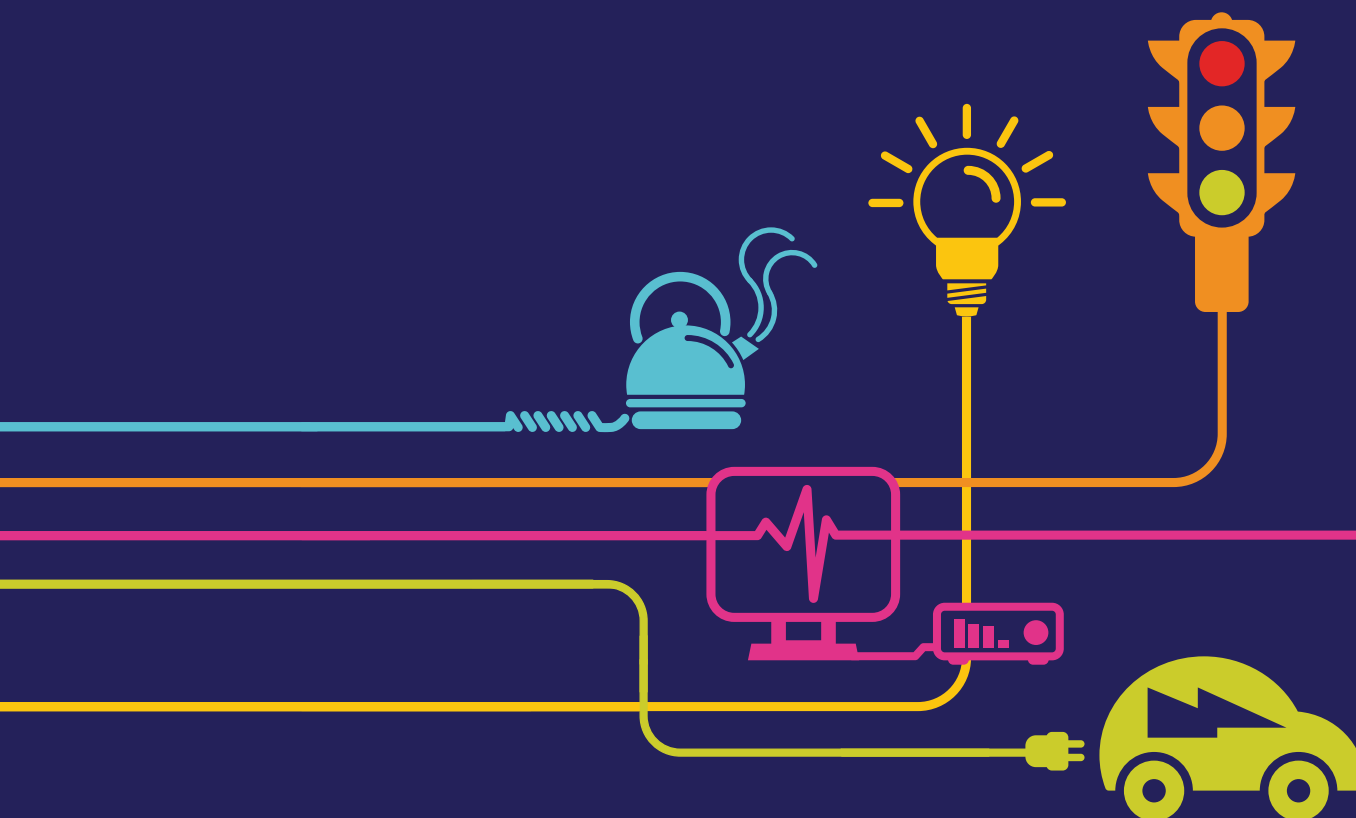


# Environmental Statement Biodiversity and Nature Conservation Appendices 8J to 8P

Hinkley Point C Connection Project

*Regulation 5(2)(a) of the Infrastructure Planning  
(Applications: Prescribed Forms and Procedure)  
Regulations 2009*



# Environmental Statement

## Hinkley Point C Connection Project

### 5.8.2 – Biodiversity and Nature Conservation – Appendices (orange highlight indicates the contents of this Volume)

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8B	Biodiversity Policy Overview
8C	NVC Surveys – Woodland, Grassland and Wetland Habitats
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8J	Water Vole and Otter Surveys
8K	<b>CONFIDENTIAL</b> Badger Survey
8L	Amphibian Survey
8M	Reptile Survey
8N	Ditch Invertebrate & Flora Surveys
8O	Impacts on National, County & Local Designated Sites
8P	Overview of the Potential Effects of Climate Change on Designated Sites and Priority Species

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## Appendix 8J – Water Vole and Otter Surveys





## Version B



**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
Ecology Appendix 8J  
Water Vole Survey & Otter Survey  
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## **WATER VOLE SURVEY AND OTTER SURVEY**

### **1.0 Introduction**

- 1.1 A search for water vole (*Arvicola amphibious*) and otter (*Lutra lutra*) data revealed records for one or other of these species across the majority of the landscape within the Route Corridor. The landscape along much of the route is dominated by an extensive network of field ditches which is a particular characteristic of the Somerset Levels. In addition to field ditches, a number of watercourses also cross the route generally flowing from east to west. Some areas have clusters of field ponds. These habitats have high potential for supporting both water vole and otter.
- 1.2 The potential for impacts on water vole and otter to result from the proposed development are primarily associated with locations where watercourses are affected by:
- crossings of proposed underground cable routes (400kV and 132kV);
  - construction of sealing end compounds;
  - construction of substation sites;
  - permanent bridges at two locations;
  - temporary bridge or culvert crossings for construction access tracks.
- 1.3 Given the landscape crossed by the Proposed Development, complete avoidance of aquatic habitats is not feasible. Due to the likely prevalence of water vole and otter in the landscape, surveys for these species were undertaken in 2012 and 2013.
- 1.4 A combination of OS mapping and Phase 1 habitat mapping and amphibian survey data was used to inform the locations watercourses for survey in 2012 and 2013. The 2012 surveys focussed on the area proposed for 400kV underground cables (around the Mendips AONB) as this was potentially a high impact area. In 2013 surveys covered all proposed working areas with potential impacts on watercourses including the proposed 132kV undergrounding, substation sites and access routes.

### **2.0 Legal Protection**

- 2.1 Water voles are protected under the Wildlife and Countryside Act 1981 (as amended) from killing or taking by certain prohibited methods. Their breeding and resting places are fully protected from damage, destruction or obstruction and it is also an offence to disturb them in these places.
- 2.2 Otters receive protection under both the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. Otters and their resting places are fully protected, it is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It is also an offence to disturb otters in their breeding or resting places.
- 2.3 Both species are also listed within Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006. Section 40(1) of the Act states that each public authority “must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”, with particular regard to the Section 41 habitats and species.

### **3.0 Water Vole Survey Method**

- 3.1 Water vole surveys were undertaken in pairs and led by personnel with skills and experience in line with those described in relevant sections of CIEEM's Technical Guidance Series (Competencies for Survey Series: Water Vole).
- 3.2 Surveys followed guidance set out in the water vole conservation handbook<sup>1</sup> and were undertaken between March and October inclusive. The optimum period when they are most active is normally April to September inclusive. The validity of a survey is compromised if it is undertaken after heavy rain when water levels may be raised washing away or obscuring field signs. To avoid this situation, water vole surveys were not undertaken following heavy rain.
- 3.3 Surveyors examined the targeted aquatic habitats by walking along the bank and along the water's edge using binoculars and/or hand searching as appropriate for evidence of water vole activity including burrows, grazed lawns, latrines & droppings, feeding remains, runs and footprints.
- 3.4 Given the scale of the aquatic habitats requiring survey, the interconnected nature of many of the aquatic habitats and the long time frame between survey for ES consultation and eventual determination of the DCO, a precautionary approach to survey has been taken. Water vole presence will be assumed for the entire length of ditch or section of watercourse as soon as a minimum of three of the field signs described above have been observed within a given watercourse. Sightings of water vole are also adequate validation of presence. Surveys continue along the entire length of ditch or section of watercourse until or unless a water vole is seen or three types of field signs are recorded. Any ditches or watercourses where only one or two types of water vole field sign are identified are still recorded in the survey results as likely water vole habitat.

### **4.0 Otter Survey Method**

- 4.1 Otter surveys were undertaken in pairs and led by personnel with skills and experience in line with those described in relevant sections of CIEEM's Technical Guidance Series (Competencies for Survey Series: Otter).
- 4.2 Surveys broadly followed the approach used in the national otter survey<sup>2</sup> except that survey locations targeted stretches of watercourse within the development footprint and up to 50m either side of the development proposals. Surveys can be undertaken at anytime of year but are best if avoiding periods of high rainfall. To avoid this situation, otter surveys were not undertaken following heavy rain.
- 4.3 Surveyors examined the targeted aquatic habitats by walking along the bank and along the water's edge using binoculars and/or hand searching as appropriate for evidence of otter activity including holts, couches, spraints, feeding remains, runs and footprints.

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<sup>1</sup> Strachan, R et al (2011) *Water Vole Conservation Handbook*. 3<sup>rd</sup> Edition.

<sup>2</sup> Fifth Otter Survey of England 2009-2010, Technical Report, Environment Agency.

## 5.0 Survey Results and Limitations

- 5.1 The locations of the water vole and otter surveys were determined by construction impacts on the ditches. Following a period of design refinements to reduce environmental impacts and meet concerns of stakeholders and landowners expressed during 2013, National Grid finalised the detailed scheme design in early 2014.
- 5.2 Due to design changes in 2013/14, various ditches were surveyed but are no longer impacted. Results on watercourses affected by the proposals are presented in **Table 1** and the full survey results for all ditches that were surveyed over 2012 and 2013 are provided in **Table 2**. The latter is provided to give an overall impression of water vole and otter coverage in area, although not all ditches in the table are necessarily impacted.
- 5.3 Since the survey area was defined early in 2013 there have been changes to the proposed construction layout and as such additional ditches will be subject to water vole and otter surveys in early 2014. These ditches are identified in **Table 1**.

## 6.0 Water Vole Interpretation/Evaluation of Results

- 6.1 The 2012 and 2013 survey locations and findings and the proposed 2014 survey locations are illustrated on **Figure 8.46.1** to **Figure 8.46.31**.
- 6.2 During the course of surveys in 2012 and 2013 a total of 434 watercourses were subject to a full water vole survey. Of these ditches, 62% (269) contained evidence of water vole presence.
- 6.3 The southernmost records were found at Horsey Levels. Clusters of water vole activity were found across the Woolavington Levels and along the Huntspill River. North of Huntspill River there were numerous records across Huntspill Moor, north to Mark, then north of Mark and past Rook's Bridge. To the north of Rook's Bridge, water vole activity was recorded in every ditch surveyed up to Loxton. Records also exist between Loxton and Sandford, across Puxton Moor and north to North End. Kenn Moor and Nailsea Moor also have a high number of water vole records as far north as Tickenham. Scattered records were found at Portbury and Avonmouth although desktop records are numerous at these locations.
- 6.4 For the majority of ditches, presence was confirmed through discovery of field signs (burrows, latrines, feeding remains and runs) only. Presence was confirmed at four watercourses through a water vole sighting by the surveyors. The water vole sightings were at ditches TEP1001 (south of Rook's Bridge), TEP556 (Mark Moor), TEP2349 (south of Portishead) and TEP2522 (east of Avonmouth Docks).
- 6.5 Water vole presence was also recorded in single ditches, some distance from the larger clusters of activity described above. These are not considered isolated or remnant sub-populations; the water vole population is evidently mobile within the ditch network and occupancy may shift, particularly in light of the active ditch management which is integral to the maintenance of this man-made landscape. Furthermore, the scope of the survey was determined by development impacts therefore apparently isolated water vole records may simply be adjacent to areas outside the survey scope.
- 6.6 The ditch network is managed by the EA, IDB and private landowners, which entails dredging and vegetation clearance on an approximately five year cycle. Best practice guidance suggests vegetation is cleared from select stretches (alternate banks, short

sections or retaining a strip of vegetation at half bank height), in part, to minimise the impact on the resident water vole population. However the degree to which this approach is adopted will vary between landowners/operators. Whilst such management will influence the distribution and abundance of water voles, it is likely to offer some benefit by controlling scrub encroachment which would otherwise over shade the ditches and reduce habitat suitability for the species.

- 6.7 Of the 434 ditches surveyed 165 found no evidence of water voles. 65% of the watercourses where water vole were absent were dry at the time of survey. Water vole populations are generally fluid and the network of ditches present across the Somerset Levels would facilitate mobility in populations. It is likely that when water levels drop in one location individuals will move to areas where more suitable water levels can be found.

## **7.0 Otter Interpretation/Evaluation of Results**

- 7.1 The 2012 and 2013 survey locations and findings and the proposed 2014 survey locations are illustrated on **Figure 8.47.1** to **Figure 8.47.31**.
- 7.2 During field surveys otter presence was confirmed in only four locations. All four locations were ditches with connectivity to the River Brue. The field evidence identified was otter prints, feeding remains and spraints, indicating that otter is active through these watercourses at the surveyed stretches, although no otter holts or shelters were recorded.
- 7.3 Otter have large home ranges and are known to be widespread through the Somerset Levels. The paucity of data is likely to be a function of the restricted stretches of watercourse surveyed, a high proportion of which is open ditch habitat largely unsuitable for shelter. The otter relies heavily on clean rivers, streams and associated land to supply its food, and on at least one bankside having well developed vegetation to provide cover. The network of rhynes is however suitable for otters to forage, and disperse and potentially, laying-up areas where bankside vegetation is lush (a feature that can change with the ditch management rotation). It has been shown that otters will use small streams and ditches including dry watercourses as regular routes.
- 7.4 The Somerset Otter Group carries out an annual otter survey across the county, including the Parrett, Brue and North Axe catchments, all of which supported records of otter. Results of their 2013 survey showed the otter population to have remained stable from previous years. As otters are known to be present on the main rivers that flow through the Order Limits, individuals are likely to move through these watercourses and associated tributaries as part of typical ranging behaviour. Therefore, for the purposes of identifying potential effects and appropriate mitigation, otter is assumed to utilise all watercourses through the Levels, extending south to Bridgwater and north to Portbury.

## **8.0 Construction effects**

- 8.1 288 watercourses will be impacted by construction works. Of these, 80% (228) were surveyed during the 2012/2013 water vole and otter surveys. 135 of these ditches were found to contain field signs of water vole presence while otter field signs were only detected at four ditches. A further 62 affected ditches will be surveyed in 2014 detailed within **Table 1**.



- 8.2 The re-routing of a ditch at the proposed Sandford substation (in section D) is the only permanent impact to ditch habitat. Although this is a single ditch it has been categorised for survey reference as 3 connected ditches (Ditches TEP1318, TEP1320 and TEP1323) which are located within the footprint of the proposed Sandford Substation construction footprint and compound. No water vole or otter field signs were found during the surveys of 2012/13 along this ditch.
- 8.3 Two permanent bridges are proposed within the 400kV undergrounding section of the development. These crossing are proposed over the River Axe (TEP2991) and Towerhead Brook (TEP1312). Water vole evidence was found along the River Axe, however no evidence was found along Towerhead Brook at the time of survey. No signs of otter were recorded at either watercourse. There will be temporary effect on the river habitat during the construction of the bridge. Although a permanent feature the bridges will be clear span and therefore leave a wildlife corridor beneath for movement of both water vole and otter.
- 8.4 **Table 1**, below, lists the ditches which will be impacted by construction works, whether these have been surveyed for water vole and otter and whether any survey is required in 2014. **Blue** indicates survey in 2014, **green** indicates water vole have been recorded and **pink** indicates otter (and water vole) have been recorded. This information is also provided in the text of the table. Results are presented for each section of the Proposed Development. Each crossing point has a discrete identifier.

**Table 1: Ditches Affected by Construction Works**

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
<b>SECTION A – PURITON RIDGE</b>				
TEP148	VQ043R-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP162	VQ043R-CR02	Not surveyed	Not surveyed	Survey required 2014
TEP169	VQ043R-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP174	VQ043R-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP209	C-ZGA4-CR05	Not surveyed	Not surveyed	Survey required 2014
TEP210	C-ZGA4-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP211	C-ZGA4-CR03	No	No	
<b>SECTION B – SOMERSET LEVELS &amp; MOORS SOUTH</b>				
TEP237	C-ZGA4-CR01	Yes	No	
TEP238	C-ZGA4-CR02	Yes	No	
TEP256	C-ZGA12-CR01	No	No	
TEP281	C-LD3-CR01	Yes	No	
TEP285	C-ZGA13-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP301	C-LD3-CR06	Yes	No	
TEP303	C-LD3-CR02	Not surveyed	Not surveyed	Survey required 2014
TEP313	C-LD3-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP314	C-LD3-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP319	C-LD3-CR05	Not surveyed	Not surveyed	Survey required 2014
TEP327	C-LD3-CR07	Yes	No	
TEP341	C-LD3-CR08	Yes	No	
TEP346	C-LD3-CR09	Yes	No	
TEP359	C-LD9-CR03	No	No	
TEP364	C-LD9-CR04 C-LD9-CR05	Yes	No	
TEP372	C-LD9-CR02	Yes	No	

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP373	C-LD9-CR01	Yes	No	
TEP375	C-LD9-CR06	No	No	
TEP381	C-LD9-CR07	Yes	No	
TEP388	C-LD9-CR08	Yes	No	
TEP402	C-LD9-CR09	Yes	No	
TEP416	C-LD9-CR10	Yes	No	
TEP420	C-LD9-CR11	Yes	Yes	
TEP441	C-LD9-CR12	Yes	Yes	
TEP547	C-LD10-CR57	Yes	No	
TEP556	C-LD10-CR58	Yes	Yes	
TEP573	C-LD10-CR56	No	No	
TEP708	C-LD10-CR47	Yes	No	
TEP723	C-LD10-CR46	No	No	
TEP727	C-LD10-CR45	Yes	No	
TEP734	C-LD10-CR44	Yes	No	
TEP756	C-LD10-CR43	Yes	No	
TEP760	C-LD10-CR42	Yes	No	
TEP772	C-LD10-CR41	Not surveyed	Not surveyed	Survey required 2014
TEP780	C-LD10-CR40	Not surveyed	Not surveyed	Survey required 2014
TEP815	C-LD10-CR39	Yes	No	
TEP816	C-LD10-CR38	Yes	No	
TEP826	C-LD10-CR37	Not surveyed	Not surveyed	Survey required 2014
TEP832	C-LD10-CR36	Yes	No	
TEP861	C-LD10-CR35	Yes	No	
TEP862	C-LD10-CR32	Not surveyed	Not surveyed	Survey required 2014
TEP863	C-LD10-CR34	No	No	
TEP874	C-LD10-CR33	No	No	
TEP885	C-LD10-CR31	Yes	No	
TEP891	C-LD10-CR30	Yes	No	
TEP903	C-LD10-CR29	Yes	No	
TEP905	C-LD10-CR28	Yes	No	
TEP910	C-LD10-CR26	Yes	No	
TEP911	C-LD10-CR27	Not surveyed	Not surveyed	Survey required 2014
TEP924	C-LD10-CR25	Yes	No	
TEP934	C-LD10-CR24	Yes	No	
TEP945	C-LD10-CR23	Yes	No	
TEP952	C-LD10-CR22	Not surveyed	Not surveyed	Survey required 2014
TEP971	C-LD10-CR21	Yes	No	
TEP976	C-LD10-CR20	Yes	No	
TEP978	C-LD10-CR19	Yes	No	
TEP991	C-LD10-CR17	Yes	No	
TEP992	C-LD10-CR18	Not surveyed		Survey required 2014
TEP1001	C-LD10-CR16	Yes	No	
TEP1012	C-LD10-CR15	No	No	
TEP1015	C-LD10-CR13	Yes	No	
TEP1018	C-LD10-CR14	Not surveyed		Survey required 2014

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP1019	C-LD10-CR12	Not surveyed		Survey required 2014
TEP1023	C-LD10-CR11	Yes		
TEP1024	C-LD10-CR10	Yes		
TEP1030	C-LD10-CR09	No	No	
TEP1046	C-LD10-CR08	No	No	
TEP1048	C-LD10-CR07 C-LD10-CR06	No	No	
TEP1054	C-LD10-CR05	No	No	
TEP1058	C-LD10-CR04	No	No	
TEP1062	C-LD10-CR02	No	No	
TEP1065	C-LD10-CR03	No	No	
TEP1074	C-LD10-CR01	No	No	
TEP1099	C-LD38-CR04	Yes	No	
TEP1110	C-LD38-CR04 C-LD38-CR02	Yes	No	
TEP1112	C-LD38-CR03	Yes	No	
TEP1121	C-LD38-CR02	Yes	No	
TEP1122	C-LD38-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP1127	400-UG-CR04	Yes	No	
TEP1128	400-UG-CR03	Yes	No	
TEP1136	400-UG-CR05	Yes	No	
TEP1137	400-UG-CR02	Yes	No	
TEP1141	400-UG-CR06	Yes	No	
TEP1147	400-UG-CR07	Yes	No	
TEP1148	400-UG-CR08	Yes	No	
TEP1156	400-UG-CR09	Yes	No	
TEP1171	400-UG-CR10	Yes	No	
TEP1178	400-UG-CR11	Yes	No	
TEP1196	400-UG-CR17	Yes	No	
TEP1200	400-UG-CR12 400-UG-CR13	Yes	No	
TEP1206	400-UG-CR16 400-UG-CR14	Yes	No	
TEP1209	400-UG-CR18 400-UG-CR15	Yes	No	
TEP1212	400-UG-CR20	Yes	No	
TEP1213	400-UG-CR19	Yes	No	
TEP1215	400-UG-CR22	Yes	No	
TEP1233	400-UG-CR24	Not surveyed	Not surveyed	Survey required 2014
TEP1241	400-UG-CR25	No	No	
TEP2930	C-LD10-CR48	No	No	
TEP2931	C-LD10-CR49	No	No	
TEP2932	C-LD10-CR50	No	No	
TEP2933	C-LD10-CR51	No	No	
TEP2935	C-LD10-CR52	No	No	
TEP2937	C-LD10-CR54	No	No	
TEP2938	C-LD10-CR55	Yes	No	
TEP2943	C-LD10-CR53	Not surveyed	Not surveyed	Survey required 2014

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP2991	400-UG-CR21 400-UG-CR23	Yes	No	
TEP3048	400-UG-CR01	No	No	
<b>SECTION C – MENDIP HILLS AONB</b>				
TEP1248	400-UG-CR26	No	No	
TEP1263	400-UG-CR28 400-UG-CR29	No	No	
TEP2999	400-UG-CR27	Yes	No	
TEP1282	400-UG-CR37	No	No	
TEP1294	400-UG-CR44	No	No	
TEP1298	400-UG-CR45	Yes	No	
TEP1303	400-UG-CR50	Yes	No	
TEP1307	400-UG-CR52	No	No	
TEP2919	400-UG-CR30 400-UG-CR31	No	No	
TEP2920	400-UG-CR47	No	No	
TEP2921	400-UG-CR46	No	No	
TEP2922	400-UG-CR49	No	No	
TEP2923	400-UG-CR53	No	No	
TEP2924	400-UG-CR54	No	No	
TEP3002	400-UG-CR32 400-UG-CR33	No	No	
TEP3004	400-UG-CR35 400-UG-CR36	No	No	
TEP3006	400-UG-CR38 400-UG-CR39	No	No	
TEP3008	400-UG-CR40	No	No	
TEP3011	400-UG-CR41	No	No	
TEP3012	400-UG-CR42	No	No	
TEP3015	400-UG-CR43	No	No	
TEP3024	400-UG-CR48	No	No	
TEP3049	400-UG-CR34	No	No	
TEP3050	400-UG-CR55	No	No	
TEP3216	400-UG-CR51	No	No	
<b>SECTION D – SOMERSET LEVELS &amp; MOORS NORTH</b>				
TEP1312	400-UG-CR56 400-UG-CR57	No	No	
TEP1317	400-UG-CR59	Not surveyed	Not surveyed	Survey required 2014
TEP1318	SANDFORD	No	No	
TEP1320	SANDFORD	No	No	
TEP1323	SANDFORD	No	No	
TEP1330	AT30-CR01	No	No	
TEP1331	C-LD39-CR25	No	No	
TEP1338	AT30-CR02	Not surveyed	Not surveyed	Survey required 2014
TEP1344	C-LD39-CR23	No	No	
TEP1346	C-LD39-CR24	No	No	
TEP1348	AT30-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP1350	C-LD39-CR22	No	No	

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP1364	C-LD39-CR21	No	No	
TEP1379	C-LD39-CR20	Yes	No	
TEP1382	AT29-CR07	Not surveyed	Not surveyed	Survey required 2014
TEP1388	C-LD39-CR19	Yes	No	
TEP1392	AT29-CR06	Not surveyed	Not surveyed	Survey required 2014
TEP1410	C-LD39-CR18	Yes	No	
TEP1441	AT29-CR05	Not surveyed	Not surveyed	Survey required 2014
TEP1447	AT29-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP1450	C-LD39-CR17	Yes	No	
TEP1471	C-LD39-CR16	Yes	No	
TEP1474	AT29-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP1491	C-LD39-CR15	Yes	No	
TEP1502	AT29-CR02	Not surveyed	Not surveyed	Survey required 2014
TEP1525	C-LD39-CR14	Yes	No	
TEP1554	C-LD39-CR13	Yes	No	
TEP1559	AT29-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP1565	C-LD39-CR12	Yes	No	
TEP1586	C-LD39-CR11	Yes	No	
TEP1596	C-LD39-CR10	Not surveyed	Not surveyed	Survey required 2014
TEP1606	C-LD39-CR09	Yes	No	
TEP1641	C-LD39-CR08	No	No	
TEP1642	C-LD39-CR07	Yes	No	
TEP1667	C-LD39-CR06	No	No	
TEP1674	C-LD39-CR05	No	No	
TEP1694	C-LD39-CR04	No	No	
TEP1705	C-LD39-CR03	No	No	
TEP1718	C-LD39-CR02	Yes	No	
TEP1721	C-LD39-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP1759	C-LD53-CR01	No	No	
TEP1765	C-LD53-CR02	Yes	No	
TEP1807	C-LD53-CR03	Yes	No	
TEP1815	C-LD53-CR05	Yes	No	
TEP1827	C-LD53-CR06	Yes	No	
TEP1833	C-LD53-CR07	Not surveyed	Not surveyed	Survey required 2014
TEP1857	C-LD54-CR18	Yes	No	
TEP1880	C-LD54-CR17	Yes	No	
TEP1883	C-LD54-CR16	Yes	No	
TEP1909	C-LD54-CR15	Yes	No	
TEP1921	C-LD54-CR14	Yes	No	
TEP1927	C-LD54-CR13	Yes	No	
TEP1932	C-LD54-CR12	No	No	
TEP1942	C-LD54-CR11	Yes	No	
TEP1954	C-LD54-CR10	No	No	
TEP1966	C-LD54-CR09	Yes	No	
TEP1992	C-LD54-CR08	Yes	No	
TEP32`7	C-LD54-CR07	No	No	

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP1993	C-LD54-CR06	Yes	No	
TEP2000	C-LD54-CR05	Not surveyed	Not surveyed	Survey required 2014
TEP2015	C-LD54-CR05	Not surveyed	Not surveyed	Survey required 2014
TEP2025	C-LD54-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP2031	C-LD54-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP2033	C-LD54-CR02	No	No	
TEP2059	C-LD62-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP2076	C-LD62-CR04	No	No	
TEP2086	C-LD62-CR03	No	No	
TEP2093	C-LD62-CR02	No	No	
TEP2097	C-LD62-CR01	Yes	No	
TEP2099	C-LD70-CR01	No	No	
TEP2116	C-LD70-CR03	No	No	
TEP2117	C-LD70-CR02	Yes	No	
TEP2118	C-LD70-CR05	Yes	No	
TEP2119	C-LD70-CR04	Yes	No	
TEP2128	C-LD70-CR06	Yes	No	
TEP2137	C-LD70-CR08	Yes	No	
TEP2139	C-LD70-CR11	Yes	No	
TEP2142	C-LD70-CR09	No	No	
TEP2145	C-LD70-CR10	Yes	No	
TEP2153	C-LD70-CR07	Yes	No	
TEP2160	C-LD70-CR12	Yes	No	
TEP2167	C-LD70-CR13	Yes	No	
TEP2182	C-LD74-CR01	Yes	No	
TEP2188	C-LD74-CR02	Yes	No	
TEP2192	C-LD74-CR04	Yes	No	
TEP2195	C-LD74-CR03	Yes	No	
TEP2208	C-LD74-CR05	Yes	No	
TEP2209	C-LD74-CR06	Yes	No	
TEP2216	C-LD74-CR07	Not surveyed	Not surveyed	Survey required 2014
TEP2218	C-LD74-CR08	Yes	No	
TEP2223	C-LD74-CR11	Yes	No	
TEP2233	C-LD74-CR09	Not surveyed	Not surveyed	Survey required 2014
TEP2239	C-LD74-CR10	Yes	No	
TEP2279	C-LD76-CR04	Yes	No	
TEP2282	C-LD76-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP2286	C-LD76-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP2291	C-LD76-CR02	Yes	No	
TEP2294	W-ROUTE-CR02 W-ROUTE-CR04	Yes	No	
TEP2314	W-ROUTE-CR05 C-LD78-CR02	Yes	No	
TEP2333	W-ROUTE-CR07	Yes	No	
TEP2912	C-LD53-CR04	Yes	No	
TEP2913	C-LD54-CR01	No	No	
TEP2914	W-ROUTE-CR06	Yes	No	

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP3043	AT-ROUTE-CR02	No	No	
TEP3047	Y1R-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP3051	400-UG-CR58	No	No	
TEP3052	W-ROUTE-CR01	No	No	
TEP3053	W-ROUTE-CR03	Not surveyed	Not surveyed	Survey required 2014
<b>SECTION E – TICKENHAM RIDGE</b>				
TEP2339	W-ROUTE-CR08	No	No	
<b>SECTION F - PORTISHEAD</b>				
TEP2413	W-ROUTE-CR10	Not surveyed	Not surveyed	Survey required 2014
TEP2444	W-ROUTE-CR11	Not surveyed	Not surveyed	Survey required 2014
TEP2446	W-ROUTE-CR12	Yes	No	
TEP2452	W-ROUTE-CR13	No	No	
TEP2461	W-ROUTE-CR14	Not surveyed	Not surveyed	Survey required 2014
TEP2464	P-LD99-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP2484	P-LD99-CR02 P-LD99-CR05 BW-P-CR01	Yes	No	
TEP2486	P-LD99-CR03	Not surveyed	Not surveyed	Survey required 2014
TEP2490	P-LD99-CR04	Not surveyed	Not surveyed	Survey required 2014
TEP2915	W-ROUTE-CR09	Yes	No	
TEP2916	C-LD95-CR01	No	No	
TEP2925	C-LD96-CR01	No	No	
<b>SECTION G – AVONMOUTH</b>				
TEP2465	P-LD101-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP2510	C-LD114-CR01	No	No	
TEP2511	G-ROUTE-CR01	No	No	
TEP3218	G-ROUTE-CR02	No	No	
TEP2514	C-LD114-CR02	Yes	No	
TEP2523	G-ROUTE-CR03	Yes	No	
TEP2536	G-ROUTE-CR05	Yes	No	
TEP2537	G-ROUTE-CR06	No	No	
TEP2541	G-ROUTE-CR04	Yes	No	
TEP2543	G-ROUTE-CR07 C-LD118-CR01	Yes	No	
TEP2549	G-ROUTE-CR08	Not surveyed	Not surveyed	Survey required 2014
TEP2569	G-ROUTE-CR10	Not surveyed	Not surveyed	Survey required 2014
TEP2570	G-ROUTE-CR09	No	No	
TEP2577	G-ROUTE-CR11	Not surveyed	Not surveyed	Survey required 2014
TEP2584	G-ROUTE-CR12	Yes	No	
TEP2594	G-ROUTE-CR13	Not surveyed	Not surveyed	Survey required 2014
TEP2601	G-ROUTE-CR14	No	No	
TEP2622	C-LD119-CR01	Yes	No	
TEP2623	C-LD120-CR01	Yes	No	
TEP2609	C-LD120-CR02	Not surveyed	Not surveyed	Survey required 2014
TEP2643	C-LD121-CR04	No	No	
TEP2649	C-LD121-CR03	No	No	
TEP2651	C-LD121-CR02	No	No	
TEP2666	C-LD121-CR01	Not surveyed	Not surveyed	Survey required 2014

Ditch No.	Crossing ID	Water Vole Present	Otter Present	Additional Information
TEP2699	C-LD125-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP2714	SEABANK-CR01	Not surveyed	Not surveyed	Survey required 2014
TEP2715	C-LD127-CR01	No	No	
TEP2720	SEABANK-CR02	Yes	No	
<b>SECTION H – HINKLEY LINE ENTRIES</b>				
TEP2926	VQ3C-CR02	No	No	
TEP2927	VQ3C-CR01	No	No	

## 9.0 Water Vole Survey Data

9.1 **Table 2**, below, details all ditches surveyed and the water vole field signs found. This includes ditches where no construction effects will be incurred following changes to the Proposed Development.

**Table 2: Water Vole Survey Data**

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP14	No	No	No	No	No	No
TEP17	No	No	No	No	No	No
TEP68	Yes	Yes	Yes	Yes	No	Yes
TEP74	Yes	No	Yes	Yes	No	Yes
TEP92	No	No	No	No	No	No
TEP165	No	No	No	No	No	No
TEP166	Yes	No	Yes	Yes	No	Yes
TEP172	No	Yes	Yes	Yes	No	Yes
TEP176	Yes	No	Yes	Yes	No	Yes
TEP182	No	No	No	No	No	No
TEP185	No	No	No	No	No	No
TEP188	No	No	No	No	No	No
TEP200	No	No	No	No	No	No
TEP211	No	No	No	No	No	No
TEP216	No	No	No	No	No	No
TEP217	No	No	No	No	No	No
TEP232	No	No	No	No	No	No
TEP233	No	No	No	No	No	No
TEP237	Yes	Yes	Yes	Yes	No	Yes
TEP238	Yes	Yes	Yes	Yes	No	Yes
TEP246	Yes	Yes	Yes	Yes	No	Yes
TEP254	No	No	Yes	Yes	No	Yes
TEP256	No	No	No	No	No	No
TEP257	Yes	No	Yes	Yes	No	Yes
TEP258	Yes	Yes	Yes	Yes	No	Yes
TEP281	No	No	Yes	Yes	No	Yes
TEP301	Yes	Yes	Yes	Yes	No	Yes
TEP308	No	No	No	No	No	No
TEP321	No	No	No	No	No	No
TEP327	Yes	Yes	Yes	Yes	No	Yes
TEP334	Yes	No	No	Yes	No	No
TEP336	Yes	No	Yes	Yes	No	Yes
TEP337	No	No	No	No	No	No
TEP341	Yes	Yes	Yes	Yes	No	Yes
TEP343	Yes	Yes	Yes	Yes	No	Yes



Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP346	Yes	Yes	Yes	Yes	No	Yes
TEP348	Yes	No	Yes	Yes	No	Yes
TEP359	No	No	No	No	No	No
TEP364	Yes	Yes	Yes	Yes	No	Yes
TEP366	No	No	No	No	No	No
TEP372	Yes	Yes	Yes	Yes	No	Yes
TEP373	Yes	Yes	Yes	Yes	No	Yes
TEP375	No	No	No	No	No	No
TEP381	Yes	No	No	Yes	No	No
TEP386	No	No	No	No	No	No
TEP388	Yes	Yes	Yes	Yes	No	Yes
TEP389	No	No	No	No	No	No
TEP402	Yes	No	Yes	Yes	No	Yes
TEP407	Yes	Yes	Yes	Yes	No	Yes
TEP415	No	No	No	No	No	No
TEP416	Yes	Yes	Yes	Yes	No	Yes
TEP420	Yes	Yes	Yes	Yes	No	Yes
TEP425	No	No	No	No	No	No
TEP434	No	No	No	No	No	No
TEP441	Yes	Yes	Yes	Yes	No	Yes
TEP452	No	No	No	No	No	No
TEP470	Yes	Yes	Yes	Yes	No	Yes
TEP501	No	No	No	No	No	No
TEP515	No	No	No	No	No	No
TEP517	Yes	No	Yes	Yes	No	Yes
TEP521	No	No	No	No	No	No
TEP522	No	No	No	No	No	No
TEP524	No	No	No	No	No	No
TEP528	Yes	Yes	Yes	Yes	No	Yes
TEP539	Yes	Yes	Yes	Yes	No	Yes
TEP547	Yes	No	Yes	Yes	No	Yes
TEP554	No	No	No	No	No	No
TEP556	Yes	Yes	Yes	Yes	Yes	Yes
TEP570	Yes	No	Yes	Yes	No	Yes
TEP573	No	No	No	No	No	No
TEP583	No	No	No	No	No	No
TEP587	Yes	Yes	Yes	Yes	No	Yes
TEP588	No	No	No	No	No	No
TEP594	No	No	No	No	No	No
TEP597	Yes	No	Yes	Yes	No	Yes
TEP603	No	No	No	No	No	No
TEP616	No	No	No	No	No	No
TEP618	Yes	No	Yes	Yes	No	Yes
TEP627	No	No	No	No	No	No
TEP635	Yes	No	Yes	Yes	No	Yes
TEP642	Yes	No	Yes	Yes	No	Yes
TEP643	No	No	No	No	No	No
TEP644	No	No	Yes	Yes	No	Yes
TEP648	Yes	Yes	Yes	Yes	No	Yes
TEP650	Yes	Yes	Yes	Yes	No	Yes
TEP653	No	No	Yes	Yes	No	Yes
TEP656	Yes	Yes	Yes	Yes	No	Yes
TEP659	No	No	No	Yes	No	Yes
TEP663	Yes	Yes	Yes	Yes	No	Yes
TEP665	No	No	No	No	No	No
TEP673	Yes	Yes	Yes	Yes	No	Yes
TEP677	Yes	Yes	Yes	Yes	No	Yes
TEP680	No	No	No	No	No	No
TEP708	Yes	No	No	Yes	No	Yes

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP715	Yes	Yes	Yes	Yes	No	Yes
TEP721	Yes	Yes	Yes	Yes	No	Yes
TEP723	No	No	No	No	No	No
TEP727	Yes	Yes	Yes	Yes	No	Yes
TEP733	Yes	Yes	Yes	Yes	No	Yes
TEP734	Yes	Yes	Yes	Yes	No	Yes
TEP736	Yes	Yes	Yes	Yes	No	Yes
TEP740	Yes	Yes	Yes	Yes	No	Yes
TEP751	No	No	No	No	No	No
TEP756	Yes	Yes	Yes	Yes	No	Yes
TEP758	Yes	No	Yes	Yes	No	Yes
TEP760	Yes	Yes	Yes	Yes	No	Yes
TEP782	No	No	No	No	No	No
TEP792	No	No	No	No	No	No
TEP797	No	No	No	No	No	No
TEP803	Yes	Yes	Yes	No	No	Yes
TEP806	N/S	N/S	N/S	N/S	N/S	N/S
TEP815	Yes	Yes	Yes	Yes	No	Yes
TEP816	Yes	Yes	Yes	Yes	No	Yes
TEP819	Yes	Yes	Yes	Yes	No	Yes
TEP822	Yes	Yes	Yes	Yes	No	Yes
TEP829	Yes	Yes	Yes	Yes	No	Yes
TEP832	Yes	Yes	Yes	Yes	No	Yes
TEP837	No	No	No	No	No	No
TEP848	Yes	No	Yes	Yes	No	Yes
TEP852	Yes	Yes	Yes	Yes	No	Yes
TEP861	Yes	Yes	Yes	Yes	No	Yes
TEP863	No	No	No	No	No	No
TEP865	Yes	Yes	Yes	Yes	No	Yes
TEP874	No	No	No	No	No	No
TEP885	Yes	No	Yes	Yes	No	Yes
TEP891	Yes	No	Yes	Yes	No	Yes
TEP901	Yes	Yes	Yes	Yes	No	Yes
TEP903	Yes	No	Yes	Yes	No	Yes
TEP905	Yes	Yes	Yes	Yes	No	Yes
TEP906	Yes	No	Yes	Yes	No	Yes
TEP907	Yes	Yes	Yes	Yes	No	Yes
TEP909	Yes	Yes	Yes	Yes	No	Yes
TEP910	Yes	Yes	Yes	Yes	No	Yes
TEP914	Yes	Yes	Yes	Yes	No	Yes
TEP916	Yes	No	Yes	Yes	No	Yes
TEP924	Yes	Yes	Yes	Yes	No	Yes
TEP934	Yes	No	Yes	Yes	No	Yes
TEP945	Yes	Yes	Yes	Yes	No	Yes
TEP955	No	No	No	No	No	No
TEP960	Yes	Yes	Yes	Yes	No	Yes
TEP969	No	No	No	No	No	No
TEP970	No	No	No	No	No	No
TEP971	Yes	No	Yes	Yes	No	Yes
TEP976	Yes	No	Yes	Yes	No	Yes
TEP978	Yes	No	Yes	Yes	No	Yes
TEP984	Yes	Yes	Yes	Yes	No	Yes
TEP991	Yes	No	Yes	Yes	No	Yes
TEP998	Yes	Yes	Yes	Yes	No	Yes
TEP1001	Yes	Yes	Yes	Yes	Yes	Yes
TEP1005	Yes	Yes	No	Yes	No	Yes
TEP1006	Yes	Yes	Yes	Yes	No	Yes
TEP1010	No	No	No	No	No	No
TEP1012	No	No	No	No	No	No

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP1013	Yes	No	Yes	Yes	No	Yes
TEP1015	Yes	Yes	Yes	Yes	No	Yes
TEP1017	Yes	Yes	Yes	Yes	No	Yes
TEP1023	Yes	Yes	Yes	Yes	No	Yes
TEP1024	Yes	Yes	Yes	Yes	No	Yes
TEP1029	Yes	Yes	Yes	Yes	No	Yes
TEP1030	No	No	No	No	No	No
TEP1033	Yes	No	Yes	Yes	No	Yes
TEP1043	Yes	No	Yes	Yes	No	Yes
TEP1046	No	No	No	No	No	No
TEP1048	No	No	No	No	No	No
TEP1054	No	No	No	No	No	No
TEP1058	No	No	No	No	No	No
TEP1062	No	No	No	No	No	No
TEP1065	No	No	No	No	No	No
TEP1069	Yes	Yes	No	Yes	No	Yes
TEP1070	Yes	Yes	Yes	Yes	No	Yes
TEP1074	No	No	No	No	No	No
TEP1095	No	No	No	No	No	No
TEP1099	Yes	Yes	Yes	Yes	No	Yes
TEP1110	Yes	Yes	Yes	Yes	No	Yes
TEP1112	Yes	No	No	No	No	Yes
TEP1121	Yes	No	No	No	No	Yes
TEP1124	Yes	No	No	No	No	Yes
TEP1127	Yes	Yes	Yes	Yes	No	Yes
TEP1128	Yes	Yes	Yes	Yes	No	Yes
TEP1132	Yes	No	Yes	Yes	No	Yes
TEP1136	Yes	Yes	Yes	Yes	No	Yes
TEP1137	Yes	Yes	No	Yes	No	Yes
TEP1138	Yes	Yes	Yes	Yes	No	Yes
TEP1141	Yes	Yes	Yes	Yes	No	Yes
TEP1142	Yes	Yes	Yes	Yes	No	Yes
TEP1143	Yes	Yes	Yes	Yes	No	Yes
TEP1146	Yes	No	Yes	No	No	Yes
TEP1147	Yes	Yes	Yes	Yes	No	Yes
TEP1148	Yes	Yes	Yes	Yes	No	Yes
TEP1156	Yes	Yes	No	Yes	No	Yes
TEP1166	Yes	Yes	No	Yes	No	Yes
TEP1168	Yes	Yes	Yes	Yes	No	Yes
TEP1171	Yes	Yes	Yes	Yes	No	Yes
TEP1174	Yes	Yes	No	Yes	No	Yes
TEP1178	Yes	No	Yes	Yes	No	Yes
TEP1187	Yes	Yes	Yes	Yes	No	Yes
TEP1189	Yes	Yes	Yes	Yes	No	Yes
TEP1196	Yes	Yes	Yes	Yes	No	Yes
TEP1200	Yes	Yes	Yes	Yes	No	Yes
TEP1202	Yes	Yes	Yes	Yes	No	Yes
TEP1206	Yes	Yes	No	Yes	No	Yes
TEP1207	Yes	Yes	Yes	Yes	No	Yes
TEP1209	Yes	Yes	Yes	Yes	No	Yes
TEP1210	Yes	Yes	Yes	Yes	No	Yes
TEP1212	Yes	Yes	Yes	Yes	No	Yes
TEP1213	Yes	No	Yes	Yes	No	Yes
TEP1215	Yes	Yes	Yes	Yes	No	Yes
TEP1223	Yes	Yes	No	Yes	No	Yes
TEP1230	Yes	Yes	Yes	Yes	No	Yes
TEP1232	Yes	Yes	Yes	Yes	No	Yes
TEP1236	Yes	Yes	Yes	Yes	No	Yes
TEP1240	Yes	Yes	Yes	Yes	No	Yes

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP1241	No	No	No	No	No	No
TEP1243	Yes	No	Yes	Yes	No	Yes
TEP1248	No	No	No	No	No	No
TEP1250	Yes	No	Yes	Yes	No	Yes
TEP1252	Yes	No	Yes	Yes	No	Yes
TEP1260	Yes	Yes	Yes	Yes	No	Yes
TEP1263	No	No	No	No	No	No
TEP1265	Yes	Yes	Yes	Yes	No	Yes
TEP1269	Yes	No	Yes	Yes	No	Yes
TEP1274	Yes	Yes	Yes	Yes	No	Yes
TEP1276	Yes	Yes	No	Yes	No	Yes
TEP1277	Yes	Yes	Yes	Yes	No	Yes
TEP1278	Yes	Yes	No	Yes	No	Yes
TEP1282	No	No	No	No	No	No
TEP1286	Yes	Yes	No	Yes	No	Yes
TEP1293	N/S	N/S	N/S	N/S	N/S	N/S
TEP1294	No	No	No	No	No	No
TEP1296	Yes	Yes	Yes	Yes	No	Yes
TEP1297	Yes	Yes	Yes	Yes	No	Yes
TEP1298	Yes	Yes	Yes	Yes	No	Yes
TEP1299	Yes	Yes	Yes	Yes	No	Yes
TEP1301	Yes	Yes	Yes	Yes	No	Yes
TEP1303	Yes	No	Yes	Yes	No	Yes
TEP1304	Yes	Yes	No	Yes	No	Yes
TEP1307	No	No	No	No	No	No
TEP1308	Yes	No	Yes	Yes	No	Yes
TEP1311	No	No	No	No	No	No
TEP1312	No	No	No	No	No	No
TEP1317	N/S	N/S	N/S	N/S	N/S	N/S
TEP1318	No	No	No	No	No	No
TEP1320	No	No	No	No	No	No
TEP1323	No	No	No	No	No	No
TEP1330	No	No	No	No	No	No
TEP1331	No	No	No	No	No	No
TEP1344	No	No	No	No	No	No
TEP1346	No	No	No	No	No	No
TEP1350	No	No	No	No	No	No
TEP1364	No	No	No	No	No	No
TEP1379	Yes	Yes	Yes	Yes	No	Yes
TEP1385	No	No	Yes	Yes	No	Yes
TEP1388	Yes	No	No	Yes	No	Yes
TEP1389	No	No	No	No	No	No
TEP1395	Yes	Yes	Yes	Yes	No	Yes
TEP1410	Yes	Yes	Yes	Yes	No	Yes
TEP1413	Yes	Yes	Yes	Yes	No	Yes
TEP1450	Yes	No	Yes	No	No	Yes
TEP1471	Yes	No	No	Yes	No	Yes
TEP1491	Yes	No	Yes	Yes	No	Yes
TEP1525	Yes	No	Yes	Yes	No	Yes
TEP1554	Yes	Yes	Yes	Yes	No	Yes
TEP1565	Yes	Yes	Yes	Yes	No	Yes
TEP1586	Yes	No	No	Yes	No	Yes
TEP1606	Yes	Yes	Yes	Yes	No	Yes
TEP1641	No	No	No	No	No	No
TEP1642	No	No	No	Yes	No	Yes
TEP1667	No	No	No	No	No	No
TEP1674	No	No	No	No	No	No
TEP1694	No	No	No	No	No	No
TEP1705	No	No	No	No	No	No

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP1718	Yes	No	Yes	Yes	No	Yes
TEP1726	Yes	No	Yes	Yes	No	Yes
TEP1759	No	No	No	No	No	No
TEP1765	Yes	No	Yes	Yes	No	Yes
TEP1807	Yes	Yes	Yes	Yes	No	Yes
TEP1815	Yes	No	Yes	Yes	No	Yes
TEP1827	Yes	Yes	Yes	Yes	No	Yes
TEP1832	No	No	No	Yes	No	Yes
TEP1854	No	No	No	No	No	No
TEP1857	Yes	No	Yes	Yes	No	Yes
TEP1880	Yes	Yes	Yes	Yes	No	Yes
TEP1883	Yes	Yes	Yes	Yes	No	Yes
TEP1909	Yes	Yes	Yes	Yes	No	Yes
TEP1921	Yes	Yes	Yes	Yes	No	Yes
TEP1927	Yes	Yes	Yes	Yes	No	Yes
TEP1932	No	No	No	No	No	No
TEP1942	Yes	Yes	Yes	Yes	No	Yes
TEP1954	No	No	No	No	No	No
TEP1963	Yes	Yes	Yes	Yes	No	Yes
TEP1966	No	No	No	Yes	No	Yes
TEP1983	Yes	Yes	Yes	Yes	No	Yes
TEP1992	Yes	Yes	Yes	Yes	No	Yes
TEP1993	Yes	Yes	Yes	Yes	No	Yes
TEP1997	No	No	No	No	No	No
TEP2033	No	No	No	No	No	No
TEP2045	No	No	No	No	No	No
TEP2069	No	No	No	No	No	No
TEP2076	No	No	No	No	No	No
TEP2086	No	No	No	No	No	No
TEP2093	No	No	No	No	No	No
TEP2097	Yes	Yes	Yes	Yes	No	Yes
TEP2099	No	No	No	No	No	No
TEP2102	Yes	Yes	Yes	Yes	No	Yes
TEP2106	No	No	No	Yes	No	No
TEP2116	No	No	No	No	No	No
TEP2117	Yes	Yes	Yes	Yes	No	Yes
TEP2118	Yes	Yes	Yes	Yes	No	Yes
TEP2119	Yes	Yes	Yes	Yes	No	Yes
TEP2128	Yes	Yes	Yes	Yes	No	Yes
TEP2137	Yes	Yes	Yes	Yes	No	Yes
TEP2139	Yes	Yes	Yes	Yes	No	Yes
TEP2142	No	No	No	No	No	No
TEP2145	Yes	Yes	Yes	Yes	No	Yes
TEP2153	Yes	Yes	Yes	Yes	No	Yes
TEP2160	Yes	Yes	Yes	Yes	No	Yes
TEP2165	Yes	No	Yes	Yes	No	Yes
TEP2167	Yes	Yes	Yes	Yes	No	Yes
TEP2169	Yes	Yes	Yes	Yes	No	Yes
TEP2182	Yes	Yes	No	Yes	No	Yes
TEP2188	Yes	Yes	No	Yes	No	Yes
TEP2192	Yes	Yes	Yes	Yes	No	Yes
TEP2195	Yes	Yes	Yes	Yes	No	Yes
TEP2208	Yes	Yes	Yes	Yes	No	Yes
TEP2209	No	No	Yes	Yes	No	Yes
TEP2210	Yes	Yes	Yes	Yes	No	Yes
TEP2218	Yes	Yes	Yes	Yes	No	Yes
TEP2223	Yes	Yes	Yes	Yes	No	Yes
TEP2230	Yes	Yes	Yes	Yes	No	Yes
TEP2232	Yes	Yes	Yes	Yes	No	Yes

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP2239	Yes	No	Yes	Yes	No	Yes
TEP2241	Yes	Yes	Yes	Yes	No	Yes
TEP2254	Yes	Yes	Yes	Yes	No	Yes
TEP2258	Yes	Yes	Yes	Yes	No	Yes
TEP2264	Yes	Yes	Yes	Yes	No	Yes
TEP2279	Yes	Yes	Yes	Yes	No	Yes
TEP2282	N/S	N/S	N/S	N/S	N/S	N/S
TEP2283	Yes	Yes	Yes	Yes	No	Yes
TEP2291	Yes	Yes	Yes	Yes	No	Yes
TEP2294	Yes	Yes	Yes	Yes	No	Yes
TEP2297	Yes	Yes	Yes	Yes	No	Yes
TEP2305	Yes	Yes	Yes	Yes	No	Yes
TEP2309	No	No	No	No	No	No
TEP2313	Yes	Yes	Yes	Yes	No	Yes
TEP2314	Yes	Yes	Yes	Yes	No	Yes
TEP2333	Yes	Yes	Yes	Yes	No	Yes
TEP2339	No	No	No	No	No	No
TEP2347	No	No	No	No	No	No
TEP2349	Yes	Yes	Yes	Yes	Yes	Yes
TEP2352	Yes	Yes	Yes	Yes	No	Yes
TEP2427	No	No	No	No	No	No
TEP2438	No	No	No	No	No	No
TEP2446	No	No	Yes	Yes	No	Yes
TEP2452	No	No	No	No	No	No
TEP2453	No	No	No	No	No	No
TEP2462	Yes	Yes	Yes	Yes	No	Yes
TEP2476	Yes	Yes	Yes	Yes	No	Yes
TEP2484	Yes	Yes	Yes	Yes	No	Yes
TEP2489	Yes	Yes	Yes	Yes	No	Yes
TEP2491	No	No	No	No	No	No
TEP2492	Yes	Yes	Yes	Yes	No	Yes
TEP2510	No	No	No	No	No	No
TEP2511	No	No	No	No	No	No
TEP2514	Yes	Yes	Yes	Yes	No	Yes
TEP2515	Yes	Yes	Yes	Yes	No	Yes
TEP2517	Yes	Yes	Yes	Yes	No	Yes
TEP2519	Yes	Yes	Yes	Yes	No	Yes
TEP2522	No	No	No	No	Yes	Yes
TEP2523	Yes	Yes	Yes	Yes	No	Yes
TEP2529	No	No	No	No	No	No
TEP2536	Yes	Yes	Yes	Yes	No	Yes
TEP2537	No	No	No	No	No	No
TEP2538	Yes	Yes	Yes	Yes	No	Yes
TEP2540	No	No	No	No	No	No
TEP2541	Yes	Yes	Yes	Yes	No	Yes
TEP2543	Yes	Yes	Yes	Yes	No	Yes
TEP2551	No	No	No	No	No	No
TEP2562	No	No	No	No	No	No
TEP2564	No	No	No	No	No	No
TEP2570	No	No	No	No	No	No
TEP2574	Yes	Yes	Yes	Yes	No	Yes
TEP2581	No	No	No	No	No	No
TEP2584	Yes	Yes	Yes	Yes	No	Yes
TEP2586	No	No	No	No	No	No
TEP2589	Yes	Yes	Yes	Yes	No	Yes
TEP2595	No	No	No	No	No	No
TEP2601	No	No	No	No	No	No
TEP2622	Yes	Yes	Yes	Yes	No	Yes
TEP2623	Yes	Yes	Yes	Yes	No	Yes

Ditch No.	Water Vole Signs Observed					Water Vole Present
	Burrows	Latrine	Feeding Remains	Runs	Sighting	
TEP2624	No	No	No	No	No	No
TEP2643	No	No	No	No	No	No
TEP2649	No	No	No	No	No	No
TEP2651	No	No	No	No	No	No
TEP2658	No	No	No	No	No	No
TEP2687	N/S	N/S	N/S	N/S	N/S	N/S
TEP2691	N/S	N/S	N/S	N/S	N/S	N/S
TEP2694	N/S	N/S	N/S	N/S	N/S	N/S
TEP2715	No	No	No	No	No	No
TEP2720	Yes	No	Yes	Yes	No	Yes
TEP2912	Yes	Yes	Yes	Yes	No	Yes
TEP2913	No	No	No	No	No	No
TEP2914	Yes	Yes	Yes	Yes	No	Yes
TEP2915	Yes	Yes	Yes	Yes	No	Yes
TEP2916	No	No	No	No	No	No
TEP2917	Yes	Yes	Yes	Yes	No	Yes
TEP2918	No	No	No	No	No	No
TEP2919	No	No	No	No	No	No
TEP2920	No	No	No	No	No	No
TEP2921	No	No	No	No	No	No
TEP2922	No	No	No	No	No	No
TEP2923	No	No	No	No	No	No
TEP2924	No	No	No	No	No	No
TEP2925	No	No	No	No	No	No
TEP2926	No	No	No	No	No	No
TEP2927	No	No	No	No	No	No
TEP2929	No	No	No	No	No	No
TEP2930	No	No	No	No	No	No
TEP2931	No	No	No	No	No	No
TEP2932	No	No	No	No	No	No
TEP2933	No	No	No	No	No	No
TEP2934	Yes	Yes	Yes	Yes	No	Yes
TEP2935	No	No	No	No	No	No
TEP2936	Yes	No	No	Yes	No	Yes
TEP2937	No	No	No	No	No	No
TEP2938	Yes	No	Yes	Yes	No	Yes
TEP2939	No	No	No	No	No	No
TEP2991	Yes	Yes	Yes	Yes	No	Yes
TEP3002	No	No	No	No	No	No
TEP3004	No	No	No	No	No	No
TEP3006	No	No	No	No	No	No
TEP3008	No	No	No	No	No	No
TEP3011	No	No	No	No	No	No
TEP3012	No	No	No	No	No	No
TEP3015	No	No	No	No	No	No
TEP3024	No	No	No	No	No	No
TEP3043	No	No	No	No	No	No
TEP3048	No	No	No	No	No	No
TEP3049	No	No	No	No	No	No
TEP3050	No	No	No	No	No	No
TEP3051	No	No	No	No	No	No
TEP3052	No	No	No	No	No	No

## 10.0 Otter Survey Data

- 10.1 The details of the positive otter survey results obtained during the 2012/2013 surveys are provided in **Table 3** below.

**Table 3: Otter Survey Data**

Ditch No.	Otter Signs Observed					Otter Present
	Holt/ Shelter	Prints	Feeding Remains	Spraint	Sighting	
TEP420 (connectivity to River Brue - south)	No	Yes	Yes	Yes	No	Yes
TEP441 (connectivity to River Brue - south)	No	Yes	Yes	Yes	No	Yes
TEP528 (connectivity to River Brue - north)	No	No	No	Yes	No	Yes
TEP556 (connectivity to River Brue - north)	No	No	No	Yes	No	Yes





## Appendix 8K – CONFIDENTIAL Badger Survey

(Not provided - please contact Simon Pepper at National Grid to discuss obtaining a copy: National Grid House, Warwick Technology Park, Warwick, CV34 6DA)



## Appendix 8L – Amphibian Survey





# **Hinkley Point C Connection Project Environmental Statement Volume 5.8.2 Ecology Appendix 8L Amphibian Surveys March 2014 1979.40.019 Version B**

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**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
Ecology Appendix 8L  
Amphibian Surveys  
March 2014  
1979.40.019  
Version B**

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## AMPHIBIAN SURVEY

### 1.0 Introduction

- 1.1 A data search revealed amphibian records within the majority of the landscape crossed by the Proposed Development. Great crested newt (GCN) records alone were less prevalent and were concentrated in the south of the route at Woolavington and Mark, from the Mendips through to Churchill and in the north of the route from Nailsea to Avonmouth.
- 1.2 The landscape is dominated by freshwater aquatic habitats, namely ditches (rhynes or rhines) but also ponds, brooks and rivers. Due to the extensive nature of these habitats, it is not possible to design complete avoidance into the scheme. The construction phase activities in particular are likely to impact amphibians with undergrounding works, Sandford substation and construction of a temporary haul road (including culvert crossings of ditches) likely to cause the most ground disturbance at or adjacent to aquatic habitats and within terrestrial habitats potentially used by amphibians.
- 1.3 Great crested newt habitat suitability assessments (HSI) and detailed GCN surveys were undertaken at ponds and ditches across the Proposed Development in 2013. The findings of the surveys have been used to inform the detailed construction layout prior to submitting the DCO application.

### 2.0 Legal Protection

- 2.1 The great crested newt is a European Protected Species (EPS). Their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981. It is an offence for anyone to intentionally or recklessly kill, injure or disturb a GCN, to possess one (whether live or dead), or sell or offer for sale. It is also an offence to damage, destroy or obstruct access to any place used by GCN for shelter. As an EPS, development works affecting GCN are licensable by Natural England.
- 2.2 All other native amphibians are protected under the W&CA 1981 from sale or offer for sale without a licence. Common toad is also listed within Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006. Section 40(1) of the Act states that each public authority “must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”, with particular regard to the Section 41 habitats and species.

### 3.0 Method

3.1 The methods and effort of the 2013 amphibian survey were in accordance with the current “GCN Mitigation Guidelines” (English Nature 2001) and conformed to the following strategy:

- Habitat survey to identify locations of aquatic habitat within the Route Corridor.
- Mapping exercise to identify ponds and ditches within 250m of draft Order Limits.
- Habitat Suitability Index (HSI) assessment<sup>1</sup> of all accessible waterbodies within draft Order Limits and within 250m of Order Limits.
- Field surveys, four visits of each pond/ditch<sup>2</sup> throughout peak season, using a combination of techniques to determine presence/absence.
- Two additional survey visits to each pond/ditch where GCN are present.
- Calculation of population estimates and metapopulation estimates where GCN are present.

3.2 A survey zone of 250m from draft (March 2013) Order Limits was established. This zone included construction working areas, construction compounds and access routes. Amphibian surveys are seasonally restricted and the development proposals were still undergoing the design and review process. To ensure that the survey scope was as comprehensive as possible but accepting that the 2013 survey season would be the last opportunity prior to DCO submission to gather information on amphibians, the scope was based on proposals available in mid-March 2013. This scope was reviewed several times during March to early May as additional construction information became available (including access routes and compound areas), and as the route was refined. Pond and ditch surveys commenced in early April 2013 and were completed by mid-June 2013.

3.3 Ditches or ponds that could not be surveyed in 2014 because ownership was unknown, or because changing Order Limits came too late for inclusion in the 2013 survey season, have been scheduled for survey in 2014. Following design freeze in early 2014, 52 ponds and 371 ditches have been identified up to 250m from the DCO Order Limits for survey in 2014.

#### Habitat Suitability Index Assessment

3.4 A Habitat Suitability Index (HSI) was calculated for every accessible pond within the survey area. This is a standard measure of calculating the suitability for a pond to support breeding amphibians, based on an assessment of ten characteristics, such as size, shading, depth and vegetation profile. The value of each of these ten suitability indices generates a number between 0 and 1 which provides an assessment of suitability on a categorical scale (**Table 1**).

---

<sup>1</sup> A bespoke ditch HSI was developed for this project.

<sup>2</sup> Each accessible pond or ditch not ruled out from further survey during daytime site visit and the HSI assessment.

- 3.5 The initial assessment gives an indication of the condition of the pond and extent of the surrounding terrestrial habitat and its suitability for GCN to breed. Ponds with a score of below average, average, good or excellent were subject to a full survey. All ponds assessed to have a 'poor' suitability were reviewed and where sufficient justification<sup>3</sup> could be made, these ponds were scoped out of further surveys.

**Table 1: Pond Habitat Suitability Index Scoring**

Habitat Suitability Index Scoring (ponds only)			
HSI		Suitability	Predicted Occupancy
< 0.5	=	poor	0.03
0.5-0.59	=	below average	0.2
0.6-0.69	=	average	0.55
0.7-0.79	=	good	0.79
> 0.8	=	excellent	0.93

- 3.6 The landscape along much of the route is dominated by an extensive network of field ditches (particularly characteristic of the Somerset Levels). Given the interconnected nature of these habitats and the enormous number present, it was proposed to Natural England NSIP Licensing team that a sampling method (i.e. 50% of ditches) would be an appropriate approach to surveying this unique habitat. The response of the licensing team was that a sampling approach would not be acceptable to meet licensing requirements and that Habitat Suitability Index (HSI) assessment<sup>4</sup> was the only acceptable method to exclude potential breeding habitats from full survey.
- 3.7 The standard HSI assessment was developed for ponds, and cannot be applied readily to a ditch system due to its linear and interconnected nature. A simplified suitability score for ditches was formulated for this project to generate a suitability score based on key ditch characteristics (**Table 2**). Ditches found to have an overall positive or neutral score using the five ditch characteristics were subject to full survey.
- 3.8 A sixth characteristic, water flow, was also applied to the ditch HSI. In terms of the scoring system for water flow, where water flow was assessed to be fast the ditches were automatically scoped out as fast flowing water would not provide suitable breeding habitat for GCN.
- 3.9 Although this does not fully replicate the standard "pond-oriented" HSI, it does provide a consistent and efficient characterisation of the ditches in respect of amphibian breeding requirements.

<sup>3</sup> Justifications for scoping any 'poor' HSI score ponds out of survey were presented to Natural England during consultation on the draft EPS licence method statement.

<sup>4</sup> ARG UK Advice Note 5 (May 2010) Great Crested Newt Habitat Suitability Index

**Table 2: Ditch Habitat Suitability Scoring**

<b>Ditch Suitability Scoring (ditches only)</b>				
<b>Ditch Characteristic</b>	<b>Negative Measure</b>	<b>Score</b>	<b>Positive Measure</b>	<b>Score</b>
Permanence	Dry or Dries annually	-2	Wet (even water distribution, water level >5cm deep)	+1
Vegetation	No suitable egg laying plants present	-1	Suitable egg laying plants present	+1
Fish	Present	-1	Absent	+1
Shade	Shaded (>60% shaded, 1m from shore)	-1	Not shaded (>40% open 1m from shore)	+1
Water quality	Poor (e.g. evidence of pollution or enrichment)	-1	Moderate / Good (no evidence of pollution or enrichment)	+1

- 3.10 HSI surveys were undertaken on over 2,500 ditches and over 300 ponds. Arising from this, full amphibian surveys were carried out on 964 ditches and over 125 ponds. The results of the pond Habitat Suitability Index and ditch suitability assessments are illustrated at **Figure 8.50.1** to **Figure 8.50.23**.

#### Full Survey Techniques

- 3.11 A combination of three survey techniques were used; bottle trapping, torch surveys and egg searches were primary survey techniques and hand netting or terrestrial searches were used in the event that primary techniques were not appropriate. Surveyors worked in pairs with at least one Natural England licenced surveyor in each team. This approach is in line with Natural England GCN Mitigation Guidelines (2001).
- 3.12 Health and safety considerations precluded direct access to water in ditches, many of which were deep and steep-sided. Even with two surveyors, working with lifejackets, this limited survey techniques at ditches to torch survey, egg searches and terrestrial searches. No other standard survey techniques could be applied for ditch surveys.

#### *Torch survey (ponds & ditches)*

- 3.13 Ponds were surveyed by walking the perimeter, while ditches were surveyed by walking the top bank along one side of the ditch. Torch surveys were carried out after dusk with a powerful torch (one million candle power). The number, species and (where possible) sex and age class of amphibians seen were recorded.

- 3.14 It is not always possible to achieve 100% coverage along the length of all ditches using the torch surveys because of access difficulties, for example dense vegetation or boggy margins. Access was only taken where it was safe to do so. Estimates of the percentage of shoreline of each waterbody surveyed and other factors affecting torching were recorded.
- 3.15 A high percentage of *Lemna sp.* cover in some of the ditches was found to reduce the visibility. In response to this, sections of duckweed were carefully cleared from the surface using a long handled rake immediately prior to torch survey.

*Bottle trap survey (ponds only)*

- 3.16 Bottle traps were used only at ponds, ditches were not bottled due to health and safety constraints. The bottle trap used is a two litre plastic bottle with the funnel inverted. The traps are secured in the water at the pond margins using a flagged cane. Bottle traps were generally set at an average spacing of 2 metres along accessible shorelines (to allow estimation of population size).
- 3.17 Traps were set in the evening and operated overnight, emptying the traps early the following morning. Newts are particularly at risk on warm sunny days in shallow water traps. The traps were operated well within the maximum time limits (English Nature, 2001) which are outlined below:
- traps with an air bubble up to 17 hours; and
  - traps without an air bubble, 12 hours in March-April, 10 hours in May and 8 hours in June.

*Egg search (ponds & ditches)*

- 3.18 Aquatic vegetation was searched by walking or wading (ponds only) the shoreline of a waterbody and looking for the characteristic shape of folded leaves on favoured plants for ovipositing. GCN lay their eggs singly on the leaves of submerged vegetation and then the vegetation is folded over the egg to form a protective 'purse'.
- 3.19 Egg searching was used at both ponds and ditches. However, as access to the water was not possible at ditches, a grapnel was used to assist sampling of plants to identify eggs within folds. In the event that egg folds are identified but cannot be accessed to sample, an assumption will be made of GCN breeding where adult GCN have been recorded and the egg laying substrate is suitable for large newt eggs.
- 3.20 In some situations it was necessary to install artificial egg-laying features within ditches where there was no or little aquatic vegetation. This entailed attaching strips of plastic to a stone and using string to throw the egg strips into the ditch and securing it to the bank for retrieval later. The egg strips were installed in March and April and retrieved in June.

*Hand netting (only as secondary method)*

- 3.21 Hand netting was only used at ponds where an alternative third survey method was required. Ponds in this instance were hand netted during the day or night (depending

on other survey techniques being employed) to search for GCN adults or larvae. The standard procedure for hand netting was used; this required a D-net to be swept vigorously through the water in 2m sweeps with a survey effort of 15 minutes per 50m of shoreline (Froglife Advice Sheet 115, English Nature 2001).

#### *Terrestrial search (ponds & ditches)*

- 3.22 Terrestrial searches were made by visually inspecting potential amphibian refugia within 10m of waterbodies. Existing natural or man-made refuge features on the ground included logs/branches, bricks/stones/rocks or other debris.
- 3.23 In locations where the initial scoping assessment found no obvious pre-existing natural refuges near the ditch/pond, artificial refuges were placed on the banks. These refuges were then inspected during the evening survey visits.

## 4.0 Results

- 4.1 **Tables 3 and 4** summarise the amphibian survey results for ditches and ponds respectively where amphibians were recorded. The tables identify the species recorded and the method by which it was recorded. The methods referred to are torch survey (T), bottle trap survey (B), egg searching (E for eggs, L for larvae), hand netting (N) and terrestrial/refuge searching (R). The full amphibian survey results, ponds and ditches supporting GCN and ponds and ditches supporting common toad are illustrated in **Figure 8.51.1** to **Figure 8.51.29**.

**Table 3: Summary of Ditch Survey Results**

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP7	T	T	T	
TEP12	T	T		
TEP18		T		
TEP44				T
TEP52		T		
TEP72			T	
TEP76			T	
TEP127		T		
TEP205			T	
TEP227			T	
TEP238				T
TEP246			T	T
TEP252				T
TEP255				R

<sup>5</sup> Froglife (2003) Advice Sheet 11 Surveying for (Great Crested) Newt Conservation. Froglife, Halesworth

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP260			T	
TEP267			T	
TEP299			T	
TEP341			T	T
TEP344			T	
TEP346				T
TEP349				T
TEP350			T	
TEP355			T	
TEP360			T	T
TEP368		T		
TEP381			T	
TEP385			T	
TEP389		T	T, E	
TEP393		T		
TEP398		T		
TEP401		T		
TEP404		T		
TEP406		T		
TEP407			T	
TEP410		T		
TEP412		T	T	
TEP413			E	
TEP416			T	
TEP421		T	E	
TEP423			E	T
TEP425			T	
TEP429				T
TEP432			T	
TEP437			T	
TEP442			T	
TEP446			T	
TEP452			T	
TEP456			T, E	T
TEP485				R
TEP487		T		
TEP493			L	
TEP502				T
TEP510			T	
TEP517		T	R	
TEP523			T	
TEP528			T	

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP532		T	T, E	R
TEP539		T	R	
TEP542				T
TEP550		T	T	T
TEP580		T		
TEP587			T	T
TEP590		T	T	
TEP598		T		
TEP606			T	T
TEP609		T	T, E	T
TEP611			T	
TEP635		T	T	
TEP660			E	
TEP671			R	
TEP682			T	T
TEP701			T	
TEP712			T	
TEP713			T	
TEP715				T
TEP731				T
TEP735			T	
TEP736			T	
TEP756			T	R
TEP760		T	T	T
TEP764			T	
TEP811		T		
TEP839				T
TEP840			T	
TEP845			E	
TEP849			R, L	T
TEP853		T	T	
TEP860		T		
TEP861			T	T
TEP862		T	T	
TEP864			T, E	
TEP865			T	
TEP874			T	
TEP879				R
TEP891			T	R
TEP892			T, E	
TEP894			E	
TEP898			E	



Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP902		T	T	T, L
TEP908			T	
TEP909		T		T
TEP916			E	
TEP918			T	
TEP920			T	T
TEP922			T	
TEP924		T	T	T
TEP926			T	
TEP929			R	
TEP938			T	
TEP942			T	
TEP944				R
TEP947			T	
TEP948				L
TEP949				L
TEP950		T	T	
TEP951			T	
TEP952		R	T	
TEP956			T	
TEP959			L	L
TEP960			T	L
TEP964		T	T, R	
TEP968			T	T, R
TEP972			T	R
TEP974			T	
TEP975			L	T
TEP977		T	T, R	
TEP979			T, E	
TEP980		T	T	
TEP982			T, E	
TEP983			E	
TEP984			T, E	
TEP986		T	T, L	
TEP987			T	T
TEP991		T, R	T, E	T
TEP992			T, R	R, L
TEP993			T, L	
TEP995			T, R, E, L	T, R
TEP996			R	
TEP997			T	
TEP1000			T	

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP1005		T	T, E	T
TEP1007				T
TEP1008		T	T, E	T
TEP1009			T, L	T
TEP1010				T, R
TEP1016			T, R	T, R
TEP1018			R, E	T
TEP1019			T	R
TEP1020			T	R, L
TEP1022				T
TEP1023				T
TEP1026			T	
TEP1033			T	T
TEP1035			T	
TEP1038			T	
TEP1048			T, L	T
TEP1053				R
TEP1060			T	
TEP1062	E	E		T
TEP1065	E	E		
TEP1070			T	T
TEP1090			T	
TEP1091		T		
TEP1099				T
TEP1104				R
TEP1105				T
TEP1112				R
TEP1127			E	T, L
TEP1131				T
TEP1136		T		
TEP1138			R	
TEP1141				T
TEP1147				T
TEP1201				T
TEP1202				T
TEP1209			T, E	
TEP1210		T		
TEP1230				T
TEP1250		T		
TEP1267				T
TEP1272				T
TEP1274				T

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP1279				T
TEP1281			L	T
TEP1283			L	T
TEP1286				T
TEP1287			T	T
TEP1316			T, E	
TEP1346				T
TEP1377				T, L
TEP1386				T
TEP1387			T, E	
TEP1390		T, R	T	
TEP1399			T	
TEP1405				T
TEP1413				T
TEP1427			T, E	L
TEP1433		T		
TEP1443			T	
TEP1448			T	
TEP1460				T
TEP1465		T, R	T, R	T, R
TEP1476				T
TEP1486		T		
TEP1494				T
TEP1500		T, E	T	
TEP1501		T, E	T	T
TEP1508		T		
TEP1511		T, E	E	
TEP1521		T		
TEP1524		T, R		
TEP1530			T	T
TEP1545		T	T, L	R
TEP1546		T	T, L	
TEP1553		T	T, L	
TEP1554			T	
TEP1637		T	T	T
TEP1643		T, R	R	
TEP1648		T, E		T, R
TEP1780		T		
TEP1781			T	
TEP1784		T		
TEP1808			R	
TEP1810		R	T	R

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP1812		T	T	
TEP1851			T	
TEP1856			T	
TEP1861			L	
TEP1868			T, E	
TEP1870			L	
TEP1910			T	
TEP1951		T	T	
TEP1991			L	T
TEP2023		T		
TEP2031			L	T
TEP2083			T	
TEP2095			L	
TEP2096			L	
TEP2100		T	T	
TEP2102			L	
TEP2107				T
TEP2116		T		
TEP2117			T	
TEP2119		T		
TEP2124		T		
TEP2125			T	
TEP2134		T		T
TEP2137		T		T
TEP2138		T		T
TEP2139		T		T
TEP2144		T	L	T
TEP2145			E	T
TEP2149		T, E		
TEP2152		T		
TEP2154			L	E
TEP2157		T		T
TEP2159		T		
TEP2162			L	
TEP2165		T		
TEP2167		T		T
TEP2174		T		
TEP2179			R	
TEP2185				T
TEP2187				T
TEP2193			T	
TEP2199		T	T	T

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP2201		T		
TEP2212				T
TEP2214				T
TEP2218		T	T	
TEP2221			E	
TEP2223		T	R	T, R, L
TEP2224		T	T	
TEP2226		T	T	
TEP2230			T	
TEP2233		T		
TEP2234				R, L
TEP2235		T		
TEP2236			T	T
TEP2237				T
TEP2238			T, E	
TEP2239		T		
TEP2242				T
TEP2244				T
TEP2247		T		
TEP2248		T		T
TEP2249		T		T
TEP2250		T		T
TEP2254		T	T	T
TEP2255		T		
TEP2262			T	T
TEP2263			L	T, R
TEP2264		T		
TEP2266			R	T
TEP2267		T		
TEP2268		T		T
TEP2269		T		
TEP2270		T	T	T
TEP2271		T		T
TEP2272		T		T
TEP2273		T		
TEP2275		T	T, R	T, R
TEP2276		T	T	
TEP2277		T	T	T, R
TEP2278		T	T	T
TEP2279		T		T
TEP2281		T, R	T	T
TEP2282				T

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP2283		T		T
TEP2288		T		T
TEP2289		T		
TEP2291		T		
TEP2297			T	
TEP2299			T, E	
TEP2305				T
TEP2307		T		
TEP2309		T		
TEP2311		T	T	T
TEP2315		T		
TEP2318		T	T	T
TEP2342				T
TEP2343				T
TEP2344			T	
TEP2349				T
TEP2354			R	T
TEP2356			T	
TEP2362		T		
TEP2376				T
TEP2378		T		
TEP2381		R		T
TEP2384				T
TEP2385				T, L
TEP2392				T
TEP2397				T
TEP2405			T, R	
TEP2444		T	T	T
TEP2451		T		R, E
TEP2452		R		
TEP2461	R	T		E
TEP2462		T		T
TEP2464				T
TEP2476		T		
TEP2478		T		
TEP2485		T		
TEP2489	T, R	T, R, E	T	T
TEP2497		T		
TEP2519		T		
TEP2522		T, E		R
TEP2538		T		T
TEP2557		T		

Summary of amphibian survey results - ditches				
TEP Ditch Ref	GCN	Small Newt	Common Frog	Common Toad
TEP2573		T		E
TEP2577				T
TEP2582		T		
TEP2583				T
TEP2641				R
TEP2643		T		
TEP2655		T		
TEP2697		T, E		
TEP2699		T		
TEP2724			T	

Table 4: Summary of Pond Survey Results

Summary of amphibian survey results - ponds				
TEP Pond Ref	GCN	Small Newt	Common Frog	Common Toad
P7		B		
P22		T, B		T
P24			T, B	T, B
P25	T, B	T, B		
P26	R	T, B, R	R	
P27	T, B	T, B		
P29		T	B	T
P32	T, B	B	T	
P33	T, B			
P34			T	
P38		B		
P39		T, B		
P40	B	B		
P43	B			
P46	E			
P48	B	B		B
P50		B	B	T
P55		T		B, R
P60				R
P62			T	
P68		E		
P71		T, B		
P73		B	R	
P76		T	T	T
P95		T		
P96	T, B	T, B, E	T, B, R, L	T

Summary of amphibian survey results - ponds				
TEP Pond Ref	GCN	Small Newt	Common Frog	Common Toad
P100		T		
P101	<b>T, B, E</b>			
P102				T
P103		T		T
P104	<b>T, B</b>	T, B		T
P107	<b>B</b>	T, B, E	R, L	
P108		B		
P121		T, B, E		
P128		T, B		
P136		T, B		R
P144	<b>T, B</b>	T, B	T	T
P145	<b>B</b>		L	
P146		R		
P147				R
P148			L	
P149			T	
P157	<b>T</b>	T		T
P171		T, B	R, E, L	
P178		T, B		T
P179		E, L	R	
P181			R	R
P185		T		
P191		T, B		L
P192		T, B	E	T, L
P193	<b>B</b>	T, B	E	T, B, L
P194		T	B, L	L
P199	<b>T</b>	T		
P201	<b>T, B</b>	T, B	R	T, R, L
P204	<b>T, B</b>	T	T	T
P205	<b>T</b>	T, B	T	T, L
P206	<b>T</b>	T	T	T
P208	<b>T, B</b>	T, B	T	
P216		T, B	T	
P225		T, B		
P227		T, B		
P228		T, B		T
P229		B		
P232		T, B, E		T, L
P248	<b>T</b>	T, B		T
P251	<b>T, B</b>			
P255		T	E	T



Summary of amphibian survey results - ponds				
TEP Pond Ref	GCN	Small Newt	Common Frog	Common Toad
P256	B	B	T	T
P260	T, B	T, B	T	T, B, L
P261	T, B	T, B	T	
P265	B, E		T	T
P272				T
P274				T, R
P279			T	
P280		B	E, L	L
P283				L
P286				T

### GCN Population Size Class

4.2 Following the amphibian presence/absence survey (four visits), waterbodies which had recorded GCN, were subject to a further two visits (six in total) to determine population size class. All visits were completed during the months March to June 2013 inclusive. The size class is determined by the peak count on any one survey visit using any single survey method. Population size classes are then determined based on this peak count, and are classified as follows:

- 'small population' for a maximum peak count up to 10 GCN,
- 'medium population' for a maximum peak count between 11 and 100 GCN,
- 'large population' for a maximum peak count over 100 GCN. While it is accepted that this approach has been developed for use on pond habitats. In the absence of an established method for determining population size class for ditches this approach has been applied to both pond and ditch habitats although it is likely to result in an overestimate for ditches due to the generally higher coverage of the habitat by survey methods compared with the pond (where only the margins are visible for torch surveys).

4.3 **Tables 5 and 6** detail those ditches and ponds supporting GCN and states the associated population size class estimate based on the peak count. The locations of these GCN ponds and ditches are illustrated in **Figure 8.52.1** to **Figure 8.52.8**.

**Table 5: GCN Population Size Class - Ditches**

GCN population size class - ditches			
TEP Ditch Ref	Method of Identifying GCN	Peak Count	Population Size Class
TEP7	T	11	Medium
TEP12	T	3	Small
TEP1062	E	Eggs only	Small
TEP1065	E	Eggs only	Small
TEP2461	R	1	Small
TEP2489	T, R	1	Small

**Table 6: GCN Population Size Class - Ponds**

<b>GCN population size class - ponds</b>			
<b>TEP Pond Ref</b>	<b>GCN</b>	<b>Peak Count</b>	<b>Population Size Class</b>
P25	T, B	7	Small
P26	R	1	Small
P27	T, B	2	Small
P32	T, B	4	Small
P33	T, B	5	Small
P40	B	5	Small
P43	B	1	Small
P46	E	Eggs only	Small
P48	B	4	Small
P96	T, B	1	Small
P101	T, B, E	3	Small
P104	T, B	2	Small
P107	B	9	Small
P144	T, B	3	Small
P145	B	1	Small
P157	T	3	Small
P193	B	1	Small
P199	T	5	Small
P201	T, B	5	Small
P204	T, B	3	Small
P205	T	1	Small
P206	T	2	Small
P208	T, B	1	Small
P248	T	80	Medium
P251	T, B	2	Small
P256	B	1	Small
P260	T, B	4	Small
P261	T, B	3	Small
P265	B, E	1	Small



## Appendix 8M – Reptile Survey





# **Hinkley Point C Connection Project Environmental Statement Volume 5.8.2 Ecology Appendix 8M Reptile Surveys February 2014**

**1979.40.020**

**Version B**

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**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
Ecology Appendix 8M  
Reptile Surveys  
February 2014  
1979.40.020  
Version B**

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## REPTILE SURVEY

### 1.0 Introduction

- 1.1 A records search initially undertaken in 2011 and updated in 2013 identified the presence of four species of reptile within the landscape of the Order Limits; grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*) and adder (*Vipera berus*). During the Phase 1 habitat and other botanical surveys, surveyors noted any incidental sightings of reptiles. One reptile species was recorded; grass snake.
- 1.2 There are two other species of reptile native to England; Sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*). The sand lizard and smooth snake both have a very limited distribution within the British Isles. The species favour lowland heath (and sand dune habitats for the sand lizard) and are not known in the counties of Somerset or Gloucestershire.

### 2.0 Reptile species

#### Grass snake

- 2.1 The grass snake is relatively abundant and has a wide distribution across England, particularly in the south. It is often associated with wetland habitats but recorded in a vast range of other habitats as well. Like many reptiles it needs a range of habitats (and structural diversity within habitats) to satisfy requirements for foraging, shelter, hibernation and egg-laying. However unlike other species, its relative mobility means that these do not need to be a single site and can range over several kilometres in one year<sup>1</sup>. Grass snakes are faithful to their egg-laying sites and multiple animals may use a single site. Piles of manure, decomposing vegetation such as compost heaps or woodchips are favoured sites.
- 2.2 The landscape within the Order Limits (particularly the Somerset Levels) has a range of habitats frequently used by grass snakes. Given also the distances covered by this species, it is likely that grass snake could occur across much of the land within the Order Limits and associated construction easements and footprints at least in parts of the year.

#### Slow worm

- 2.3 The slow worm is the most common species of reptile in the UK and is widely distributed across England and particularly abundant in the south. It inhabits a broad range of terrestrial habitats and although requires less structural diversity than other lizard species, it still favours dense vegetation for shelter and foraging in association with sunny areas for basking. Their fossorial habits mean that areas of loose soil can also be used by slow worms. Hibernation sites are often used by multiple animals and can include rabbit burrows, loose earth and dense tussocks of grass. Slow worm do not move great distances, so all their habitat requirements, although not particularly specialised, need to be present within a few hundred square metres.

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<sup>1</sup> Reptile Habitat Management Handbook, Baker et al (2011), ARC Trust, Bournemouth, UK

- 2.4 Given the landscape within the Order Limits, and the range of habitats used by this species, it is likely that slow worm could be present across much of the land within the Order Limits and associated construction easements and footprints.

#### Common lizard

- 2.5 The common lizard (also known as the viviparous lizard) has a wide but patchy distribution in England. Like the other common species of UK reptile they are found in a broad range of habitats, however they are more reliant on habitats with high structural diversity. As a result they are often absent from intensively managed or grazed farmland or large areas of woodland (or grassland) with a consistently dense structure. Where structural diversity is high, good populations of this species are often associated with damp or wet habitats and this is thought to be associated with abundance of prey species. Common lizard have an even more restricted home range than slow worm, moving less than 100m and therefore require habitat and structural diversity within a much smaller area.

- 2.6 Given the landscape within the Order Limits, and the range of habitats used by this species, it is likely that common lizard could be present at least in limited locations within the Order Limits and associated construction easements and footprints.

#### Adder

- 2.7 The distribution of adder in England is patchy, but southwest England is an area in which they are more prevalent. They use a broad range of habitats, but exhibit a preference for heathland, moorland and grassland, often on chalk and sandy substrates and avoid intensive agricultural land. Again structural diversity is important and the species requires open dry areas where they can bask adjacent to low dense vegetation where they can shelter and forage (wetter habitats can also be utilised for summer foraging if they are in association with dry areas). Hibernation sites are often south facing slopes with suitable voids and adders can move up to several kilometres between these sites, breeding grounds and foraging grounds where necessary.
- 2.8 Seasonal habitat requirements for this species are relatively demanding, but in combination across the year they are broad. The occurrence of suitable hibernation sites may be a limiting factor affecting their distribution within the Order Limits and associated construction easements and footprints.

### **3.0 Legal Protection**

- 3.1 The adder, common lizard, grass snake and slow worm are protected from killing or injury under Section 9 of the Wildlife and Countryside Act 1981 (as amended). They are also listed within Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006. Section 40(1) of the Act states that each public authority “must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”, with particular regard to the Section 41 habitats and species.

## 4.0 Method

### Targeted survey locations

- 4.1 An initial assessment of the potential for the landscape within the Order Limits to support reptiles has revealed that all four common UK species of reptile could be present across the route in low numbers. However, the potential for significant populations or assemblages is likely to be limited to areas with greater habitat, structural and topographical diversity.
- 4.2 Standard reasonable avoidance measures for construction working methods are likely to be sufficient to avoid or reduce impacts on these common reptile species where construction impacts are low (small working areas, temporary short-term impacts, sub-optimal low capacity landscapes). However, specialised measures may be required in potential high impact areas (large working areas, permanent or long term impacts, optimal high capacity landscapes).
- 4.3 Reptile surveys targeted locations where 400kV and 132kV undergrounding, new substation sites and sealing end compounds overlapped with high capacity landscapes. Phase 1 habitat survey maps and target notes, aerial images of the wider landscape and surveyor knowledge of local topography was used to identify potential high capacity areas. Few areas within the Order Limits of the proposed development were considered high capacity. However a precautionary approach was taken, and by considering the influence of the wider landscape, seventeen locations were identified for survey.
- 4.4 Survey locations avoided areas where access issues had been encountered however this is not considered to have had an impact on the scope of the reptile survey.

### Field survey technique

- 4.5 Reptile surveys were undertaken between May and July 2013. The surveys were led by personnel with skills and experience in line with those described in relevant sections of CIEEM's Technical Guidance Series (Competencies for Survey Series: Reptiles).
- 4.6 A combination of survey methods were used, including artificial refuge survey, searching of existing features likely to shelter reptiles and careful observation of basking/moving reptiles. The use of artificial refugia is the most efficient method for locating reptiles and was used as the key method in this survey.
- 4.7 The artificial refugia (reptile 'tins') were a combination of reptile profile tins and bitumen backed carpet tiles, both 0.5m x 0.5m.
- 4.8 An initial visit was undertaken to all seventeen locations in late May and early June to set out numbered refugia. These were laid out along key reptile habitat features including hedgerows, field margins, woodland edges, south facing banks and adjacent to aquatic habitats. The tins were laid out at a density of 10 tins per hectare and were left to 'bed-in' for two weeks.
- 4.9 During each visit, visual inspections using binoculars and checks above and underneath the tins were undertaken. Existing refugia, natural or artificial, such as wood, black

plastic, tyres, signboards or other suitable debris were also inspected in addition to naturally open basking areas, earth banks etc.

- 4.10 To establish reptile presence or absence in each of the seventeen sites, as set out in standard guidance produced by the Herpetofauna Groups of the British Isles, seven visits in suitable weather conditions were undertaken at an appropriate time of year. The majority of survey visits were carried out between 8.30am and 11.00am, on some occasions when the weather prohibited survey during these hours, a visit was undertaken between 4.00pm and 6.30pm. These survey windows are both recommended within the guidance as the best time periods to achieve the most effective survey.
- 4.11 The survey dates and conditions are detailed in Table 1. The survey results are provided in Table 2. Descriptions (including a photographic record) of the seventeen locations and a summary of the results per site are provided in Table 3.
- 4.12 The reptile refugia were checked on seven occasions between mid-June and mid-July. Although this is outside the optimum months for reptile survey (April, May and September) it is within the period of March to October where guidance advises that reptile surveys can be effective. The spring of 2013 across the survey area was particularly cold and as such reptile surveys in April to mid-May would have been largely ineffective. Artificial refugia were placed in late-May and, as stated previously, were given a 2 week period to bed in. Temperatures never fell below or went above the temperature range of 10-20°C which is the temperature range provided in the guidance as appropriate for reptile basking. Temperatures ranged between 12°C and 19°C across the survey period.
- 4.13 The location of all reptile records (per 1km grid square) including historical data, incidental records and reptile survey results are shown in **Figures 8.52.1 to 8.52.23**. The location of the seventeen survey locations (including reptile tin locations and Phase 1 habitat mapping) are also shown on **Figures 8.53.1 to 8.52.5**.

**Table 1: Reptile Survey Conditions**

<b>Reptile Survey Conditions (Part 1 of 2)</b>									
	<b>Location</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Visit One</b>	Date	18/6/13	18/6/13	18/6/13	18/6/13	17/6/13	17/6/13	19/6/13	17/6/13
	Surveyor	AK & SS	AK & SS	SS & AK	SS & AK	AK	AK	AK	AK
	Weather	Dry/sunny	Dry/sunny	Dry/overcast	Dry/overcast	Dry/overcast	Dry/overcast	Dry/overcast	Dry/overcast
	Temperature	15°C	15 °C	18 °C	18 °C	18 °C	18 °C	18 °C	18 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Two</b>	Date	20/6/13	20/6/13	20/6/13	20/6/13	19/6/13	19/6/13	24/6/13	19/6/13
	Surveyor	SS	SS	AK	AK	BP	BP	AK	AK
	Weather	Cloudy	Overcast	Overcast	Overcast/sunny	Dry/sunny	Dry/sunny	Dry/light breeze	Sun/ light breeze
	Temperature	15 °C	15 °C	14 °C	14 °C	19 °C	19 °C	15 °C	19 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Three</b>	Date	25/6/13	25/6/13	25/6/13	25/6/13	24/6/13	24/6/13	26/6/13	21/6/13
	Surveyor	SS	AK & SS	AK	SS	KJ	KJ	AK	AK
	Weather	Dry/sunny	Dry/sunny	Dry/sunny	Dry/sunny	Dry/overcast	Dry/overcast	Clear/ dry	Dry/overcast
	Temperature	16 °C	16 °C	16 °C	16 °C	13 °C	14 °C	17 °C	17 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Four</b>	Date	27/6/13	27/6/13	27/6/13	28/6/13	26/6/13	26/6/13	28/6/13	24/6/13
	Surveyor	AK & KJ	AK & KJ	AK & KJ	AK	KJ	KJ	AK	AK
	Weather	Light rain/dry	Light rain/dry	Light rain/period of dry	Dry/sunny	Clear/dry	Clear/dry	Dry/sunny	Dry/ light wind
	Temperature	14 °C	13 °C	13 °C	16 °C	17 °C	17 °C	17 °C	15 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Five</b>	Date	1/7/13	1/7/13	1/7/13	1/7/13	28/6/13	28/6/13	1/7/13	26/6/13
	Surveyor	AK & KJ	AK & KJ	AK & KJ	AK & KJ	KJ	KJ	AK & KJ	AK
	Weather	Sun/ light breeze	Sun/ light breeze	Sun/ light breeze	Sun/ light breeze	Dry/sunny	Dry/sunny	Sun/ light breeze	Clear/ dry
	Temperature	15 °C	16 °C	16 °C	17 °C	16 °C	16 °C	18 °C	17 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Six</b>	Date	3/7/13	3/7/13	3/7/13	3/7/13	2/7/13	2/7/13	3/7/13	2/7/13
	Surveyor	AK & KJ	AK & KJ	KJ	AK	KJ & AK	KJ & AK	AK & KJ	AK
	Weather	Overcast	Overcast/sunny	Overcast	Overcast	Dry/ bright	Dry/ bright	Overcast	Dry/ bright
	Temperature	15 °C	15 °C	15 °C	15 °C	15 °C	15 °C	15 °C	15 °C
	Total number of refugia	35	204	33	31	89	60	42	23
<b>Visit Seven</b>	Date	4/7/13	9/7/13	4/7/13	4/7/13	8/7/13	5/7/13	5/7/13	4/7/13
	Surveyor	AK & KJ	TC & EA	AK & KJ	AK & KJ	AK & KJ	AK & KJ	AK & KJ	AK & KJ
	Weather	Sunny/ light rain	Sunny/ warm	Sunny/ bright	Sunny	Dry/sunny	Bright/ sunny	Bright/ sunny	Sunny/ bright

Temperature	12 °C	?°C	18 °C	18 °C	16 °C	16 °C	18 °C	17 °C
Total number of refugia	35	204	33	31	89	60	42	23

Reptile Survey Conditions (Part 2 of 2)										
	Location	9	10	11	12	13	14	15	16	17
Visit One	Date	18/6/13	18/6/13	18/6/13	18/6/13	17/6/13	17/6/13	17/6/13	18/6/13	18/6/13
	Surveyor	TC	EA	TC	TC	EA	EA	EA	EA	TC
	Weather	Overcast / dry	Overcast / dry	Overcast / dry	Overcast / dry	Warm/ dry	Warm/ dry	Warm/ dry	Overcast/ dry	Overcast/ dry
	Temperature	17°C	15°C	16 °C	15 °C	19 °C	19 °C	19 °C	16 °C	16 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Two	Date	20/6/13	20/6/13	20/6/13	20/6/13	19/6/13	19/6/13	24/6/13	21/6/13	20/6/13
	Surveyor	TC	TC	EA	TC	EA	TC	EA	TC	TC
	Weather	Overcast / dry	Overcast / dry	Overcast / dry	Overcast / dry	Warm/ dry	Warm/ dry	Overcast / dry	Overcast/ dry	Overcast/ dry
	Temperature	15 °C	14 °C	15 °C	15 °C	18 °C	18 °C	16 °C	15 °C	16 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Three	Date	24/6/13	24/6/13	24/6/13	24/6/13	21/6/213	21/6/13	25/6/13	25/6/13	25/6/13
	Surveyor	TC	EA	TC	EA	TC	EA	TC	TC	EA
	Weather	Overcast / dry	Overcast / dry	Overcast / dry	Overcast / dry	Overcast	Overcast	Warm/ dry	Sunny/ dry	Overcast
	Temperature	15 °C	15 °C	15 °C	15 °C	18 °C	18 °C	19 °C	19 °C	17 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Four	Date	26/6/13	26/6/13	26/6/13	26/6/13	25/6/13	25/6/13	26/6/13	27/6/13	27/6/13
	Surveyor	TC	TC	TC	TC	TC	EA	TC	TC	EA
	Weather	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Overcast	Warm/ dry	Warm/ dry	Warm/ dry
	Temperature	16 °C	18°C	18 °C	19 °C	19 °C	14 °C	18 °C	18 °C	16 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Five	Date	28/6/13	28/6/13	28/6/13	28/6/13	27/6/13	27/6/13	27/6/13	1/7/13	1/7/13
	Surveyor	TC & EA	TC	EA	TC	TC	EA	EA	EA	EA
	Weather	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ dry
	Temperature	17 °C	18 °C	18 °C	18 °C	16 °C	18 °C	17 °C	17 °C	17 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Six	Date	2/7/13	2/7/13	2/7/13	7/7/13	1/7/13	1/7/13	28/6/13	3/7/13	3/7/13
	Surveyor	TC	TC	EA	EA	TC	TC	EA	TC	TC
	Weather	Overcast / dry	Overcast / dry	Overcast / dry	Overcast / dry	Warm/ dry	Warm/ dry	Warm/ dry	Warm/ cloudy	Warm/ cloudy
	Temperature	16 °C	16 °C	16 °C	16 °C	18 °C	18 °C	18 °C	16 °C	16 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61
Visit Seven	Date	4/7/13	2/7/13	5/7/13	4/7/13	3/7/13	3/7/13	29/6/13	5/7/13	9/7/13
	Surveyor	TC & EA	EA	EA & TC	EA	EA	TC	TC & EA	TC & EA	TC & EA

Reptile Survey Conditions (Part 2 of 2)										
	Location	9	10	11	12	13	14	15	16	17
	Weather	Warm/dry	Overcast / dry	Warm/dry	Overcast /light rain	Warm/cloudy	Warm/cloudy	Warm/dry	Warm/dry	Warm/dry
	Temperature	15 °C	15 °C	16 °C	14 °C	15 °C	15 °C	17 °C	18 °C	15 °C
	Total number of refugia	60	6	96	26	79	22	74	55	61

Table 2: Summary of reptile survey results

Summary of reptile survey results 01/02									
	Location	1	2	3	4	5	6	7	8
	NGR	ST 3732 5454	ST 3381 1560	ST 4056 5826	ST 4092 5852	ST 4138 5931	ST 4119 5962	ST 4166 6041	ST 4530 6221
Visit One	Date	18/6/13	18/6/13	18/6/13	18/6/13	17/6/13	17/6/13	19/6/13	17/6/13
	Grass snake	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	1	0	0	2
	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Two	Date	20/6/13	20/6/13	20/6/13	20/6/13	19/6/13	19/6/13	24/6/13	19/6/13
	Grass snake	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	0	0	0	0
	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Three	Date	25/6/13	25/6/13	25/6/13	25/6/13	24/6/13	24/6/13	26/6/13	21/6/13
	Grass snake	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	0	0	0	1
	Common lizard	0	0	0	0	0	1	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Four	Date	27/6/13	27/6/13	27/6/13	28/6/13	26/6/13	26/6/13	28/6/13	24/6/13
	Grass snake	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	0	1	0	0
	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Five	Date	1/7/13	1/7/13	1/7/13	1/7/13	28/6/13	28/6/13	1/7/13	26/6/13
	Grass snake	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	1	0	0	1
	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Six	Date	3/7/13	3/7/13	3/7/13	3/7/13	2/7/13	2/7/13	3/7/13	2/7/13
	Grass snake	0	0	0	0	0	0	1	0
	Slow worm	0	0	0	0	1	0	0	0




	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0
Visit Seven	Date	4/7/13	9/7/13	4/7/13	4/7/13	8/7/13	5/7/13	5/7/13	4/7/13
	Grass snake	0	0	0	0	0	2	0	0
	Slow worm	0	0	0	0	0	0	0	0
	Common lizard	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0


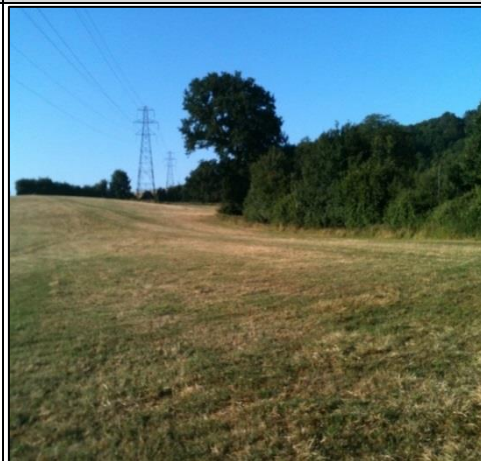

Summary of reptile survey results 02/02										
	Location	9	10	11	12	13	14	15	16	17
	NGR	ST 4605 6946	ST 4596 7058	ST 4582 7145	ST 4582 7174	ST 4800 7302	ST 4786 7295	ST 4886 7477	ST 4849 7630	ST 4851 7686
Visit One	Date	18/6/13	18/6/13	18/6/13	18/6/13	17/6/13	17/6/13	17/6/13	18/6/13	18/6/13
	Grass snake	0	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	0	0	0	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Two	Date	20/6/13	20/6/13	20/6/13	20/6/13	19/6/13	19/6/13	24/6/13	21/6/13	20/6/13
	Grass snake	0	0	1	0	0	0	0	0	0
	Slow worm	0	0	1	0	0	0	2	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Three	Date	24/6/13	24/6/13	24/6/13	24/6/13	21/6/13	21/6/13	25/6/13	25/6/13	25/6/13
	Grass snake	0	0	1	0	0	0	0	0	0
	Slow worm	0	0	1	0	0	0	0	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Four	Date	26/6/13	26/6/13	26/6/13	26/6/13	25/6/13	25/6/13	26/6/13	27/6/13	27/6/13
	Grass snake	0	0	0	0	0	0	0	0	1
	Slow worm	0	0	0	0	0	0	3	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Five	Date	28/6/13	28/6/13	28/6/13	28/6/13	27/6/13	27/6/13	27/6/13	1/7/13	1/7/13
	Grass snake	0	0	0	0	0	0	0	1	0
	Slow worm	0	0	1	0	0	0	3	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Six	Date	2/7/13	2/7/13	2/7/13	7/7/13	1/7/13	1/7/13	28/6/13	3/7/13	3/7/13
	Grass snake	0	0	0	0	0	0	0	1	0









	Slow worm	0	0	0	0	0	0	2	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0
Visit Seven	Date	4/7/13	2/7/13	5/7/13	4/7/13	3/7/13	3/7/13	29/6/13	5/7/13	9/7/13
	Grass snake	0	0	0	0	0	0	0	0	0
	Slow worm	0	0	0	0	0	0	0	0	0
	Common lizard	0	0	0	0	0	0	0	0	0
	Adder	0	0	0	0	0	0	0	0	0

**Table 3: Descriptions of reptile survey locations**




Descriptions of reptile survey locations		
1	Description:	Photo:
NGR: ST 3732 5454	<p>A horse paddock with improved grassland in short sward. At the field margins there are narrow strips of long grass and woody hedges.</p> <p>There are no ponds at this location however there is a wet ditch area to the east by the entrance gate.</p> <p>A juvenile toad was recorded under tile #2 on the seventh visit.</p>	
	Reptile species identified during survey: None	
2	Description:	Photo:
NGR: ST 3381 1560	<p>An area of improved cattle-grazed grassland with rough grass margins and generally low hedgerows.</p> <p>There are no ponds at this location however there is a small watercourse along the southern margin and south-western corner.</p> <p>The first visit noted that many tiles had been displaced and damaged by recent 'topping' and cattle in the field. These were all replaced or repaired.</p>	
	Reptile species identified during survey: None	
3	Description:	Photo:
NGR: ST 4056 5826	<p>An area of semi-improved sheep-grazed grassland with wide woody margins and woody hedgerows.</p> <p>There are no ponds at this location however there is a small stream/brook located on the southern margin.</p> <p>On the fourth visit it was noted that the grass in both fields had been cut.</p>	
	Reptile species identified during survey: None	


Descriptions of reptile survey locations		
4	Description:	Photo:
NGR: ST 4092 5852	<p>An area of semi-improved grassland with wide grassy margins and woody hedgerows.</p> <p>There are no ponds at this location however there is a small stream/brook located on the lower southern margin.</p>	
	Reptile species identified during survey: None	
5	Description:	Photo:
NGR: ST 4138 5931	<p>An area of semi-improved grassland with slopes, wide grassy margins and woody hedgerows.</p> <p>There are no ponds however there is a small stream/brook on the lower eastern margin.</p> <p>During the first visit some tiles on the lower eastern field side were not found. Many badger paths and dog tracks from an adjoining yard were also noted.</p>	
	Reptile species identified during survey: Slow worm	
6	Description:	Photo:
NGR: ST 4119 5962	<p>An area of cattle-grazed, semi-improved grassland with narrow grassy margins and woody hedgerows.</p> <p>There are no ponds however there is a small stream on the northern and eastern margins.</p> <p>On the first visit it was noted that some tiles were superficially damaged and trampled by cattle and as such some were moved or replaced.</p>	
	Reptile species identified during survey: Grass snake, slow worm and common lizard	

Descriptions of reptile survey locations		
7	Description:	Photo:
NGR: ST 4166 6041	An area of semi-improved grassland with bare patches (a chicken farm area with many chickens).  There are no ponds or watercourses at this location.	
	Reptile species identified during survey: Grass snake	
8	Description:	Photo:
NGR: ST 4530 6221	An arable field, with maize crop in the central area with rough grassy margins and hedgerows along with bare soil patches.  There are no ponds or watercourses at this location.  A toad was recorded under tile #15 on the sixth visit.	
	Reptile species identified during survey: Slow worm	
9	Description:	Photo:
NGR: ST 4605 6946	An area of short sward pasture with no ponds or watercourses at this location.  On the first visit it was noted that many of the mats had been moved by cattle and the tins crushed as if they had been walked on.  On the sixth visit a juvenile toad was noted under tile #43.	
	Reptile species identified during survey: None	

Descriptions of reptile survey locations		
10	Description:	Photo:
NGR: ST 4596 7058	<p>A large arable field with a 2 metre strip of short grass around the edge.</p> <p>There are no ponds or watercourses at this location.</p> <p>On the first visit it was noted that mats 3 and 4 had been destroyed.</p>	
	Reptile species identified during survey: None	
11	Description:	Photo:
NGR: ST 4582 7145	<p>An area comprising improved grassland and wet grassland.</p> <p>There are no ponds at this location however the fields were very wet with two notable puddles.</p> <p>On the second visit it was noted that many mats in the bottom field had been disturbed by cattle.</p>	
	Reptile species identified during survey: Grass snake and slow worm	
12	Description:	Photo:
NGR: ST 4582 7174	<p>An area of improved grassland with no ponds or watercourses at this location.</p>	
	Reptile species identified during survey: None	



Descriptions of reptile survey locations		
13	Description:	Photo:
NGR: ST 4800 7302	An area of short grassy pasture which was grazed by sheep on the first visit. There are no ponds or watercourses at this location.	
	Reptile species identified during survey: None	
14	Description:	Photo:
NGR: ST 4786 7295	An area of grassland with no ponds or watercourses at this location.	
	Reptile species identified during survey: None	
15	Description:	Photo:
NGR: ST 4886 7477	An area of grassland with one pond noted.	
	Reptile species identified during survey: Slow worm	

Descriptions of reptile survey locations		
16	Description:	Photo:
NGR: ST 4849 7630	<p>An area of improved grassland and grazed short grassland. No ponds or watercourses were noted at this location.</p> <p>On the first visit it was noted that mats 19 and 22 were missing. Tiles 25-40 were not checked as there were cattle with young in the field.</p> <p>During the second survey a local farmer advised that he had seen an adder in the area however this was not seen by the surveyors.</p>	
	Reptile species identified during survey: Grass snake	
17	Description:	Photo:
NGR: ST 4851 7686	<p>An area of short pasture with artificial ponds noted.</p> <p>On the second visit surveyors were unable to gain access due to cattle with calves.</p>	
	Reptile species identified during survey: Grass snake	

## Appendix 8N – Ditch Invertebrate & Flora Surveys







# **Hinkley Point C Connection Project Environmental Statement Volume 5.8.2 Ditch Invertebrate and Flora Surveys March 2014 1979.40.023 Version B**

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**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
Ecology Appendix 8N  
Ditch Invertebrate and Flora Surveys  
March 2014  
1979.40.023  
Version B**

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## 1.0 Introduction

- 1.1 The Somerset Levels and Moors are renowned for their important invertebrate assemblages associated with grazing marsh habitats and the characteristic ditch and rhyme field boundaries. There are a number of Sites of Special Scientific Interest (SSSI) within the Order Limits designated for their aquatic invertebrate assemblages including Puxton Moor SSSI; Biddle Street, Yatton SSSI; and Tickenham, Nailsea and Kenn Moors SSSI.
- 1.2 Terrestrial habitats that are often associated with good terrestrial invertebrate assemblages include ditch margins, unimproved, calcareous and acid grasslands, heathlands, ancient woodland and brownfield sites. Other than ditch margins, such terrestrial habitats are rarely encountered along the Preferred Route Corridor, and where they are encountered, significant damage is unlikely. Therefore terrestrial invertebrate survey concentrated on field margins associated with ditch habitats.
- 1.3 Potential impacts on invertebrates as a result of the Proposed Development are primarily associated with locations where ditches or other aquatic habitat (i.e. rivers, ponds, streams) are crossed by the proposed underground cable routes (400kV and 132kV) or fall within the footprint of the proposed substation at Sandford. The proposed construction access tracks may also affect such habitats, especially if the crossings require construction of a temporary bridge or culvert. The route corridor crosses a large number of ditches, several of which are designated SSSIs.

## 2.0 Legal Protection

- 2.1 The only protected invertebrate likely to be present within the Proposed Development Order Limits is *Hydrochara caraboides* lesser silver water beetle. This species is afforded special protection under the Wildlife and Countryside Act (1981) Schedule 5, making it an offence to intentionally kill, injure or take.

## 3.0 Method

### Desk Study

- 3.1 Information was provided by Bristol Environmental Records Centre (BERC) and Somerset Environmental Record Centre (SERC). The data was requested for a 1km search area from the Order Limits, the latest request was made in 2013. The Order Limits have been refined since the data request. Considering the relatively small range of most invertebrate species and the large search area, changes to the Order Limits do not affect the validity of the data search zone.

### Field Survey

#### Scope

- 3.2 It is not appropriate to undertake a detailed invertebrate survey of every ditch within the Order Limits of the Proposed Development. To evaluate invertebrate assemblages in grazing marsh habitat Buglife's ditch survey guidance (Buglife, 2013) recommends surveying every 5th ditch. This broad approach is adopted on this project, but as the

focus of the survey is ecological impact assessment it is also appropriate for consideration of potential effects to further influence survey scope.

- 3.2 To determine the scope of invertebrate surveys, aquatic habitat maps (wet ditches and ponds) were overlaid with draft construction proposals in early 2013. Ditches which fell within undergrounding construction swathes, new substation working areas, cable sealing end compound sites and construction compound areas were included in the broad scope as were ditches crossed by access routes. Ditches crossed by proposed access routes were scoped out where access was provided by an existing land bridge (on the basis that construction effects would be avoided or minimal).
- 3.3 At the time of scoping, it was understood that development proposals would alter during the upcoming year and the purpose of the survey scope (in combination with existing invertebrate data) was to provide an overall assessment of invertebrate assemblages within the habitats crossed by the Proposed Development.
- 3.1 A total of 116 ditches and three ponds were identified in the desk-based scoping exercise for an initial field-based assessment. During the initial field visit surveyors refined the survey scope to select ditches they perceived to provide good aquatic invertebrate<sup>1</sup> habitat. Ditches were excluded from survey where the habitat was perceived by the invertebrate surveyors to be poor for aquatic invertebrates. Essentially this equates to the ditch being largely dry or absent and in a few cases polluted/of poor water quality. Following the field-based assessment 67 of the ditches and all three ponds were subsequently selected for full aquatic invertebrate survey following the initial field visit.

#### Timing

- 3.2 Mid April to September/October is the core season for invertebrate surveys. Natural England guidance (Drake et al, 2007) states that aquatic habitats can be successfully surveyed using spring and autumn visits because many of the important invertebrate groups are identifiable for long periods or can be successfully sampled and identified in their larval stages. This guidance also promotes the use of an initial reconnaissance visit as part of the survey strategy. With this in mind the survey approach for this project entailed an initial visit to confirm and refine the desk based survey scope. This was undertaken in April, followed by two survey visits, one earlier in the season and one later in the season.
- 3.3 Terrestrial invertebrate surveys are weather dependent; therefore all the invertebrate surveys were undertaken in suitable weather conditions (warm days with little or no rain and wind).

#### Ditch assessment

- 3.4 Invertebrate surveys were undertaken in pairs with a terrestrial invertebrate surveyor working alongside an aquatic invertebrate surveyor. At least one person in the survey team held a Natural England licence for lesser silver water beetle.
- 3.5 All of the 116 ditches and 3 ponds were assessed for:
- their suitability to support lesser silver water beetle; and
  - to determine if further invertebrate surveys were required and which species or species-groups would be targeted.

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<sup>1</sup> An aquatic invertebrate is defined as one that is listed as a “*Target Native Aquatic Invertebrate of Grazing Marshes*” in Palmer et al (2013).

- 3.6 The criteria assessed were based upon known habitat requirements of lesser silver water beetle in Somerset as given in Boyce (2004).
- 3.7 If a ditch was assessed and not surveyed, surveys were listed as 'Visual'; however, a maximum of 5 minutes was spent netting to determine the presence of fish.
- 3.8 During the course of the invertebrate surveys a list of plant species within each of the wetland survey areas was compiled.

#### Invertebrate collection techniques

- 3.9 Two visits to each survey sites was carried out, in line with the recommendations for aquatic surveys given by Drake et al (2007). An early season survey visit and a late season survey visit was made to the survey sites (67 ditches and 3 ponds) identified during the Ditch Assessment.
- 3.10 With such a large group of animals as the invertebrates, attempting to sample all taxon groups is not practical. Certain invertebrate groups support good ecological indicator species or species assemblages. Therefore, a cross-section of commonly recorded groups has been surveyed for.
- 3.11 The survey approach taken was to continue sampling at each location until no new aquatic species were identified, up to a maximum of 1 hour per site. A range of methods was used to ensure a wide range of invertebrates were detected as follows.
- Aquatic-netting is used in areas of standing or running water.
  - Sweep-netting of terrestrial habitats was used in conjunction with a pooter to collect very small invertebrates.
  - Hand-searching of terrestrial habitats was undertaken. This entails searching through features such as piles of deadwood, under stones, amongst tipped materials and through grass tussocks.
  - Beating was carried out in scrub, along hedgerows and in woodland.
  - Pitfall trapping was not used as a survey method due to potential risks posed to dogs and farm animals, furthermore pitfalls traps are only effective if left in-situ for several days.
  - Suction-sampling: A suction-sampler is an inverted leaf blower which is very effective at 'sucking' invertebrates out of grassland, scrub and scree and is not weather dependent.

#### Identification

- 3.12 Any invertebrate caught live and promptly identified to species level was released back into the field. Where identification in the field was not possible, specimens were preserved in 70% ethanol and taken away for critical identification.

#### Target invertebrate groups

- 3.13 Based on the habitats present in the survey area, the following groups of terrestrial invertebrates were targeted:
- Coleoptera (beetles)
  - Diptera (true flies)
  - Lepidoptera (butterflies and day-flying moths only)
  - Odonata (dragonflies and damselflies)
  - Aculeate Hymenoptera (bees and wasps)
  - Heteroptera (bugs) targeting shield and capsid bugs



3.14 The following groups of freshwater aquatic invertebrates were targeted:

- Tricladida (flatworms)
- Hirudinea (leeches)
- Mollusca (snails and mussels)
- Malacostraca (shrimps and hoglice)
- Ephemeroptera (mayflies)
- Plecoptera (stoneflies)
- Odonata (dragonflies and damselflies)
- Hemiptera (aquatic bugs)
- Coleoptera (water beetles)
- Megaloptera (alderflies)
- Trichoptera (caddis flies)

3.15 For each ditch/pond surveyed a Native Invertebrate Species Conservation Status Score was calculated in accordance with the methods set out by Palmer *et al* (2013). This method allocates a score to each aquatic invertebrate species according to its relative rarity (see **Table 1**), then calculates the average score for a sample this is known as the Species Quality Index or SQI. The Joint Nature Conservancy Council (JNCC) provides criteria for the assessment of species of conservation concern (see Section 6.0). Where multiple categories apply to a species, the highest score is used, not the sum of the scores. Non-native taxa are not used when calculating this metric.

**Table 1: Invertebrate Conservation Status Score**

Category	Score
*Habitats Directive Annex II and/or IV; W&CA (1981) Schedule 5; Red List CR, EN, VU (revised assessments); Red List E or V (unrevised lists)	5
*Red List Rare (R in unrevised lists), DD or K; Near Threatened	4
Nationally Scarce (NS, Nationally Notable Na and Nb)	3
Local	2
None of the above (common)	1

\* Some of these are UK Biodiversity Action Plan priority species.

3.16 The SQI for a sample is obtained by adding together all the individual species scores, then dividing by the number of native taxa recorded. If a sample contains fewer than ten invertebrate taxa the SQI should not be calculated. The maximum score is therefore 5, however this score could only be attained if the only species recorded were in the rarest category. Scores are generally lower than this. To simplify the SQI score, the ditches were awarded a category from 1 to 6 (see **Table 2**).

**Table 2: Ditch Categories**

Ditch Category	SQI Score	Comments
1	>2	Ditch which has a high percentage of Species of Conservation Importance in the species count.
2	>1.5 but <2	Ditch which contains several high scoring invertebrates and has the highest value based on Species of Conservation Importance.
3	>1.0 but <1.5	Ditch which contains high scoring invertebrates but has a lower value based on Species of Conservation Importance.
4	1.0	A ditch in which only common species were recorded, but with a minimum of 10 scoring aquatic invertebrates.
5	Species poor	A ditch with less than 10 scoring aquatic invertebrates.
6	Scoped out	A ditch which was considered unsuitable for survey.

## 4.0 Survey Results

### Desk Study

- 4.1 The collective datasets provided by SERC and BRERC included 1,381 invertebrate records. Each species was checked against the up to date designation list (JNCC, 2011 and various publications (**Section 11**)). Species designations were updated where necessary (normally due to an expansion of range). The species names were checked for changes in nomenclature and altered where appropriate. Data lists by taxon group are provided in **Section 6** and by data lists by 1km grid square are provided in **Section 7** and illustrated in **Figure 8.56.1** to **Figure 8.56.30**.
- 4.2 Both aquatic and terrestrial invertebrate datasets were carefully analysed. Only records with a 6-figure grid reference were used in the analysis. Moth records which were described as having been obtained from moth traps were removed from the dataset as moth traps can skew results by attracting species from several miles away.
- 4.3 For the purpose of **Tables 3 to 6**, repeat records (same species occurring in the same year and at the same grid reference) were removed. Records within the Order Limits were checked against the Phase 1 Habitat maps and the species habitat requirements to determine if the species may still occur given the habitats now present. Records from outside of the Order Limits were retained in the dataset but only if the record was not before the year 2000. Often records older than five years would be disregarded but the datasets contained only historical records and removing all records older than five years, would have left a very small dataset which would have been difficult to analyse.

#### Section A – Puriton Ridge

- 4.4 No aquatic or terrestrial invertebrate records were provided for Section A.

#### Section B – Somerset Levels and Moors South

- 4.5 No invertebrate records were provided for Section B.

#### Section C – Mendip Hills AONB

- 4.6 **Table 3** lists the invertebrate records provided for the land within the Order Limits in Section C. Only two records of designated species exist within the Order Limits. These are the wall *Lasiommata megera* and small heath *Coenonympha pamphilus* butterflies. Both species are included on the GB Red List and are classed as Near Threatened. However the records are from 1989 and appear to have been taken from within arable land. A number of nocturnal moth records exist but have been discounted.

**Table 3: Invertebrate records from within the Corridor - Section C**

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Coenonympha pamphilus</i>	Small Heath	ST396574	01/01/1989	IUCN - Near Threatened
<i>Lasiommata megera</i>	Wall	ST396574	01/01/1989	IUCN - Near Threatened

- 4.7 Many invertebrate records were provided from the surrounding land. A number of designated butterfly species have been recorded from Crook Peak SSSI (to the east of the Order Limits) including grizzled skipper *Pyrgus malvae* and small pearl-bordered fritillary *Boloria selene*. Max Bog SSSI and SNCI lies north of Crook Peak SSSI and supports a number of Nationally Notable species of Diptera and Coleoptera. Max Bog is predominantly a calcicolous mire, the likes of which does not exist within the Order

Limits. The invertebrates recorded from Max Bog are specialist species found in bog habitats such as species of Soldierfly and Dolichopodid fly.

#### Section D – Somerset Levels and Moor North

- 4.8 Section D is a long stretch of the corridor dominated by permanent pasture (improved grassland and semi-improved grassland) with ditches bordering the fields. Other habitats present include marshy grassland, ponds and arable farmland.
- 4.9 Many aquatic and terrestrial invertebrate records exist within the Order Limits of Section D. These records are mainly from the three SSSIs that the route runs through. To the south of Section D is Puxton Moor SSSI, which lies mostly outside of the Order Limits. From the ditch systems within the Order Limits are records for Nationally Notable Diptera and Nationally Scarce aquatic Coleoptera (see **Table 4**). Outside of the Order Limits, many records exist from the main part of Puxton Moor SSSI, which is designated for its ditch flora and fauna.
- 4.10 Further north is Biddle Street, Yatton SSSI. Part of the Order Limits passes through this SSSI, which is designated for its grazing marsh and ditch system. A number of Nationally Scarce aquatic beetles records exist within the Order Limits along with Nationally Notable soldierfly records (see **Table 4**). Further north is a large SSSI; Tickenham, Nailsea and Kenn Moors, designated for its grazing marsh and ditch system including important assemblages of aquatic plants and beetles. The Order Limits pass through this SSSI. Many records of designated dragonflies (Odonata), soldierflies and aquatic beetles exist from within the Order Limits here.

**Table 4: Invertebrate records from within the Corridor - Section D**

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Caenis robusta</i>	a mayfly	ST416638 ST446707	1991 13/05/1999	Rare
<i>Callophrys rubi</i>	Green Hairstreak	ST426592	10/05/1988	Not designated LBAP only
<i>Cercyon convexusculus</i>	a scavenger water beetle	ST446707 ST458712	13/05/1999 13/08/1999	L*
<i>Cercyon sternalis</i>	a scavenger water beetle	ST415621	08/08/1999	L*
<i>Chiasmia clathrata</i>	Latticed Heath	ST427608	28/07/1996	S41
<i>Coenagrion pulchellum</i>	Variable Damselfly	ST415621 ST4315268515 ST4325169301 ST4325169442 ST4368469337 ST4373269227 ST438701 ST4388970039 ST4394270004 ST439699 ST439700 ST439700 ST4398269726 ST440697 ST440697 ST440698 ST440698 ST440698 ST440698 ST440698 ST441696 ST4422969846 ST442693	08/08/1999 27/07/2010 22/07/2010 22/07/2010 22/07/2010 28/07/2010 06/06/1999 22/06/2010 22/07/2010 06/06/1999 30/05/1998 31/05/1999 27/07/2010 02/07/1995 16/06/1996 01/07/1995 04/06/1998 08/06/1995 08/06/2000 06/06/1999 05/08/2010 11/06/1999	IUCN - Near Threatened

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Coenagrion pulchellum</i>	Variable Damselfly	ST442694 ST442696 ST4443969639 ST445704 ST457704	1986 15/06/1996 24/06/2010 1984 June 1993	IUCN - Near Threatened
<i>Diarsia rubi</i>	Small Square-spot	ST444617	29/08/1998	S41
<i>Erynnis tages</i>	Dingy Skipper	ST426592	10/05/1988	IUCN - Vulnerable
<i>Euphyia unangulata</i>	Sharp-angled Carpet	ST427608	28/07/1996	S41
<i>Helochaeres lividus</i>	a scavenger water beetle	ST416653 ST418655 ST443705	22/08/1999 22/08/1999 13/05/1999	L*
<i>Hydaticus seminiger</i>	a water beetle	ST415621	08/08/1999	Nationally Scarce
<i>Hydaticus transversalis</i>	a water beetle a water beetle a water beetle a water beetle	ST415621 ST415623 ST417655 ST418655	08/08/1999 08/08/1999 21/09/1993 22/08/1999	Nationally Scarce
<i>Hydraecia micacea</i>	Rosy Rustic	ST444617	29/08/1998	S41
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	ST446705	12/05/2004	IUCN – Near Threatened
<i>Lasiommata megera</i>	Wall	ST444618	10/06/1997	IUCN -Near Threatened
<i>Limenitis camilla</i>	White Admiral	ST425686	19/06/1998	IUCN - Vulnerable
<i>Odontomyia ornata</i>	Ornate Brigadier	ST415623 ST418652 ST418655 ST446707 ST458712	08/08/1999 22/08/1999 22/08/1999 13/05/1999 13/08/1999	IUCN - Vulnerable
<i>Odontomyia tigrina</i>	Black Colonel	ST414652 ST415621 ST415623 ST416653 ST448705 ST458712	22/08/1999 08/08/1999 08/08/1999 22/08/1999 13/05/1999 13/08/1999	Nationally Notable
<i>Peltodytes caesus</i>	a crawling water beetle	ST418655 ST443705 ST446707 ST450711 ST457706 ST458712	22/08/1999 13/05/1999 13/05/1999 15/08/1999 1993 13/08/1999	Nationally Scarce
<i>Pyrgus malvae</i>	Grizzled Skipper	ST426592	10/05/1988	IUCN - Vulnerable
<i>Rhantus grapii</i>	a water beetle	ST414652 ST415623	22/08/1999 08/08/1999	L* L*
<i>Scirtes orbicularis</i>	a marsh beetle	ST414652	22/08/1999	Nationally Scarce
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	ST418655 ST427608	22/08/1999 28/07/1996	Nationally Scarce S41
<i>Timandra comae</i>	Blood-vein	ST444696 ST459709	24/06/2010 Jun 1993	S41 S41
<i>Tyria jacobaeae</i>	Cinnabar	ST416599	28/05/1997	S41

Section E – Tickenham Ridge

- 4.11 No invertebrate records were provided that fall within Section E.

Section F - Portbury

- 4.12 Section F includes comprise semi-improved grassland with water-bodies including ditches, ponds, sewage beds and streams.
- 4.13 Records of designated invertebrates that fall within the Order Limits of Section F are listed in **Table 5**. These are mainly from the Portbury Wharf Nature Reserve. Two Notable species of Coleoptera have been recorded from this area; the leaf beetle *Donacia thalassina*, (associated with ponds and lakes), and the weevil *Larinus planus*, (associated with maritime cliffs. Small heath *Coenonympha pamphilus* has also been recorded from this area. A rare aquatic beetle, the New Forest mud beetle *Helophorus laticollis*, (favours shallow water-bodies on heathland) has been recorded in the Portbury Wharf area. This species is on the Red List as Endangered.

**Table 5: Invertebrate records from within the Corridor - Section F**

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Ophonus ardosiacus</i>	a ground beetle	ST483767	14/05/2011	Nb
<i>Donacia thalassina</i>	a leaf beetle	ST483767	14/05/2011	Nb
<i>Larinus planus</i>	a weevil	ST483767	14/05/2011	Nb
<i>Sitochroa palealis</i>	a pyralid moth	ST484760	01/10/2011	Nationally Notable
<i>Chiasmia clathrata</i>	Latticed Heath	ST484772	13/08/1995	S41
<i>Coenonympha pamphilus</i>	Small Heath	ST484772	1987 - 1994	IUCN - Near Threatened
<i>Chiasmia clathrata</i>	Latticed Heath	ST489771	04/06/2003	S41
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	ST485764	17/05/2005	IUCN - Near Threatened
<i>Berosus affinis</i>	a scavenger water beetle	ST48587720 ST48787672	March 1999	L*
<i>Helophorus laticollis</i>	New Forest Mud Beetle	ST489769	01/01/1999	RDB2, IUCN - Endangered, S41, AvonBAP
<i>Rhantus grapii</i>	a water beetle	ST489769	01/01/1999	L*

Section G – Avonmouth

- 4.14 Records of designated invertebrates that fall within the Order Limits of Section G are listed in **Table 6**. A number of records of small heath *Coenonympha pamphilus* exist from the Portbury Dock area. Many records exist from the Avonmouth Sewage Farm SNCI. These include the Nationally Scarce water beetle *Helophorus nanus* (associated with fen vegetation), the Notable B Adonis ladybird *Adonia variegata* and a number of Nationally Notable snail-killing flies. Further north, records from Crooks Marsh include a number of Nationally Notable beetles, flies, planthoppers and wasps, as well as the Nationally Scarce water beetle *Graptodytes bilineatus* (a species associated with brackish sites).

**Table 6: Invertebrate records from within the Corridor - Section G**

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Adonia variegata</i>	Adonis' Ladybird	ST528798 ST53848185	26/08/2001 29/05/2009	Nb Nb
<i>Anagnota bicolor</i>	a fly	ST53878162	29/05/2009	Nationally Notable
<i>Anoscopus albifrons</i>	a leafhopper	ST53808177 ST53878162	29/05/2009 29/05/2009	Nb

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Badister unipustulatus</i>	a ground beetle	ST530796	29/05/2001	Nb
<i>Berosus affinis</i>	a scavenger water beetle	ST532819	15/05/2006	L*
<i>Berosus signaticollis</i>	a scavenger water beetle	ST538817	29/05/2009	L*
<i>Bombus hortorum</i>	Small Garden Bumble Bee	ST516779 ST532819	20/08/2003 May 2006	Not designated LBAP ONLY
<i>Bombus muscorum</i>	Moss Carder-bee	ST532819	May 2006	S41
<i>Calamotropha paludella</i>	a pyralid moth	ST530796	05/07/2001	Nb
<i>Cercyon convexiusculus</i>	a scavenger water beetle	ST532819	15/05/2006	L*
<i>Chiasmia clathrata</i>	Latticed Heath	ST522806 ST528798 ST531798 ST532819	11/05/1998 05/07/2001 05/07/2001 May 2006	S41
<i>Chloriona dorsata</i>	a planthopper	ST53738170 ST53848176 ST53878181	May 2009 May 2009 May 2009	Nb Nb Nb
<i>Cleptes semiauratus</i>	a rubytail wasp	ST530796	05/07/2001	Nb
<i>Coenonympha pamphilus</i>	Small Heath	ST511772 ST511772 ST511772 ST512773 ST516779 ST527815 ST528798 ST528803 ST531798 ST531798 ST531808 ST531810 ST532819 ST532819 ST535780 ST536785 ST536802 ST538811 ST545804	07/06/2000 21/05/2001 21/08/1999 1993-1994 20/08/2003 03/06/1999 09/06/1998 20/07/1987 18/05/1992 28/08/1987 20/06/1998 20/06/1998 08/06/1999 May 2006 21/05/1998 21/05/1998 30/05/1998 10/06/1998 10/06/1998	IUCN - Near Threatened
<i>Colobaea bifasciella</i>	a snail-killing fly	ST53828180	May 2009	Nationally Notable
<i>Colobaea distincta</i>	a snail-killing fly	ST53918173	May 2009	Nationally Notable
<i>Colobaea punctata</i>	a snail-killing fly	ST530796	05/07/2001	Nationally Notable
<i>Crossocerus distinguendus</i>	a solitary wasp	ST538817	May 2009	Nb
<i>Diarsia rubi</i>	Small Square-spot	ST539793	21/09/2005	S41
<i>Donacia thalassina</i>	a leaf beetle	ST53918173	May 2009	Nb
<i>Elachiptera austriaca</i>	a fly	ST538817	May 2009	Nationally Notable
<i>Elaphropus parvulus</i>	a ground beetle	ST53878162	May 2009	Nb
<i>Empis decora</i>	a dance fly	ST53918173	May 2009	Nationally Scarce
<i>Graptodytes bilineatus</i>	a water beetle	ST532819 ST538817	15/05/2006 May 2009	Nationally Scarce
<i>Halipus heydeni</i>	a crawling water beetle	ST532819	15/05/2006	L*

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Helius pallirostris</i>	a crane fly	ST53878162	May 2009	Nationally Notable
<i>Helochaeres lividus</i>	a scavenger water beetle	ST532819 ST542799	15/05/2006 20/05/1999	L*
<i>Helophorus griseus</i>	a scavenger water beetle	ST532819	15/05/2006	L*
<i>Helophorus nanus</i>	a scavenger water beetle	ST530796	29/05/2001	Nationally Scarce
<i>Heringia heringi</i>	a hoverfly	ST528798	29/05/2001	Not designated
<i>Hydraecia micacea</i>	Rosy Rustic	ST539793	21/09/2005	S41
<i>Hydroglyphus geminus</i>	a water beetle	ST532819 ST538817	15/05/2006 May 2009	L*
<i>Hylaeus signatus</i>	Large Yellow-faced Bee	ST532819	May 2006	Nb
<i>Laccobius sinuatus</i>	a scavenger water beetle	ST532819	15/05/2006	L*
<i>Lasiommata megera</i>	Wall	ST512773 ST526810	1993-1994 28/04/1998	IUCN - Near Threatened, S41
<i>Malacosoma neustria</i>	Lackey	ST513774	1994	S41
<i>Odontomyia ornata</i>	Ornate Brigadier	ST53738170	29/05 &/or 20/07/2009	IUCN - Vulnerable
<i>Oxystoma cerdo</i>	a seed weevil	ST530799	05/07/2001	Nb
<i>Pherbellia dorsata</i>	a snail-killing fly	ST530796	05/07/2001	Nationally Notable
<i>Pherbellia nana</i>	a snail-killing fly	ST53808177	29/05 &/or 20/07/2009	Nationally Notable
<i>Phyllotreta aerea</i>	a leaf beetle	ST528798	05/07/2001	Nb
<i>Pipizella virens</i>	a hoverfly	ST532819	00/05 to 00/09/2006	Nationally Notable
<i>Pipunculus zugmayeriae</i>	a big-headed fly	ST528798	29/05/2001	Nationally Notable
<i>Pteromicra glabricula</i>	a snail-killing fly	ST530796	05/07/2001	Nationally Notable
<i>Sapromyza opaca</i>	a fly	ST53808177 ST53838162 ST53858178 ST53878162 ST53878166 ST53878181 ST53918173	May 2009 May 2009 May 2009 May 2009 May 2009 May 2009 May 2009	Nationally Notable
<i>Stratiomys singularior</i>	Flecked General	ST532819	00/05 to 00/09/2006	Nationally Notable
<i>Tetanocera punctifrons</i>	a snail-killing fly	ST53808177 ST53868183	May 2009 May 2009	Nationally Notable
<i>Timandra comae</i>	Blood-vein	ST528809	20/08/2000	S41
<i>Typhamyza bifasciata</i>	a fly	ST53878181 ST538817 ST53918173	May 2009 May 2009 May 2009	Nationally Notable
<i>Tyria jacobaeae</i>	Cinnabar	ST526808 ST528798 ST528798 ST528809 ST531798 ST531798 ST531798 ST532819 ST53878162 ST539794 ST539794	26/07/2000 05/07/2001 29/05/2001 21/07/2000 05/07/2001 18/05/1992 29/05/2001 May 2009 May 2009 04/06/2001 26/06/2000	S41

Scientific Name	Vernacular Name	Grid Ref	Date	Designation
<i>Tyria jacobaeae</i>	Cinnabar	ST542799	22/07/1997	S41

### Field survey

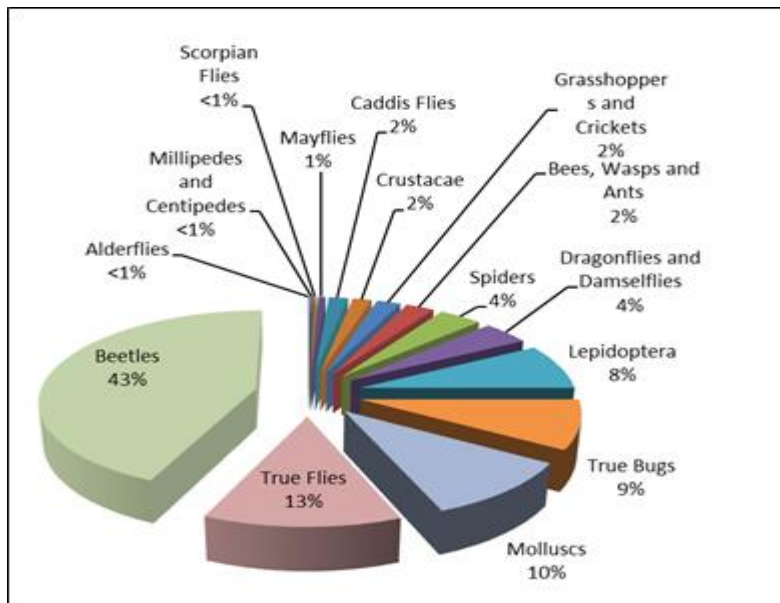
- 4.15 A total of 116 ditches and three ponds were initially identified for assessment for invertebrates and aquatic plants as a result of the desk-based scoping exercise. Following the initial reconnaissance survey in April, 67 of the ditches and all three ponds were selected for a full terrestrial and aquatic invertebrate survey; the remaining ditches were subjected to a visual assessment for their suitability to support to lesser silver water beetle. A total of 4,369 records of 484 species of invertebrate survey including 166 of aquatic invertebrate were made. Species lists for each ditch and results of the Ditch Assessment surveys are contained in **Section 10 – Ditch Survey Data**. Beetles and flies accounted for half of the species recorded; a breakdown of the different groups recorded is contained in **Table 7** and **Figure 1** shows the percentage of each group recorded.

**Table 7: Invertebrate Groups Recorded**

Group	No. of Species
Alderflies	1
Millipedes and centipedes	1
Scorpionflies	1
Mayflies	3
Caddis flies	8
Crustaceae	8
Grasshoppers and crickets	10
Bees, wasps and ants	12
Spiders	18
Dragonflies and damselflies	20
Lepidoptera	39
True bugs	42
Molluscs	50
True flies	61
Beetles	210

- 4.16 **Section 10** of this report contains details of each ditch surveyed, its assessment for suitability to support lesser silver water beetle, a botanical species list (plants within the wetland boundary) and list of invertebrates recorded.
- 4.17 A full list of all invertebrates recorded (including Taxonomic and Vernacular names) is contained in **Section 8**; plant species recorded are listed in **Section 9**.
- 4.18 The number of invertebrate species recorded from each ditch system varied from less than 10 to 94. Aquatic species were awarded a value in accordance with the methods set out by Palmer et al (2013), as discussed previously in **Section 4** and the ditches awarded a category based on their SQI score. The results are illustrated in **Figure 8.56.1** to **Figure 8.56.56**.



**Figure 1: Invertebrate Groups Recorded by Percentage**Section A – Puriton Ridge

- 4.19 Three ditches and one pond were surveyed in this Section, the scores and ditch categories are provided in **Table 8**.

**Table 8: Invertebrate Assemblages Recorded in Section A**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
P24	77	45	62	1.38	3
TEP37	58	21	21	1.00	4
TEP62	43	5	N/A	N/A	5
TEP73	40	12	12	1.00	4

Assessment for species of conservation concern

- 4.20 A single Near Threatened aquatic beetle and a Nationally Scarce aquatic beetle were recorded in this Section and are listed in **Table 9**.

**Table 9: Species of Conservation Concern Recorded in Section A**

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Limnoxenus niger</i>	a water beetle	P24	IUCN (2001) - Lower risk - near threatened
<i>Peltodytes caesus</i>	a water beetle	P24	Nationally Scarce

Section B – Somerset Levels and Moors South

- 4.21 Twenty-three ditches were selected for survey in Section, three of which were dry and therefore only surveyed for terrestrial invertebrates. The results are summarised in **Table 10**.

**Table 10: Invertebrate Assemblages Recorded in Section B**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
TEP246	12	56	69	1.23	3
TEP320	37	28	28	1.00	4
TEP327	58	34	39	1.15	3
TEP341	94	63	84	1.33	3
TEP388	68	41	54	1.32	3
TEP416	50	47	60	1.28	3
TEP464	51	32	32	1.00	4
TEP528	21	14	14	1.00	4
TEP550	31	26	30	1.15	3
TEP648	52	40	51	1.28	3
TEP715	79	64	95	1.48	3
TEP733	80	48	59	1.23	3
TEP816	30	14	14	1.00	4
TEP826	3	Terrestrial Survey Only			6
TEP885	21	Terrestrial Survey Only			6
TEP891	15	Terrestrial Survey Only			6
TEP903	41	26	26	1.00	4
TEP952	54	36	46	1.28	3
TEP991	82	45	54	1.20	3
TEP992	38	36	44	1.22	3
TEP1001	73	47	59	1.26	3
TEP1099	44	23	23	1.00	4

#### Assessment for species of conservation concern

- 4.22 Invertebrates and Plants of Conservation Concern recorded in this Section are listed in **Table 11**. The freshwater sponge *Ephydatia fluviatilis* was found in TEP528 at the survey point. Although this species has no designation, the NBN database only shows 10 sites for this in the UK. This species has not previously been recorded in Somerset. European eel (IUCN, 2001 Critically endangered) was recorded in ditch TEP464.

**Table 11: Species of Conservation Concern Recorded in Section B**

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Hydrochara caraboides</i>	Lesser Silver Water Beetle	TEP341	IUCN (2001) - Lower risk - near threatened
<i>Hydaticus transversalis</i>	A water beetle	TEP341	IUCN (2001) - Lower risk - near threatened
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	TEP715	IUCN (2001) - Lower risk - near threatened
<i>Limnophila pictipennis</i>	a crane fly	TEP388	IUCN (pre 1994) - Vulnerable
<i>Peltodytes caesus</i>	a water beetle	TEP246 TEP733	Nationally Scarce

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Hydrocharis morsus-ranae</i>	Frogbit	TEP320 TEP327 TEP341 TEP37 TEP52 TEP715 TEP816 TEP952	IUCN (pre 1994) - Vulnerable

### Section C – Mendip Hills AONB

- 4.23 Twelve ditches were selected for survey in Section B, two of which were surveyed only for terrestrial invertebrates. The results are summarised in **Table 12**.

**Table 12: Invertebrate Assemblages Recorded in Section C**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
TEP1124	41	28	28	1.00	4
TEP1127	45	28	31	1.11	3
TEP1128	55	38	48	1.26	3
TEP1141	40	18	18	1.00	4
TEP1148	53	37	48	1.30	3
TEP1178	71	56	70	1.25	3
TEP1213	21	8	N/A	N/A	5
TEP1233	49	17	19	1.12	3
TEP1298	38	19	24	1.26	3
TEP1312	49	8	10	1.25	3
TEP1323	20	Terrestrial Survey Only			6
TEP1333	6	Terrestrial Survey Only			6

### Assessment for species of conservation concern

- 4.24 A single “Near Threatened” aquatic beetle was recorded in this Section.

**Table 13: Invertebrates of Conservation Concern Recorded in Section C**

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	TEP1127	IUCN (2001) - Lower risk - near threatened

### Section D – Somerset Levels and Moor North

- 4.25 Twenty ditches were selected for survey in Section B, one of which was only surveyed for terrestrial invertebrates. TEP1441 is listed however this was not a full invertebrate survey, the records were incidental while netting for fish. The results are summarised in **Table 14**.

**Table 14: Invertebrate Assemblages Recorded in Section D**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
TEP1338	63	43	64	1.49	3
TEP1348	28	10	10	1.00	4
TEP1379	43	34	44	1.29	3
TEP1382	40	7	N/A	N/A	5
TEP1402	54	29	32	1.10	3
TEP1410	88	36	55	1.53	2
TEP1420	59	12	12	1.00	4
TEP1441	43	9	N/A	N/A	5
TEP1447	57	15	15	1.00	4
TEP1471	83	37	52	1.41	3
TEP1491	55	35	38	1.08	3
TEP1525	30	28	28	1.00	4
TEP1606	58	39	59	1.51	2
TEP1647	4	Terrestrial Survey Only			6
TEP1674	58	20	22	1.10	3
TEP1921	75	36	45	1.25	3
TEP1977	18	8	N/A	N/A	5
TEP2118	57	28	28	1.00	4
TEP2128	67	40	53	1.33	3
TEP2137	49	28	37	1.32	3

*Assessment for species of conservation concern*

- 4.26 A single “Near Threatened” aquatic beetle and two Nationally Notable or Scarce invertebrate species were recorded in this Section. Three IUCN “Vulnerable” plants were recorded. These records are listed in **Table 15**. European eel (IUCN Critically Endangered) was recorded in ditch TEP2128.

**Table 15: Species of Conservation Concern Recorded in Section D**

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	TEP1471 TEP1491	IUCN (2001) - Lower risk - near threatened
<i>Phalacrocer a replicata</i>	a crane fly	TEP1491	Nationally Notable
<i>Peltodytes caesus</i>	a water beetle	TEP1402	Nationally Scarce
<i>Hydrocharis morsus-ranae</i>	Frogbit	TEP2118 TEP2128 TEP2137 TEP1586	IUCN (pre 1994) - Vulnerable
<i>Groenlandia densa</i>	Opposite-leaved Pondweed	TEP1606 TEP2137	IUCN (pre 1994) - Vulnerable
<i>Oenanthe fistulosa</i>	Tubular Water Dropwort	TEP2137	IUCN (pre 1994) - Vulnerable

Section E – Tickenham Ridge

- 4.27 Five ditches were selected for survey in Section E. The results of the survey are summarised in **Table 16**.

**Table 16: Invertebrate Assemblages Recorded in Section E**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
TEP2197	51	25	25	1.00	4
TEP2208	74	25	33	1.32	3
TEP2928	24	15	15	1.00	4
TEP2294	74	33	39	1.18	3
TEP2314	64	39	57	1.46	3

- 4.28 No invertebrates of Conservation Concern were recorded in this Section; two IUCN Vulnerable plant species were recorded, these are listed in **Table 17**.

**Table 17: Species of Conservation Importance Recorded in Section E**

Scientific Name	Common Name	Pond / Ditch	Designation
<i>Hydrocharis morsus-ranae</i>	Frogbit	TEP2208 TEP2928	IUCN (pre 1994) - Vulnerable
<i>Oenanthe fistulosa</i>	Tubular Water Dropwort	TEP2208	IUCN (pre 1994) - Vulnerable

Section F – Portbury

- 4.29 Seven ditches and two ponds were selected for survey in Section F, two of the ditches were only surveyed for terrestrial invertebrates. The results of the survey are summarised in **Table 18**.

**Table 18: Invertebrate Assemblages Recorded in Section F**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Survey
P199	75	35	40	1.14	3
P207	55	27	33	1.22	3
TEP2333	49	23	23	1.00	4
TEP2349	46	26	26	1.00	4
TEP2375	46	30	30	1.00	4
TEP2444	9	Terrestrial Survey Only			6
TEP2446	9	Terrestrial Survey Only			6
TEP2484	48	27	29	1.07	3
TEP2489	37	22	22	1.00	4

4.30 No invertebrates or plants of Conservation Concern were recorded in Section F.

#### Section G – Avonmouth

4.31 Eleven ditches were selected for survey in Section G, five were surveyed for terrestrial invertebrates only. The results of the survey are summarised in **Table 19**.

**Table 19: Invertebrate Assemblages Recorded in Section G**

Ditch / Pond	No. of Invertebrate Species recorded	No. of Aquatic Invertebrate Species recorded	Aquatic Invertebrate Species Score	SQI Score	Ditch Category
TEP2490	12	Terrestrial Survey Only			6
TEP2510	14	Terrestrial Survey Only			6
TEP2514	45	27	27	1.00	4
TEP2522	14	Terrestrial Survey Only			6
TEP2570	18	Terrestrial Survey Only			6
TEP2574	25	20	20	1.00	4
TEP2584	12	Terrestrial Survey Only			6
TEP2589	32	19	19	1.00	4
TEP2622	36	27	35	1.30	3
TEP2623	67	35	44	1.26	3
TEP2702	7	4	N/A	N/A	5

4.32 No invertebrates or plants of Conservation Concern were recorded in Section G.

## 5.0 Species Conservation Status Criteria

### **IUCN (2001) – Endangered**

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.

### **IUCN (2001) – Vulnerable**

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.

### **IUCN (2001) - Lower risk - near threatened**

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

### **IUCN (pre 1994) – Extinct**

Taxa which are no longer known to exist in the wild after repeated searches of their localities and other known likely places. Superseded by new IUCN categories in 1994, so no longer in use.

### **IUCN (pre 1994) – Vulnerable**

Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.

### **IUCN (pre 1994) – Rare**

Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk. (In GB, this was interpreted as species which exist in fifteen or fewer 10km squares). Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.

### **Nationally Notable A (Na)**

Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties. Superseded by Nationally Scarce, and therefore no longer in use.

### **Nationally Notable B (Nb)**

Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties. Superseded by Nationally Scarce, and therefore no longer in use.

### **Nationally Notable**

Species which are estimated to occur within the range of 16 to 100 10km squares. (subdivision into Notable A and Notable B is not always possible because there may be insufficient information available). Superseded by Nationally Scarce, and therefore no longer in use.

### **Nationally Scarce**

Species which are estimated to occur within the range of 16 to 100 10km squares in Great Britain.

### **L\***

Species too widespread to be Nationally scarce (past status Nationally Notable B).

## 6.0 Invertebrate Desktop Survey Results – Species by Taxon

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Abraxas sylvata</i>	Clouded Magpie	Kingston Seymour Blaize, Coombe Dingle Trym Gorge area	ST403669 ST5578 ST5578	July 2003 July 1999 July 1999
<i>Acasis viretata</i>	Yellow-barred Brindle	Yatton, Court Avenue Yatton. Court Avenue Littlewood SSSI Kenn moor Priors Wood - AWT	ST429653 ST429653 ST438683 ST438683 ST491742	May-Sept 2001 2003 Aug 2004 May 2005 Aug 2006
<i>Acronicta aceris</i>	Sycamore (moth)	Max Bog SSSI, adjacent fields and Winscombe Brook Yatton, Court Avenue Yatton. Court Avenue Yatton. Court Avenue Max Bog NR	ST404576  ST429653 ST429653 ST430653 ST4057	June 2000  May-Sept 2001 2002 June 2000 June 2000
<i>Acronicta alni</i>	Alder Moth	Kenn Moor	ST438683	May 2005
<i>Acronicta psi</i>	Grey Dagger	Max Bog Wildlife Trust Reserve Yatton. Grace Close Yatton. Court Avenue Yatton. Court Avenue Court Avenue, Yatton Littlewood	ST406573  ST426657 ST429653 ST429653 ST430653 ST438683	July 1999  June-July 1982 1996 & 2002 May-Oct 1999 Jun-Oct 1995 06/09/2003
<i>Acronicta rumicis</i>	Knot Grass	Max Bog Wildlife Trust Reserve Cheddar Valley Railway Walk LNR, SSSI Cheddar Valley Railway Walk LNR, SSSI Yatton. Court Avenue Yatton. Court Avenue Court Avenue, Yatton Littlewood, Kenn Moor SSSI Yatton, Kenn Moor SSSI Pill, Lodway Pill. Easton Road Lodway Gardens, Pill	ST406573  ST423655 ST425652 ST429653 ST430653 ST430653 ST438683 ST438683 ST517763 ST521758 ST522760	June 1999  1998 Oct 1991 2002 & 2005 June 2000 Jun-Oct 1995 June 2003 June 2003 Oct 2003 Aug 1999 May 2004
<i>Aeshna grandis</i>	Brown Hawker	Hill Road (garden pond), Sandford BS25 5RH Court Avenue, Yatton Tickenham Moor Portbury Wharf Nature Reserve (PWNr) Avonmouth Sewage Works Reservoir ICI Severnside - Red Rhine southeast of ICI Works Dismantled railway path, Winscombe Clapton Moor	ST421594  ST430653 ST445713 ST485768  ST533797  ST547823  ST4158 ST4573	June 2006  July 1993 July 2005 Aug 2011  June 1985  July 1997  Aug 2000 Aug 2001
<i>Aeshna juncea</i>	Common Hawker	Lawrence Weston Moor AWT Reserve, Field 7 Lawrence Weston Moor AWT Reserve, Field 9	ST547791 ST548791	July 1999 July 1999
<i>Agabus (Gaurodytes) didymus</i>	a water beetle	Biddle Street, Yatton SSSI Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham	ST421646 ST429644	Aug 1999 Sept 1993



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Agabus (Gaurodytes) didymus</i>	a water beetle	Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 4	ST438710	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 8	ST450711	Aug 1999
		ICI Severnside - Part of Red Rhine flowing southwest	ST546823	July 1997
<i>Aglossa pinguinalis</i>	Large Tabby	Yatton, Court Avenue (6 records)	ST429653	1995 - 2005
<i>Agonopterix arenella</i>	a micro-moth	Littlewood SSSI Kenn Moor	ST438683	Aug 2004
		Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
		Chittening Warth (New Pill Gout)	ST533831	Aug 1997
<i>Agriphila latistria</i>	a pyralid moth	Avonmouth Sewage Works	ST532797	Aug 1994
<i>Agriphila selasella</i>	a pyralid moth	Littlewood SSSI Kenn Moor	ST438683	Aug 2004
		Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
		Stup Pill, Chittening Warth	ST528818	Aug 2000
<i>Agrochola lychnidis</i>	Beaded Chestnut	Yatton, Court Avenue	ST429653	1996
		Gordano Motorway Service Area	ST508755	Nov 2002
<i>Altica palustris</i>	a leaf beetle	Severn Road, Crook's Marsh, Avonmouth	ST537817	May & Jul 2009
<i>Amphipoea fucosa</i>	Saltern Ear	Pill	ST516773	Aug 1995
<i>Amphipyra berbera subsp. svenssoni</i>	Svensson's Copper Underwing	Pill. Easton Road	ST521758	Aug & Sept 1999
<i>Amphipyra tragopoginis</i>	Mouse Moth	Yatton. Court Avenue (8 records)	ST429653	1995 - 2003
		Avonmouth Sewage Treatment Works, Avonmouth Sewage Works Reservoir	ST532797	July 1995
		Bristol, Blaise Hamlet area Hinkley	ST555791 ST207458	Aug 1983 1900 - 1995
<i>Anacaena bipustulata</i>	a scavenger water beetle	Decoypool Rhyne north of Claverham Drove, Kenn Moor	ST436686	Apr & May 1983
<i>Anaglyptus mysticus</i>	a longhorn beetle	Tickenham Hill (TH) (Site B)	ST447722	May 2001
<i>Anagnota bicolor</i>	a fly	Crooks Marsh, Severn Road, Avonmouth	ST538816	May & Jul 2009
<i>Ancylosis oblitella</i>	a pyralid moth	Portbury Dock	ST503782	Aug 1996
<i>Andrena (Chlorandrena) humilis</i>	a solitary bee	Nailsea, North Somerset	ST470708	June 2007
<i>Andrena (Hoplendrena) trimmerana</i>	Trimmer's Mining Bee	ICI Severnside - Foreshore	ST5382	Mar 1997
<i>Anisus (Anisus) leucostoma</i>	a ramshorn snail	Portbury Wharf Reserve, ditch south end of site, south of nest-box field, site central grid reference	ST484762	June 2011

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Anisus (Anisus) leucostoma</i>	a ramshorn snail	Northern end Portbury Wharf Nature Reserve, alongside sea bank, site central grid reference Shipway Farm, Sheepway, reedbed Ditches North East of Chittening Industrial Estate, Avonmouth Severn Road, Crook's Marsh, Avonmouth (Central Grid Ref) ICI Severnside - Part of Red Rhine flowing southwest ICI Severnside - Field pond S.of Central Avenue	ST485772  ST489769 ST532819 ST537817 ST546823 ST550825	June 2011  Jan 1999 May 2006 May & Jul 2009 July 1997 July 1997
<i>Apamea ophiogramma</i>	Double Lobed	Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog Wildlife Trust Reserve Max Bog NR Yatton. Grace Close	ST404576 ST406573 ST4057 ST426657	June 2000 June 1999 June 2000 July 1982
<i>Apamea unanimitis</i>	Small Clouded Brindle	Yatton, Court Avenue (4 records)	ST429653	1996 – 2002
<i>Apeira syringaria</i>	Lilac Beauty	Yatton. Court Avenue	ST430653	Jul 1986 & Jun 1989
<i>Aphodius (Otophorus) haemorrhoidalis</i>	a dung beetle or chafer	ICI Severnside - Fields s/w of Tip	ST5481	June 1997
<i>Aphrodes albifrons</i>	a leafhopper	Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth	ST538817 ST538816	May/Jul 2009 May/Jul 2009
<i>Aphthona lutescens</i>	a leaf beetle	Max Bog AWT Reserve, Field B	ST406573	June 1999
<i>Aplexa hypnorum</i>	a bladder snail	Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Chestnut Farm Puxton Moor SSSI - Sample Point 11 Biddle Street, Yatton SSSI - Sample Point 10 Biddle Street, Yatton SSSI - Sample Point 18	ST408635 ST413629 ST425650 ST426644	Sept 1993 Aug 1999 Aug 1999 Aug 1999
<i>Aplocera efformata</i>	Lesser Treble-bar	Sandford Hill	ST4259	Aug 2003
<i>Apomyelois bistriatella</i>	a pyralid moth	Max Bog Max Bog SSSI, adjacent fields and Winscombe Brook	ST403573 ST404576	2000 Jun 2000
<i>Archanara geminipuncta</i>	Twin-spotted Wainscot	Yatton, Court Avenue Yatton, Court Avenue	ST430653 ST4365	Jun-Oct 1995 July 1995
<i>Arctia caja</i>	Garden Tiger	YACWAG Nature Reserve, Biddle Street SSSI, 2.5 Acre Field Yatton, Court Avenue (7 records) Portishead Marina, Portishead, Old Parish Wharf (central grid reference)	ST428643 ST429653 ST472768	July 2003 1984 – 2000 June 2008

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Arctia caja</i>	Garden Tiger	Avonmouth Sewage Treatment Works (4 records) Hinkley	ST532797 ST207458	1994 - 1995 1900 - 1995
<i>Arctia villica</i>	Cream-spot Tiger	Chittening Warth Avonmouth railway siding	ST527815 ST531822	June 2001 June 1999
<i>Argynnis aglaja</i>	Dark Green Fritillary	Crook Peak (2 records) Crook Peak (5 records) Crook Peak (3 records) Crook Peak Meadows on Wavering Down Max Bog (MB) Max Bog Wildlife Trust Reserve Max Bog (MB) (2 records) Max Bog AWT Reserve Max Bog SSSI	ST385555 ST387558 ST393562 ST395560 ST405562 ST406573 ST406573 ST406573 ST407573 ST4057	July 2006 1997 - 2008 2006 - 2008 July 2006 June 1992 July 1995 July 1995 1995 - 1996 July 1996 July 1996
<i>Argynnis paphia</i>	Silver-washed Fritillary	Crook Peak (2 records) Winscombe Station area Congresbury to Yatton Sandford Hill Sandford Hill Sandford Hill, north side of, by stables Cadbury Camp Kingshill Nailsea Bristol Kingshill, Nailsea. Garden at Kingsmead, Nailsea Banwell Hill area (3 records) Sandford Quarry (2 records) Sandford Hill Sandford Quarry (3 records)	ST385555 ST418578 ST420645 ST421588 ST425590 ST425596 ST454724 ST462706 ST462707 ST462708 ST3958 ST4258 ST4259 ST4259	Jun & Jul 2006 July 1984 Aug 1984 Jun 1992 Jul 1999 Jul 2004 Aug 1984 July 2003 Jul & Sept 2006 Apr-May 1995 1995 July 2006 July 2004 July 2003 2004 - 2006
<i>Asaphidion curtum</i>	a ground beetle	Sheepway. Temporary(?) pond near farm entrance	ST491762	Jan 1999
<i>Asaphidion flavipes</i>	a ground beetle	Nailsea, Towerhouse Wood Wraxall, Sidelands Wood	ST472718 ST493724	Sept 2007 May 2002
<i>Ashfordia granulata</i>	Silky Snail	Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Chestnut Farm Wemberham Triangle near Yatton, south west of Rectory Farm bounded by Gang Wall and New Rhyne, Scrub to the west of Covent Close	ST408635 ST423647 ST553791	Sept 1993 Sept 1993 Sept 2002
<i>Asilus crabroniformis</i>	Hornet Robberfly	Sandford Hill	ST4259	Aug 2003
<i>Atethmia centrargo</i>	Centre-barred Sallow	Yatton. Court Avenue (2 records) Portbury Wharf Nature Reserve (PWNR)	ST429653 ST484772	1995 - 1999 Sept 2010
<i>Atolmis rubricollis</i>	Red-necked Footman	Yatton, Court Avenue	ST429653	1998
<i>Bactra robustana</i>	a tortrix moth	Chittening Warth (New Pill Gout) Chittening Warth	ST533831 ST534830	Aug 1997 June 2001
<i>Badister (Badister) unipustulatus</i>	a ground beetle	Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	May 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Bembecia ichneumoniformis</i>	Six-belted Clearwing	Lamplighters Marsh Lamplighters, near Shirehampton and River Avon	ST522769 ST522769	June 2005 July 1996
<i>Berosus (Berosus) affinis</i>	a scavenger water beetle	Puxton Moor, rhyne Puxton Moor, rhyne adjacent to public footpath Ditch north of New Rhyne, near Congresbury, site central transect point Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 16 Portbury Wharf Area - long pond west of electricity substation South end of Portbury Wharf Reserve, PWNr, south of nest-box field, site central grid reference Portbury Wharf Area - small pond west of sewage works, behind sea wall Portbury Wharf Area - small pond north of disused camp site Ditches North East of Chitting Industrial Estate, Avonmouth Severnside, ICI Estate, ditch part of Red Rhyne, site Severnside, ICI Estate, Red Rhyne south-east of the ICI Severnside - Red Rhine southeast of ICI Works Severnside, ICI Estate, Red Rhyne south-east of the Severnside. ICI. Ditch E of M49. Ecological Refuge Area Severnside, ICI. Ditch E of M49. Ecological Refuge Area	ST415629 ST415627  ST424646  ST436707  ST481769  ST483763  ST485772  ST487767  ST532819  ST546823  ST547823  ST547823  ST550822  ST553815  ST553816	July 2011 July 2011  July 2011  Aug 1999  Mar 1999  June 2011  Mar 1999  Mar 1999  May 2006  1998  1996  July 1996  1997  1998  1998
<i>Berosus (Berosus) signaticollis</i>	a scavenger water beetle	Severn Road, Crooks Marsh, Avonmouth (central grid reference)	ST538817	May & Jul 2009
<i>Blepharita adusta</i>	Dark Brocade	Yatton. Grace Close (7 records) Yatton. Court Avenue	ST426657 ST430653	Jun – Jul 1982 July 1986
<i>Boloria euphrosyne</i>	Pearl-bordered Fritillary	Crook Peak Sandford Quarry Woodlands of Tickenham Ridge, approximate grid reference Cadbury Camp Nailsea	ST3855 ST4259 ST4472  ST4572 ST4770	June 1980 June 2001 June 1971  June 1964 June 1963
<i>Boloria selene</i>	Small Pearl-bordered Fritillary	Crook Peak (3 records) Crook Peak (9 records) Crook Peak (2 records) Crooks Peak Compton Bishop Valley Track. Crook Peak	ST385555 ST387558 ST393562 ST396560  ST399560	Jun- Aug 2006 1997 - 2008 2006 - 2008 May 1998  June 1984

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Boloria selene</i>	Small Pearl-bordered Fritillary	Meadows on Wavering Down Sandford Hill Crook Peak Sandford Quarry (6 records) North Somerset (2 records) North Somerset (8 records) North Somerset Crook Peak to Shute Shelve Hill SSSI North Somerset North Somerset North Somerset North Somerset	ST405562 ST425594 ST3855 ST4259 ST393562 ST391558 ST388558 ST385555  ST405562 ST396560 ST387558 ST425594	June 1992 June 2000 June 1994 2001 - 2005 2006 - 2008 2006 - 2008 June 2006 1995  June 1992 May 1998 July 1997 June 2000
<i>Bombus (Megabombus) hortorum</i>	Small Garden Bumble Bee	Max Bog AWT Reserve, Field A Littlewood, Kenn Moor SSSI Yatton, Kenn Moor SSSI Gloucester Road Railway Sidings, Avonmouth. Pill Paddock Fields North East of Chittening Industrial Estate, Avonmouth ICI Severnside - Fields W. of Works railway sidings ICI Severnside - foreshore section ICI Severnside - Foreshore ICI Severnside - Ableton Lane & fields ICI Severnside - Fields south of ICI works ICI Severnside - EBZ fields east of road ICI Severnside - Tip ICI Severnside - Tip ICI Severnside - Vimpennys Lane Section 3 ICI Severnside - Tip	ST405573  ST438683 ST438683 ST516779  ST519754 ST532819  ST5382 ST5383 ST5383 ST5482 ST5482 ST5483 ST5582 ST5582 ST5582 ST5582	July 1999  June 2003 June 2003 Aug 2003  July 1999 May - Sept 2006  July 1997 July 1997 Aug 1997 Aug 1997 June 1997 June 1997 June 1996 Apr 1997 12/08/1997 Aug 1997
<i>Bombus (Thoracombus) muscorum</i>	Moss Carder-bee	Fields North East of Chittening Industrial Estate, Avonmouth	ST532819  ST371476 ST376513	May – Sept 2006  Aug 2001 July 2001
<i>Bombus (Thoracombus) rudinaris</i>	Red-tailed Carder Bee	ICI Severnside - Tip ICI Severnside - EBZ fields east of road ICI Severnside - Tip	ST5483 ST5483 ST5582	Apr 1997 May 1997 Apr 1997
<i>Bombus (Thoracombus) sylvarum</i>	Bombus (Thoracombus) sylvarum		ST371476 ST364476 ST346457	Aug 2001 Aug 2001 Aug 2001
<i>Bombylius major</i>	Bee-fly	Max Bog (MB) Sandford Hill (Quarry) Cadbury Camp, North Somerset Nailsea, Ravenswood School (Pound Lane) Lime Breach Wood	ST406573 ST423590 ST446723  ST468713 ST4672	Apr 2011 Mar 2004 Apr 2007  Apr 2006 Apr 1993

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Brachytron pratense</i>	Hairy Dragonfly	Oldbridge River along Goosy Drove, east of Willow Farm, from ST407638 to ST410638, Puxton Moor	ST409638	June 1993
		Puxton Moor, rhyne	ST411630	July 2011
		Puxton Moor (PM) (x2)	ST413632	2009 & 2010
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne south east of South Farm and west of Meer Wall, draining into Blackstone's Rhyne, north of Rockers Rhyne	ST414623	Sept 1993
		Puxton Moor SSSI - Sample Point 19	ST415621	Aug 1999
		Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST420646	Sept 1993
		Cadbury Farm Yatton Rhynes, Biddle Street S.S.S.I.	ST423645	Summer 1996
		Congresbury to Yatton	ST423655	May 1998
		Congresbury to Yatton	ST423656	May 1997
		Cheddar Valley Railway Walk, Yatton, Congresbury to Yatton	ST423659	July 1998
		Cheddar Valley Railway, near to. West of Carditch Drove	ST424617	May 2008
		Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST424644	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 16	ST424644	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
		Ditch north of New Rhyne, near Congresbury, site central transect point	ST424646	July 2011
		Yatton Moor, Yatton	ST425647	May 2004
		East Ditch, Congresbury Moor	ST427645	June 2002
		Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway	ST427648	June 2002
		Near Congresbury	ST428620	June 1983
		Cadbury Farm Pond	ST428648	Summer 1996
		Cadbury Farm Pond	ST428649	June 1996
		Kenn Moor	ST430678	June 1999
		Kenn Moor	ST430683	1984
		Tickenham, Nailsea and Kenn Moors SSIs - Sample Point 14	ST433709	Aug 1999
		Kenn Moor, Claverham Drove	ST434680	June 2000

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Brachytron pratense</i>	Hairy Dragonfly	Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 20	ST435703	Aug 1999
		Decoypool Rhyne north of Claverham Drove, Kenn Moor	ST436686	Apr & May 1983
		Yatton, Kenn Moor SSSI	ST438683	June 2003
		Kenn Moor	ST438684	June 1996
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 2	ST438712	Aug 1999
		Nailsea Moor	ST439699	June 1999
		Nailsea Moor	ST439700	May 1998
		Nailsea Moor	ST439704	June 2010
		Kenn Moor	ST440680	May 1982
		Nailsea Moor	ST440697	July 1995
		Nailsea Moor, West End Drive	ST440698	June 2000
		Nailsea, Tickenhams and Clevedon Moor, south of Cadbury Court Farm, north west of West End, central site grid reference (x 2)	ST440700	2008 & 2009
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 5	ST440710	Aug 1999
		Nailsea Moor	ST441696	June 1999
		Nailsea Moor (x 2)	ST442693	May & Jun 1999
		Just outside Nailsea Moor	ST442694	1986
		Nailsea Moor	ST445704	1984
		Tickenham Moor	ST445714	May 2007
		Tickenham Moor	ST445710	June 2010
		Tickenham Moor	ST445711	June 2010
		Tickenham Moor, Tickenhams	ST446714	June 2004
		Tickenham Moor, Tickenhams, central site grid reference	ST447712	June 2010
		Tickenham Moor, between Moor Lane and Middle Yeo	ST447713	June 2006
		Nailsea Moor	ST448702	June 1994
		Nailsea Moor	ST449700	June 2010
		Nailsea Moor	ST450700	June 1996
		Nailsea Moor	ST451701	June 1995
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10	ST454713	Aug 1999
		Nailsea Moor	ST455703	June 1994
		Cockheap Wood	ST469732	June 1983
		Portbury Wharf, North Somerset	ST483764	May 2011
		Meadows around Portbury Wharf	ST483772	July 1985
		Portbury Wharf Nature Reserve (PWNr)	ST485768	May 2009
		Avonmouth - ecological survey area 3, section 127a.	ST530797	May 1998 - Jun 1998
		Avonmouth - ecological survey area 2, sections 1&2.	ST532790	May 1998
		Avonmouth - ecological survey area 3, section 96.	ST534798	May 1998 - Jun 1998

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Brachytron pratense</i>	Hairy Dragonfly	Avonmouth - ecological survey area 3, section 58. Avonmouth - ecological survey area 3, section 59. Avonmouth - ecological survey area 3, section 8. Avonmouth - ecological survey area 3, section 161. Lawrence Weston Moor AWT Reserve, Field 7 Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog, Somerset Max Bog SSSI, adjacent fields and Winscombe Brook Puxton Moor SSSI - Sample Point 22 Congresbury North Somerset Congresbury Moor Yatton Moor, Biddle Street S.S.S.I. (2 records) Yatton Moor (2 records) Kenn Moor North Somerset North Somerset Nailsea Moor (2 records) North Somerset Tickenham Moor (2 records) Tickenham Hill Tickenham Moor Clapton Moor (2 records) North Somerset Portbury River, Near Portishead (2 records) Portbury Ashlands Bristol, North Somerset Bristol, North Somerset	ST535798 ST538798 ST539799 ST539804 ST547791 ST4057 ST4057 ST4057 ST4163 ST4262 ST4263 ST4264 ST4264 ST4264 ST4368 ST4468 ST4469 ST4470 ST4470 ST4471 ST4472 ST4571 ST4573 ST4774 ST4775 ST4876 ST4877 ST4977	May 1998 - Jun 1998 May 1998 - Jun 1998 May 1998 - Jun 1998 May 1998 - Jun 1998 May 1999 May 1995 May 2006 May 1995 Aug 1999 1980 - 1992 1980 - 1992 June 2003 1998 & 1999 2000 & 2002 1980 - 1992 1980 - 1992 1980 - 1992 1997 1980 - 1992 May 1997 May 2007 June 2010 June 1993 1969 - 1979 1949 - 1953 Summer 1994 1980 - 1992 1980 - 1992
<i>Broscus cephalotes</i>	a ground beetle	Lamplighter's Marsh Compartment 1. Narrow strip of salt marsh, scrub, an area of grasses and herbs and bare ground.	ST520769	June 1995
<i>Bruchus rufimanus</i>	Bean Beetle	Max Bog AWT Reserve, Field B	ST406573	June 2001
<i>Bupalus piniaria</i>	Bordered White	Yatton. Grace Close	ST426657	July 1982
<i>Caenis robusta</i>	a mayfly	Puxton Moor, (rhyme) 1200 metres north-east of Goose Acre Farm, Puxton, west of Congresbury Puxton Moor, (rhyme) 400 metres north of Old Bridges on Dolemoor Lane, Puxton, west of Congresbury East Ditch, Congresbury Moor Tickenham, Nailsea and Kenn Moors SSIs - Sample Point 24	ST414630 ST416638 ST427645 ST446707	1991 1991 June 2002 May 1999



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Calamotropha paludella</i>	a pyralid moth	Yatton, Court Avenue (x 2) Littlewood SSSI Kenn Moor Fen, Avonmouth Sewage Farm AWT Reserve	ST429653 ST438683 ST530796	2000 & 2004 Aug 2004 July 2001
<i>Calathus (Amphigynus) rotundicollis</i>	a ground beetle	Wraxall, Sidelands Wood (N)	ST493724	Apr 2002
<i>Callimorpha dominula</i>	Scarlet Tiger	Nailsea, Tickenham and Clevedon Moor, south of Cadbury Court Farm, north west of West End, central site grid reference Tickenham Hill - Cadbury Camp - Chummock Wood Complex Jacklands Bridge Fish Farm Nailsea, Jacklands Bridge Fish Farm Towerhouse Wood, Nailsea Nailsea - Old Glassworks Nailsea - Old Glassworks Portbury St Andrews Road Rhyne Tickenham Moor Clapton Moor Lawrence Weston Moor Crook Peak (3 records) Crook Peak (2 records)	ST440700  ST465728  ST471716 ST471716  ST475719 ST477709 ST477709 ST500750 ST517794 ST4571 ST4573 ST5479 ST385555 ST388558	June 2008  July 1997  May 2006 July 2006  Apr 2006 June 2006 June 2007 June 2006 June 1999 June 2010 July 1997 July 2002 2006 1981 & 2007
<i>Callophrys rubi</i>	Green Hairstreak	Crook Peak Crook Peak (2 records) Crook Peak (2 records) Meadows on Wavering Down Sandford Hill Sandford Quarry surround Hallen. Mount Skitham Crook Peak (2 records) Sandford Hill Sandford Quarry (2 records) Woodland east of Clapton Wick	ST388558 ST391558 ST392560 ST405562 ST421588 ST424590 ST555798 ST3855 ST4258 ST4259 ST4472	May 2007 June 2006 1983 & 2007 June 1992 June 1969 May 2005 June 1988 1980 & 1982 June 1970 2004 & 2005 May 1987
<i>Calopteryx virgo</i>	Beautiful Demoiselle	Hill Road (garden pond), Sandford BS25 5RH	ST4210594 1	June 2006
<i>Cantharis thoracica</i>	a soldier beetle	Lawrence Weston Moor AWT Reserve, Field 6 Lawrence Weston Moor AWT Reserve	ST547791 ST547792	July 1999 June 2006
<i>Caradrina morpheus</i>	Mottled Rustic	Yatton. Court Avenue (6 records) Pill Paddock	ST429653 ST519755 ST345391	1995 - 2001 July 2000 July 1998
<i>Catoptria pinella</i>	a pyralid moth	Yatton. Court Avenue	ST429653	2002
<i>Celaena leucostigma subsp. leucostigma</i>	Crescent	Portbury Wharf Nature Reserve (PWNr)	ST484772	Sept 2010
<i>Cepphis advenaria</i>	Little Thorn	Lime Breach Wood Blaise Castle	ST466726 ST5578	June 1995 May 1998
<i>Cerastis rubricosa</i>	Red Chestnut	Yatton, Court Avenue	ST429653	2005

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<i>Cercyon</i> ( <i>Cercyon</i> ) <i>convexiusculus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 13	ST411627	Aug 1999
		Puxton Moor SSSI - Sample Point 11	ST413629	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 17	ST445709	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 24	ST446707	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 11	ST458712	Aug 1999
		Ditches North East of Chittening Industrial Estate, Avonmouth	ST532819	May 2006
		Puxton Moor SSSI - Sample Point 19	ST415621	Aug 1999
		Puxton Moor SSSI - Sample Point 11	ST413629	Aug 1999
		<i>Cetonia aurata</i>	Rose Chafer	Chescombe Road, Yatton
<i>Ceutorhynchus contractus</i>	Cabbage Leaf Weevil	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	May 2001
<i>Chiasmia clathrata</i>	Latticed Heath	Station Yard, Yatton	ST422655	July 1999
		Cheddar Valley Railway Walk LNR, SSSI	ST423655	1998
		Congresbury to Yatton	ST423655	June 1993
		Yatton Railway Station	ST423660	July 1991
		Churchill, Yarnell Bog	ST427608	July 1996
		Portbury Wharf	ST484772	Aug 1995
		Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
		Portbury Sleepway	ST489771	June 2003
		Portbury Wharf	ST490771	1993
		Portbury Wharf	ST490773	1994
		Portbury Wharf	ST496776	1998
		Portbury	ST496777	July 1995
		Portbury Dock	ST503782	1996
		Portbury Wharf	ST504768	1993
		Royal Portbury Dock	ST507776	1993
		A369 N verge from ST508753 to ST516751 (CGR used)	ST512752	June-Aug 2004
		Portbury Wharf	ST520767	1993
		Lamplighters Marsh, Avonmouth, saltmarsh	ST520769	June 1995
		Lamplighters	ST523767	June 2002
		Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	July 2001
		Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	Aug 2001
		Deep Pool, Avonmouth Sewage Farm AWT Reserve	ST531798	July 2001
		Avonmouth Sewage Treatment Works (9 records)	ST532797	1994 - 1995

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Chiasmia clathrata</i>	Latticed Heath	Fields North East of Chittening Industrial Estate, Avonmouth Chittening Warth (New Pill Gout) Lawrence Weston Moor AWT Reserve, Field 1 Crook's Marsh, Avonmouth Lawrence Weston Moor AWT Reserve, Field 6 Lawrence Weston Moor AWT Reserve, Field 6 Lawrence Weston Moor AWT Reserve, Field 7 Lawrence Weston Moor AWT Reserve, Field 4 (2 records) Bristol, Blaise Hamlet area Kingsweston Down Lawrence Weston Moor (x 4) ICI Severnside - Relocated Meadow	ST532819 ST533831 ST545791 ST545825 ST547791 ST547791 ST547791 ST547791 ST547793 ST555791 ST5477 ST5479 ST5582	May - Sept 2006 Aug 1997 June 1999 1997 July 2001 July 1999 July 1999 July 1999 1999 & 2001 July 1983 July 1994 1993 - 2002 June 1997
<i>Chilo phragmitella</i>	a pyralid moth	Yatton, Court Avenue	ST429653	1996
<i>Chilodes maritimus</i>	Silky Wainscot	Yatton. Grace Close (x 2)	ST426657	July 1982
<i>Chloriona dorsata</i>	a planthopper	Crooks Marsh, Severn Road, Avonmouth (3 records) Crooks Marsh, Severn Road, Avonmouth	ST537817 ST538818	May/Jul 2009 May/Jul 2009
<i>Chorthippus albomarginatus</i>	Lesser Marsh Grasshopper	Puxton Moor Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Littlewood, Kenn Moor SSSI Littlewood, Kenn Moor SSSI  Yatton, Kenn Moor SSSI Littlewood, Eastern Drove, Kenn Moor Yatton, Kenn Moor SSSI Avonmouth - Sewage Works Reserve. Rhyne off Kingsweston Lane, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Lawrence Weston Moor AWT Reserve, Field 2 Lawrence Weston Moor AWT Reserve, Field 1 Lawrence Weston Moor AWT Reserve, Field 5 Lawrence Weston Moor AWT Reserve, Field 10 Lawrence Weston Moor AWT Reserve, Field 6 Lawrence Weston Moor AWT Reserve, Field 4	ST415629 ST427648  ST438683 ST438683  ST438683 ST438683 ST438683 ST530798 ST531792 ST538817 ST538816 ST542799 ST545791 ST546791 ST547790 ST547791 ST547793	July 2003 Aug 2002  June 2003 Jul 2002 – Dec 2003 June 2003 Jul-Sept 2002 June 2003 Sept 1991 July 1997 May/Jul 2009 May/Jul 2009 July 2001 July 2001 July 2001 July 2001 July 2001 July 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Chorthippus albomarginatus</i>	Lesser Marsh Grasshopper	Lawrence Weston Moor AWT Reserve, Field 9	ST548791	July 2001
		Lawrence Weston Moor AWT Reserve, Field 8	ST548792	July 2001
		Portbury Ashlands	ST4876	Summer 1994
		ICI Severnside - Foreshore	ST5383	July 1997
		ICI Severnside - Tip	ST5582	Aug 1996
<i>Chortodes pygmina</i>	Small Wainscot	Yatton, Court Avenue	ST429653	May-Sept 2001
<i>Chrysolina menthastri</i>	Mint Leaf Beetle	Max Bog AWT Reserve, Field B	ST406573	July 1999
		Max Bog AWT Reserve	ST407573	July 1996
<i>Cixius remotus</i>	a lacehopper	Max Bog AWT Reserve, Field B	ST406573	June 2001
<i>Cleptes semiauratus</i>	a rubytail wasp	Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	July 2001
<i>Coccidula scutellata</i>	a ladybird	Severn Road, Crook's Marsh, Avonmouth (2 records)	ST537817	May-Jul 2009
		Severn Road, Crook's Marsh, Avonmouth (2 records)	ST538818	May-Jul 2009
<i>Coenagrion pulchellum</i>	Variable Damselfly	Puxton Moor SSSI	ST410635	Jul 1992
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST411630	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of South Farm and west of Meer Wall, south of Puxton Moor Lane	ST413625	Sept 1993
		Puxton Moor, rhyne	ST413629	July 2011
		Puxton Moor SSSI - Sample Point 19	ST415621	Aug 1999
		Puxton Moor, rhyne	ST415629	July 2011
		Cadbury Farm Yatton	ST423645	Summer 1996
		Rhynes, Biddle Street S.S.S.I. (2 records)		
		Wemberham Triangle near Yatton, south west of Rectory Farm bounded by Gang Wall and New Rhyne, central site grid reference	ST423647	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 16	ST424644	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
		Rhyne, Biddle Street SSSI	ST425648	July 2003
		East Ditch, Congresbury Moor	ST427645	May 2002
		Biddle Street S.S.S.I.	ST428648	July 1997
		Cadbury Farm Pond	ST428648	Summer 1996
		Cadbury Farm Pond	ST428649	June 1996
		Kenn Moor (3 records)	ST429677	1985 - 1987
		Kenn Moor	ST430685	1984
		Kenn Moor	ST430683	July 2010
		Kenn Moor	ST431685	July 2010
		Kenn Moor (6 records)	ST432679	Jun-Jul 1999
		Kenn Moor	ST432693	July 2010
		Kenn Moor (2 records)	ST432694	July 2010

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Coenagrion pulchellum</i>	Variable Damselfly	Kenn Moor, Claverham Drove (4 records)	ST434680	May-Jun 2000
		Tickenham Moor	ST434711	May 1982
		Kenn Moor	ST436693	July 2010
		Kenn Moor	ST437692	July 2010
		Kenn Moor	ST438684	June 1996
		Nailsea Moor (2 records)	ST438701	June 1999
		Nailsea Moor	ST438700	June 2010
		Nailsea Moor	ST439699	June 1999
		Nailsea Moor (4 records)	ST439700	1998, 1999 & 2010
		Kenn Moor	ST439697	July 2010
		Nailsea Moor	ST439704	June 2010
		Nailsea Moor (2 records)	ST440697	1995 & 1996
		West End Drove, Nailsea Moor	ST440698	June 1998
		Nailsea Moor (5 records)	ST440698	1995-2000
		Nailsea Moor	ST441696	June 1999
		Tickenham Moor	ST441712	June 2010
		Nailsea Moor (6 records)	ST442693	May-Jul 1999
		Just outside Nailsea Moor	ST442694	1986
		Nailsea Moor (2 records)	ST442696	Jun & Jul 1996
		Kenn Moor	ST442698	Aug 2010
		Nailsea Moor (2 records)	ST443707	Jun 2010
		Nailsea Moor (2 records)	ST444696	Jun 2010
		Nailsea Moor	ST445704	1984
		Tickenham Moor	ST445713	July 2005
		Tickenham Moor	ST445711	June 2010
		Tickenham Moor (4 records)	ST446714	2008 & 2009
		Tickenham Moor (2 records)	ST446716	Aug 2005
		Tickenham Moor, Ticklenham, (2 records)	ST447712	2010 & 2011
		Tickenham Moor, between Moor Lane and Middle Yeo	ST447713	24/06/2006
		Tickenham Moor, between Moor Lane and Middle Yeo	ST447713	21/07/2006
		Nailsea Moor	ST4490670 032	24/06/2010
		Nailsea Moor	ST457704	June 1993
		North Somerset	ST4264	1980 - 1992
		Yatton Moor, Biddle Street S.S.S.I. (7 records)	ST4264	1996 - 2005
		Congresbury Moor	ST4264	June 2003
		Yatton Moor	ST4264	June 2000
		North Somerset	ST4267	1980 - 1992
		Kenn Moor	ST4268	June 1972
		North Somerset (2 records)	ST4368	1980 - 1992
		North Somerset (2 records)	ST4370	1980 - 1992
		North Somerset	ST4469	1980 - 1992
		North Somerset	ST4470	1980 - 1992
		Nailsea Moor (3 records)	ST4470	May-June 1997
<i>Coenobia rufa</i>	Small Rufous	Littlewood SSSI Kenn Moor	ST438683	Aug 2004
<i>Coenonympha pamphilus</i>	Small Heath	Crook Peak (16 records)	ST385555	Jun-Sept 2006
		Crooks Peak, valley on side of Compton Bishop and track., Crook Peak	ST386558	May 1998
		Crook Peak (49 records)	ST387558	1997 - 2008
		Crook Peak (21 records)	ST393562	2006 - 2008
		Crook Peak (9 records)	ST395560	2006 - 2008

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<i>Coenonympha pamphilus</i>	Small Heath	Crooks Peak Compton Bishop Valley Track.	ST396560	May 1998
		Crook Peak	ST399560	June 1984
		Meadows on Wavering Down	ST405562	June 1992
		Meadows on Wavering Down	ST405562	Sept 1983
		Sandford Hill	ST421588	June 1992
		Court Avenue, Yatton	ST429653	July 1999
		Kenn Moor (2 records)	ST435686	Jun-Aug 1996
		Cadbury Camp	ST454724	June 1983
		Kingshill Nailsea (8 records)	ST462705	2000 - 2002
		Kingsmead, Nailsea (x5)	ST462706	2007 - 2008
		Kingshill, North Somerset (9 records)	ST462707	Jul-Aug 2001
		Area west of Clapton Lane	ST470747	1985
		Clapton Lane Meadows field 5	ST472753	June 1985
		Clapton lane	ST473746	1985
		Clapton Lane Meadows field 6	ST474751	June 1985
		Clapton Lane Meadows field 7	ST474753	June 1985
		Portbury Ashlands	ST484772	1987 - 1994
		Avonmouth, St. Georges Wharf.	ST500775	June 1991
		Portbury Dock grassland adjacent to River Avon	ST503782	1996
		Portbury Field, Drove Rhyne and adjacent fields (x 2)	ST504759	June 1987
		Portbury Dock Area Wildlife Corridor	ST511772	May 2001
		Portbury Docks off Marsh Lane	ST511772	May 2000
		Portbury, Bristol, Sheephouse Farm Industrial Estate	ST511772	June 1999
		Portbury, Bristol, Sheephouse Farm Industrial Estate	ST511772	Aug 1999
		Portbury Docks off Marsh Lane	ST511772	June 2000
		Portbury Dock	ST512773	1993 - 1994
		Gloucester Road Railway Sidings, Avonmouth.	ST516779	Aug 2003
		Waste ground at Shirehampton	ST522772	Aug 1991
		Avonmouth Railway siding - Avonmouth Docks to Bristol Boundary	ST527815	June 1999
		Avonmouth - reservoirs, south of Albright & Wilson.	ST528798	June 1998
		Avonmouth, Hoar Gout Badlands	ST528803	July 1987
		Avonmouth Pools AWT Reserve (2 records)	ST531798	1987 & 1992
		Avonmouth - south of West House Farm	ST531808	June 1998
		Avonmouth - west of Lynx depot.	ST531810	June 1998
		Avonmouth Sewage Works Reservoir	ST532798	1985 - 1994

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<i>Coenonympha pamphilus</i>	Small Heath	Sevalco Field	ST532819	June 1999
		Fields North East of Chittening Industrial Estate, Avonmouth	ST532819	May-Sept 2006
		Avonmouth - Barracks Lane Rhine.	ST533777	May 1998
		Avonmouth Sewage Works Reservoir	ST533797	June 1985
		Chittening Warth	ST533827	June 2004
		Avonmouth - Barracks Lane Rhine.	ST535780	May 1998
		Avonmouth - Kingsweston Lane - wood at pond.	ST536785	May 1998
		Avonmouth - Salt Rhine, south of Packgate Farm.	ST536802	May 1998
		Avonmouth - track to pumping station.	ST537784	May 1998
		Avonmouth - rhine E of M49.	ST538785	May 1998
		Avonmouth - Rodbourn Gout.	ST538811	June 1998
		Lawrence Weston Moor	ST543787	1985 - 1991
		Lawrence Weston Moor AWT Reserve, Field 2	ST545792	June 1985
		Lawrence Weston Moor	ST545792	1973
		Lawrence Weston Marshes, Bristol	ST545796	July 1994
		Avonmouth - Stuppill, middle, east of M49.	ST545804	June 1998
		Lawrence Weston Moor AWT Reserve, Field 10	ST547790	June 1985
		Lawrence Weston Moor AWT Reserve, Field 4	ST547793	June 1985
		Banwell Hill area (2 records)	ST3958	June 2006
		Banwell	ST4158	June 2003
		Sandford Quarry (4 records)	ST4259	2003-2005
		Howham farm	ST4674	1985
		Fore Hill, Portishead (x2)	ST4675	Aug 1984
		Wraxall arable field	ST4971	May 2003
		Lawrence Weston Moor	ST5479	July 2005
		ICI Severnside - Ableton Lane & fields	ST5482	Aug 1997
		ICI Severnside - EBZ fields east of road (2 records)	ST5483	May & Jun 1997
		ICI Severnside - Ableton Lane & south spur of Buffer Zone	ST5483	June 1997
		Orchard Pools, Severn Beach	ST5483	May 2007
		Mount Skitham	ST5579	June 2004
		ICI Severnside – Tip (x14)	ST5582	1996 - 1997
		North Somerset (x3)	ST391554	2006 - 2007
		North Somerset (x3)	ST390552	2006 - 2007
		North Somerset (x14)	ST395560	2006 - 2009
		North Somerset (x29)	ST393562	2006 - 2009
		North Somerset (x30)	ST391558	2006 - 2009
		North Somerset (x7)	ST391554	2006 - 2009
		North Somerset (x20)	ST390552	2006 - 2009
		North Somerset (x29)	ST388558	2006 - 2009
		Hinkley (2 records)	ST207458	1900 - 1995
		Hinkley	ST207458	Aug 2005
		South Somerset (5 records)	ST215458	2001 - 2007

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Coenonympha pamphilus</i>	Small Heath	South Somerset (4 records)	ST210457	2001 - 2006
		South Somerset (77 records)	ST208458	1996 - 2009
		South Somerset (6 records)	ST207460	Jun-Sept 2008
		South Somerset (24 records)	ST203462	2001 - 2007
		West Gloucestershire	ST531808	June 1998
		West Gloucestershire	ST528798	June 1998
		West Gloucestershire	ST532798	Jan-Dec 1994
		West Gloucestershire	ST545804	June 1998
		West Gloucestershire	ST527815	June 1999
		West Gloucestershire	ST538811	June 1998
		West Gloucestershire	ST536802	May 1998
		West Gloucestershire	ST531810	June 1998
		West Gloucestershire	ST545796	July 1994
		West Gloucestershire	ST532819	June 1999
		West Gloucestershire	ST536785	May 1998
		West Gloucestershire	ST538785	May 1998
		West Gloucestershire	ST535780	May 1998
		North Somerset	ST522772	Aug 1991
		West Gloucestershire	ST543787	Jan-Dec 1991
		West Gloucestershire	ST533777	May 1998
		West Gloucestershire	ST537784	May 1998
		North Somerset	ST516779	Aug 2003
		North Somerset	ST512773	Jan-Dec 1994
		North Somerset (5 records)	ST511772	1994 - 2001
		North Somerset	ST484772	Jan-Dec 1994
		North Somerset	ST500775	June 1991
		North Somerset	ST503782	Jan-Dec 1996
		North Somerset (32 records)	ST474763	2002 - 2009
		North Somerset (8 records)	ST462705	2000 - 2002
		North Somerset (2 records)	ST435686	Jun & Aug 1996
		North Somerset	ST429653	July 1999
		North Somerset	ST396560	May 1998
		North Somerset	ST405562	June 1992
		North Somerset	ST390552	May 2001
		North Somerset (2 records)	ST387558	May & Jul 1997
		North Somerset	ST386558	May 1998
		North Somerset (6 records)	ST373562	1990 - 1992
		North Somerset (2 records)	ST371560	May-Sept 1998
		Tapmoor Fields Moorlinch	ST396574	1989
		North Somerset	ST421588	June 1992
		North Somerset	ST329401	June 2009
		South Somerset	ST216456	June 2008
		South Somerset	ST216460	Aug 2008
		South Somerset (2 records)	ST215458	May-Jul 2002
		South Somerset (5 records)	ST216460	May-Aug 2008
		South Somerset	ST209455	Sept 2008
		South Somerset	ST216456	Sept 2008
		South Somerset (38 records)	ST208458	1996 - 2009
		South Somerset (4 records)	ST207460	Jul-Sept 2008
		South Somerset (12 records)	ST203462	2001 - 2007
		South Somerset (5 records)	ST216463	May-Sept 2008
		South Somerset	ST205462	May 2008
		South Somerset (7 records)	ST206463	Jun-Sept 2008
		South Somerset (7 records)	ST203462	2001 - 2007
		South Somerset (3 records)	ST204462	Jun-Jul 2008
		South Somerset	ST215456	Aug 2008
		South Somerset (3 records)	ST215458	2001 - 2006
		South Somerset (4 records)	ST215456	Jun-Aug 2008
		South Somerset (2 records)	ST209455	Aug-Sept 2008
		South Somerset (4 records)	ST210457	2006 - 2007



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Coenonympha pamphilus</i>	Small Heath	South Somerset (3 records) South Somerset (4 records) Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth	ST209455 ST208458 ST538818 ST539817	Jun-Sept 2008 1999 - 2002 May-Jul 2009 May-Jul 2009
<i>Colobaea punctata</i>	a snail-killing fly	Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	July 2001
<i>Colostygia multistrigaria</i>	Mottled Grey	Yatton, Court Avenue	ST429653	1996
<i>Conistra rubiginea</i>	Dotted Chestnut	Yatton, Court Avenue Max Bog NR	ST429653 ST4057	May-Sept 2001 Mar 2000
<i>Conocephalus discolor</i>	Long-winged Conehead	Max Bog Wildlife Trust Reserve Max Bog (MB) CEGB Pond Portishead Meadows around Portbury Wharf Fields North East of Chittening Industrial Estate, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth Max Bog SSSI	ST406573  ST406573 ST482772  ST532819 ST538817 ST538816 ST538818 ST539817 ST539816 ST4057	Aug 1999  July 2012 Aug 1994  May-Sept 2006 May-Jul 2009 May-Jul 2009 May-Jul 2009 May-Jul 2009 May-Jul 2009 May-Jul 2009 May 1995
<i>Conocephalus dorsalis</i>	Short-winged Conehead	Max Bog AWT Reserve, Field A (2 records) Max Bog Max Bog AWT Reserve, Field B (6 records) Max Bog AWT Reserve, Field C (5 records) Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Littlewood, Eastern Drove, Kenn Moor Yatton, Kenn Moor SSSI Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 5 Portbury Wharf Nature Reserve (PWNr) Pill, Lodway Lamplighter's Marsh, area of grassland, with small area of scrub alongside a hedge Lamplighter's Marsh, fenced compound, area of bare ground and area of scrubby grassland Fen, Avonmouth Sewage Farm AWT Reserve (x2)	ST405573 ST405574 ST406573 ST407573 ST427648 ST438683 ST438683 ST440710 ST483767 ST517763 ST522770 ST522770 ST530796	Jun-Aug 2001 Sept 2005 1997 - 2001 1996 - 2001 2000 - 2002 Sept 2002 June 2003 Aug 1999 May 2011 Oct 2003 June 1995 June 1995 July-Aug 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Conocephalus dorsalis</i>	Short-winged Conehead	Avonmouth - Sewage Works Reserve. Avonmouth Pools (ASW) Fields North East of Chittening Industrial Estate, Avonmouth Severn Road, Crook's Marsh, Avonmouth Lawrence Weston Moor AWT Reserve, Field 2 Lawrence Weston Moor LNR, Bristol Lawrence Weston Moor AWT Reserve, Field 2 Lawrence Weston Moor AWT Reserve, Field 5 Lawrence Weston Moor AWT Reserve, Field 10 (x2) Lawrence Weston Moor AWT Reserve, Field 6 (x2) Lawrence Weston Moor AWT Reserve, Field 7 (x2) Lawrence Weston Moor AWT Reserve, Field 4 (x2) Lawrence Weston Moor AWT Reserve, Field 9 (x2) Lawrence Weston Moor AWT Reserve, Field 8 (x2) Puxton Moor, South Gloucestershire Buckland's Pool Nailsea (x2) Portbury Ashlands ICI Severnside – Foreshore ICI Severnside - foreshore section Lawrence Weston Lawrence Weston Moor (x3)	ST530798 ST531798 ST532819 ST539817 ST542799 ST543791 ST545792 ST546791 ST547790 ST547791 ST547791 ST547791 ST547793 ST548791 ST548792 ST4163 ST4769 ST4876 ST5383 ST5383 ST5478 ST5479	Sept 1991 July 1998 May-Sept 2006 May-Jul 2009 July 2001 June 2006 July 1999 July 2001 July 2001 1999 - 2001 1999 - 2001 1999 - 2001 1999 - 2001 1999 - 2001 Aug 2006 Jul-Aug 2002 Summer 1994 July 1997 July 1997 July 2002 2002 & 2005
<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly	Max Bog (MB) Max Bog AWT Reserve, Field B Max Bog - AWT Reserve Max Bog, Winscombe Max Bog AWT Reserve, Field C (2 records) Max Bog (MB) - Field C. Max Meadows, Winscombe Sandford Cheddar Valley Railway (unused), Dismantled railway and adjacent fields, Winscombe Max Bog, near Winscombe Winscombe to Sandford dismantled railway and adjacent fields Dismantled railway path, Winscombe	ST406573 ST406573 ST406574 ST406575 ST407573 ST407573 ST407573 ST415593 ST416593 ST4057 ST4158 ST4259	Aug 2009 June 1999 July 2006 July 2005 2001 - 2004 July 2007 June 2009 July 1997 July 1997 June 2011 July 1997 July 2000
<i>Cordulia aenea</i>	Downy Emerald	Nailsea ponds (6 records)	ST4769	1921 - 1989
<i>Cosmia pyralina</i>	Lunar-spotted Pinion	Kingston Seymour	ST403669	July 2003

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<i>Craniophora ligustri</i>	Coronet	Barton Quarry Kingston Seymour Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog Wildlife Trust Reserve (2 records) Yatton. Court Avenue Littlewood Littlewood, Kenn Moor SSSI Portbury Wharf Nature Reserve (PWNR)	ST380562 ST403669 ST404576  ST406573  ST429653 ST438683 ST438683 ST484772	June 1995 July 2003 June 2000  Jun-Jul 1999  2002 June 2004 June 2004 Sept 2010
<i>Criorhina ranunculi</i>	a hoverfly	Priors Wood area	ST4974	Apr 1999
<i>Crossocerus (Crossocerus) distinguendus</i>	a solitary wasp	Crooks Marsh, Severn Road, Avonmouth	ST538817	May-Jul 2009
<i>Cryptoblabes bistriga</i>	a pyralid moth	Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 2000
<i>Cucullia absinthii</i>	Wormwood	Stockway North Nature Reserve Nailsea	ST471708	Aug 2008
<i>Cucullia chamomillae</i>	Chamomile Shark	Lamplighter's Marsh, fenced compound, area of bare ground and area of scrubby grassland Lamplighters Marsh, Avonmouth	ST522770  ST522771	June 1995  June 1995
<i>Cupido minimus</i>	Small Blue	Kenn Moor North Somerset	ST430680 ST430680	June 1997 June 1997
<i>Curculio nucum</i>	Nut Weevil	Lawrence Weston Moor Lawrence Weston Moor Local Nature Reserve, Lawrence Weston, Bristol	ST543791 ST543791	May 2010 Apr 2007
<i>Cychnus caraboides</i>	Snail Hunter	Wraxall, Sidelands Wood (N) Wraxall, Sidelands Wood (N)	ST493724 ST493724	Apr 2002 Apr 2002
<i>Cyclophora annularia</i>	Mocha	Yatton. Court Avenue Court Avenue, Yatton Lime Breach Wood Portbury Wharf Nature Reserve (PWNR) Sandford Wood area Blaise Castle	ST429653 ST430653 ST466726 ST484772  ST4258 ST5578	May-Oct 1999 June-Oct 1995 June 1995 Sept 2010  July 2003 May 1998
<i>Cyclophora linearia</i>	Clay Triple-lines	Max Bog Wildlife Trust Reserve Court Avenue, Yatton Lime Breach Wood	ST406573  ST430653 ST466726	June 1999  Jun-Oct 1995 June 1995
<i>Cyclophora punctaria</i>	Maiden's Blush	Court Avenue, Yatton Littlewood Littlewood, Kenn Moor SSSI Lime Breach Wood	ST430653 ST438683 ST438683 ST466726	Jun-Oct 1995 June 2004 June 2004 June 1995
<i>Cymbiodyta marginellus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 2 Puxton Moor SSSI - Sample Point 13 Puxton Moor SSSI - Sample Point 11 Biddle Street, Yatton SSSI - Sample Point 1	ST408637  ST411627 ST413629 ST414652	Aug 1999  Aug 1999 Aug 1999 Aug 1999

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Cymbiodyta marginellus</i>	a scavenger water beetle	Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST424644	Sept 1993
		Ditches between Nailsea and St Georges, Ditch 55	ST425670	Aug-Sept 2000
		Biddle Street, Yatton SSSI - Sample Point 19	ST426642	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 18	ST426644	Aug 1999
		Ditches between Nailsea and St Georges, Ditch 56a	ST426670	Aug-Sept 2000
		Ditches between Nailsea and St Georges, Ditch 56b	ST426670	Aug-Sept 2000
		Ditches between Nailsea and St Georges, Ditch 59	ST427671	Aug-Sept 2000
		Biddle Street, Yatton SSSI - Sample Point 20	ST428642	Aug 1999
		Ditches between Nailsea and St Georges, Ditch 60	ST428671	Aug-Sept 2000
		Ditches between Nailsea and St Georges, Ditch 61	ST429671	Aug-Sept 2000
		Stockway North Nature Reserve pond, Nailsea	ST471708	2001-2003
		Northern end Portbury Wharf Nature Reserve, PWNr, alongside sea bank, site central grid reference	ST485772	June 2011
		Portbury Wharf Area - small pond west of sewage works, behind sea wall	ST485772	Mar 1999
		Shipway Farm, Sheepway, reedbed	ST489769	Jan 1999
		Shipway Farm, Sheepway, reedbed	ST489769	Jan 1999
		Ditches North East of Chittening Industrial Estate, Avonmouth	ST532819	May 2006
		Severn Road, Crooks Marsh, Avonmouth (central grid reference)	ST538817	May-Jul 2009
		Lawrence Weston Moor AWT Reserve, Pond, Ditch F	ST542799	May 1999
<i>Cyphon laevipennis</i>	a marsh beetle	Crooks Marsh, Severn Road, Avonmouth	ST538818	May-Jul 2009
		Crooks Marsh, Severn Road, Avonmouth	ST538817	May-Jul 2009
		Crooks Marsh, Severn Road, Avonmouth	ST538818	May-Jul 2009
<i>Cyphon palustris</i>	a marsh beetle	Crooks Marsh, Severn Road, Avonmouth	ST539817	May-Jul 2009
<i>Deilephila porcellus</i>	Small Elephant Hawk-moth	Barton Quarry	ST380562	June 1995
		Barton Quarry	ST385563	July 1994
		Yatton. Court Avenue	ST430653	June 2000
<i>Diarsia rubi</i>	Small Square-spot	Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 1995
		Max Bog SSSI, adjacent fields and Winscombe Brook	ST406574	May 2000
		Max Bog.	ST406574	May 2000

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Diarsia rubi</i>	Small Square-spot	Max Bog Yatton, Court Avenue (x7) Kenn moor Littlewood SSSI Kenn Moor hay, silage field, VC6 Portbury Wharf Nature Reserve (PWNR) Pill. Easton Road (x2) Avonmouth Sewage Works (3 records) Lawrence Weston Max Bog NR  Hinkley (2 records)	ST406574 ST429653 ST438683 ST438683 ST469746 ST484772  ST521758 ST532797  ST539793 ST4057 ST345391 ST207458	May 2000 1996 - 2004 May 2005 Aug 2004 Aug 2004 Sept 2010  Aug 1999 Aug 1994  Sept 2005 May 2000 July 1998 1900 - 1995
<i>Dicraeus scibilis</i>	a fly	Max Bog AWT Reserve, Field A	ST405573	June 2001
<i>Didineis lunicornis</i>	a solitary wasp	Severnside, ICI Estate, Red Rhyne south-east of the	ST550822	1998
<i>Discoloxia blomeri</i>	Blomer's Rivulet	Lime Breach Wood Blaise Castle	ST466726 ST5578	June 1995 May 1998
<i>Dixella attica</i>	a meniscus midge	Crooks Marsh, Severn Road, Avonmouth	ST537817	May-Jul 2009
<i>Dixella serotina</i>	a meniscus midge	Severn Road, Crooks Marsh, Avonmouth (central grid reference)	ST538817	May-Jul 2009
<i>Dolichovespula media</i>	Median Wasp	ICI Severnside - Vimpenys Lane Section 3	ST5582	May 1997
<i>Donacia clavipes</i>	a leaf beetle	Max Bog AWT Reserve, Field B	ST406573	June 2001
<i>Donacia semicuprea</i>	a leaf beetle	Claverham Drove Rhyne between Decoypool Drove and Decoypool Rhyne, Kenn Moor	ST435680	Apr-May 1983
<i>Donacia simplex</i>	a leaf beetle	Claverham Drove Rhyne between Decoypool Drove and Decoypool Rhyne, Kenn Moor Decoypool Rhyne north of Claverham Drove, Kenn Moor (2 records)	ST435680  ST436686	Apr-May 1983  Apr-May 1983
<i>Donacia thalassina</i>	a leaf beetle	Portbury Wharf Nature Reserve (PWNR) Crooks Marsh, Severn Road, Avonmouth	ST483767 ST539817	May 2011 May-Jul 2009
<i>Dorylomorpha hungarica</i>	a big-headed fly	Max Bog AWT Reserve, Field A (2 records) Max Bog AWT Reserve, Field B Lawrence Weston Moor AWT Reserve, Horse Field Lawrence Weston Moor AWT Reserve, Field 10 Lawrence Weston Moor AWT Reserve, Field 6	ST405573 ST406573 ST542799 ST547790 ST547791	1999 & 2001 July 1999 May 1999 July 1999 July 1999
<i>Earias clorana</i>	Cream-bordered Green Pea	Court Avenue, Yatton	ST430653	Jun-Oct 1995
<i>Ebulea crocealis</i>	a pyralid moth	Max Bog SSSI, adjacent fields and Winscombe Brook Portbury Wharf Nature Reserve (PWNR)	ST404576 ST48477	June 2000 Sept 2010

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<i>Ecliptopera silaceata</i>	Small Phoenix	Yatton, Court Avenue Littlewood SSSI Kenn Moor Cadbury Camp Priors Wood - AWT Reserve	ST429653 ST438683 ST455725 ST491742	2005 Aug 2004 May 2002 Aug 2006
<i>Ectemnius (Clytochrysus) ruficornis</i>	a solitary wasp	ICI Severnside - Foreshore ICI Severnside - Foreshore	ST5382 ST5382	July 1997 June 1997
<i>Ectoedemia sericopeza</i>	a micro-moth	Portbury Wharf Nature Reserve (PWNr)	ST484772	Sept 2010
<i>Eilema complana</i>	Scarce Footman	Max Bog Wildlife Trust Reserve	ST406573	July 1999
<i>Eilema sororcula</i>	Orange Footman	Yatton, Court Avenue	ST429653	2005
<i>Elachiptera austriaca</i>	a fly	Severn Road, Crooks Marsh, Avonmouth (central grid reference)	ST538817	May-Jul 2009
<i>Elaphropus parvulus</i>	a ground beetle	Crooks Marsh, Severn Road, Avonmouth	ST538816	May-Jul 2009
<i>Empis decora</i>	a dance fly	Crooks Marsh, Severn Road, Avonmouth	ST539817	May-Jul 2009
<i>Ena montana</i>	Mountain Bulin	Sandford Hill - Mixed woodland to north of quarry	ST423592	March 2004
<i>Ennomos fuscantaria</i>	Dusky Thorn	Yatton, Court Avenue (x2) Court Avenue, Yatton (x2) Littlewood SSSI Kenn Moor Portbury Wharf Nature Reserve (PWNr) Priors Wood - AWT Reserve	ST429653 ST430653 ST438683 ST484772 ST491742	2001-2004 1995-2000 Aug 2004 Sept 2010 Aug 2006
<i>Enochrus melanocephalus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 11 Biddle Street, Yatton SSSI - Sample Point 12 Biddle Street, Yatton SSSI - Sample Point 18 Biddle Street, Yatton SSSI - Sample Point 20 Puxton Moor SSSI - Sample Point 24	ST413629 ST421646 ST426644 ST428642 ST4163	Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999
<i>Epione repandaria</i>	Bordered Beauty	Yatton. Grace Close	ST426657	July 1982
<i>Epistrophe diaphana</i>	a hoverfly	ICI Severnside - Tip ICI Severnside - Fields west of Tip	ST5582 ST5582	June 1997 June 1997
<i>Eriogaster lanestris</i>	Small Eggar	Biddle Street, Yatton Yatton. Court Avenue	ST428652 ST430653	May 1991 March 1986
<i>Erioptera mejerei</i>	a crane fly	Lawrence Weston Moor AWT Reserve, Field 8	ST548792	July 1999
<i>Erynnis tages</i>	Dingy Skipper	Crook Peak Crook Peak Crooks Peak, valley on side of Compton Bishop and track., Crook Peak Shute Shelve, Crook Peak Crook Peak (4 records) Crook Peak (3 records) Sandford Hill (4 records) Sandford Quarry surround Easton in Gordano Crook Peak (5 records) Sandford Hill (3 records)	ST385555 ST386555 ST386558  ST387558 ST387558 ST395560 ST421588 ST424590 ST515753 ST3855 ST4259	June 2006 June 1994 May 1998  June 1965 1976 - 1994 1998 - 2007 1969 - 1971 May 2005 June 2000 1980 - 1998 1994 - 2009

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Erynnis tages</i>	Dingy Skipper	Sandford Quarry (2 records) North Somerset (4 records) North Somerset (3 records) North Somerset (7 records) South Somerset South Somerset (5 records) Hinkley South Somerset (4 records) North Somerset North Somerset (3 records) North Somerset (2 records) North Somerset North Somerset North Somerset North Somerset Crook Peak to Shute Shelve Hill SSSI South Somerset South Somerset (5 records) South Somerset South Somerset Hinkley (2 records) Cadbury Camp (3 records) Sandford Quarry Sandford Hill	ST4259 ST395560 ST391558 ST390552 ST215458 ST208458 ST209457 ST208458 ST515753 ST474763 ST424590 ST396560 ST390552 ST386558 ST387558 ST386555 ST387556 ST215458 ST208458 ST210457 ST208458 ST207458 ST454724 ST4259 ST4259	2004 - 2005 2006 - 2009 2007 - 2009 2007 - 2009 May 2001 1997 - 2000 1993 - 1994 1996 - 2000 June 2000 2008 - 2009 Apr-May 2009 May 1998 May 2001 May 1998 June 1994 June 1994 May 2005 May 2001 1998 - 2001 May 2002 May 1998 1900 - 1995 July 1963 May 2004 Aug 2003
<i>Erythromma najas</i>	Red-eyed Damselfly	Grebe pool, Portbury Wharf, Portishead	ST481769	May 2003
<i>Euchoeca nebulata</i>	Dingy Shell	Max Bog SSSI, adjacent fields and Winscombe Brook Yatton, Kenn Moor SSSI Kenn Moor, Littlewood, North Somerset	ST404576 ST438683 ST438683	June 2000 June 2003 May 2009
<i>Eudonia pallida</i>	a pyralid moth	Max Bog SSSI, adjacent fields and Winscombe Brook Field 2, Max Bog SSSI Portbury Wharf Nature Reserve (PWNR) Chittinging Warth (New Pill Gout)	ST404576 ST408575 ST484772 ST533831	June 2000 Aug 1997 Sept 2010 Aug 1997
<i>Eulithis mellinata</i>	Spinach	Court Avenue, Yatton Bristol, Blaise Hamlet area	ST430653 ST555791	Jun-Aug 1995 July 1983
<i>Euphydryas aurinia</i>	Marsh Fritillary	Meadows, Winscombe Sandford Quarry (3 records)	ST407574 ST4259	May 2004 June 2005
<i>Euphyia unangulata</i>	Sharp-angled Carpet	Churchill, Yarnell Bog	ST427608	July 1996
<i>Eupithecia haworthiata</i>	Haworth's Pug	Yatton, Court Avenue (x2) Court Avenue, Yatton	ST429653 ST430653	1996 & 2002 Jun-Oct 1995
<i>Eupithecia linariata</i>	Toadflax Pug	Yatton, Court Avenue (x2)	ST429653	1996 & 2004
<i>Eupithecia tenuiata</i>	Slender Pug	Portbury Wharf Nature Reserve (PWNR) Pill. Easton Road	ST484772 ST521758	Sept 2010 July 2001
<i>Eupithecia tripunctaria</i>	White-spotted Pug	Yatton, Court Avenue Pill. Easton Road	ST429653 ST521758	1998 July 2001
<i>Eupithecia valerianata</i>	Valerian Pug	Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 2000
<i>Eupithecia virgaureata</i>	Golden-rod Pug	Yatton, Court Avenue	ST429653	May-Sept 2001

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<i>Euxoa nigricans</i>	Garden Dart	Yatton. Grace Close Pill. Easton Road (2 records)	ST426657 ST521758	15/06/1982 1999 - 2000
<i>Forficula lesnei</i>	Forficula lesnei		ST391551 ST368556	Aug 1993 Aug 1993
<i>Galerucella calmariensis</i>	a leaf beetle	Lawrence Weston Moor AWT Reserve, Field 7 (2 records) Lawrence Weston Moor AWT Reserve, Field 8 (2 records)	ST547791 ST548792	May-Jul 1999 Jun-Jul 1999
<i>Galerucella tenella</i>	a leaf beetle	Max Bog AWT Reserve, Field A	ST405573	July 1999
<i>Gastropacha quercifolia</i>	Lappet	Pill. Easton Road Loxton	ST521758 ST3756	July 1999 May 1999
<i>Glyphipterix forsterella</i>	a micro-moth	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve Stup Pill, Chittening Warth	ST528798 ST528818	May 2001 June 2001
<i>Graptodytes bilineatus</i>	a water beetle	Ditches North East of Chittening Industrial Estate, Avonmouth Severn Road, Crooks Marsh, Avonmouth (central grid reference) Severnside.ICI.Central Avenue.Main site drain.	ST532819 ST538817 ST547828	May 2006 May-Jul 2009 1998
<i>Haematopota grandis</i>	a horse fly	ICI Severnside - Tip	ST5582	June 1996
<i>Haliplus (Haliplus) heydeni</i>	a crawling water beetle	Ditches North East of Chittening Industrial Estate, Avonmouth Red Rhyne to the East of M49 motorway	ST532819 ST544818	May 2006 1996
<i>Haliplus (Haliplus) immaculatus</i>	a crawling water beetle	Puxton Moor, rhyne Ditch south of New Rhyne, near Congresbury, site central transect point Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 16 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 1 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 5 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 6 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 7 South end of Portbury Wharf Reserve, PWNR, south of nest-box field Portbury Wharf Reserve, ditch south end of site, south of nest-box field Northern end Portbury Wharf Nature Reserve, PWNR, alongside sea bank	ST412629 ST426644 ST436707 ST436711 ST440710 ST443712 ST444712 ST483763 ST484762 ST485772	July 2011 July 2011 Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999 June 2011 June 2011 June 2011



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Haliphus</i> ( <i>Haliplinus</i> ) <i>immaculatus</i>	a crawling water beetle	ICI Severnside - Main drain south of ICI Works entrance	ST537832	July 1997
		ICI Severnside - Part of Red Rhine flowing southwest	ST546823	July 1997
		ICI Severnside - Part of Red Rhine flowing southwest	ST546823	July 1996
		ICI Severnside - Red Rhine southeast of ICI Works	ST547823	July 1996
		ICI Severnside - Red Rhine southeast of ICI Works	ST547823	July 1997
		Ditch south of New Rhyne, near Congresbury, site central transect point	ST428643	July 2011
<i>Haliphus</i> ( <i>Haliphus</i> ) <i>obliquus</i>	a crawling water beetle	Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 16	ST436707	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10	ST454713	Aug 1999
<i>Haliphus</i> ( <i>Liaphlus</i> ) <i>fulvus</i>	a crawling water beetle	Puxton Moor (Oldbridge River Outflow) 200 metres west of Willow Farm, at sharp bend of public footpath, Puxton, west of Congresbury	ST403638	1991
		Puxton Moor, (rhyne) south-south-east of Pool Farm and east-north-east of The Cottages, Puxton, west of Congresbury	ST409642	1991
		Puxton Moor, (rhyne) 1200 metres north-east of Goose Acre Farm, Puxton, west of Congresbury	ST414630	1991
		Puxton Moor, (rhyne) 400 metres north of Old Bridges on Dolemoor Lane, Puxton, west of Congresbury	ST416638	1991
		Puxton Moor, (Oldbridge River Inflow) at junction of Meer Wall Track and rhyne east of South Farm, Puxton, west of Congresbury	ST417625	1991
<i>Haliphus</i> ( <i>Liaphlus</i> ) <i>mucronatus</i>	a crawling water beetle	North Somerset	ST4470	1991 - 1993
<i>Harmonia</i> <i>axyridis</i>	Harlequin Ladybird	Nailsea, nature reserve at Silver Street and Stockway North	ST470708	June 2007
		Portbury Wharf Nature Reserve (PWNr)	ST483767	May 2011
		Severn Road, Crook's Marsh, Avonmouth	ST538816	May-Jul 2009
		Severn Road, Crook's Marsh, Avonmouth	ST539815	May-Jul 2009
		Lawrence Weston Moor	ST543791	May 2010
		Bower Ashton	ST4365	Sept 2006
		Cross Lanes, BS20 0JJ	ST5275	Oct 2007

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Harpalus</i> ( <i>Harpalus</i> ) <i>rubripes</i>	a ground beetle	Nailsea, Old Glassworks Nailsea, Old Glassworks	ST477709 ST477709	Aug 2002 Aug 2002
<i>Helius</i> <i>pallirostris</i>	a crane fly	Crooks Marsh, Severn Road, Avonmouth	ST538816	May-Jul 2009
<i>Helochares</i> <i>lividus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 1 Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Chestnut Farm Puxton Moor SSSI - Sample Point 2 Puxton Moor SSSI - Sample Point 9 Puxton Moor SSSI - Sample Point 20 Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Meer Wall Rhyne Puxton Moor SSSI - Sample Point 4 Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Old Bridges, south of Goosey Drove Biddle Street, Yatton SSSI - Sample Point 2 Biddle Street, Yatton SSSI - Sample Point 3 Biddle Street, Yatton SSSI - Sample Point 12 Biddle Street, Yatton SSSI - Sample Point 4 Biddle Street, Yatton SSSI - Sample Point 18 Rhyne south of Little River, east of Westmead Rhyne, east of Kennmoor Road and north of Yatton, Kenn Moor Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 22 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 23 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10 Ditch North West in Portbury Wharf Reserve, behind sea bank, site central grid reference Ditches North East of Chitting Industrial Estate, Avonmouth Lawrence Weston Moor AWT Reserve, Pond, Ditch F	ST407636  ST408635  ST408637  ST411630  ST412620  ST412631  ST412636  ST413635   ST416653 ST418655 ST421646 ST421655 ST426644 ST428670  ST441706 ST443705 ST454713 ST479772  ST532819 ST542799	Aug 1999  Sept 1993  Aug 1999  Aug 1999  Aug 1999  Sept 1993  Aug 1999 Sept 1993  Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999 Apr-May 1983  May 1999 May 1999 Aug 1999 June 2011  May 2006 May 1999

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Helochares lividus</i>	a scavenger water beetle	Severnside, ICI Estate, ditch part of Red Rhyne, site	ST546823	1998
		Severnside. ICI. Central Avenue. Main site drain.	ST547828	1998
		Severnside. ICI. Ditch E of M49. Ecological Refuge Area	ST553815	1998
		Severnside. ICI. Ditch E of M49. Ecological Refuge Area	ST553816	1998
		Severnside. ICI. Pond E of M49. Ecological Refuge Area	ST553816	1998
		Puxton Moor SSSI - Sample Point 22	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 23	ST4163	Aug 1999
<i>Helochares punctatus</i>	a scavenger water beetle	West Ditch, Congresbury Moor	ST427648	June 2002
<i>Helophorus griseus</i>	a scavenger water beetle	Ditches North East of Chitting Industrial Estate, Avonmouth	ST532819	May 2006
		Severnside. ICI. Ditch E of M49. Ecological Refuge Area	ST553816	1998
<i>Helophorus laticollis</i>	New Forest Mud Beetle	Shipway Farm, Sheepway, reedbed	ST489769	Jan 1999
		Sheepway	ST491762	Jan 1999
<i>Helophorus nanus</i>	a scavenger water beetle	Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	May 2001
<i>Hemaris fuciformis</i>	Broad-bordered Bee Hawk	Yatton, Stowey Road	ST429659	July 1994
<i>Hemistola chrysoprasaria</i>	Small Emerald	Barton Quarry	ST385563	July 1994
		Yatton. Court Avenue (x3)	ST429653	1997 - 2000
<i>Hepialus humuli</i>	Ghost Moth	Barton Quarry	ST380562	June 1995
		Barton Quarry	ST385563	July 1994
		Kingston Seymour	ST403669	July 2003
		Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 2000
		Max Bog Wildlife Trust Reserve	ST406573	July 1999
		Max Bog SSSI, adjacent fields and Winscombe Brook	ST406574	May 2000
		Max Bog.	ST406574	May 2000
		Puxton to Sandford Road	ST411620	July 1985
		Yatton. Grace Close	ST426657	July 1982
		Yatton, Court Avenue	ST430653	July 1989
		Littlewood, Kenn Moor SSSI	ST438683	June 2004
		Littlewood	ST438683	June 2004
		Lamplighters Marsh, Avonmouth	ST521769	June 1995
<i>Hercostomus plagiatus</i>	a dolichopodid fly	Bristol, Blaise Hamlet area	ST555791	July 1983
		Max Bog AWT Reserve, Field A	ST405573	June 1999
		Max Bog AWT Reserve, Field B (3 records)	ST406573	1999 - 2001
		Max Bog AWT Reserve, Field C (2 records)	ST407573	1999 - 2001
<i>Heringia heringi</i>	a hoverfly	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	May 2001
<i>Hipparchia semele</i>	Grayling	Crook Peak (2 records)	ST385555	July 2006
		Crook Peak	ST386555	Aug 2004
		Crook Peak (5 records)	ST388558	2006 - 2008

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Hipparchia semele</i>	Grayling	Crook Peak Barton Hill Footpath Meadows on Wavering Down Sandford Quarry Cheddar Valley Railway Walk Sandford Quarry Garden at Kingsmead, Nailsea Wavering Down Sandford Quarry (2 records) Sandford Hill North Somerset (2 records) North Somerset North Somerset (2 records) North Somerset (6 records) South Somerset (2 records) North Somerset North Somerset North Somerset North Somerset Crook Peak to Shute Shelve Hill SSSI North Somerset South Somerset South Somerset	ST395560 ST396563 ST405562 ST422590 ST423659  ST424589 ST462708  ST3858 ST4259 ST4259 ST395560 ST391558 ST391554 ST388558 ST203462 ST462708 ST405562 ST396563 ST386555 ST387558  ST423659 ST204461 ST203462	July 2006 July 2004 June 1992 July 1984 Aug 1998  June 2009 July  July 2006 July 2004 Aug 2003 2004 - 2006 Aug 2009 Aug 2008 2006 - 2009 Jul-Aug 2006 July 1995 June 1992 July 2004 Aug 2004 July 2004  Aug 1998 July 2006 Aug 2006
<i>Hippodamia variegata</i>	Adonis' Ladybird	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve Severn Road, Crook's Marsh, Avonmouth	ST528798  ST538818	Aug 2001  May-Jul 2009
<i>Homoeosoma sinuella</i>	a pyralid moth	Lamplighters Marsh, Avonmouth, saltmarsh Lamplighter's Marsh, large areas of bare ground and low plants, and largest area of scrub, edged with tall herbs. Lamplighters	ST520769  ST521769  ST523767	June 1995  June 1995  June 2002
<i>Hoplodrina ambigua</i>	Vine's Rustic	Yatton, Court Avenue (x7 ) Court Avenue, Yatton Portbury Wharf Nature Reserve (PWNR) Chittening Warth (New Pill Gout)	ST429653 ST430653 ST484772  ST533831	1996 - 2004 Jun-Oct 1995 Sept 2010  Aug 1997
<i>Hoplodrina blanda</i>	Rustic	Kingston Seymour Yatton, Court Avenue (x6)	ST403669 ST429653	July 2003 1995 - 2002
<i>Hoplodrina blanda</i>	Rustic	Yatton. Court Avenue Pill. Easton Road Avonmouth Sewage Treatment Works, Avonmouth Sewage Works Reservoir Hinkley	ST430653 ST521758 ST532797  ST207458	June 2000 July 2001 July 1995  1900 - 1995
<i>Hydaticus seminiger</i>	a water beetle	Puxton Moor SSSI - Sample Point 19	ST415621	Aug 1999
<i>Hydaticus transversalis</i>	a water beetle	Puxton Moor SSSI - Sample Point 1 Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST407636  ST410630	Aug 1999  Sept 1993

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Hydaticus transversalis</i>	a water beetle	Puxton Moor SSSI - Sample Point 6	ST410632	Aug 1999
		Puxton Moor SSSI - Sample Point 13	ST411627	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm (2 records)	ST411630	Sept 1993
		Puxton Moor SSSI - Sample Point 4	ST412636	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of South Farm and west of Meer Wall, south of Puxton Moor Lane	ST413625	Sept 1993
		Puxton Moor SSSI - Sample Point 11	ST413629	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Old Bridges, south of Goosey Drove	ST413635	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne south east of South Farm and west of Meer Wall, draining into Blackstone's Rhyne, north of Rockers Rhyne	ST414623	Sept 1993
		Puxton Moor SSSI - Sample Point 19	ST415621	Aug 1999
		Puxton Moor SSSI - Sample Point 18	ST415623	Aug 1999
		Puxton Moor SSSI - Sample Point 8	ST415632	Aug 1999
		Avon Levels and Moors, south west of Yatton, Biddle Street or Wemberham, Biddle Street Rhyne	ST417655	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 3	ST418655	Aug 1999
		Avon Levels and Moors, south west of Yatton, Biddle Street or Wemberham, rhyne adjacent to Biddle Street Rhyne	ST419653	Sept 1993
		Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST420646	Sept 1993
		Wemberham Triangle near Yatton, south west of Rectory Farm bounded by Gang Wall and New Rhyne, central site grid reference	ST423647	Sept 1993
		Ditch north of New Rhyne, near Congresbury, site central transect point	ST423646	July 2011

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Hydaticus transversalis</i>	a water beetle	Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST424644	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 10	ST425650	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 18	ST426644	Aug 1999
		West Ditch, Congresbury Moor	ST427648	June 2002
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 21	ST437704	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 7	ST444712	Aug 1999
		North Somerset	ST3960	1991 - 1993
		North Somerset	ST3961	1991 - 1993
		North Somerset	ST4060	1991 - 1993
		North Somerset	ST4161	1991 - 1993
		North Somerset	ST4162	1991 - 1993
		North Somerset	ST4163	1991 - 1993
		Puxton Moor SSSI - Sample Point 23	ST4163	Aug 1999
		North Somerset	ST4165	1991 - 1993
		North Somerset	ST4262	1991 - 1993
		North Somerset	ST4263	1991 - 1993
		North Somerset	ST4264	1991 - 1993
		North Somerset	ST4265	1991 - 1993
<i>Hydraecia micacea</i>	Rosy Rustic	Yatton, Court Avenue (x3)	ST429653	1999 - 2001
		Yatton. Court Avenue	ST430653	June 2000
		Littlewood SSSI Kenn Moor	ST438683	Aug 2004
		Portbury Wharf Nature Reserve (PWNr)	ST484772	Sept 2010
		Chittening Warth (New Pill Gout)	ST533831	Aug 1997
<i>Hydraena rufipes</i>	a small water beetle	Lawrence Weston	ST539793	Sept 2005
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
<i>Hydroglyphus geminus</i>	a water beetle	Ditches North East of Chittening Industrial Estate, Avonmouth	ST532819	May 2006
		Severn Road, Crooks Marsh, Avonmouth	ST538817	May-Jul 2009
		Severnside.ICI.Pond E of M49. Ecological Refuge Area (x2)	ST553816	1998
<i>Hydrometra sp.</i>	a water measurer (unidentified)	Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Chestnut Farm	ST408635	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST410630	Sept 1993

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Hydrometra</i> sp.	a water measurer (unidentified)	Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST411629	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST411630	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Old Bridges, south of Goosey Drove	ST413635	Sept 1993
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne south east of South Farm and west of Meer Wall, draining into Blackstone's Rhyne, north of Rockers Rhyne	ST414623	Sept 1993
		Wemberham Triangle near Yatton, south west of Rectory Farm bounded by Gang Wall and New Rhyne, central site grid reference	ST423647	Sept 1993
		Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST424644	Sept 1993
<i>Hydronomus alismatis</i>	a weevil	Rhyne south of Little River, east of Westmead Rhyne, east of Kennmoor Road and north of Yatton, Kenn Moor	ST428670	Apr-May 1983
<i>Hydrophilus piceus</i>	Great Silver Water Beetle	Puxton Moor SSSI - Sample Point 1	ST407636	Aug 1999
		Puxton Moor SSSI - Sample Point 3	ST408635	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST411630	Sept 1993
		Puxton Moor, rhyne	ST411630	July 2011
		Puxton Moor, rhyne	ST412629	July 2011
		Puxton Moor, rhyne adjacent to public footpath	ST415627	July 2011
		Ditch north of New Rhyne, near Congresbury, site central transect point	ST423646	July 2011
		Ditch north of New Rhyne, near Congresbury, site central transect point	ST424646	July 2011
		North Drove, Nailsea Moor	ST446705	May 2004
		Portbury	ST485764	May 2005
		North Somerset	ST4162	1991 - 1993
		North Somerset	ST4163	1991 - 1993
		North Somerset	ST4265	1991 - 1993
		North Somerset	ST4470	1991 - 1993
		Screech Owl	ST316351	Aug-Sept 1958

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Hydroporus nigrita</i>	a water beetle	ICI Severnside - Field pond S.of Central Avenue	ST550825	July 1997
<i>Hydrothassa glabra</i>	a leaf beetle	Max Bog AWT Reserve, Field A	ST405573	June 2001
<i>Hygrotus (Coelambus) confluens</i>	a water beetle	Portbury Wharf Area - long pond west of electricity substation Severnside,ICI Estate,ditch part of Red Rhyne,site ICI Severnside - Part of Red Rhine flowing southwest ICI Severnside - Central Avenue. main drain by middle gates	ST481769 ST546823 ST546823 ST547828	March 1999 1996 July 1996 July 1997
<i>Hylaeus (Prosopis) signatus</i>	Large Yellow-faced Bee	Fields North East of Chittening Industrial Estate, Avonmouth	ST532819	May-Sept 2006
<i>Hypera meles</i>	a weevil	Max Bog AWT Reserve, Field A	ST405573	June 2001
<i>Idea emarginata</i>	Small Scallop	Pill. Easton Road	ST521758	July 2001
<i>Idea trigeminata</i>	Treble Brown Spot	Lime Breach Wood	ST466726	June 1995
<i>Ipimorpha subtusa</i>	Olive	Max Bog Wildlife Trust Reserve	ST406573	July 1999
<i>Ischnomera sanguinicollis</i>	a thick-legged flower beetle	Lawrence Weston Moor LNR, Bristol	ST543791	Apr 2007
<i>Kibunea minuta</i>	a click beetle	Kingsweston Down, Blaise Estate	ST5578	May 2010
<i>Lacanobia w-latinum</i>	Light Brocade	Yatton, Court Avenue	ST429653	1997 - 2004
<i>Laccobius minutus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 2 Puxton Moor, rhyne Puxton Moor SSSI - Sample Point 14 Ditch North of River Yeo, South of New Rhyne, near Congresbury, site central transect point Ditch north of New Rhyne, near Congresbury, site central transect point Ditch south of New Rhyne, near Congresbury, site central transect point Ditch south of New Rhyne, near Congresbury, site central transect point Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 23 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 8 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10 ICI Severnside - Part of Red Rhine flowing southwest	ST408637 ST411630 ST413626 ST420645 ST423646 ST426644 ST428643 ST443705 ST450711 ST454713 ST546823	Aug 1999 July 2011 Aug 1999 July 2011 July 2011 July 2011 July 2011 May 1999 Aug 1999 Aug 1999 July 1997



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Laccobius minutus</i>	a scavenger water beetle	Puxton Moor SSSI - Sample Point 22	ST4163	Aug 1999
<i>Laccobius sinuatus</i>	a scavenger water beetle	Ditches North East of Chitting Industrial Estate, Avonmouth	ST532819	May 2006
<i>Laccobius striatulus</i>	a scavenger water beetle	Biddle Street, Yatton SSSI - Sample Point 12	ST421646	Aug 1999
<i>Laccophilus minutus</i>	a water beetle	Puxton Moor SSSI - Sample Point 2	ST408637	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm	ST411630	Sept 1993
		Puxton Moor SSSI - Sample Point 20	ST412620	Aug 1999
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Meer Wall Rhyne	ST412631	Sept 1993
		Puxton Moor, rhyne	ST412629	July 2011
		Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of South Farm and west of Meer Wall, south of Puxton Moor Lane (x2)	ST413625	Sept 1993
		Avon Levels and Moors, Puxton Moor, rhyne east of South Farm and Puxton Lane	ST414626	Sept 1993
		Puxton Moor SSSI - Sample Point 18	ST415623	Aug 1999
		Avon Levels and Moors, Puxton Moor, rhyne west of Meer Wall and Oldbridge River east of Goose Acre Farm	ST415629	Sept 1993
		Avon Levels and Moors, south west of Yatton, Biddle Street or Wemberham, Biddle Street Rhyne	ST417655	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 3	ST418655	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 13	ST422647	Aug 1999
		Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo	ST424644	Sept 1993
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 15	ST426648	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 15	ST434707	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 20	ST435703	Aug 1999

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Laccophilus minutus</i>	a water beetle	Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 16	ST436707	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 5	ST440710	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 22	ST441706	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 23	ST443705	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 7	ST444712	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 24	ST446707	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10	ST454713	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 11	ST458712	Aug 1999
		Portbury Wharf Reserve, ditch south end of site, south of nest-box field, site central grid reference	ST484762	June 2011
		Sheepway, Portbury, Shipway Farm, stream with flooded banks (2 records)	ST488768	Jan 1999
		Ditches North East of Chittening Industrial Estate, Avonmouth	ST532819	May 2006
		ICI Severnside - Red Rhine southeast of ICI Works	ST547823	July 1997
		ICI Severnside - Red Rhine southeast of ICI Works	ST550822	July 1997
		Puxton Moor SSSI - Sample Point 23	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 22	ST4163	Aug 1999
<i>Lampyrus noctiluca</i>	Glow-worm	Barton Quarry, Webbington. Max Bog (MB) (2 records) Jacklands Trout Farm	ST386562 ST406573 ST471717	June 1995 June 2009 June/July 1992
<i>Larinus planus</i>	a weevil	Max Bog AWT Reserve, Field B Portbury Wharf Nature Reserve (PWNr)	ST406573 ST483767	July 1999 May 2011
<i>Lasiommata megera</i>	Wall	Christon Crook Peak Crook Peak Crooks Peak Summit Crook Peak Crooks Peak Summit Crook Peak (4 records) Crook Peak Crook Peak(4 records) Crook Peak (3 records) Crook Peak	ST379573 ST385555 ST386555 ST387557 ST388557 ST387558 ST388558 ST391558 ST393562 ST395560 ST399560	Sept 1995 Aug 2006 Aug 2004 May 2004 Sept 1997 May 2004 2007 - 2008 Aug 2008 2007 - 2008 2007 - 2008 June 1984

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Lasiommata megera</i>	Wall	Perkham field, Barton RD, Winscombe, Avon.	ST404570	Aug 1984
		Max Bog SSSI, adjacent fields and Winscombe Brook Meadows on Wavering Down	ST404571	Sept 1982
		Sandford - Congresbury (x2)	ST405562	June 1992
		Winscombe Station area	ST416596	Jul-Aug 1993
		Sandford Hill	ST418578	July 1984
		Congresbury to Yatton (x2)	ST421588	Oct 1990
		Cheddar Valley Railway Walk	ST423655	1991 - 1993
			ST423659	Aug 1998
		Dolemoor, near Congresbury	ST425635	May 1990
		Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway	ST427648	2000-2002
		Biddle Sreet SSSI, Congresbury Moor, YACWAG Ten Acre Field Nature Reserve	ST428644	July 2000
		Court Avenue, Yatton (x3)	ST430655	1991 - 1995
		Cadbury Camp	ST455725	June 1983
		Kingshill Nailsea	ST462705	May 2000
		Gordano Motorway Service Area	ST508755	May 1999
		Portbury Dock	ST512773	1993 - 1994
		Loxton Hill	ST3756	May 1999
		Top of Peak, Crook Peak	ST3855	Aug 1998
		Crook Peak	ST3855	May 2000
		Wavering Down	ST3858	July 2006
		Cheddar Valley Railwalk	ST4257	Apr 2002
		Sandford Quarry	ST4259	July 2004
		Goss Lane, Nailsea (x3)	ST4670	May 2000
		Blaise Castle Estate GBNCs	ST5578	Aug 1982
		North Somerset	ST391554	May 2007
		North Somerset (4 records)	ST395560	2007 - 2009
		North Somerset (10 records)	ST393562	2007 - 2009
		North Somerset (2 records)	ST391558	2008 - 2009
		North Somerset (3 records)	ST391554	2008 - 2009
		North Somerset (2 records)	ST390552	2008 - 2009
		North Somerset (6 records)	ST388558	2007 - 2009
		Hinkley (2 records)	ST207458	1900 - 1995
		South Somerset (3 records)	ST215458	May-Aug 2002
		South Somerset (3 records)	ST210457	2001 - 2002
		South Somerset (22 records)	ST208458	1996 - 2009
		South Somerset (2 records)	ST210457	2001 - 2006
		South Somerset (9 records)	ST208458	1996 - 2009
		South Somerset	ST204460	Aug 2001
		South Somerset (7 records)	ST203462	2001 - 2006
		North Somerset	ST512773	Jan-Dec 1994
		North Somerset	ST508755	May 1999
		North Somerset (3 records)	ST474763	2002 - 2007
		North Somerset	ST462705	May 2000
		North Somerset	ST428644	July 2000
		North Somerset (3 records)	ST430655	1991 - 1995
		North Somerset	ST405562	June 1992
		North Somerset	ST390552	May 2001
		North Somerset	ST387557	May 2004
		North Somerset	ST388557	Sept 1997
		North Somerset	ST387558	May 2004
		North Somerset	ST386555	Aug 2004

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Lasiommata megera</i>	Wall	North Somerset (4 records) North Somerset (2 records) North Somerset Tapmoor Fields Moorlinch North Somerset North Somerset (2 records) North Somerset North Somerset North Somerset North Somerset South Somerset South Somerset South Somerset (14 records) South Somerset (2 records) South Somerset (2 records) South Somerset (2 records) South Somerset South Somerset South Somerset South Somerset (3 records) South Somerset (2 records)	ST373562 ST371560 ST379573 ST396574 ST421588 ST416596 ST423655 ST409622 ST423659 ST423655 ST215458 ST216460 ST208458 ST204460 ST203462 ST206463 ST203462 ST215458 ST211456 ST210457 ST208458	1990 - 1992 1998 - 1999 Sept 1995 1989 Oct 1990 Jul-Aug 1993 Aug 1993 Oct 1995 Aug 1998 Aug 1991 May 2001 Aug 2008 1999 - 2006 May-Aug 2002 2001 - 2002 May-Jun 2008 Sept 2006 June 2002 Sept 2008 2001 - 2002 1997 - 1998
<i>Laspeyria flexula</i>	Beautiful Hook-tip	Max Bog SSSI, adjacent fields and Winscombe Brook YACWAG Nature Reserve, Biddle Sreet SSSI, 2.5 Acre Field Court Avenue, Yatton (x2) Pill Paddock	ST404576  ST428643  ST429653 ST519755	June 2000  July 2003  1997 - 1999 July 2000
<i>Lestes sponsa</i>	Emerald Damselfly	River Banwell (part of) (x3) River Banwell (part of) (x2) Ham Rhyne, Kingston Seymour (4 records) Max Bog AWT Reserve, Field B Acom Fishing Lakes Kingston Seymour Puxton Moor SSSI Puxton Moor Puxton Moor Puxton Moor, rhyne (x2) Puxton Moor, rhyne (x2) Puxton Moor, rhyne (x2) Puxton Moor, rhyne adjacent to public footpath Gang Wall, Yatton (x2) Cheddar Valley Railway Walk, section near Churchill Rhyne Cadbury Farm Yatton Rhynes, Biddle Street S.S.S.I. Cheddar Valley Railway nature reserve Yatton - Pond 2 (6 records) Main Ditch, New Rhyne Ditch near Strawberry Line, Congresbury Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway	ST392615 ST398608 ST399667  ST406573  ST408668  ST410635 ST412619 ST412630 ST412629 ST413629 ST415629 ST415627  ST417646 ST423615  ST423645 ST424651  ST427644 ST427645  ST427648	July 1999 July 1999 July 1999  Aug 2001  2002  July 1992 Aug 2009 Aug 2005 July 2011 July 2011 July 2011 July 2011  Aug 1999 May-Jul 1997  Summer 1996 Aug-Sept 1999  July 2003 July 2004  Aug 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Lestes sponsa</i>	Emerald Damselfly	Cadbury Farm, Yatton, Congresbury Yeo, adjacent land and rhynes	ST427651	July 1998
		Kenn Moor	ST427690	Aug 2010
		Mark's Pond, Biddle Street SSSI (10 records)	ST428648	1996 - 1999
		Cadbury Farm Pond (x2)	ST428649	Jul-Sept 1995
		Dismantled Railway, Congresbury to Yatton	ST429652	July 1997
		Court Avenue, Yatton	ST430653	Aug 1992
		Kenn Moor (2 records)	ST430678	July 1999
		Kenn Moor	ST430683	July 2010
		Kenn Moor (2 records)	ST431685	July 2010
		Kenn Moor	ST432695	July 2010
		Kenn Moor	ST432694	July 2010
		Nailsea Moor	ST436696	July 1999
		Kenn Moor	ST436693	July 2010
		Kenn Moor	ST437681	Sept 1981
		Kenn Moor	ST437692	July 2010
		Kenn Moor	ST437690	July 2010
		Kenn Moor, River Kenn	ST438694	July 2010
		Nailsea Moor	ST439700	July 2010
		Kenn Moor	ST439697	July 2010
		Nailsea Moor, West End Drive	ST440698	June 2000
		Nailsea Moor,	ST442693	June 1999
		Kenn Moor	ST442698	Aug 2010
		Kenn Moor	ST442696	Aug 2010
		Tickenham Moor	ST445713	July 2005
		Tickenham Moor	ST445714	Aug 2007
		Nailsea Moor (2 records)	ST445707	July 2010
		Nailsea Moor	ST445705	July 2010
		Tickenham Moor, North Somerset (3 records)	ST446714	2004 - 2009
		Tickenham Moor	ST446716	Aug 2005
		Tickenham Moor, between Moor Lane and Middle Yeo	ST447713	July 2006
		Tickenham Moor, between Moor Lane and Middle Yeo	ST447713	Aug 2006
		Nailsea Moor	ST448703	Aug 1997
		Nailsea Moor	ST451701	July 1995
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10	ST454713	Aug 1999
		path between ponds, Portbury Wharf Pond	ST483771	July 1998
		South end of Portbury Wharf Reserve, PWNr, south of nest-box field, site central grid reference	ST483763	June 2011
		Portbury Wharf - small pond, Portbury Wharf Pond (x2)	ST489772	July 1998
		Avonmouth, 'Honda Pools'	ST530808	Aug 2000
		Rhyne off Kingsweston Lane, Avonmouth (x3)	ST531792	July 1997
		Puxton Moor, South Gloucestershire	ST4163	Aug 2006
		Yatton Moor, Biddle Street S.S.S.I.	ST4264	July 1996

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Lestes sponsa</i>	Emerald Damselfly	Yatton Moor Congresbury to Yatton Kenn Moor Nailsea Moor Nailsea Moor Nailsea Moor Nailsea Moor Nailsea Moor King's Hill Farm Clapton Moor Gordano Valley Buckland's Pool Nailsea Portbury River, Portishead Portbury Ashlands Fields adjacent to Wharf Lane., Meadows around Portbury Wharf Lower Wharf Lane and Sea Wall. Meadows around Portbury Wharf	ST4264 ST4265 ST4267 ST4370 ST4469 ST4469 ST4470 ST4570 ST4570 ST4573 ST4573 ST4769 ST4775 ST4876 ST4876  ST4877	Aug 2000 July 1997 July 1981 July 1981 Aug 1994 July 1996 July 2002 Aug 1994 July 2002 Aug 2001 July 1994 July 2002 July 1949 Summer 1994 July 1998  July 1998
<i>Libellula fulva</i>	Scarce Chaser	Nailsea, Moorend Spout	ST4671	June 2010
<i>Libellula quadrimaculata</i>	Four-spot Chaser	Rust Bridge Pond, Rust Lane Borrow Pool and meadows Puxton Moor SSSI Rhyne, Biddle Street SSSI New Croft, Congresbury Moor Wiggly Ditch in Ten Acre Field West Ditch, Congresbury Moor Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Puxton Moor SNCI Areas Cadbury Farm Pond Pond, Cadbury Farm Pond Mark's Pond, Biddle Street SSSI Biddle Street S.S.S.I. Cadbury Farm Pond (x2) Dismantled Railway Congresbury to Yatton Nailsea Moor Yatton, Kenn Moor SSSI Kenn Moor Nailsea Moor Tickenham Moor Tickenham Moor, Tickenham Tickenham Moor, between Moor Lane and Middle Yeo Nailsea Moor South end of Portbury Wharf Reserve, south of nest-box field Avonmouth - ecological survey area 3, section 127a. Avonmouth Pools (ASW) Deep Pool, Avonmouth Sewage Farm AWT Reserve	ST410684  ST411623 ST425648 ST426646  ST427645 ST427648 ST427648  ST428620 ST428648 ST428648 ST428648  ST428648 ST428649 ST429652  ST437700 ST438683 ST438684 ST443707 ST445713 ST447712 ST447713  ST450700 ST483763  ST530797  ST531798 ST531798	July 1986  June 1982 July 2003 2000 - 2002  July 2003 June 2002 June 2001  June 1983 Summer 1996 June 1999 July 2003  July 1997 1995 - 1996 July 1997  June 2010 June 2003 June 1996 June 2010 July 2005 June 2010 June 2006  June 1996 June 2011  May-Jun 1998  Apr 2007 May 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Libellula quadrimaculata</i>	Four-spot Chaser	Avonmouth - ecological survey area 2, sections 1&2. Avonmouth - ecological survey area 3, section 58. Avonmouth - ecological survey area 4, section 42. Lawrence Weston, Poplar Farm (2 records) Avonmouth - ecological survey area 3, section 8. Avonmouth - ecological survey area 3, section 161. Avonmouth - ecological survey area 4, section 66. Avonmouth - ecological survey area 4, section 103(s). Avonmouth - ecological survey area 4, section 103(m). Avonmouth - ecological survey area 4, section 103(n). Yatton Moor Yatton Moor, Biddle Street S.S.S.I. (4 records) Nailsea Moor Nailsea Moor King's Hill Farm Clapton Moor Gordano Valley Gordano Valley Gordano Valley Clapton Court. Portbury River near Portishead (2 records)	ST532790 ST535798 ST538812 ST539794 ST539799 ST539804 ST540802 ST543801 ST543802 ST544805 ST4264 ST4264 ST4469 ST4470 ST4570 ST4573 ST4573 ST4573 ST4573 ST4673 ST4775	May-Jun 1998 May-Jun 1998 May-Jun 1998 June 2000 May-Jun 1998 May-Jun 1998 May-Jun 1998 May-Jun 1998 May-Jun 1998 May-Jun 1998 June 2000 1996 - 1999 June 1994 May-June 1997 July 2002 June 1993 July 1994 June 1994 June 1994 June 1984 1949 - 1953
<i>Limenitis camilla</i>	White Admiral	Shiphams Lane Winscombe N. Somerset Off Kenn Moor Rd, Tickenham, Nailsea and Kenn Moors SNCI areas Royal Hotel, Portishead Portishead North Somerset North Somerset	ST421585 ST425686 ST474776 ST474776 ST421585 ST425686	June 1999 June 1998 Aug 1986 July 1984 June 1999 June 1998
<i>Limnebius nitidus</i>	a small water beetle	Biddle Street, Yatton SSSI - Sample Point 20	ST428642	Aug 1999
<i>Lipara rufitarsis</i>	a fly	Max Bog AWT Reserve, Field C	ST407573	June 2001
<i>Lobophora halterata</i>	Seraphim	Max Bog (3 records) Max Bog NR Blaise Castle	ST406574 ST4057 ST5578	May 2000 May 2000 May 1998
<i>Longitarsus parvulus</i>	Flax Flea Beetle	Lawrence Weston Moor AWT Reserve, Field 6	ST547791	July 1999
<i>Lycia hirtaria</i>	Brindled Beauty	Winscombe Yatton. Court Avenue (x2)	ST420585 ST429653	May 2001 2003 - 2004
<i>Lygephila pastinum</i>	Blackneck	Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog Wildlife Trust Reserve	ST404576 ST406573	June 2000 July 1999

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<i>Lygephila pastinum</i>	Blackneck	Portbury Wharf Nature Reserve (PWNR) Deep Pool, Avonmouth Sewage Farm AWT Reserve Lawrence Weston Moor LNR, Bristol Lawrence Weston Moor, Bristol Lawrence Weston Moor AWT Reserve Max Bog Max Bog AWT Reserve	ST484772 ST531798 ST543791 ST544791 ST547792 ST4057 ST4057	Sept 2010 July 2001 June 2006 June 2007 June 2006 July 1996 July 1996
<i>Lygus pratensis</i>	a plantbug or grassbug	Lawrence Weston Moor LNR	ST543791	June 2006
<i>Lysandra bellargus</i>	Adonis Blue	Cadbury Camp (7 records) Cadbury Camp	ST454724 ST4572	Aug-Sept 1964 June 1971
<i>Lysandra coridon</i>	Chalkhill Blue	Crook Peak	ST385555	Aug 2006
<i>Malacosoma neustria</i>	Lackey	Barton Quarry Max Bog Wildlife Trust Reserve From Yatton Station to Gangwall on Cheddar Valley Railway Walk, Congresbury to Yatton Yatton, Court Avenue (x3) Yatton, Court Avenue (x3) Pill to Portbury Dock Pill Paddock Avonmouth Sewage Treatment Works (6 records) Portbury Docks (2 records) Hinkley (2 records)	ST385563 ST406573 ST423653 ST429653 ST430653 ST513774 ST519755 ST532797 ST5076 ST207458	July 1994 July 1999 May 1998 1997 - 2001 1983 - 1995 1994 July 2000 1994 - 1995 May 1992 1900 - 1995
<i>Melanchra persicariae</i>	Dot Moth	Barton Quarry Kingston Seymour Max Bog SSSI, adjacent fields and Winscombe Brook Yatton, Grace Close Yatton, Court Avenue (x5) Pill Paddock	ST380562 ST403669 ST404576 ST426657 ST429653 ST519755	June 1995 July 2003 June 2000 July 1982 1996 - 2004 July 2000
<i>Melanchra pisi</i>	Broom Moth	Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 2000
<i>Melanthia procellata</i>	Pretty Chalk Carpet	Barton Quarry Barton Quarry Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog Wildlife Trust Reserve Lime Breach Wood	ST380562 ST385563 ST404576 ST406573 ST466726	June 1995 July 1994 June 2000 July 1999 June 1995
<i>Meloe proscarabaeus</i>	Oil Beetle	Screech Owl	ST316351	June 1958
<i>Meloe violaceus</i>	Violet Oil-beetle	Cadbury Camp, Tickenham Cadbury Camp, Tickenham Cadbury Camp, Tickenham	ST446723 ST446723 ST447723	April 2007 April 2007 April 2007
<i>Mesoligia literosa</i>	Rosy Minor	Hinkley (2 records)	ST207458	1900 - 1995
<i>Miltochrista miniata</i>	Rosy Footman	Kingston Seymour Yatton, Court Avenue (x2)	ST403669 ST429653	July 2003 2000 - 2002



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<i>Mompha langiella</i>	a micro-moth	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	July 2001
<i>Monochroa lucidella</i>	a micro-moth	Deep Pool, Avonmouth Sewage Farm AWT Reserve	ST531798	July 2001
<i>Mononychus punctumalbum</i>	Iris Weevil	Nailsea, North Somerset	ST474715	June 2007
<i>Mordellistena (Mordellistena) pumila</i>	a tumbling flower beetle	Max Bog AWT Reserve, Field A Max Bog AWT Reserve, Field B	ST405573 ST406573	June 2001 June 2001
<i>Mormo maura</i>	Old Lady	Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
<i>Myrmeleotettix maculatus</i>	Mottled Grasshopper	Sandford Hill (2 records)	ST4259	Jul-Aug 2003
<i>Mythimna comma</i>	Shoulder-striped Wainscot	Max Bog Wildlife Trust Reserve (3 records) Court Avenue, Yatton	ST406573 ST429653	Jun-Jul 1999 May-Aug 1997
<i>Mythimna pudorina</i>	Striped Wainscot	Barton Quarry Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog AWT Reserve, Field B Max Bog NR	ST380562 ST404576 ST404576 ST406573 ST4057	June 1995 June 2000 June 1995 June 2001 June 2000
<i>Mythimna straminea</i>	Southern Wainscot	Littlewood SSSI Kenn Moor St. Georges Road Pill. Easton Road (3 records)	ST438683 ST508775 ST521758	Aug 2004 1993 July 2001
<i>Naenia typica</i>	Gothic	Station Yard, Yatton Yatton, Court Avenue (x3) Court Avenue, Yatton (x2) Pill. Easton Road Avonmouth Sewage Treatment Works, Avonmouth Sewage Works Reservoir near Moorgrove wood	ST422655 ST429653 ST430653 ST521758 ST532797 ST555791	July 1999 1997 - 2001 1995 - 2000 July 2001 July 1995 pre 1990
<i>Nomada hirtipes</i>	a nomad or mason bee	Nailsea, North Somerset	ST474715	June 2007
<i>Nonagria typhae</i>	Bulrush Wainscot	Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Court Avenue, Yatton Portbury Wharf Nature Reserve (PWNR) Avonmouth Sewage Treatment Works, Avonmouth Sewage Works Reservoir	ST427648 ST430653 ST484772 ST532797	Aug 2001 Jun-Oct 1995 Sept 2010 July 1995
<i>Notaris bimaculatus</i>	a weevil	ICI Severnside - Fields west of Tip	ST5582	June 1997
<i>Nudaria mundana</i>	Muslin Footman	YACWAG Nature Reserve, Biddle Sreet SSSI, 2.5 Acre Field	ST428643	July 2003
<i>Nycteola revayana</i>	Oak Nycteoline	Kingston Seymour Max Bog SSSI, adjacent fields and Winscombe Brook	ST403669 ST404576	July 2003 June 2000
<i>Nycteola revayana</i>	Oak Nycteoline	Portbury Wharf Nature Reserve (PWNR) Max Bog NR	ST484772 ST4057	Sept 2010 Mar 2000

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<i>Ochthebius (Asiobates) dilatatus</i>	a small water beetle	Puxton Moor SSSI - Sample Point 9	ST411630	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 1	ST414652	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 6	ST418652	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 16	ST424644	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 17	ST426646	Aug 1999
<i>Odontomyia ornata</i>	Ornate Brigadier	Puxton Moor SSSI - Sample Point 1	ST407636	Aug 1999
		Puxton Moor SSSI - Sample Point 20	ST412620	Aug 1999
		Puxton Moor SSSI - Sample Point 11	ST413629	Aug 1999
		Puxton Moor SSSI - Sample Point 18	ST415623	Aug 1999
		Puxton Moor, rhyne adjacent to public footpath	ST415627	July 2011
		Biddle Street, Yatton SSSI - Sample Point 6	ST418652	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 3	ST418655	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 13	ST422647	Aug 1999
		Ditch north of New Rhyne, near Congresbury, site central transect point	ST423646	July 2011
		Biddle Street, Yatton SSSI - Sample Point 16	ST424644	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 18	ST426644	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 20	ST428642	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 14	ST433709	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 20	ST435703	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 18	ST436706	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 1	ST436711	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 5	ST440710	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 22	ST441706	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 3	ST441713	Aug 1999

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Odontomyia ornata</i>	Ornate Brigadier	Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 7	ST444712	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 24	ST446707	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 10	ST454713	Aug 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 11	ST458712	Aug 1999
		Severn Road, Crook's Marsh, Avonmouth	ST537817	May-Jul 2009
		Puxton Moor SSSI - Sample Point 23	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 21	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 22	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 24	ST4163	Aug 1999
<i>Odontomyia tigrina</i>	Black Colonel	Puxton Moor SSSI - Sample Point 7	ST412631	02/08/1999
		Puxton Moor SSSI - Sample Point 4	ST412636	02/08/1999
		Biddle Street, Yatton SSSI - Sample Point 1	ST414652	22/08/1999
		Puxton Moor SSSI - Sample Point 19	ST415621	08/08/1999
		Puxton Moor SSSI - Sample Point 18	ST415623	08/08/1999
		Biddle Street, Yatton SSSI - Sample Point 2	ST416653	22/08/1999
		Biddle Street, Yatton SSSI - Sample Point 4	ST421655	22/08/1999
		Biddle Street, Yatton SSSI - Sample Point 14	ST424647	21/08/1999
		Biddle Street, Yatton SSSI - Sample Point 19	ST426642	21/08/1999
		Biddle Street, Yatton SSSI - Sample Point 18	ST426644	21/08/1999
		Biddle Street, Yatton SSSI - Sample Point 20	ST428642	21/08/1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 18	ST436706	13/08/1999
		Decoypool Rhyne north of Claverham Drove, Kenn Moor	ST4361686 4	April and May 1983
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 21	ST437704	Aug 1999
		Yatton, Kenn Moor SSSI (x2)	ST438683	2003 - 2009
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 25	ST448705	May 1999
		Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 11	ST458712	Aug 1999

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<i>Odontomyia tigrina</i>	Black Colonel	Puxton Moor SSSI - Sample Point 21	ST4163	Aug 1999
		Puxton Moor SSSI - Sample Point 24	ST4163	Aug 1999
		ICI Severnside – Tip (x2)	ST5582	May-Jun 1997
<i>Odynerus (Odynerus) melanocephalus</i>	Black Headed Mason Wasp	ICI Severnside - Tip	ST5582	June 1997
<i>Oligia versicolor</i>	Rufous Minor	Max Bog SSSI, adjacent fields and Winscombe Brook	ST404576	June 2000
		Yatton. Court Avenue Yatton. Court Avenue (x2)	ST429653 ST430653	May-Oct 1999 1995 - 2000
<i>Omocestus viridulus</i>	Common Green Grasshopper	New Croft Field	ST426646	July 2003
		Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway	ST427648	Aug 2002
		Sandford Hill	ST4259	July 2003
<i>Onthophagus (Paleonthophagus) vacca</i>	a dung beetle or chafer	ICI Severnside - Fields Southwest of tip	ST5481	June 1997
<i>Ophonus (Ophonus) ardosiacus</i>	a ground beetle	Portbury Wharf Nature Reserve (PWNR)	ST483767	May 2011
<i>Orsodacne cerasi</i>	a leaf beetle	ICI Severnside - Field pond S.of Central Avenue	ST550825	June 1997
<i>Orthetrum coerulescens</i>	Keeled Skimmer	Max Bog AWT Reserve, In Ditch of Field B (7 records)	ST406573	1997 - 2001
		Max Bog SSSI, adjacent fields and Winscombe Brook	ST4057	July 1996
<i>Orthonama vittata</i>	Oblique Carpet	Littlewood SSSI Kenn Moor	ST438683	Aug 2004
<i>Orthonevra brevicornis</i>	a hoverfly	Lawrence Weston Moor AWT Reserve, Field 7	ST547791	May 1999
<i>Ostrinia nubilalis</i>	European Corn Borer	Portbury Wharf	ST496776	1998
		Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	July 2001
<i>Oxycera morrisii</i>	White-barred Soldier	Max Bog AWT Reserve, Field B	ST406573	June 1999
<i>Oxycera pygmaea</i>	Pygmy Soldier	Max Bog AWT Reserve, Field B (3 records)	ST406573	1999 - 2001
<i>Oxystoma cerdo</i>	a seed weevil	Northwest Edge, Avonmouth Sewage Farm AWT Reserve	ST530799	July 2001
<i>Panemeria tenebrata</i>	Small Yellow Underwing	Max Bog AWT Reserve, Field A	ST405573	June 2001
		Cheddar Valley Railway Walk LNR, SSSI	ST423655	1998
		Littlewood, Eastern Drove, Kenn Moor	ST438683	May 2002
		Portbury Wharf	ST496776	1998
		A369 S verge from ST507753 east to ST513752	ST510753	June-Aug 2004
		A369 N verge from ST508753 to ST516751	ST512752	June-Aug 2004
		Blaise Castle Estate	ST5578	May 1994
		Kingsweston Down, Blaise Estate	ST5578	May 2010
<i>Panorpa cognata</i>	a scorpion fly	Max Meadows, Winscombe, hedge	ST4057	June 1994

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<i>Paradarisa consonaria</i>	Square Spot	Yatton. Grace Close	ST426657	June 1982
<i>Parapoynx stratiotata</i>	Ringed China-mark	Yatton. Court Avenue (x2)	ST429653	2000 - 2002
<i>Parastichtis ypsilon</i>	Dingy Shears	Yatton. Grace Close	ST426657	July 1982
<i>Pechipogo strigilata</i>	Common Fan-Foot		ST345391	July 1998
<i>Peltodytes caesus</i>	a crawling water beetle	Biddle Street, Yatton SSSI - Sample Point 3 Biddle Street, Yatton SSSI - Sample Point 12 Biddle Street, Yatton SSSI - Sample Point 18 West Ditch, Congresbury Moor Ditches between Nailsea and St Georges, Ditch 59 Ditch south of New Rhyne, near Congresbury, site central transect point Ditches between Nailsea and St Georges, Ditch 60 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 20 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 2 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 22 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 23 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 24 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 8 Nailsea, south side of North Drove Rhyne as it leaves causeway on western edge of Nailsea Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 11 Ditch North West in Portbury Wharf Reserve, behind sea bank Portbury Wharf Reserve, ditch south end of site, south of nest-box field	ST418655 ST421646 ST426644 ST427648 ST427671 ST428643 ST428671 ST435703 ST438712 ST441706 ST443705 ST446707 ST450711 ST457706 ST458712 ST479772 ST484762	Aug 1999 Aug 1999 Aug 1999 June 2002 Aug-Sept 2000 July 2011 Aug-Sept 2000 Aug 1999 Aug 1999 May 1999 May 1999 May 1999 Aug 1999 Summer 1993 Aug 1999 June 2011 June 2011
<i>Pelurga comitata</i>	Dark Spinach	Max Bog Wildlife Trust Reserve Avonmouth Sewage Works Avonmouth Sewage Works	ST406573 ST532797 ST532797	July 2000 July 1994 Aug 1994
<i>Perizoma albulata</i>	Grass Rivulet	A369 S verge from ST507753 east to ST513752	ST510753	June-Aug 2004

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Perizoma albulata</i>	Grass Rivulet	A369 N verge from ST508753 to ST516751 Lawrence Weston Moor AWT Reserve, Field 1 Kingsweston Down, Blaise Estate	ST512752 ST545791 ST5578	June-Aug 2004 May 1999 May 2010
<i>Pherbellia dorsata</i>	a snail-killing fly	Fen, Avonmouth Sewage Farm AWT Reserve (x2)	ST530796	May-Jul 2001
<i>Pherbellia nana</i>	a snail-killing fly	Severn Road, Crook's Marsh, Avonmouth	ST538817	May-Jul 2009
<i>Philanthus triangulum</i>	Bee Wolf	ICI Severnside - Fields west of Tip	ST551824	Aug 1996
<i>Philereme transversata</i> subsp. <i>britannica</i>	Dark Umber	Pill. Easton Road	ST521758	July 2001
<i>Phycitodes maritima</i>	a pyralid moth	Avonmouth Sewage Works	ST532797	July 1994
<i>Phyllotreta aerea</i>	a leaf beetle	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	July 2001
<i>Phytoecia cylindrica</i>	Umbellifer Longhorn Beetle	Kingsweston Down, Blaise Estate	ST5578	May 2010
<i>Pipizella virens</i>	a hoverfly	Max Bog AWT Reserve, Field B Fields North East of Chitting Industrial Estate, Avonmouth Max Bog ICI Severnside - Tip	ST406573 ST532819 ST4057 ST5582	June 1999 May-Sept 2006 June 1999 July 1997
<i>Pipunculus zugmayeriae</i>	a big-headed fly	Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	May 2001
<i>Pisidium pseudosphaerium</i>	a pea mussel	Biddle Street, North Somerset Levels and Moors Biddle Street, North Somerset Levels and Moors Tckenham Moor, North Somerset Levels and Moors	ST4265 ST4368 ST4470	1991 - 1993 1991 - 1993 1991 - 1993
<i>Plagodis dolabraria</i>	Scorched Wing	Max Bog Wildlife Trust Reserve Lime Breach Wood	ST406573 ST466726	June 1999 June 1995
<i>Plateumaris affinis</i>	a leaf beetle	Max Bog AWT Reserve, Field B	ST406573	June 2001
<i>Platycnemis pennipes</i>	White-legged Damselfly	Puxton Moor SSSI Puxton Moor, (rhyme) 400 metres north of Old Bridges on Dolemoor Lane, Puxton, west of Congresbury	ST410636 ST416638	June 1991 1991
<i>Plusia festucae</i>	Gold Spot	Pilhay Farm area, Hewish Yatton. Grace Close (x3) Yatton. Court Avenue (x3) Yatton. Court Avenue Littlewood SSSI Kenn Moor Avonmouth Sewage Works	ST411652 ST426657 ST429653 ST430653 ST438683 ST532797	Aug 1993 June 1982 1997 - 2001 June 2000 Aug 2004 Aug 1994
<i>Polymixis flavicincta</i>	Large Ranunculus	Yatton, Court Avenue	ST429653	May-Sept 2001
<i>Polymixis lichenea</i>	Feathered Ranunculus	Yatton. Court Avenue (x4) Court Avenue, Yatton (x2)	ST429653 ST430653	1996-2004 1995 - 2000

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Polymixis lichenea</i>	Feathered Ranunculus	Lawrence Weston	ST539793	Sept 2005
<i>Psacadina verbekei</i>	a snail-killing fly	Max Bog AWT Reserve, Field B	ST406573	1999 - 2001
<i>Pseudopanthera macularia</i>	Speckled Yellow	Sandford Hill Sandford Hill Quarry (x2) Sandford Hill, Sandford, near Winscombe	ST4259 ST4259 ST4259	May 1994 June 2001 May 2008
<i>Psychoides filicivora</i>	a micro-moth	Lime Breach Wood	ST4672	April 1993
<i>Pteromicra glabricula</i>	a snail-killing fly	Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	July 2001
<i>Ptinus fur</i>	White-marked Spider Beetle	Nailsea - Town Centre East Nailsea - Town Centre East	ST474707 ST474707	June 1970 June 1970
<i>Pyrausta ostrinalis</i>	a pyralid moth	Winscombe Sandford Hill (2 records)	ST4157 ST4259	1940 Jul-Aug 2003
<i>Pyrgus malvae</i>	Grizzled Skipper	Crook Peak (5 records) Crooks Peak Crooks Peak, valley on side of Compton Bishop and track., Crook Peak Crook Peak (4 records) Crook Peak (5 records) Crook Peak (3 records) Crooks Peak Compton Bishop Valley Track. Sandford Hill (6 records) Cheddar Valley Railway Walk Sandford Quarry surround Yatton Junction Nature Reserve (LNR) Wharf Lane, Portbury Crook Peak (4 records) Sandford Quarry Sandford Hill and Lyncombe Wood Cadbury Camp (2 records) Kingsweston (2 records) North Somerset (6 records) North Somerset North Somerset (5 records) North Somerset (13 records) North Somerset (2 records) Hinkley (3 records) North Somerset (2 records) North Somerset North Somerset (2 records) North Somerset North Somerset (2 records) North Somerset (3 records) North Somerset North Somerset North Somerset Crook Peak to Shute Shelve Hill SSSI North Somerset	ST385555 ST386556 ST386558  ST387558 ST388558 ST391558 ST396560  ST421588 ST423659  ST424590 ST424659  ST488764 ST3855 ST4259 ST4259  ST4572 ST5477 ST390552 ST395560 ST391558 ST390552 ST388558 ST207458 ST474763 ST424659 ST424590 ST396560 ST390552 ST387558 ST386558 ST386556 ST386555 ST387556  ST423659	1994 - 2006 May 2004 May 1998  1964 - 1997 1981 - 2008 2006 - 2008 May 1998  1969 - 1971 May 1998  May 2005 June 2001  May 1987 1980 - 1998 May 2004 June 1986  June 1984 May 1968 2006 - 2008 April 2007 2006 - 2009 2006 - 2009 2008 - 2009 1900 - 1995 2006 - 2009 June 2001 Apr-May 2009 May 1998 2000 - 2001 1994 - 1997 May 1998 May 2004 June 1994 May 2005  May 1998
<i>Pyrrhia umbra</i>	Bordered Sallow	Max Bog SSSI, adjacent fields and Winscombe Brook Yatton. Grace Close	ST404576 ST426657	June 2000 July 1982

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Pyrrhidium sanguineum</i>	Longhorn Beetle	Stockway North Nature Reserve, Nailsea Lawrence Weston Moor	ST471708 ST543791	July 2008 May 2010
<i>Rhantus (Nartus) grapii</i>	a water beetle	Puxton Moor SSSI - Sample Point 13 Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm Puxton Moor SSSI - Sample Point 15 Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Meer Wall Rhyne Puxton Moor SSSI - Sample Point 4 Puxton Moor SSSI - Sample Point 11 Avon Levels and Moors, Puxton Moor, Puxton, rhyne south east of South Farm and west of Meer Wall, draining into Blackstone's Rhyne, north of Rockers Rhyne Biddle Street, Yatton SSSI - Sample Point 1 Puxton Moor SSSI - Sample Point 18 Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo Biddle Street, Yatton SSSI - Sample Point 7	ST411627 ST411630 ST412624 ST412631 ST412636 ST413629 ST414623 ST414652 ST415623 ST420646 ST421654	Aug 1999 Sept 1993 Aug 1999 Sept 1993 Aug 1999 Aug 1999 Sept 1993 Aug 1999 Aug 1999 Sept 1993 Aug 1999
<i>Rhantus (Nartus) grapii</i>	a water beetle	Avon Levels and Moors, south of Yatton, Biddle Street or Wemberham, rhyne between Binhay Rhyne and Congresbury Yeo Biddle Street, Yatton SSSI - Sample Point 10 Biddle Street, Yatton SSSI - Sample Point 19 Biddle Street, Yatton SSSI - Sample Point 15 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 19 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 20 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 21 Tickenham, Nailsea and Kenn Moors SSSIs - Sample Point 7	ST424644 ST425650 ST426642 ST426648 ST434704 ST435703 ST437704 ST444712	Sept 1993 Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999 Aug 1999



TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Rhantus (Nartus) grapii</i>	a water beetle	Portbury Wharf Reserve, ditch south end of site, south of nest-box field, site central grid reference Shipway Farm, Sheepway, reedbed Puxton Moor SSSI - Sample Point 21 Puxton Moor SSSI - Sample Point 24 Puxton Moor SSSI - Sample Point 23	ST484762  ST489769 ST4163 ST4163 ST4163	June 2011  Jan 1999 Aug 1999 Aug 1999 Aug 1999
<i>Rhantus (Rhantus) suturalis</i>	a water beetle	Avon Levels and Moors, Puxton Moor, Puxton, Rhyne north east of Goose Acre Farm Avon Levels and Moors, Puxton Moor, Puxton, rhyne east of Puxton and west of Meer Wall Rhyne Puxton Moor SSSI - Sample Point 11 Avon Levels and Moors, Puxton Moor, rhyne east of South Farm and Puxton Lane Puxton Moor SSSI - Sample Point 23 Portbury Wharf Nature Reserve (PWNR)	ST411630  ST412631 ST413629 ST414626 ST4163 ST484772	Sept 1993  Sept 1993 Aug 1999 Sept 1993 Aug 1999 Sept 2010
<i>Rhizedra lutosa</i>	Large Wainscot	Lawrence Weston	ST539793	Sept 2005
<i>Rhopalopterum femorale</i>	a fly	Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth	ST538817 ST538818 ST539817	May-Jul 2009 May-Jul 2009 May-Jul 2009
<i>Rhyparochromus pini</i>	a ground bug	Combe Dingle	ST5578	Jul 1957
<i>Sapromyza opaca</i>	a fly	Severn Road, Crook's Marsh, Avonmouth (2 records) Severn Road, Crook's Marsh, Avonmouth (3 records) Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth	ST538817 ST538816 ST538818 ST539817	May-Jul 2009 May-Jul 2009 May-Jul 2009 May-Jul 2009
<i>Saturnia pavonia</i>	Emperor	Biddle St Biddle Street, Yatton	ST428643 ST428652	1997 Aug 1985
<i>Satyrrium w-album</i>	White-letter Hairstreak	Sandford Quarry Easton-in-Gordano Blaise Castle Estate ICI Severnside - Fields west of Tip Vimpenny's Lane., Severnside work site, Hallen ICI Severnside - Foreshore section west of railway	ST4259 ST5175 ST5578 ST5582  ST5582  ST5582	July 2004 1957 - 1963 July 1991 Aug 1996  June 1996  July 1996
<i>Sciocoris cursitans</i>	a shield bug	Crook Peak	ST3855	Aug 1993

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Scirtes orbicularis</i>	a marsh beetle	Puxton Moor SSSI - Sample Point 6	ST410632	Aug 1999
		Puxton Moor SSSI - Sample Point 7	ST412631	Aug 1999
		Puxton Moor SSSI - Sample Point 10	ST414630	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 1	ST414652	Aug 1999
		Biddle Street, Yatton SSSI - Sample Point 3	ST418655	Aug 1999
<i>Scopula ternata</i>	Smoky Wave	Barton Quarry	ST380562	June 1995
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	Max Bog (MB)	ST406573	Aug 1999
		Max Bog Wildlife Trust Reserve	ST406573	July 1999
		Max Bog AWT Reserve, Field B (2 records)	ST406573	1999 - 2001
		Max Bog AWT Reserve, Field C (2 records)	ST407573	1999 - 2001
		Field 2, Max Bog SSSI	ST408575	Aug 1997
		Pilhay Farm area, Hewish	ST411652	Aug 1993
		Station Yard, Yatton	ST422655	July 1999
		Cheddar Valley Railway Walk LNR, SSSI	ST423655	1998
		Churchill, Yarnell Bog	ST427608	July 1996
		Yatton, Court Avenue	ST429653	1998
		Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
		Portbury	ST496777	July 1995
		Portbury Wharf	ST497767	1993
		Portbury Wharf	ST504767	1993
		St Georges Flower Bank, south side of A369	ST510752	2009
		St Georges Flower Bank, north side of A369	ST510753	2009
		Portbury Wharf, Pill	ST516772	1993
		Avonmouth Sewage Treatment Works (9 records)	ST532797	1994 - 1995
		Hallen tip	ST553805	Aug 2000
		Bristol, Blaise Hamlet area	ST555791	Aug 1983
		Winscombe	ST4057	July 2001
		Sandford-Winscombe, Cheddar Valley Railway Walk	ST4158	July 1997
		Hinkley (2 records)	ST207458	1900 - 1995
<i>Sesia bembeciformis</i>	Lunar Hornet Moth	Cheddar Valley Railway Walk LNR, SSSI	ST425652	March 1994
		Portbury Wharf	ST496767	May 1998
		Portbury Wharf	ST496776	1998
<i>Silpha obscura</i>	a sexton beetle	Kingsweston Down, Blaise Estate	ST5578	May 2010
<i>Sitochroa palealis</i>	a pyralid moth	Portbury Wharf AWT Reserve (S)	ST484760	Oct 2011
		Portbury Wharf Nature Reserve (PWNR)	ST484772	Sept 2010
		Portbury Wharf and Meadows	ST492773	1997
		Portbury Wharf	ST496776	1998
		Portbury Dock	ST503782	Aug 1996
<i>Sitona sulcifrons</i>	a Clover Weevil	Crooks Marsh, Severn Road, Avonmouth	ST538817	May-Jul 2009

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Sphaeridium bipustulatum</i>	a scavenger water beetle	ICI Severnside - Fields s/w of Tip	ST5481	June 1997
<i>Sphecodes rubicundus</i>	a solitary bee	ICI Severnside - Relocated Meadow	ST5582	May 1997
<i>Spilosoma lubricipeda</i>	White Ermine	Barton Quarry (2 records) Yatton, Court Avenue (x4) Yatton. Court Avenue (x3) Lime Breach Wood Portbury Dock Area Lodway Gardens (garden at), Pill, BS20 0DL (2 records) Kingston Seymour Max Bog Wildlife Trust Reserve Yatton. Grace Close (x4) Ten Acre Field Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Yatton, Court Avenue (x7) Yatton. Court Avenue	ST380562 ST429653 ST430653 ST466726 ST507767 ST523760  ST403669 ST406573  ST426657 ST427645 ST427648  ST429653 ST430653	June 1995 1996 - 2003 1986 - 2000 June 1995 May 2001 May-Jun 2006  July 2003 June 1999  Jun-Jul 1982 July 2003 Oct 2000  1997 - 2004 June 1993
<i>Spilosoma lubricipeda</i>	White Ermine	Court Avenue, Yatton (x5) Lime Breach Wood Pill Paddock Pill. Easton Road	ST430653 ST466726 ST519754 ST521758	1986 - 2000 June 1995 July 1999 June 2001
<i>Stathmopoda pedella</i>	a micro-moth	Littlewood, Kenn Moor SSSI Yatton, Kenn Moor SSSI	ST438683 ST438683	June 2003 June 2003
<i>Stenostola dubia</i>	a longhorn beetle	Lawrence Weston Moor LNR, Bristol	ST543791	April 2007
<i>Stenus (Hemistenus) ossium</i>	a rove beetle	Sheepway, Portbury, Shipway Farm, stream with flooded banks Severn Road, Crooks Marsh, Avonmouth	ST488768  ST538817	Jan 1999  May-Jul 2009
<i>Stenus (Hypostenus) fulvicornis</i>	a rove beetle	Crooks Marsh, Severn Road, Avonmouth (2 records) Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth	ST538818 ST539817 ST539815	May-Jul 2009 May-Jul 2009 May-Jul 2009
<i>Stenus (Stenus) nanus</i>	a rove beetle	Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth Crooks Marsh, Severn Road, Avonmouth	ST538817 ST538818 ST539817	May-Jul 2009 May-Jul 2009 May-Jul 2009
<i>Stictopleurus abutilon</i>	a ground bug	St Georges Flowerbank LNR, Gordano, North Somerset	ST512752	Aug 2006
<i>Stratiomys potamida</i>	Banded General	Max Bog AWT Reserve	ST407573	July 1996
<i>Stratiomys singularior</i>	Flecked General	Puxton Moor SSSI - Sample Point 1 Puxton Moor SSSI - Sample Point 7 Puxton Moor, rhyne adjacent to public footpath Ditch North West in Portbury Wharf Reserve, behind sea bank	ST407636 ST412631 ST415627 ST479772	Aug 1999 Aug 1999 July 2011 June 2011

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Stratiomys singularior</i>	Flecked General	Fields North East of Chittening Industrial Estate, Avonmouth ICI Severnside - Fields south of ICI works ICI Severnside - Relocated Meadow	ST532819 ST544820 ST5582	May-Sept 2006 July 1996 June 1997
<i>Sympetrum danae</i>	Black Darter	East Ditch, Congresbury Moor Cadbury Farm Pond	ST427645 ST428648	June 2002 Summer 1996
<i>Sympetrum sanguineum</i>	Ruddy Darter	Puxton Moor SSSI Puxton Moor SSSI Puxton Moor,(Oldbridge River Inflow) at junction of Meer Wall Track and rhyne east of South Farm, Puxton, west of Congresbury Cadbury Farm Yatton Rhynes,Biddle Street S.S.S.I. East Ditch, Congresbury Moor (2 records) West Ditch, Congresbury Moor Biddle Street S.S.S.I. Cadbury Farm Pond Littlewood Tickenham Moor (2 records) Tickenham Moor Tickenham Moor, between Moor Lane and Middle Yeo (2 records) Nailsea Moor (2 records) Stockway North Nature Reserve pond, Nailsea Portbury Wharf CEGB Pond, Portishead, Portbury Wharf Pond Portbury Wharf,Meadows around Portbury Wharf (x3) Meadows around Portbury Wharf Portbury Wharf, by old CEGB pool Portbury Ashlands (PA) Portbury Wharf Nature Reserve (PWNR) Portbury Wharf,Meadows around Portbury Wharf Meadows around Portbury Wharf (3 records) Pill Fen, Avonmouth Sewage Farm AWT Reserve Avonmouth, 'Honda Pools' Rhyne off Kingsweston Lane, Avonmouth (2 records) Deep Pool, Avonmouth Sewage Farm AWT Reserve	ST410635 ST410636 ST417625  ST423645 ST427645 ST427648 ST428648 ST428648 ST438683 ST445714 ST446716 ST447713  ST448698 ST471708  ST482769 ST482772 ST483771 ST483772 ST484772 ST485768 ST485768 ST486767 ST488770 ST518764 ST530796 ST530808 ST531792 ST531798	July 1992 June 1997 1991  Summer 1996 May-Jun 2002 June 2002 July 1997 Summer 1996 Sept 2003 2007 - 2008 Aug 2005 Jul-Aug 2006  Aug 1994 2001-2003  Sept 2002 Aug 1994 1998 - 1999 July 1985 Aug 1995 July 2008 Aug 2011 Aug 1999 Aug-Sept 1999 Aug 1992 Aug 2001 Aug 2000 July 1997 July 2001

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Sympetrum sanguineum</i>	Ruddy Darter	Fields North East of Chittening Industrial Estate, Avonmouth	ST532819	May-Sept 2006
		Lawrence Weston Moor Nature Reserve	ST546790	Aug 2007
		Lawrence Weston Moor AWT Reserve	ST547792	Aug 2004
		Oldbridge River, Puxton Moor SSSI	ST4060	Jun 1991
		Fields adjacent to Wharf Lane., Meadows around Portbury Wharf	ST4876	July 1998
		Wharf Lane, Sheepway., Meadows around Portbury Wharf	ST4876	Aug 1998
		Portbury Wharf, lane with rhynes each side	ST4876	Aug 2000
		Wharf Lane, Sheepway., Meadows around Portbury Wharf	ST4876	Sept 1998
		Portbury Ashlands	ST4876	Summer 1994
		Portbury Wharf, artificial lake and rough grassland	ST4877	Aug 2000
		Portbury Wharf	ST4877	Aug 2000
		ditches, Portbury Wharf and Meadows	ST4877	July 1998
		Lower Wharf Lane and Sea Wall., Meadows around Portbury Wharf	ST4877	July 1998
		North Somerset	ST4976	1980 - 1992
		ICI Severnside - Tip	ST5582	July 1996
<i>Tetanocera punctifrons</i>	a snail-killing fly	Severn Road, Crook's Marsh, Avonmouth	ST538817	May-Jul 2009
		Severn Road, Crook's Marsh, Avonmouth	ST538818	May-Jul 2009
<i>Tetheella fluctuosa</i>	Satin Lutestring	Priors Wood - AWT Reserve	ST491742	Aug 2006
<i>Tetrix subulata</i>	Slender Ground Hopper	Max Bog Wildlife Trust Reserve	ST406573	Aug 1999
		Congresbury to Yatton	ST423655	May 1998
		Cheddar Valley Railway Walk	ST425651	1999
		Pill Paddock (2 records)	ST520756	May 1999
		Coarse Grassland, Avonmouth Sewage Farm AWT Reserve	ST528798	May 2001
		Fen, Avonmouth Sewage Farm AWT Reserve	ST530796	May 2001
		Severn Road, Crook's Marsh, Avonmouth (2 records)	ST538817	May-Jul 2009
		Severn Road, Crook's Marsh, Avonmouth (2 records)	ST538816	May-Jul 2009
		Severn Road, Crook's Marsh, Avonmouth	ST538818	May-Jul 2009
		Lawrence Weston Moor (x2)	ST543791	2007 - 2010
		Muddy margin of small pool in field, Kingston Seymour	ST4167	Oct 1994
		Portbury Ashlands	ST4876	Summer 1994
		ICI Severnside - Relocated Meadow	ST5582	Apr 1997

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<i>Tettigonia viridissima</i>	Great Green Bush Cricket	Crooks Peak Rust Lane Borrow Pool and meadows Gordano Valley, Cadbury Camp Sandford Hill Crook Peak to Shute Shelve Hill SSSI	ST387558 ST409685  ST453724  ST4259 ST385555	July 2004 Sept 2003  June 1971  Aug 2003 1975 - 1991
<i>Thecla betulae</i>	Brown Hairstreak	North Somerset	ST345413	Apr 2007
<i>Theridion familiare</i>	a comb-footed spider	10 Acre Field, Biddle Street SSSI	ST427645	Jul 2003
<i>Tholera cespitis</i>	Hedge Rustic	Pill. Easton Road	ST521758	Jul 2000
<i>Thryogenes nereis</i>	a weevil	Shipway Farm, Sheepway, reedbed Fen, Avonmouth Sewage Farm AWT Reserve Severn Road, Crook's Marsh, Avonmouth Severn Road, Crook's Marsh, Avonmouth	ST489769  ST530796 ST538816 ST539817	Jan 1999  May 2001 May-Jul 2009 May-Jul 2009
<i>Thumatha senex</i>	Round-winged Muslin	Max Bog Wildlife Trust Reserve (2 records) Station Yard, Yatton Pill Paddock	ST406573  ST422655 ST519755	July 1999  July 1999 July 2000
<i>Thymelicus lineola</i>	Essex Skipper	Fields above Lawrence Weston Moor Lawrence Weston Moor	ST550789  ST5479	July 2005  July 2005
<i>Timandra comae</i>	Blood-vein	Max Bog SSSI, adjacent fields and Winscombe Brook Max Bog Max Bog Wildlife Trust Reserve Max Bog (MB) Congresbury Moor, Ten Acre Field, adjacent to Cheddar Valley Railway Phippens Field Court Avenue, Yatton (x4) Yatton. Court Avenue (x2) Littlewood SSSI Kenn Moor Littlewood, Kenn Moor SSSI Nailsea Moor Nailsea Moor Lamplighters Marsh, Avonmouth Avonmouth Sewage Treatment Works, Avonmouth Sewage Works Reservoir (2 records) Chittingen Warth (New Pill Gout) Kingsweston Lane Triangle I.C.I. Works, Hallen.	ST404576  ST405575 ST406573  ST406573 ST427648  ST428643 ST429653 ST430653 ST438683 ST438683 ST444696 ST459709 ST522771  ST532797  ST533831  ST537783 ST5483	June 2000  July 1995 June 1999  July 1995 Aug 2002  July 2003 1996 - 2001 1995 - 2000 Aug 2004 June 2004 June 2010 June 1993 June 1995  Jun-Jul 1995  Aug 1997  June 1999 June 1995
<i>Triphosa dubitata</i>	Tissue	Avonmouth Sewage Works Near Moorgrove wood Banwell Hill, The Caves	ST532797 ST555791 ST3858	July 1994 pre 1990 Oct 1992
<i>Typhamyza bifasciata</i>	a fly	Severn Road, Crooks Marsh, Avonmouth	ST538817	May-Jul 2009

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Typhamyza bifasciata</i>	a fly	Crooks Marsh, Severn Road, Avonmouth	ST538818	May-Jul 2009
		Crooks Marsh, Severn Road, Avonmouth	ST539817	May-Jul 2009
<i>Tyria jacobaeae</i>	Cinnabar	Cheddar Valley Railway Walk, section west of Nye Road, Sandford	ST416599	May-Jul 1997
		Congresbury to Yatton	ST423655	July 1993
		Cheddar Valley Railway Walk LNR, SSSI	ST423655	1998
		Cheddar Valley Railway Walk, Yatton, Congresbury to Yatton	ST423659	July 1998
		Cheddar Valley Railway Walk LNR, SSSI	ST425652	Aug 1983
		Court Avenue, Yatton (x3)	ST429653	1996 - 1998
		Yatton, Court Avenue (x4)	ST430653	1992 - 1995
		Nailsea - Morgans Hill (1)	ST467695	Aug 2002
		Clapton Lane Meadows field 7	ST474753	June 1985
		Nailsea- Old Glassworks (x2)	ST477709	May 2007
		Nailsea - Southfield Trading Estate	ST477714	Aug 2002
		Portbury Wharf	ST490773	1994
		Portbury Wharf	ST496776	1998
		Portbury Wharf	ST497777	1993
		Portbury Wharf	ST503766	1993
		St. Georges Road, Rpd South	ST504779	1993
		St. George Flower Bank A369	ST511752	June 2004
		Portbury Wharf	ST512774	1993
		Pill Paddock	ST519754	July 1999
		Lamplighters Marsh, Avonmouth	ST521759	June 1995
		Lamplighters Marsh, along Portway north of Markham Close	ST522770	June 1995
		Lamplighters Marsh, former allotments along Portway south of Markham Close	ST522770	June 1995
		Lamplighters Marsh (x2)	ST523767	1994 - 2002
		Lamplighters	ST524766	June 1993
		Coarse Grassland, Avonmouth Sewage Farm AWT Reserve (2 records)	ST528798	May-Jul 2001
		Stup Pill, Chittening Warth	ST528818	June 2001
		Avonmouth Pools AWT Reserve (3 records)	ST531798	1992 - 2001
		avonmouth railway siding	ST531822	June 1999
		Fields North East of Chittening Industrial Estate, Avonmouth	ST532819	May-Sept 2006
		Severnside	ST533824	Jun-Aug 1995
		Chittening Warth	ST533827	June 2004
		Chittening Warth	ST536833	July 2000
		Kingsweston Lane Triangle	ST537783	June 1999
		Lawrence Weston	ST538783	June 2001
		Severn Road, Crook's Marsh, Avonmouth	ST538816	May-Jul 2009

TAXONOMIC NAME	VERNACULAR NAME	LOCATION	OS REF	DATE
<i>Tyria jacobaeae</i>	Cinnabar	Poplar Farm, Lawrence Weston (2 records) Lawrence Weston Moor Lawrence Weston Moor AWT Reserve, Field 1 Lawrence Weston Moor AWT Reserve, Field 2 (x2) Hallen tip Winscombe, Max Bog SSSI Sandford- Winscombe, Cheddar Valley Railway Walk Sandford- Winscombe, Cheddar Valley Railway Walk Congresbury, field off Weston Road Portbury Docks Portbury Docks, Avonmouth Lamplighter's Marsh, Avonmouth Avonmouth Sewage Works ICI Severnside - Fields W. of Works railway sidings ICI Severnside - Foreshore ICI Severnside – Tip (x5) ICI Severnside - Relocated Meadow Hinkley (2 records)	ST539794 ST542799 ST545791 ST545792 ST549809 ST4057 ST4158  ST4159  ST4264 ST5076 ST5076 ST5276 ST5379 ST5382  ST5383 ST5582 ST5582  ST207458	2000 - 2001 July 1997 July 2001 1997 - 1999 Aug 2000 June 1996 July 1997  July 1997  June 1997 May 1992 May 1992 July 2010 June 1994 July 1997  July 1997 1996 - 1997 June 1997  1900 - 1995
<i>Vanoyia tenuicornis</i>	a soldier fly	Max Bog AWT Reserve, Field A (2 records) Max Bog AWT Reserve, Field B	ST405573 ST406573	1999 - 2001 June 2001
<i>Vespa crabro</i>	Hornet	Max Bog Wildlife Trust Reserve Prior's Wood - AWT Reserve Portbury Wharf	ST406573 ST490745 ST5077	May 1999 Sept 2006 Oct 2003
<i>Volucella inanis</i>	a hoverfly	Stockway North Nature Reserve Tickenham Hill (TH) (Site B). Stockway North Nature Reserve, Nailsea (2 records) Portishead Marina Lawrence Weston, The Tump	ST471708 ST447722 ST471708 ST477771 ST539777	July 2008 May 2001 June 2008 Sept 2006 July 2003
<i>Watsonalla binaria</i>	Oak Hook-tip	Yatton, Court Avenue Yatton. Court Avenue Littlewood SSSI Kenn Moor Priors Wood - AWT Reserve	ST429653 ST430653 ST438683 ST491742	2004 June 2000 Aug 2004 Aug 2006
<i>Watsonalla cultraria</i>	Barred Hook-tip	Tickenham Hill	ST4472	July 2001
<i>Xanthia togata</i>	Pink-barred Sallow	Max Bog (MB) Yatton. Court Avenue	ST406573 ST430653	Sept 2011 June 2000
<i>Xanthogramma citrofasciatum</i>	a hoverfly	Fields North East of Chittening Industrial Estate, Avonmouth	ST532819	May-Sept 2006
<i>Xestia baja</i>	Dotted Clay	Yatton. Grace Close	ST426657	29/06/1982



## 7.0 Invertebrate Desktop Survey Results – Species by 1km Square

- 7.1 The 1km grid square ID and the British National Grid (BNG) reference are displayed on **Figure 8.55** along with a colour scale to illustrate the total number of invertebrate records per grid square.

Grid ID & BNG Location	Total Invertebrates
<b>A1 - ST331135</b>	<b>2</b>
<b>Great Silver Water Beetle</b>	<b>1</b>
Hydrophilus piceus	1
<b>Oil Beetle</b>	<b>1</b>
Meloe proscarabaeus	1
<b>A10 - ST336147</b>	<b>1</b>
<b>Bombus (Thoracombus) sylvarum</b>	<b>1</b>
Bombus (Thoracombus) sylvarum	1
<b>A100 - ST351176</b>	<b>3</b>
<b>Knot Grass (moth)</b>	<b>1</b>
Acronicta rumicis	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Short-winged Conehead</b>	<b>1</b>
Conocephalus dorsalis	1
<b>A101 - ST352176</b>	<b>17</b>
<b>a ground beetle</b>	<b>1</b>
Broscus cephalotes	1
<b>a pyralid moth</b>	<b>3</b>
Homoeosoma sinuella	3
<b>Cinnabar</b>	<b>4</b>
Tyria jacobaeae	4
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>
Hepialus humuli subsp. humuli	1
<b>Knot Grass (moth)</b>	<b>1</b>
Acronicta rumicis	1
<b>Latticed Heath</b>	<b>3</b>
Chiasmia clathrata	3
<b>Six-belted Clearwing</b>	<b>2</b>
Bembecia ichneumoniformis	2
<b>White Ermine</b>	<b>2</b>
Spilosoma lubricipeda	2
<b>A102 - ST347177</b>	<b>6</b>
<b>a crawling water beetle</b>	<b>1</b>
Peltodytes caesus	1
<b>a hoverfly</b>	<b>1</b>
Volucella zonaria	1
<b>a scavenger water beetle</b>	<b>1</b>
Helochares lividus	1
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>White Admiral</b>	<b>2</b>
Limenitis camilla	2

Grid ID & BNG Location	Total Invertebrates
<b>A103 - ST348177</b>	<b>50</b>
<b>a crawling water beetle</b>	<b>1</b>
Haliphus (Haliphus) immaculatus	1
<b>a micro-moth</b>	<b>2</b>
Agonopterix arenella	1
Ectoedemia sericopeza	1
<b>a pyralid moth</b>	<b>4</b>
Agriphila selasella	1
Ebulea crocealis	1
Eudonia pallida	1
Sitochroa palealis	1
<b>a scavenger water beetle</b>	<b>3</b>
Berosus (Berosus) affinis	1
Cymbiodyta marginellus	2
<b>Blackneck</b>	<b>1</b>
Lygephila pastinum	1
<b>Bulrush Wainscot</b>	<b>1</b>
Nonagria typhae	1
<b>Centre-barred Sallow</b>	<b>1</b>
Atethmia centrago	1
<b>Coronet</b>	<b>1</b>
Craniophora ligustri	1
<b>Crescent</b>	<b>1</b>
Celaena leucostigma subsp. leucostigma	1
<b>Dusky Thorn</b>	<b>1</b>
Ennomos fuscantaria	1
<b>Emerald Damselfly</b>	<b>4</b>
Lestes sponsa	4
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Large Wainscot</b>	<b>1</b>
Rhizodra lutosa	1
<b>Latticed Heath</b>	<b>3</b>
Chiasmia clathrata	3
<b>Long-winged Conehead</b>	<b>1</b>
Conocephalus discolor	1
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Oak Nycteoline</b>	<b>1</b>
Nycteola revayana	1
<b>Old Lady</b>	<b>1</b>
Mormo maura	1
<b>Rosy Rustic</b>	<b>1</b>
Hydraecia micacea	1
<b>Ruddy Darter</b>	<b>13</b>
Sympetrum sanguineum	13
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Slender Pug</b>	<b>1</b>
Eupithecia tenuiata	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Small Square-Spot</b>	<b>1</b>
Diarsia rubi	1

<b>Grid ID &amp; BNG Location</b>	<b>Total Invertebrates</b>
<b>Vine's Rustic</b>	<b>1</b>
Hoplodrina ambigua	1
<b>A104 - ST349177</b>	<b>14</b>
<b>a pyralid moth</b>	<b>2</b>
Sitochroa palealis	2
<b>Cinnabar</b>	<b>3</b>
Tyria jacobaeae	3
<b>European Corn Borer</b>	<b>1</b>
Ostrinia nubilalis	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Latticed Heath</b>	<b>4</b>
Chiasmia clathrata	4
<b>Lunar Hornet Moth</b>	<b>1</b>
Sesia bembeciformis	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Small Yellow Underwing</b>	<b>1</b>
Panemeria tenebrata	1
<b>A105 - ST350177</b>	<b>6</b>
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Hornet</b>	<b>1</b>
Vespa crabro	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Southern Wainscot</b>	<b>1</b>
Mythimna straminea	1
<b>A106 - ST351177</b>	<b>21</b>
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Lackey</b>	<b>1</b>
Malacosoma neustria	1
<b>Saltern Ear</b>	<b>1</b>
Amphipoea fucosa subsp. paludis	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Small Garden Bumble Bee</b>	<b>1</b>
Bombus (Megabombus) hortorum	1
<b>Small Heath</b>	<b>14</b>
Coenonympha pamphilus	14
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A107 - ST352177</b>	<b>9</b>
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Chamomile Shark</b>	<b>2</b>
Cucullia chamomillae	2
<b>Cinnabar</b>	<b>2</b>

Grid ID & BNG Location	Total Invertebrates
Tyria jacobaeae	2
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A108 - ST353177</b>	<b>3</b>
<b>a hoverfly</b>	<b>1</b>
Volucella zonaria	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A109 - ST354177</b>	<b>3</b>
<b>Grizzled Skipper</b>	<b>2</b>
Pyrgus malvae	2
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>A11 - ST337147</b>	<b>2</b>
<b>Bombus (Thoracombus) muscorum</b>	<b>1</b>
Bombus (Thoracombus) muscorum	1
<b>Bombus (Thoracombus) sylvarum</b>	<b>1</b>
Bombus (Thoracombus) sylvarum	1
<b>A110 - ST350178</b>	<b>5</b>
<b>a pyralid moth</b>	<b>2</b>
Ancylosis oblitella	1
Sitochroa palealis	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A111 - ST353178</b>	<b>11</b>
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Small Heath</b>	<b>8</b>
Coenonympha pamphilus	8
<b>A112 - ST354178</b>	<b>3</b>
<b>Short-winged Conehead</b>	<b>1</b>
Conocephalus dorsalis	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A113 - ST355178</b>	<b>17</b>
<b>a click beetle</b>	<b>1</b>
Kibunea minuta	1
<b>a ground bug</b>	<b>1</b>
Rhyparochromus pini	1
<b>a sexton beetle</b>	<b>1</b>
Silpha obscura	1

Grid ID & BNG Location	Total Invertebrates
<b>Blomer's Rivulet</b>	<b>1</b>
Discoloxia blomeri	1
<b>Clouded Magpie</b>	<b>2</b>
Abraxas sylvata	2
<b>Essex Skipper</b>	<b>1</b>
Thymelicus lineola	1
<b>Grass Rivulet</b>	<b>1</b>
Perizoma albulata subsp. albulata	1
<b>Little Thorn</b>	<b>1</b>
Cepphis advenaria	1
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Seraphim</b>	<b>1</b>
Lobophora halterata	1
<b>Small Yellow Underwing</b>	<b>2</b>
Panemeria tenebrata	2
<b>Umbellifer Longhorn Beetle</b>	<b>1</b>
Phytoecia cylindrica	1
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>White-letter Hairstreak</b>	<b>2</b>
Satyrrium w-album	2
<b>A114 - ST351179</b>	<b>1</b>
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>A115 - ST352179</b>	<b>15</b>
<b>a big-headed fly</b>	<b>1</b>
Pipunculus zugmayeriae	1
<b>a hoverfly</b>	<b>1</b>
Heringia heringi	1
<b>a leaf beetle</b>	<b>1</b>
Phyllotreta aerea	1
<b>a micro-moth</b>	<b>2</b>
Glyphipterix forsterella	1
Mompha langiella	1
<b>Adonis' Ladybird</b>	<b>1</b>
Hippodamia variegata	1
<b>Cabbage Leaf Weevil</b>	<b>1</b>
Ceutorhynchus contractus	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>European Corn Borer</b>	<b>1</b>
Ostrinia nubilalis	1
<b>Latticed Heath</b>	<b>2</b>
Chiasmia clathrata	2
<b>Slender Ground Hopper</b>	<b>1</b>
Tetrix subulata	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2

Grid ID & BNG Location	Total Invertebrates
<b>A116 - ST353179</b>	<b>102</b>
<b>a ground beetle</b>	<b>1</b>
Badister (Badister) unipustulatus	1
<b>a micro-moth</b>	<b>1</b>
Monochroa lucidella	1
<b>a pyralid moth</b>	<b>3</b>
Agriphila latistria	1
Calamotropha paludella	1
Phycitodes maritima	1
<b>a rubytail wasp</b>	<b>1</b>
Cleptes semiauratus	1
<b>a scavenger water beetle</b>	<b>1</b>
Helophorus nanus	1
<b>a seed weevil</b>	<b>1</b>
Oxystoma cerdo	1
<b>a snail-killing fly</b>	<b>4</b>
Colobaea punctata	1
Pherbellia dorsata	2
Pteromicra glabricula	1
<b>a weevil</b>	<b>1</b>
Thryogenes nereis	1
<b>Blackneck</b>	<b>1</b>
Lygephila pastinum	1
<b>Blood-vein</b>	<b>2</b>
Timandra comae	2
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Bulrush Wainscot</b>	<b>1</b>
Nonagria typhae	1
<b>Cinnabar</b>	<b>6</b>
Tyria jacobaeae	6
<b>Dark Spinach</b>	<b>2</b>
Pelurga comitata	2
<b>Emerald Damselfly</b>	<b>3</b>
Lestes sponsa	3
<b>Feathered Ranunculus</b>	<b>1</b>
Polymixis lichenea subsp. lichenea	1
<b>Four-spot Chaser</b>	<b>8</b>
Libellula quadrimaculata	8
<b>Garden Tiger</b>	<b>4</b>
Arctia caja	4
<b>Gold Spot</b>	<b>1</b>
Plusia festucae	1
<b>Gothic</b>	<b>1</b>
Naenia typica	1
<b>Hairy Dragonfly</b>	<b>8</b>
Brachytron pratense	8
<b>Lackey</b>	<b>6</b>
Malacosoma neustria	6
<b>Large Wainscot</b>	<b>1</b>
Rhizedra lutosa	1
<b>Latticed Heath</b>	<b>10</b>
Chiasmia clathrata	10

Grid ID & BNG Location	Total Invertebrates
<b>Lesser Marsh Grasshopper</b>	<b>2</b>
Chorthippus albomarginatus	2
<b>Mouse Moth</b>	<b>1</b>
Amphipyra tragopoginis	1
<b>Rosy Rustic</b>	<b>1</b>
Hydraecia micacea	1
<b>Ruddy Darter</b>	<b>4</b>
Sympetrum sanguineum	4
<b>Rustic</b>	<b>1</b>
Hoplodrina blanda	1
<b>Shaded Broad-Bar</b>	<b>9</b>
Scotopteryx chenopodiata	9
<b>Short-winged Conehead</b>	<b>4</b>
Conocephalus dorsalis	4
<b>Slender Ground Hopper</b>	<b>1</b>
Tetrix subulata	1
<b>Small Heath</b>	<b>5</b>
Coenonympha pamphilus	5
<b>Small Square-Spot</b>	<b>4</b>
Diarsia rubi	4
<b>Tissue</b>	<b>1</b>
Triphosa dubitata	1
<b>A117 - ST354179</b>	<b>82</b>
<b>a big-headed fly</b>	<b>3</b>
Dorylomorpha hungarica	3
<b>a cranefly</b>	<b>1</b>
Erioptera meijerei	1
<b>a hoverfly</b>	<b>1</b>
Orthonevra brevicornis	1
<b>a leaf beetle</b>	<b>4</b>
Galerucella californiensis	4
<b>a longhorn beetle</b>	<b>1</b>
Stenostola dubia	1
<b>a plantbug or grassbug</b>	<b>1</b>
Lygus pratensis	1
<b>a scavenger water beetle</b>	<b>2</b>
Cymbiodyta marginellus	1
Helochares lividus	1
<b>a soldier beetle</b>	<b>2</b>
Cantharis thoracica	2
<b>a thick-legged flower beetle</b>	<b>1</b>
Ischnomera sanguinicollis	1
<b>Blackneck</b>	<b>3</b>
Lygephila pastinum	3
<b>Cinnabar</b>	<b>4</b>
Tyria jacobaeae	4
<b>Common Hawker</b>	<b>2</b>
Aeshna juncea	2
<b>Essex Skipper</b>	<b>1</b>
Thymelicus lineola	1
<b>Flax Flea Beetle</b>	<b>1</b>
Longitarsus parvulus	1
<b>Grass Rivulet</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Perizoma albulata subsp. albulata	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Harlequin Ladybird</b>	<b>1</b>
Harmonia axyridis	1
<b>Latticed Heath</b>	<b>10</b>
Chiasmia clathrata	10
<b>Lesser Marsh Grasshopper</b>	<b>8</b>
Chorthippus albomarginatus	8
<b>Longhorn Beetle</b>	<b>1</b>
Pyrrhidium sanguineum	1
<b>Nut Weevil</b>	<b>2</b>
Curculio nucum	2
<b>Ruddy Darter</b>	<b>2</b>
Sympetrum sanguineum	2
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>Short-winged Conehead</b>	<b>19</b>
Conocephalus dorsalis	19
<b>Slender Ground Hopper</b>	<b>2</b>
Tetrix subulata	2
<b>Small Heath</b>	<b>7</b>
Coenonympha pamphilus	7
<b>A118 - ST355179</b>	<b>10</b>
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>
Hepialus humuli subsp. humuli	1
<b>Gothic</b>	<b>1</b>
Naenia typica	1
<b>Green Hairstreak</b>	<b>1</b>
Callophrys rubi	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Mouse Moth</b>	<b>1</b>
Amphipyra tragopoginis	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Spinach (moth)</b>	<b>1</b>
Eulithis mellinata	1
<b>Tissue</b>	<b>1</b>
Triphosa dubitata	1
<b>A119 - ST352180</b>	<b>1</b>
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>A12 - ST337151</b>	<b>1</b>
<b>Bombus (Thoracomus) muscorum</b>	<b>1</b>
Bombus (Thoracomus) muscorum	1
<b>A120 - ST353180</b>	<b>9</b>
<b>Emerald Damselfly</b>	<b>1</b>



Grid ID & BNG Location	Total Invertebrates
Lestes sponsa	1
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Small Heath</b>	<b>4</b>
Coenonympha pamphilus	4
<b>A121 - ST354180</b>	<b>7</b>
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Four-spot Chaser</b>	<b>4</b>
Libellula quadrimaculata	4
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A122 - ST355180</b>	<b>1</b>
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>A123 - ST352181</b>	<b>7</b>
<b>a micro-moth</b>	<b>1</b>
Glyphipterix forsterella	1
<b>a pyralid moth</b>	<b>2</b>
Agriphila selasella	2
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Cream-spot Tiger</b>	<b>1</b>
Arctia villica subsp. britannica	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A124 - ST353181</b>	<b>106</b>
<b>a Clover Weevil</b>	<b>1</b>
Sitona sulcifrons	1
<b>a crane fly</b>	<b>1</b>
Helius pallirostris	1
<b>a crawling water beetle</b>	<b>1</b>
Halipus (Haliplus) heydeni	1
<b>a dance fly</b>	<b>1</b>
Empis decora	1
<b>a fly</b>	<b>15</b>
Anagnota bicolor	1
Elachiptera austriaca	1
Rhopalopterum femorale	3
Sapromyza opaca	7
Typhamyza bifasciata	3
<b>a ground beetle</b>	<b>1</b>
Elaphropus parvulus	1
<b>a hoverfly</b>	<b>2</b>
Pipizella virens	1
Xanthogramma citrofasciatum	1
<b>a ladybird</b>	<b>4</b>

Grid ID & BNG Location	Total Invertebrates
Coccidula scutellata	4
<b>a leaf beetle</b>	<b>4</b>
Altica palustris	3
Donacia thalassina	1
<b>a leafhopper</b>	<b>2</b>
Aphrodes albifrons	2
<b>a marsh beetle</b>	<b>4</b>
Cyphon laevipennis	3
Cyphon palustris	1
<b>a meniscus midge</b>	<b>2</b>
Dixella attica	1
Dixella serotina	1
<b>a planthopper</b>	<b>4</b>
Chloriona dorsata	4
<b>a rove beetle</b>	<b>8</b>
Stenus (Hemistenus) ossium	1
Stenus (Hypostenus) fulvicornis	4
Stenus (Stenus) nanus	3
<b>a scavenger water beetle</b>	<b>8</b>
Berosus (Berosus) affinis	1
Berosus (Berosus) signaticollis	1
Cercyon (Cercyon) convexiusculus	1
Cymbiodyta marginellus	2
Helochares lividus	1
Helophorus griseus	1
Laccobius sinuatus	1
<b>a snail-killing fly</b>	<b>5</b>
Colobaea bifasciella	1
Colobaea distincta	1
Pherbellia nana	1
Tetanocera punctifrons	2
<b>a solitary wasp</b>	<b>1</b>
Crossocerus (Crossocerus) distinguendus	1
<b>a water beetle</b>	<b>5</b>
Graptodytes bilineatus	2
Hydroglyphus geminus	2
Laccophilus minutus	1
<b>a weevil</b>	<b>2</b>
Thryogenes nereis	2
<b>Adonis' Ladybird</b>	<b>1</b>
Hippodamia variegata	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Harlequin Ladybird</b>	<b>2</b>
Harmonia axyridis	2
<b>Large Yellow-faced Bee</b>	<b>1</b>
Hylaeus (Prosopis) signatus	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Lesser Marsh Grasshopper</b>	<b>2</b>
Chorthippus albomarginatus	2

Grid ID & BNG Location	Total Invertebrates
<b>Long-winged Conehead</b>	<b>6</b>
Conocephalus discolor	6
<b>Moss Carder-bee</b>	<b>1</b>
Bombus (Thoracombus) muscorum	1
<b>Ornate Brigadier</b>	<b>1</b>
Odontomyia ornata	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2
<b>Slender Ground Hopper</b>	<b>5</b>
Tetrix subulata	5
<b>Small Garden Bumble Bee</b>	<b>1</b>
Bombus (Megabombus) hortorum	1
<b>Small Heath</b>	<b>7</b>
Coenonympha pamphilus	7
<b>A125 - ST354181</b>	<b>4</b>
<b>a crawling water beetle</b>	<b>1</b>
Halipus (Halipinus) heydeni	1
<b>a dung beetle or chafer</b>	<b>2</b>
Aphodius (Otophorus)	
haemorrhoidalis	1
Onthophagus (Paleonthophagus)	
vacca	1
<b>a scavenger water beetle</b>	<b>1</b>
Sphaeridium bipustulatum	1
<b>A126 - ST355181</b>	<b>8</b>
<b>a scavenger water beetle</b>	<b>6</b>
Berosus (Berosus) affinis	2
Helochares lividus	3
Helophorus griseus	1
<b>a water beetle</b>	<b>2</b>
Hydroglyphus geminus	2
<b>A127 - ST353182</b>	<b>10</b>
<b>a solitary wasp</b>	<b>2</b>
Ectemnius (Clytochrysus) ruficornis	2
<b>Cinnabar</b>	<b>4</b>
Tyria jacobaeae	4
<b>Cream-spot Tiger</b>	<b>1</b>
Arctia villica subsp. britannica	1
<b>Small Garden Bumble Bee</b>	<b>1</b>
Bombus (Megabombus) hortorum	1
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>Trimmer's Mining Bee</b>	<b>1</b>
Andrena (Hoplandrena) trimmerana	1
<b>A128 - ST354182</b>	<b>22</b>
<b>a crawling water beetle</b>	<b>4</b>
Halipus (Halipinus) immaculatus	4
<b>a scavenger water beetle</b>	<b>6</b>
Berosus (Berosus) affinis	3
Helochares lividus	2

Grid ID & BNG Location	Total Invertebrates
Laccobius minutus	1
<b>a water beetle</b>	<b>6</b>
Agabus (Gaurodytes) didymus	1
Graptodytes bilineatus	1
Hygrotus (Coelambus) confluens	3
Laccophilus minutus	1
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Small Garden Bumble Bee</b>	<b>2</b>
Bombus (Megabombus) hortorum	2
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>A129 - ST355182</b>	<b>56</b>
<b>a horse fly</b>	<b>1</b>
Haematopota grandis	1
<b>a hoverfly</b>	<b>3</b>
Epistrophe diaphana	2
Pipizella virens	1
<b>a leaf beetle</b>	<b>1</b>
Orsodacne cerasi	1
<b>a scavenger water beetle</b>	<b>2</b>
Berosus (Berosus) affinis	2
<b>a solitary bee</b>	<b>1</b>
Sphecodes rubicundus	1
<b>a solitary wasp</b>	<b>1</b>
Didineis lunicornis	1
<b>a water beetle</b>	<b>2</b>
Hydroporus nigrita	1
Laccophilus minutus	1
<b>a weevil</b>	<b>1</b>
Notaris bimaculatus	1
<b>Bee Wolf</b>	<b>1</b>
Philanthus triangulum	1
<b>Black Colonel</b>	<b>2</b>
Odontomyia tigrina	2
<b>Black Headed Mason Wasp</b>	<b>1</b>
Odynerus (Odynerus)	1
melanocephalus	1
<b>Cinnabar</b>	<b>5</b>
Tyria jacobaeae	5
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Lesser Marsh Grasshopper</b>	<b>1</b>
Chorthippus albomarginatus	1
<b>Median Wasp</b>	<b>1</b>
Dolichovespula (Dolichovespula)	1
media	1
<b>Red-tailed Carder Bee</b>	<b>2</b>
Bombus (Thoracombus) rudarius	2

Grid ID & BNG Location	Total Invertebrates
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Slender Ground Hopper</b>	<b>1</b>
Tetrix subulata	1
<b>Small Garden Bumble Bee</b>	<b>8</b>
Bombus (Megabombus) hortorum	8
<b>Small Heath</b>	<b>15</b>
Coenonympha pamphilus	15
<b>White-letter Hairstreak</b>	<b>4</b>
Satyrium w-album	4
<b>A13 - ST336154</b>	<b>1</b>
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>A130 - ST353183</b>	<b>16</b>
<b>a crawling water beetle</b>	<b>1</b>
Halipus (Halipinus) immaculatus	1
<b>a micro-moth</b>	<b>1</b>
Agonopterix arenella	1
<b>a pyralid moth</b>	<b>1</b>
Eudonia pallida	1
<b>a tortrix moth</b>	<b>2</b>
Bactra robustana	2
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Lesser Marsh Grasshopper</b>	<b>1</b>
Chorthippus albomarginatus	1
<b>Rosy Rustic</b>	<b>1</b>
Hydraecia micacea	1
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2
<b>Small Garden Bumble Bee</b>	<b>2</b>
Bombus (Megabombus) hortorum	2
<b>Vine's Rustic</b>	<b>1</b>
Hoplodrina ambigua	1
<b>A131 - ST354183</b>	<b>9</b>
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Red-tailed Carder Bee</b>	<b>2</b>
Bombus (Thoracombus) ruderarius	2
<b>Small Garden Bumble Bee</b>	<b>2</b>
Bombus (Megabombus) hortorum	2
<b>Small Heath</b>	<b>4</b>
Coenonympha pamphilus	4
<b>A132 - ST320145</b>	<b>214</b>
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Dingy Skipper</b>	<b>18</b>

Grid ID & BNG Location	Total Invertebrates
Erynnis tages	16
Erynnis tages subsp. baynesi	2
<b>Garden Tiger</b>	<b>2</b>
Arctia caja	2
<b>Grizzled Skipper</b>	<b>3</b>
Pyrgus malvae	3
<b>Lackey</b>	<b>2</b>
Malacosoma neustria	2
<b>Mouse Moth</b>	<b>2</b>
Amphipyra tragopoginis	2
<b>Rosy Minor</b>	<b>2</b>
Mesoligia literosa	2
<b>Rustic</b>	<b>1</b>
Hoplodrina blanda	1
<b>Shaded Broad-Bar</b>	<b>2</b>
Scotopteryx chenopodiata	2
<b>Small Heath</b>	<b>128</b>
Coenonympha pamphilus	128
<b>Small Square-Spot</b>	<b>2</b>
Diarsia rubi	2
<b>Wall</b>	<b>50</b>
Lasiommata megera	50
<b>A133 - ST321145</b>	<b>43</b>
<b>Dingy Skipper</b>	<b>3</b>
Erynnis tages	3
<b>Small Heath</b>	<b>26</b>
Coenonympha pamphilus	26
<b>Wall</b>	<b>14</b>
Lasiommata megera	14
<b>A134 - ST320146</b>	<b>82</b>
<b>Small Heath</b>	<b>67</b>
Coenonympha pamphilus	67
<b>Wall</b>	<b>15</b>
Lasiommata megera	15
<b>A135 - ST321146</b>	<b>10</b>
<b>Small Heath</b>	<b>8</b>
Coenonympha pamphilus	8
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A14 - ST338154</b>	<b>3</b>
<b>Grizzled Skipper</b>	<b>2</b>
Pyrgus malvae	2
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A15 - ST336155</b>	<b>1</b>
<b>Forficula lesnei</b>	<b>1</b>
Forficula lesnei	1
<b>A16 - ST338155</b>	<b>192</b>
<b>a shield bug</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Sciocoris cursitans	1
<b>Chalkhill Blue</b>	<b>1</b>
Lysandra coridon	1
<b>Dark Green Fritillary</b>	<b>4</b>
Argynnis aglaja	4
<b>Dingy Skipper</b>	<b>18</b>
Erynnis tages	18
<b>Grayling</b>	<b>8</b>
Hipparchia semele	8
<b>Great Green Bush Cricket</b>	<b>2</b>
Tettigonia viridissima	2
<b>Green Hairstreak</b>	<b>8</b>
Callophrys rubi	8
<b>Grizzled Skipper</b>	<b>31</b>
Pyrgus malvae	31
<b>Pearl-bordered Fritillary</b>	<b>1</b>
Boloria euphrosyne	1
<b>Silver-washed Fritillary</b>	<b>2</b>
Argynnis paphia	2
<b>Small Heath</b>	<b>79</b>
Coenonympha pamphilus	79
<b>Small Pearl-bordered Fritillary</b>	<b>11</b>
Boloria selene	11
<b>Wall</b>	<b>26</b>
Lasiommata megera	26
<b>A17 - ST339155</b>	<b>179</b>
<b>Dark Green Fritillary</b>	<b>3</b>
Argynnis aglaja	3
<b>Dingy Skipper</b>	<b>12</b>
Erynnis tages	12
<b>Forficula lesnei</b>	<b>1</b>
Forficula lesnei	1
<b>Green Hairstreak</b>	<b>2</b>
Callophrys rubi	2
<b>Grizzled Skipper</b>	<b>32</b>
Pyrgus malvae	32
<b>Small Heath</b>	<b>97</b>
Coenonympha pamphilus	97
<b>Small Pearl-bordered Fritillary</b>	<b>18</b>
Boloria selene	18
<b>Wall</b>	<b>14</b>
Lasiommata megera	14
<b>A18 - ST340155</b>	<b>8</b>
<b>Dingy Skipper</b>	<b>2</b>
Erynnis tages	2
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Small Pearl-bordered Fritillary</b>	<b>2</b>
Boloria selene	2
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A19 - ST336156</b>	<b>2</b>

Grid ID & BNG Location	Total Invertebrates
<b>Small Blue</b>	<b>1</b>
Cupido minimus	1
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A2 - ST333136</b>	<b>1</b>
<b>Dytiscus dimidiatus</b>	<b>1</b>
Dytiscus dimidiatus	1
<b>A20 - ST337156</b>	<b>17</b>
<b>Lappet</b>	<b>1</b>
Gastropacha quercifolia	1
<b>Small Heath</b>	<b>8</b>
Coenonympha pamphilus	8
<b>Wall</b>	<b>8</b>
Lasiommata megera	8
<b>A21 - ST338156</b>	<b>15</b>
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Coronet</b>	<b>1</b>
Craniophora ligustri	1
<b>Dot Moth</b>	<b>1</b>
Melanchra persicariae	1
<b>Ghost Moth (ssp. humuli)</b>	<b>2</b>
Hepialus humuli subsp. humuli	2
<b>Glow-worm</b>	<b>1</b>
Lampyrus noctiluca	1
<b>Lackey</b>	<b>1</b>
Malacosoma neustria	1
<b>Pretty Chalk Carpet</b>	<b>2</b>
Melanthia procellata	2
<b>Small Elephant Hawk-moth</b>	<b>2</b>
Deilephila porcellus	2
<b>Small Emerald</b>	<b>1</b>
Hemistola chrysoprasaria	1
<b>Smoky Wave</b>	<b>1</b>
Scopula ternata	1
<b>Striped Wainscot</b>	<b>1</b>
Mythimna pudorina	1
<b>White Ermine</b>	<b>1</b>
Spilosoma lubricipeda	1
<b>A22 - ST339156</b>	<b>139</b>
<b>Dark Green Fritillary</b>	<b>4</b>
Argynnis aglaja	4
<b>Dingy Skipper</b>	<b>8</b>
Erynnis tages	8
<b>Grayling</b>	<b>2</b>
Hipparchia semele	2
<b>Green Hairstreak</b>	<b>2</b>
Callophrys rubi	2
<b>Grizzled Skipper</b>	<b>4</b>
Pyrgus malvae	4
<b>Small Heath</b>	<b>85</b>



Grid ID & BNG Location	Total Invertebrates
Coenonympha pamphilus	85
<b>Small Pearl-bordered Fritillary</b>	<b>9</b>
Boloria selene	9
<b>Wall</b>	<b>25</b>
Lasiommata megera	25
<b>A23 - ST340156</b>	<b>10</b>
<b>Dark Green Fritillary</b>	<b>1</b>
Argynnis aglaja	1
<b>Grayling</b>	<b>1</b>
Hipparchia semele	1
<b>Green Hairstreak</b>	<b>1</b>
Callophrys rubi	1
<b>Small Heath</b>	<b>3</b>
Coenonympha pamphilus	3
<b>Small Pearl-bordered Fritillary</b>	<b>2</b>
Boloria selene	2
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A24 - ST337157</b>	<b>2</b>
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A25 - ST339157</b>	<b>2</b>
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A26 - ST340157</b>	<b>166</b>
<b>a big-headed fly</b>	<b>3</b>
Dorylomorpha hungarica	3
<b>a dolichopodid fly</b>	<b>6</b>
Hercostomus plagiatus	6
<b>a fly</b>	<b>2</b>
Dicraeus scibilis	1
Lipara rufitarsis	1
<b>a hoverfly</b>	<b>2</b>
Pipizella virens	2
<b>a lacehopper</b>	<b>1</b>
Cixius remotus	1
<b>a leaf beetle</b>	<b>5</b>
Aphthona lutescens	1
Donacia clavipes	1
Galerucella tenella	1
Hydrothassa glabra	1
Plateumaris affinis	1
<b>a pyralid moth</b>	<b>6</b>
Apomyelois bistriatella subsp.	
subcognata	2
Cryptoblabes bistriga	1
Ebulea crocealis	1
Eudonia pallida	2
<b>a scorpion fly</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Panorpa cognata	1
<b>a snail-killing fly</b>	<b>2</b>
Psacadina verbekei	2
<b>a soldier fly</b>	<b>3</b>
Vanoyia tenuicornis	3
<b>a tumbling flower beetle</b>	<b>2</b>
Mordellistena (Mordellistena) pumila	2
<b>a weevil</b>	<b>2</b>
Hypera meles	1
Larinus planus	1
<b>Banded General</b>	<b>1</b>
Stratiomys potamida	1
<b>Bean Beetle</b>	<b>1</b>
Bruchus rufimanus	1
<b>Beautiful Hook-tip</b>	<b>1</b>
Laspeyria flexula	1
<b>Bee-fly</b>	<b>1</b>
Bombylius major	1
<b>Blackneck</b>	<b>4</b>
Lygephila pastinum	4
<b>Blood-vein</b>	<b>4</b>
Timandra comae	4
<b>Bordered Sallow</b>	<b>1</b>
Pyrrhia umbra	1
<b>Broom Moth</b>	<b>1</b>
Melanchra pisi	1
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Clay Triple-lines</b>	<b>1</b>
Cyclophora linearia	1
<b>Coronet</b>	<b>3</b>
Craniophora ligustri	3
<b>Dark Green Fritillary</b>	<b>6</b>
Argynnis aglaja	6
<b>Dark Spinach</b>	<b>1</b>
Pelurga comitata	1
<b>Dingy Shell</b>	<b>1</b>
Euchoeca nebulata	1
<b>Dot Moth</b>	<b>1</b>
Melanchra persicariae	1
<b>Dotted Chestnut</b>	<b>1</b>
Conistra rubiginea	1
<b>Double Lobed</b>	<b>3</b>
Apamea ophiogramma	3
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Ghost Moth (ssp. humuli)</b>	<b>4</b>
Hepialus humuli subsp. humuli	4
<b>Glow-worm</b>	<b>2</b>
Lampyrus noctiluca	2
<b>Golden-ringed Dragonfly</b>	<b>9</b>
Cordulegaster boltonii	9
<b>Grey Dagger</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Acronicta psi	1
<b>Hairy Dragonfly</b>	<b>3</b>
Brachytron pratense	3
<b>Hornet</b>	<b>1</b>
Vespa crabro	1
<b>Keeled Skimmer</b>	<b>8</b>
Orthetrum coerulescens	8
<b>Knot Grass (moth)</b>	<b>1</b>
Acronicta rumicis	1
<b>Lackey</b>	<b>1</b>
Malacosoma neustria	1
<b>Long-winged Conehead</b>	<b>3</b>
Conocephalus discolor	3
<b>Marsh Fritillary</b>	<b>1</b>
Euphydryas aurinia	1
<b>Mint Leaf Beetle</b>	<b>2</b>
Chrysolina menthastri	2
<b>Oak Nycteoline</b>	<b>2</b>
Nycteola revayana	2
<b>Olive (moth)</b>	<b>1</b>
Ipimorpha subtusa	1
<b>Pink-barred Sallow</b>	<b>1</b>
Xanthia togata	1
<b>Pretty Chalk Carpet</b>	<b>2</b>
Melanthia procellata	2
<b>Pygmy Soldier</b>	<b>3</b>
Oxycera pygmaea	3
<b>Round-winged Muslin</b>	<b>2</b>
Thumatha senex	2
<b>Rufous Minor</b>	<b>1</b>
Oligia versicolor	1
<b>Scarce Footman</b>	<b>1</b>
Eilema complana	1
<b>Scorched Wing</b>	<b>1</b>
Plagodis dolabraria	1
<b>Seraphim</b>	<b>4</b>
Lobophora halterata	4
<b>Shaded Broad-Bar</b>	<b>8</b>
Scotopteryx chenopodiata	8
<b>Short-winged Conehead</b>	<b>14</b>
Conocephalus dorsalis	14
<b>Shoulder-striped Wainscot</b>	<b>3</b>
Mythimna comma	3
<b>Slender Ground Hopper</b>	<b>1</b>
Tetrix subulata	1
<b>Small Garden Bumble Bee</b>	<b>1</b>
Bombus (Megabombus) hortorum	1
<b>Small Square-Spot</b>	<b>5</b>
Diarsia rubi	5
<b>Small Yellow Underwing</b>	<b>1</b>
Panemeria tenebrata	1
<b>Striped Wainscot</b>	<b>4</b>
Mythimna pudorina	4
<b>Sycamore (moth)</b>	<b>2</b>
Acronicta aceris	2

Grid ID & BNG Location	Total Invertebrates
<b>Valerian Pug</b>	<b>1</b>
Eupithecia valerianata	1
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>White-barred Soldier</b>	<b>1</b>
Oxycera morrisii	1
<b>A27 - ST341157</b>	<b>4</b>
<b>a pyralid moth</b>	<b>1</b>
Pyrausta ostrinalis	1
<b>Silver-washed Fritillary</b>	<b>2</b>
Argynnis paphia	2
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A28 - ST342157</b>	<b>1</b>
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A29 - ST338158</b>	<b>4</b>
<b>Grayling</b>	<b>1</b>
Hipparchia semele	1
<b>Tissue</b>	<b>1</b>
Triphosa dubitata	1
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A3 - ST334139</b>	<b>3</b>
<b>Common Fan-Foot</b>	<b>1</b>
Pechipogo strigilata	1
<b>Mottled Rustic</b>	<b>1</b>
Caradrina morpheus	1
<b>Small Square-Spot</b>	<b>1</b>
Diarsia rubi	1
<b>A30 - ST339158</b>	<b>11</b>
<b>Silver-washed Fritillary</b>	<b>3</b>
Argynnis paphia	3
<b>Small Heath</b>	<b>4</b>
Coenonympha pamphilus	4
<b>Wall</b>	<b>4</b>
Lasiommata megera	4
<b>A31 - ST341158</b>	<b>5</b>
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Golden-ringed Dragonfly</b>	<b>1</b>
Cordulegaster boltonii	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1

Grid ID & BNG Location	Total Invertebrates
<b>A32 - ST342158</b>	<b>25</b>
<b>Brindled Beauty</b>	<b>1</b>
Lycia hirtaria	1
<b>Dingy Skipper</b>	<b>4</b>
Erynnis tages	4
<b>Grayling</b>	<b>1</b>
Hipparchia semele	1
<b>Green Hairstreak</b>	<b>2</b>
Callophrys rubi	2
<b>Grizzled Skipper</b>	<b>6</b>
Pyrgus malvae	6
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Silver-washed Fritillary</b>	<b>3</b>
Argynnis paphia	3
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Wall</b>	<b>3</b>
Lasiommata megera	3
<b>White Admiral</b>	<b>2</b>
Limenitis camilla	2
<b>A33 - ST338159</b>	<b>1</b>
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>A34 - ST339159</b>	<b>1</b>
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>A35 - ST341159</b>	<b>8</b>
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Golden-ringed Dragonfly</b>	<b>2</b>
Cordulegaster boltonii	2
<b>Wall</b>	<b>4</b>
Lasiommata megera	4
<b>A36 - ST342159</b>	<b>76</b>
<b>a dingy skipper</b>	<b>2</b>
Erynnis tages subsp. tages	2
<b>a pyralid moth</b>	<b>2</b>
Pyrausta ostrinalis	2
<b>Beautiful Demoiselle</b>	<b>1</b>
Calopteryx virgo	1
<b>Bee-fly</b>	<b>1</b>
Bombylius major	1
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Common Green Grasshopper</b>	<b>1</b>
Omocestus viridulus	1
<b>Dingy Skipper</b>	<b>11</b>
Erynnis tages	11
<b>Golden-ringed Dragonfly</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Cordulegaster boltonii	1
<b>Grayling</b>	<b>4</b>
Hipparchia semele	4
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>Green Hairstreak</b>	<b>3</b>
Callophrys rubi	3
<b>Grizzled Skipper</b>	<b>6</b>
Pyrgus malvae	6
<b>Hornet Robberfly</b>	<b>1</b>
Asilus crabroniformis	1
<b>Lesser Treble-bar</b>	<b>1</b>
Aplocera efformata	1
<b>Marsh Fritillary</b>	<b>5</b>
Euphydryas aurinia	5
<b>Mottled Grasshopper</b>	<b>2</b>
Myrmeleotettix maculatus	2
<b>Pearl-bordered Fritillary</b>	<b>2</b>
Boloria euphrosyne	2
<b>Silver-washed Fritillary</b>	<b>6</b>
Argynnis paphia	6
<b>Small Heath</b>	<b>8</b>
Coenonympha pamphilus	8
<b>Small Pearl-bordered Fritillary</b>	<b>9</b>
Boloria selene	9
<b>Speckled Yellow</b>	<b>4</b>
Pseudopanthera macularia	4
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>White-letter Hairstreak</b>	<b>2</b>
Satyrium w-album	2
<b>A37 - ST339160</b>	<b>3</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Emerald Damselfly</b>	<b>2</b>
Lestes sponsa	2
<b>A38 - ST340160</b>	<b>2</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>A39 - ST342160</b>	<b>3</b>
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>Sharp-angled Carpet</b>	<b>1</b>
Euphyia unangulata	1
<b>A4 - ST331140</b>	<b>5</b>
<b>White-letter Hairstreak</b>	<b>5</b>
Satyrium w-album	5

Grid ID & BNG Location	Total Invertebrates
<b>A40 - ST339161</b>	<b>4</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Emerald Damselfly</b>	<b>3</b>
Lestes sponsa	3
<b>A41 - ST341161</b>	<b>2</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>A42 - ST342161</b>	<b>3</b>
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>White Admiral</b>	<b>1</b>
Limenitis camilla	1
<b>A43 - ST340162</b>	<b>1</b>
<b>Wall</b>	<b>1</b>
Lasioommata megera	1
<b>A44 - ST341162</b>	<b>63</b>
<b>a crawling water beetle</b>	<b>2</b>
Haliphus (Haliphus) immaculatus	1
Haliphus (Haliphus) fulvus	1
<b>a scavenger water beetle</b>	<b>11</b>
Berosus (Berosus) affinis	2
Cercyon (Cercyon) convexiusculus	2
Cercyon (Cercyon) sternalis	1
Cercyon (Cercyon) tristis	1
Cymbiodyta marginellus	2
Enochrus melanocephalus	1
Helochara lividus	1
Laccobius minutus	1
<b>a water beetle</b>	<b>21</b>
Hydaticus seminiger	1
Hydaticus transversalis	7
Laccophilus minutus	6
Rhantus (Rhantus) grapii	5
Rhantus (Rhantus) suturalis	2
<b>a water measurer (unidentified)</b>	<b>2</b>
Hydrometra sp.	2
<b>Black Colonel</b>	<b>2</b>
Odontomyia tigrina	2
<b>Emerald Damselfly</b>	<b>7</b>
Lestes sponsa	7
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Hepialus humuli subsp. humuli	1
<b>Great Silver Water Beetle</b>	<b>3</b>
Hydrophilus piceus	3
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Lesser Marsh Grasshopper</b>	<b>1</b>
Chorthippus albomarginatus	1
<b>Ornate Brigadier</b>	<b>4</b>
Odontomyia ornata	4
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Variable Damselfly</b>	<b>4</b>
Coenagrion pulchellum	4
<b>A45 - ST342162</b>	<b>4</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>A46 - ST340163</b>	<b>14</b>
<b>a crawling water beetle</b>	<b>1</b>
Halipus (Liaphlus) fulvus	1
<b>a scavenger water beetle</b>	<b>5</b>
Cymbiodyta marginellus	1
Helochares lividus	3
Laccobius minutus	1
<b>a water beetle</b>	<b>2</b>
Hydaticus transversalis	1
Laccophilus minutus	1
<b>a water measurer (unidentified)</b>	<b>1</b>
Hydrometra sp.	1
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Great Silver Water Beetle</b>	<b>2</b>
Hydrophilus piceus	2
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Ornate Brigadier</b>	<b>1</b>
Odontomyia ornata	1
<b>A47 - ST341163</b>	<b>69</b>
<b>a crawling water beetle</b>	<b>2</b>
Halipus (Liaphlus) fulvus	2
<b>a marsh beetle</b>	<b>3</b>
Scirtes orbicularis	3
<b>a mayfly</b>	<b>2</b>
Caenis robusta	2
<b>a scavenger water beetle</b>	<b>9</b>
Enochrus melanocephalus	1
Helochares lividus	6
Laccobius minutus	2
<b>a small water beetle</b>	<b>1</b>



<b>Grid ID &amp; BNG Location</b>	<b>Total Invertebrates</b>
Ochthebius (Asiobates) dilatatus	1
<b>a water beetle</b>	<b>23</b>
Hydaticus transversalis	9
Laccophilus minutus	5
Rhantus (Nartus) grapii	5
Rhantus (Rhantus) frontalis	1
Rhantus (Rhantus) suturalis	3
<b>a water measurer (unidentified)</b>	<b>3</b>
Hydrometra sp.	3
<b>Black Colonel</b>	<b>4</b>
Odontomyia tigrina	4
<b>Emerald Damselfly</b>	<b>3</b>
Lestes sponsa	3
<b>Flecked General</b>	<b>1</b>
Stratiomys singularior	1
<b>Great Silver Water Beetle</b>	<b>3</b>
Hydrophilus piceus	3
<b>Hairy Dragonfly</b>	<b>4</b>
Brachytron pratense	4
<b>Ornate Brigadier</b>	<b>4</b>
Odontomyia ornata	4
<b>Ruddy Darter</b>	<b>2</b>
Sympetrum sanguineum	2
<b>Short-winged Conehead</b>	<b>1</b>
Conocephalus dorsalis	1
<b>Variable Damselfly</b>	<b>2</b>
Coenagrion pulchellum	2
<b>White-legged Damselfly</b>	<b>2</b>
Platynemesis pennipes	2
<b>A48 - ST342163</b>	<b>3</b>
<b>a water beetle</b>	<b>1</b>
Hydaticus transversalis	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A49 - ST340164</b>	<b>1</b>
<b>a crawling water beetle</b>	<b>1</b>
Haliphus (Liaphlus) fulvus	1
<b>A5 - ST332140</b>	<b>1</b>
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>A50 - ST341164</b>	<b>2</b>
<b>Emerald Damselfly</b>	<b>2</b>
Lestes sponsa	2
<b>A51 - ST342164</b>	<b>157</b>
<b>a comb-footed spider</b>	<b>1</b>
Theridion familiare	1
<b>a crawling water beetle</b>	<b>6</b>

Grid ID & BNG Location	Total Invertebrates
Halipus (Halipinus) immaculatus	1
Halipus (Halipus) obliquus	1
Peltodytes caesus	4
<b>a mayfly</b>	<b>1</b>
Caenis robusta	1
<b>a scavenger water beetle</b>	<b>16</b>
Berosus (Berosus) affinis	1
Cymbiodyta marginellus	4
Enochrus melanocephalus	3
Helochares lividus	2
Helochares punctatus	1
Laccobius minutus	4
Laccobius striatulus	1
<b>a small water beetle</b>	<b>4</b>
Hydraena rufipes	1
Limnebius nitidus	1
Ochthebius (Asiobates) dilatatus	2
<b>a water beetle</b>	<b>18</b>
Agabus (Gaurodytes) didymus	2
Hydaticus transversalis	8
Laccophilus minutus	4
Rhantus (Nartus) grapii	4
<b>a water measurer (unidentified)</b>	<b>2</b>
Hydrometra sp.	2
<b>Beautiful Hook-tip</b>	<b>1</b>
Laspeyria flexula	1
<b>Black Colonel</b>	<b>4</b>
Odontomyia tigrina	4
<b>Black Darter</b>	<b>2</b>
Sympetrum danae	2
<b>Blood-vein</b>	<b>2</b>
Timandra comae	2
<b>Buff Ermine</b>	<b>2</b>
Spilosoma luteum	2
<b>Bulrush Wainscot</b>	<b>1</b>
Nonagria typhae	1
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Common Green Grasshopper</b>	<b>2</b>
Omocestus viridulus	2
<b>Emerald Damselfly</b>	<b>18</b>
Lestes sponsa	18
<b>Emperor (Moth)</b>	<b>1</b>
Saturnia pavonia	1
<b>Four-spot Chaser</b>	<b>16</b>
Libellula quadrimaculata	16
<b>Garden Tiger</b>	<b>1</b>
Arctia caja	1
<b>Great Silver Water Beetle</b>	<b>2</b>
Hydrophilus piceus	2
<b>Hairy Dragonfly</b>	<b>17</b>
Brachytron pratense	17
<b>Lesser Marsh Grasshopper</b>	<b>1</b>
Chorthippus albomarginatus	1
<b>Muslin Footman</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Nudaria mundana	1
<b>Ornate Brigadier</b>	<b>6</b>
Odontomyia ornata	6
<b>Ruddy Darter</b>	<b>6</b>
Sympetrum sanguineum	6
<b>Short-winged Conehead</b>	<b>1</b>
Conocephalus dorsalis	1
<b>Silver-washed Fritillary</b>	<b>1</b>
Argynnis paphia	1
<b>Variable Damselfly</b>	<b>20</b>
Coenagrion pulchellum	20
<b>Wall</b>	<b>3</b>
Lasiommata megera	3
<b>A52 - ST341165</b>	<b>21</b>
<b>a crawling water beetle</b>	<b>1</b>
Peltodytes caesus	1
<b>a marsh beetle</b>	<b>2</b>
Scirtes orbicularis	2
<b>a scavenger water beetle</b>	<b>3</b>
Cymbiodyta marginellus	1
Helochares lividus	2
<b>a small water beetle</b>	<b>2</b>
Ochthebius (Asiobates) dilatatus	2
<b>a water beetle</b>	<b>7</b>
Hydaticus transversalis	4
Laccophilus minutus	2
Rhantus (Nartus) grapii	1
<b>Black Colonel</b>	<b>2</b>
Odontomyia tigrina	2
<b>Gold Spot</b>	<b>1</b>
Plusia festucae	1
<b>Ornate Brigadier</b>	<b>2</b>
Odontomyia ornata	2
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>A53 - ST342165</b>	<b>208</b>
<b>a pyralid moth</b>	<b>3</b>
Calamotropha paludella	1
Catoptria pinella	1
Chilo phragmitella	1
<b>a scavenger water beetle</b>	<b>1</b>
Helochares lividus	1
<b>a water beetle</b>	<b>4</b>
Hydaticus transversalis	2
Rhantus (Nartus) grapii	2
<b>Beaded Chestnut</b>	<b>1</b>
Agrochola lychnidis	1
<b>Beautiful Hook-tip</b>	<b>2</b>
Laspeyria flexula	2
<b>Black Colonel</b>	<b>1</b>
Odontomyia tigrina	1
<b>Blood-vein</b>	<b>4</b>
Timandra comae	4

Grid ID & BNG Location	Total Invertebrates
<b>Bordered Beauty</b>	<b>1</b>
Epione repandaria	1
<b>Bordered Sallow</b>	<b>1</b>
Pyrrhia umbra	1
<b>Bordered White</b>	<b>1</b>
Bupalus piniaria	1
<b>Brindled Beauty</b>	<b>2</b>
Lycia hirtaria	2
<b>Broad-bordered Bee Hawk</b>	<b>1</b>
Hemaris fuciformis	1
<b>Buff Ermine</b>	<b>11</b>
Spilosoma luteum	11
<b>Centre-barred Sallow</b>	<b>1</b>
Atethmia centrigo	1
<b>Cinnabar</b>	<b>7</b>
Tyria jacobaeae	7
<b>Coronet</b>	<b>1</b>
Craniophora ligustri	1
<b>Dark Brocade</b>	<b>7</b>
Blepharita adusta	7
<b>Dingy Shears</b>	<b>1</b>
Parastichtis ypsilon	1
<b>Dot Moth</b>	<b>6</b>
Melanchra persicariae	6
<b>Dotted Chestnut</b>	<b>1</b>
Conistra rubiginea	1
<b>Dotted Clay</b>	<b>1</b>
Xestia baja	1
<b>Dusky Brocade</b>	<b>1</b>
Apamea remissa	1
<b>Dusky Thorn</b>	<b>2</b>
Ennomos fuscantaria	2
<b>Emerald Damselfly</b>	<b>9</b>
Lestes sponsa	9
<b>Emperor (Moth)</b>	<b>1</b>
Saturnia pavonia	1
<b>Feathered Ranunculus</b>	<b>4</b>
Polymixis lichenea subsp. lichenea	4
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Garden Dart</b>	<b>1</b>
Euxoa nigricans	1
<b>Garden Tiger</b>	<b>3</b>
Arctia caja	3
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>
Hepialus humuli subsp. humuli	1
<b>Gold Spot</b>	<b>6</b>
Plusia festucae	6
<b>Golden-rod Pug</b>	<b>1</b>
Eupithecia virgaureata	1
<b>Gothic</b>	<b>4</b>
Naenia typica	4
<b>Grayling</b>	<b>1</b>
Hipparchia semele	1
<b>Great Silver Water Beetle</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Hydrophilus piceus	1
<b>Grey Dagger</b>	<b>7</b>
Acronicta psi	7
<b>Grizzled Skipper</b>	<b>4</b>
Pyrgus malvae	4
<b>Hairy Dragonfly</b>	<b>3</b>
Brachytron pratense	3
<b>Haworth's Pug</b>	<b>2</b>
Eupithecia haworthiata	2
<b>Knot Grass (moth)</b>	<b>4</b>
Acronicta rumicis	4
<b>Lackey</b>	<b>4</b>
Malacosoma neustria	4
<b>Large Ranunculus</b>	<b>1</b>
Polymixis flavicincta	1
<b>Large Tabby</b>	<b>5</b>
Aglossa pinguinalis	5
<b>Latticed Heath</b>	<b>3</b>
Chiasmia clathrata	3
<b>Light Brocade</b>	<b>2</b>
Lacanobia w-latinum	2
<b>Lunar Hornet Moth</b>	<b>1</b>
Sesia bembeciformis	1
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Mottled Grey</b>	<b>1</b>
Colostygia multistrigaria	1
<b>Mottled Rustic</b>	<b>4</b>
Caradrina morpheus	4
<b>Mouse Moth</b>	<b>6</b>
Amphipyra tragopoginis	6
<b>Oak Hook-tip</b>	<b>1</b>
Watsonalla binaria	1
<b>Orange Footman</b>	<b>1</b>
Eilema sororcula	1
<b>Red Chestnut</b>	<b>1</b>
Cerastis rubricosa	1
<b>Red-necked Footman</b>	<b>1</b>
Atolmis rubricollis	1
<b>Ringed China-mark</b>	<b>1</b>
Parapoynx stratiotata	1
<b>Rose Chafer</b>	<b>1</b>
Cetonia aurata	1
<b>Rosy Footman</b>	<b>1</b>
Miltochrista miniata	1
<b>Rosy Rustic</b>	<b>3</b>
Hydraecia micacea	3
<b>Round-winged Muslin</b>	<b>1</b>
Thumatha senex	1
<b>Rufous Minor</b>	<b>1</b>
Oligia versicolor	1
<b>Rustic</b>	<b>5</b>
Hoplodrina blanda	5
<b>Shaded Broad-Bar</b>	<b>3</b>
Scotopteryx chenopodiata	3

Grid ID & BNG Location	Total Invertebrates
<b>Shoulder-striped Wainscot</b>	<b>1</b>
Mythimna comma	1
<b>Silky Wainscot</b>	<b>2</b>
Chilodes maritimus	2
<b>Slender Ground Hopper</b>	<b>2</b>
Tetrix subulata	2
<b>Small Clouded Brindle</b>	<b>3</b>
Apamea unanimitis	3
<b>Small Eggar</b>	<b>1</b>
Eriogaster lanestris	1
<b>Small Emerald</b>	<b>2</b>
Hemistola chrysoprasaria	2
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Small Phoenix</b>	<b>1</b>
Ecliptopera silaceata	1
<b>Small Square-Spot</b>	<b>5</b>
Diarsia rubi	5
<b>Small Wainscot</b>	<b>1</b>
Chortodes pygmina	1
<b>Small Yellow Underwing</b>	<b>1</b>
Panemeria tenebrata	1
<b>Square Spot</b>	<b>1</b>
Paradarisa consonaria	1
<b>Sycamore (moth)</b>	<b>2</b>
Acronicta aceris	2
<b>Toadflax Pug</b>	<b>2</b>
Eupithecia linariata	2
<b>Vine's Rustic</b>	<b>7</b>
Hoplodrina ambigua	7
<b>Wall</b>	<b>6</b>
Lasiommata megera	6
<b>White Ermine</b>	<b>4</b>
Spilosoma lubricipeda	4
<b>White-spotted Pug</b>	<b>1</b>
Eupithecia tripunctaria	1
<b>Yellow-barred Brindle</b>	<b>2</b>
Acasis viretata	2
<b>A54 - ST343165</b>	<b>78</b>
<b>a pyralid moth</b>	<b>1</b>
Calamotropha paludella	1
<b>Blood-vein</b>	<b>2</b>
Timandra comae	2
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Buff Ermine</b>	<b>6</b>
Spilosoma luteum	6
<b>Bulrush Wainscot</b>	<b>1</b>
Nonagria typhae	1
<b>Centre-barred Sallow</b>	<b>1</b>
Atethmia centrigo	1
<b>Cinnabar</b>	<b>4</b>
Tyria jacobaeae	4
<b>Clay Triple-lines</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Cyclophora linearia	1
<b>Cream-bordered Green Pea</b>	<b>1</b>
Earias clorana	1
<b>Dark Brocade</b>	<b>1</b>
Blepharita adusta	1
<b>Dusky Thorn</b>	<b>2</b>
Ennomos fuscantaria	2
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Feathered Ranunculus</b>	<b>2</b>
Polymixis lichenea subsp. lichenea	2
<b>Garden Tiger</b>	<b>4</b>
Arctia caja	4
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>
Hepialus humuli subsp. humuli	1
<b>Gold Spot</b>	<b>1</b>
Plusia festucae	1
<b>Gothic</b>	<b>2</b>
Naenia typica	2
<b>Grey Dagger</b>	<b>1</b>
Acronicta psi	1
<b>Harlequin Ladybird</b>	<b>1</b>
Harmonia axyridis	1
<b>Haworth's Pug</b>	<b>1</b>
Eupithecia haworthiata	1
<b>Knot Grass (moth)</b>	<b>2</b>
Acronicta rumicis	2
<b>Lackey</b>	<b>3</b>
Malacosoma neustria	3
<b>Large Tabby</b>	<b>1</b>
Aglossa pinguinalis	1
<b>Lilac Beauty</b>	<b>2</b>
Apeira syringaria	2
<b>Maiden's Blush</b>	<b>1</b>
Cyclophora punctaria	1
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Mottled Rustic</b>	<b>2</b>
Caradrina morpheus	2
<b>Mouse Moth</b>	<b>2</b>
Amphipyra tragopoginis	2
<b>Oak Hook-tip</b>	<b>1</b>
Watsonalla binaria	1
<b>Pink-barred Sallow</b>	<b>1</b>
Xanthia togata	1
<b>Ringed China-mark</b>	<b>1</b>
Parapoynx stratiotata	1
<b>Rosy Footman</b>	<b>1</b>
Miltochrista miniata	1
<b>Rosy Rustic</b>	<b>1</b>
Hydraecia micacea	1
<b>Rufous Minor</b>	<b>2</b>
Oligia versicolor	2
<b>Rustic</b>	<b>2</b>
Hoplodrina blanda	2

Grid ID & BNG Location	Total Invertebrates
<b>Small Clouded Brindle</b>	<b>1</b>
Apamea unanimitis	1
<b>Small Eggar</b>	<b>1</b>
Eriogaster lanestris	1
<b>Small Elephant Hawk-moth</b>	<b>1</b>
Deilephila porcellus	1
<b>Small Emerald</b>	<b>1</b>
Hemistola chrysoprasaria	1
<b>Small Square-Spot</b>	<b>2</b>
Diarsia rubi	2
<b>Spinach (moth)</b>	<b>1</b>
Eulithis mellinata	1
<b>Sycamore (moth)</b>	<b>1</b>
Acronicta aceris	1
<b>Twin-spotted Wainscot</b>	<b>2</b>
Archanara geminipuncta	2
<b>Vine's Rustic</b>	<b>1</b>
Hoplodrina ambigua	1
<b>Wall</b>	<b>6</b>
Lasiommata megera	6
<b>White Ermine</b>	<b>3</b>
Spilosoma lubricipeda	3
<b>A55 - ST339166</b>	<b>4</b>
<b>Emerald Damselfly</b>	<b>4</b>
Lestes sponsa	4
<b>A56 - ST340166</b>	<b>10</b>
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Clouded Magpie</b>	<b>1</b>
Abraxas sylvata	1
<b>Coronet</b>	<b>1</b>
Craniophora ligustri	1
<b>Dot Moth</b>	<b>1</b>
Melanchra persicariae	1
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Ghost Moth (ssp. humuli)</b>	<b>1</b>
Hepialus humuli subsp. humuli	1
<b>Lunar-spotted Pinion</b>	<b>1</b>
Cosmia pyralina	1
<b>Oak Nycteoline</b>	<b>1</b>
Nycteola revayana	1
<b>Rosy Footman</b>	<b>1</b>
Mitochrista miniata	1
<b>Rustic</b>	<b>1</b>
Hoplodrina blanda	1
<b>A57 - ST342166</b>	<b>1</b>
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>A58 - ST341167</b>	<b>1</b>
<b>Slender Ground Hopper</b>	<b>1</b>



Grid ID & BNG Location	Total Invertebrates
Tetrix subulata	1
<b>A59 - ST342167</b>	<b>15</b>
<b>a crawling water beetle</b>	<b>2</b>
Peltodytes caesus	2
<b>a scavenger water beetle</b>	<b>7</b>
Cymbiodyta marginellus	6
Helochaeres lividus	1
<b>a weevil</b>	<b>1</b>
Hydronomus alismatis	1
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Variable Damselfly</b>	<b>4</b>
Coenagrion pulchellum	4
<b>A6 - ST331141</b>	<b>9</b>
<b>Wall</b>	<b>3</b>
Lasiommata megera	3
<b>White-letter Hairstreak</b>	<b>6</b>
Satyrrium w-album	6
<b>A60 - ST343167</b>	<b>9</b>
<b>Emerald Damselfly</b>	<b>2</b>
Lestes sponsa	2
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Variable Damselfly</b>	<b>6</b>
Coenagrion pulchellum	6
<b>A61 - ST340168</b>	<b>1</b>
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>A62 - ST341168</b>	<b>1</b>
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>A63 - ST342168</b>	<b>3</b>
<b>Variable Damselfly</b>	<b>1</b>
Coenagrion pulchellum	1
<b>White Admiral</b>	<b>2</b>
Limenitis camilla	2
<b>A64 - ST343168</b>	<b>81</b>
<b>a leaf beetle</b>	<b>4</b>
Donacia semicuprea	1
Donacia simplex	3
<b>a micro-moth</b>	<b>3</b>
Agonopterix arenella	1
Stathmopoda pedella	2
<b>a pyralid moth</b>	<b>2</b>
Agriphila selasella	1
Calamotropha paludella	1

Grid ID & BNG Location	Total Invertebrates
<b>a scavenger water beetle</b>	<b>1</b>
Anacaena bipustulata	1
<b>Alder Moth</b>	<b>1</b>
Acronicta alni	1
<b>Black Colonel</b>	<b>3</b>
Odontomyia tigrina	3
<b>Blood-vein</b>	<b>2</b>
Timandra comae	2
<b>Coronet</b>	<b>2</b>
Craniophora ligustri	2
<b>Dingy Shell</b>	<b>2</b>
Euchoeca nebulata	2
<b>Dusky Thorn</b>	<b>1</b>
Ennomos fuscantaria	1
<b>Emerald Damselfly</b>	<b>4</b>
Lestes sponsa	4
<b>Four-spot Chaser</b>	<b>2</b>
Libellula quadrimaculata	2
<b>Ghost Moth (ssp. humuli)</b>	<b>2</b>
Hepialus humuli subsp. humuli	2
<b>Gold Spot</b>	<b>1</b>
Plusia festucae	1
<b>Grey Dagger</b>	<b>1</b>
Acronicta psi	1
<b>Hairy Dragonfly</b>	<b>9</b>
Brachytron pratense	9
<b>Knot Grass (moth)</b>	<b>2</b>
Acronicta rumicis	2
<b>Lesser Marsh Grasshopper</b>	<b>5</b>
Chorthippus albomarginatus	5
<b>Maiden's Blush</b>	<b>2</b>
Cyclophora punctaria	2
<b>Oak Hook-tip</b>	<b>1</b>
Watsonalla binaria	1
<b>Oblique Carpet</b>	<b>1</b>
Orthonama vittata	1
<b>Rosy Rustic</b>	<b>1</b>
Hydraecia micacea	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2
<b>Small Blue</b>	<b>2</b>
Cupido minimus	2
<b>Small Garden Bumble Bee</b>	<b>2</b>
Bombus (Megabombus) hortorum	2
<b>Small Heath</b>	<b>4</b>
Coenonympha pamphilus	4
<b>Small Phoenix</b>	<b>1</b>
Ecliptopera silaceata	1
<b>Small Rufous</b>	<b>1</b>
Coenobia rufa	1
<b>Small Square-Spot</b>	<b>2</b>
Diarsia rubi	2
<b>Small Yellow Underwing</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Panemeria tenebrata	1
<b>Southern Wainscot</b>	<b>1</b>
Mythimna straminea	1
<b>Variable Damselfly</b>	<b>10</b>
Coenagrion pulchellum	10
<b>Yellow-barred Brindle</b>	<b>2</b>
Acasis viretata	2
<b>A65 - ST344168</b>	<b>2</b>
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>A66 - ST342169</b>	<b>1</b>
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>A67 - ST343169</b>	<b>17</b>
<b>Emerald Damselfly</b>	<b>8</b>
Lestes sponsa	8
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Variable Damselfly</b>	<b>7</b>
Coenagrion pulchellum	7
<b>A68 - ST344169</b>	<b>43</b>
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Emerald Damselfly</b>	<b>6</b>
Lestes sponsa	6
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>11</b>
Brachytron pratense	11
<b>Ruddy Darter</b>	<b>2</b>
Sympetrum sanguineum	2
<b>Variable Damselfly</b>	<b>22</b>
Coenagrion pulchellum	22
<b>A69 - ST346169</b>	<b>1</b>
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>A7 - ST334141</b>	<b>1</b>
<b>Brown Hairstreak</b>	<b>1</b>
Thecla betulae	1
<b>A70 - ST347169</b>	<b>9</b>
<b>Downy Emerald</b>	<b>6</b>
Cordulia aenea	6
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2

Grid ID & BNG Location	Total Invertebrates
<b>A71 - ST343170</b>	<b>34</b>
<b>a crawling water beetle</b>	<b>3</b>
Halipus (Halipinus) immaculatus	1
Halipus (Halipus) obliquus	1
Peltodytes caesus	1
<b>a scavenger water beetle</b>	<b>1</b>
Berosus (Berosus) affinis	1
<b>a water beetle</b>	<b>7</b>
Hydaticus transversalis	1
Laccophilus minutus	3
Rhantus (Nartus) grapii	3
<b>Black Colonel</b>	<b>2</b>
Odontomyia tigrina	2
<b>Emerald Damselfly</b>	<b>2</b>
Lestes sponsa	2
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>5</b>
Brachytron pratense	5
<b>Ornate Brigadier</b>	<b>3</b>
Odontomyia ornata	3
<b>Variable Damselfly</b>	<b>10</b>
Coenagrion pulchellum	10
<b>A72 - ST344170</b>	<b>42</b>
<b>a crawling water beetle</b>	<b>4</b>
Halipus (Liaphus) mucronatus	1
Peltodytes caesus	3
<b>a mayfly</b>	<b>1</b>
Caenis robusta	1
<b>a scavenger water beetle</b>	<b>5</b>
Cercyon (Cercyon) convexiusculus	2
Helochares lividus	2
Laccobius minutus	1
<b>a water beetle</b>	<b>3</b>
Laccophilus minutus	3
<b>Black Colonel</b>	<b>1</b>
Odontomyia tigrina	1
<b>Emerald Damselfly</b>	<b>5</b>
Lestes sponsa	5
<b>Four-spot Chaser</b>	<b>2</b>
Libellula quadrimaculata	2
<b>Great Silver Water Beetle</b>	<b>2</b>
Hydrophilus piceus	2
<b>Hairy Dragonfly</b>	<b>8</b>
Brachytron pratense	8
<b>Ornate Brigadier</b>	<b>2</b>
Odontomyia ornata	2
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>Variable Damselfly</b>	<b>8</b>
Coenagrion pulchellum	8
<b>A73 - ST345170</b>	<b>11</b>

Grid ID & BNG Location	Total Invertebrates
<b>a crawling water beetle</b>	<b>1</b>
Peltodytes caesus	1
<b>Blood-vein</b>	<b>1</b>
Timandra comae	1
<b>Emerald Damselfly</b>	<b>3</b>
Lestes sponsa	3
<b>Four-spot Chaser</b>	<b>2</b>
Libellula quadrimaculata	2
<b>Hairy Dragonfly</b>	<b>3</b>
Brachytron pratense	3
<b>Variable Damselfly</b>	<b>1</b>
Coenagrion pulchellum	1
<b>A74 - ST346170</b>	<b>43</b>
<b>Grayling</b>	<b>1</b>
Hipparchia semele	1
<b>Silver-washed Fritillary</b>	<b>4</b>
Argynnis paphia	4
<b>Small Heath</b>	<b>30</b>
Coenonympha pamphilus	30
<b>Wall</b>	<b>8</b>
Lasiommata megera	8
<b>A75 - ST347170</b>	<b>18</b>
<b>a ground beetle</b>	<b>2</b>
Harpalus (Harpalus) rubripes	2
<b>a hoverfly</b>	<b>3</b>
Volucella inanis	1
Volucella zonaria	2
<b>a scavenger water beetle</b>	<b>1</b>
Cymbiodyta marginellus	1
<b>a solitary bee</b>	<b>1</b>
Andrena (Chlorandrena) humilis	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Harlequin Ladybird</b>	<b>1</b>
Harmonia axyridis	1
<b>Longhorn Beetle</b>	<b>1</b>
Pyrrhidium sanguineum	1
<b>Pearl-bordered Fritillary</b>	<b>1</b>
Boloria euphrosyne	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Scarlet Tiger</b>	<b>2</b>
Callimorpha dominula	2
<b>White-marked Spider Beetle</b>	<b>2</b>
Ptinus fur	2
<b>Wormwood (moth)</b>	<b>1</b>
Cucullia absinthii	1
<b>A76 - ST343171</b>	<b>6</b>
<b>a crawling water beetle</b>	<b>2</b>
Haliphus (Haliplinus) immaculatus	1
Peltodytes caesus	1
<b>a water beetle</b>	<b>1</b>

Grid ID & BNG Location	Total Invertebrates
Agabus (Gaurodytes) didymus	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Ornate Brigadier</b>	<b>1</b>
Odontomyia ornata	1
<b>Variable Damselfly</b>	<b>1</b>
Coenagrion pulchellum	1
<b>A77 - ST344171</b>	<b>51</b>
<b>a crawling water beetle</b>	<b>3</b>
Halipus (Halipinus) immaculatus	3
<b>a water beetle</b>	<b>4</b>
Hydaticus transversalis	1
Laccophilus minutus	2
Rhantus (Nartus) grapii	1
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Emerald Damselfly</b>	<b>8</b>
Lestes sponsa	8
<b>Four-spot Chaser</b>	<b>3</b>
Libellula quadrimaculata	3
<b>Hairy Dragonfly</b>	<b>10</b>
Brachytron pratense	10
<b>Ornate Brigadier</b>	<b>3</b>
Odontomyia ornata	3
<b>Ruddy Darter</b>	<b>5</b>
Sympetrum sanguineum	5
<b>Short-winged Conehead</b>	<b>1</b>
Conocephalus dorsalis	1
<b>Variable Damselfly</b>	<b>13</b>
Coenagrion pulchellum	13
<b>A78 - ST345171</b>	<b>17</b>
<b>a crawling water beetle</b>	<b>3</b>
Halipus (Halipus) obliquus	1
Peltodytes caesus	2
<b>a scavenger water beetle</b>	<b>4</b>
Cercyon (Cercyon) convexiusculus	1
Helochares lividus	1
Laccobius minutus	2
<b>a water beetle</b>	<b>3</b>
Agabus (Gaurodytes) didymus	1
Laccophilus minutus	2
<b>Black Colonel</b>	<b>1</b>
Odontomyia tigrina	1
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Ornate Brigadier</b>	<b>2</b>
Odontomyia ornata	2
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>A79 - ST346171</b>	<b>2</b>

Grid ID & BNG Location	Total Invertebrates
<b>Bee-fly</b>	<b>1</b>
Bombylius major	1
<b>Scarce Chaser</b>	<b>1</b>
Libellula fulva	1
<b>A8 - ST334145</b>	<b>2</b>
<b>Bombus (Thoracombus) sylvarum</b>	<b>1</b>
Bombus (Thoracombus) sylvarum	1
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A80 - ST347171</b>	<b>9</b>
<b>a ground beetle</b>	<b>1</b>
Asaphidion flavipes	1
<b>a nomad or mason bee</b>	<b>1</b>
Nomada hirtipes	1
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Glow-worm</b>	<b>1</b>
Lampyrus noctiluca	1
<b>Iris Weevil</b>	<b>1</b>
Mononychus punctumalbum	1
<b>Scarlet Tiger</b>	<b>4</b>
Callimorpha dominula	4
<b>A81 - ST349171</b>	<b>1</b>
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>A82 - ST344172</b>	<b>10</b>
<b>a hoverfly</b>	<b>1</b>
Volucella inflata	1
<b>a longhorn beetle</b>	<b>1</b>
Anaglyptus mysticus	1
<b>Barred Hook-tip</b>	<b>1</b>
Watsonalla cultraria	1
<b>Bee-fly</b>	<b>1</b>
Bombylius major	1
<b>Green Hairstreak</b>	<b>1</b>
Callophrys rubi	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Pearl-bordered Fritillary</b>	<b>1</b>
Boloria euphrosyne	1
<b>Violet Oil-beetle</b>	<b>3</b>
Meloe violaceus	3
<b>A83 - ST345172</b>	<b>21</b>
<b>a dingy skipper</b>	<b>3</b>
Erynnis tages subsp. tages	3
<b>Adonis Blue</b>	<b>8</b>
Lysandra bellargus	8
<b>Great Green Bush Cricket</b>	<b>1</b>
Tettigonia viridissima	1
<b>Grizzled Skipper</b>	<b>2</b>

Grid ID & BNG Location	Total Invertebrates
Pyrgus malvae	2
<b>Pearl-bordered Fritillary</b>	<b>1</b>
Boloria euphrosyne	1
<b>Silver-washed Fritillary</b>	<b>1</b>
Argynnis paphia	1
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>Small Phoenix</b>	<b>1</b>
Ecliptopera silaceata	1
<b>Variable Damselfly</b>	<b>2</b>
Coenagrion pulchellum	2
<b>Wall</b>	<b>1</b>
Lasiommata megera	1
<b>A84 - ST346172</b>	<b>13</b>
<b>a micro-moth</b>	<b>1</b>
Psychoides filicivora	1
<b>Bee-fly</b>	<b>1</b>
Bombylius major	1
<b>Blomer's Rivulet</b>	<b>1</b>
Discoloxia blomeri	1
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Clay Triple-lines</b>	<b>1</b>
Cyclophora linearia	1
<b>Little Thorn</b>	<b>1</b>
Cepphis advenaria	1
<b>Maiden's Blush</b>	<b>1</b>
Cyclophora punctaria	1
<b>Mocha</b>	<b>1</b>
Cyclophora annularia	1
<b>Pretty Chalk Carpet</b>	<b>1</b>
Melanthia procellata	1
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>Scorched Wing</b>	<b>1</b>
Plagodis dolabraria	1
<b>Treble Brown Spot</b>	<b>1</b>
Idaea trigeminata	1
<b>White Ermine</b>	<b>1</b>
Spilosoma lubricipeda	1
<b>A85 - ST349172</b>	<b>4</b>
<b>a ground beetle</b>	<b>2</b>
Asaphidion flavipes	1
Calathus (Amphigynus) rotundicollis	1
<b>Snail Hunter</b>	<b>2</b>
Cychrus caraboides	2
<b>A86 - ST345173</b>	<b>10</b>
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Emerald Damselfly</b>	<b>2</b>
Lestes sponsa	2
<b>Four-spot Chaser</b>	<b>4</b>



<b>Grid ID &amp; BNG Location</b>	<b>Total Invertebrates</b>
Libellula quadrimaculata	4
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>A87 - ST346173</b>	<b>2</b>
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>A88 - ST346174</b>	<b>2</b>
<b>Small Heath</b>	<b>1</b>
Coenonympha pamphilus	1
<b>Small Square-Spot</b>	<b>1</b>
Diarsia rubi	1
<b>A89 - ST347174</b>	<b>3</b>
<b>Hairy Dragonfly</b>	<b>1</b>
Brachytron pratense	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A9 - ST336146</b>	<b>1</b>
<b>Hydaticus transversalis</b>	<b>1</b>
Hydaticus transversalis	1
<b>A90 - ST349174</b>	<b>7</b>
<b>a hoverfly</b>	<b>1</b>
Criorhina ranunculi	1
<b>Dusky Thorn</b>	<b>1</b>
Ennomos fuscantaria	1
<b>Hornet</b>	<b>1</b>
Vespa crabro	1
<b>Oak Hook-tip</b>	<b>1</b>
Watsonalla binaria	1
<b>Satin Lutestring</b>	<b>1</b>
Tetheella fluctuosa	1
<b>Small Phoenix</b>	<b>1</b>
Ecliptopera silaceata	1
<b>Yellow-barred Brindle</b>	<b>1</b>
Acasis viretata	1
<b>A91 - ST346175</b>	<b>2</b>
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>A92 - ST347175</b>	<b>9</b>
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Emerald Damselfly</b>	<b>1</b>
Lestes sponsa	1
<b>Four-spot Chaser</b>	<b>2</b>

Grid ID & BNG Location	Total Invertebrates
Libellula quadrimaculata	2
<b>Hairy Dragonfly</b>	<b>2</b>
Brachytron pratense	2
<b>Small Heath</b>	<b>3</b>
Coenonympha pamphilus	3
<b>A93 - ST350175</b>	<b>6</b>
<b>Beaded Chestnut</b>	<b>1</b>
Agrochola lychnidis	1
<b>Scarlet Tiger</b>	<b>1</b>
Callimorpha dominula	1
<b>Small Heath</b>	<b>2</b>
Coenonympha pamphilus	2
<b>Wall</b>	<b>2</b>
Lasiommata megera	2
<b>A94 - ST351175</b>	<b>20</b>
<b>a ground bug</b>	<b>1</b>
Stictopleurus abutilon	1
<b>Beautiful Hook-tip</b>	<b>1</b>
Laspeyria flexula	1
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Cinnabar</b>	<b>2</b>
Tyria jacobaeae	2
<b>Dingy Skipper</b>	<b>2</b>
Erynnis tages	2
<b>Dot Moth</b>	<b>1</b>
Melanchra persicariae	1
<b>Grass Rivulet</b>	<b>2</b>
Perizoma albulata subsp. albulata	2
<b>Lackey</b>	<b>1</b>
Malacosoma neustria	1
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1
<b>Mottled Rustic</b>	<b>1</b>
Caradrina morpheus	1
<b>Round-winged Muslin</b>	<b>1</b>
Thumatha senex	1
<b>Shaded Broad-Bar</b>	<b>2</b>
Scotopteryx chenopodiata	2
<b>Small Garden Bumble Bee</b>	<b>1</b>
Bombus (Megabombus) hortorum	1
<b>Small Yellow Underwing</b>	<b>2</b>
Panemeria tenebrata	2
<b>White-letter Hairstreak</b>	<b>1</b>
Satyrium w-album	1
<b>A95 - ST352175</b>	<b>23</b>
<b>Buff Ermine</b>	<b>1</b>
Spilosoma luteum	1
<b>Cinnabar</b>	<b>1</b>
Tyria jacobaeae	1
<b>Dark Umber</b>	<b>1</b>
Philereme transversata subsp.	1

Grid ID & BNG Location	Total Invertebrates
britannica	
<b>Garden Dart</b>	<b>2</b>
Euxoa nigricans	2
<b>Gothic</b>	<b>1</b>
Naenia typica	1
<b>Harlequin Ladybird</b>	<b>1</b>
Harmonia axyridis	1
<b>Hedge Rustic</b>	<b>1</b>
Tholera cespitis	1
<b>Knot Grass (moth)</b>	<b>1</b>
Acronicta rumicis	1
<b>Lappet</b>	<b>1</b>
Gastropacha quercifolia	1
<b>Rustic</b>	<b>1</b>
Hoplodrina blanda	1
<b>Slender Ground Hopper</b>	<b>2</b>
Tetrix subulata	2
<b>Slender Pug</b>	<b>1</b>
Eupithecia tenuiata	1
<b>Small Scallop</b>	<b>1</b>
Idaea emarginata	1
<b>Small Square-Spot</b>	<b>2</b>
Diarsia rubi	2
<b>Southern Wainscot</b>	<b>3</b>
Mythimna straminea	3
<b>Svensson's Copper Underwing</b>	<b>2</b>
Amphipyra berbera subsp. svenssoni	2
<b>White-spotted Pug</b>	<b>1</b>
Eupithecia tripunctaria	1
<b>A96 - ST347176</b>	<b>41</b>
<b>Dingy Skipper</b>	<b>3</b>
Erynnis tages	3
<b>Garden Tiger</b>	<b>1</b>
Arctia caja	1
<b>Grizzled Skipper</b>	<b>2</b>
Pyrgus malvae	2
<b>Small Heath</b>	<b>32</b>
Coenonympha pamphilus	32
<b>Wall</b>	<b>3</b>
Lasiommata megera	3
<b>A97 - ST348176</b>	<b>46</b>
<b>a crawling water beetle</b>	<b>3</b>
Halipus (Halipinus) immaculatus	2
Peltodytes caesus	1
<b>a ground beetle</b>	<b>1</b>
Ophonus (Ophonus) ardosiacus	1
<b>a leaf beetle</b>	<b>1</b>
Donacia thalassina	1
<b>a pyralid moth</b>	<b>1</b>
Sitochroa palealis	1
<b>a rove beetle</b>	<b>1</b>
Stenus (Hemistenus) ossium	1
<b>a scavenger water beetle</b>	<b>5</b>

Grid ID & BNG Location	Total Invertebrates
Berosus (Berosus) affinis	3
Cymbiodyta marginellus	2
<b>a water beetle</b>	<b>6</b>
Hygrotus (Coelambus) confluens	1
Laccophilus minutus	3
Rhantus (Nartus) grapii	2
<b>a weevil</b>	<b>2</b>
Larinus planus	1
Thryogenes nereis	1
<b>Brown Hawker</b>	<b>1</b>
Aeshna grandis	1
<b>Emerald Damselfly</b>	<b>3</b>
Lestes sponsa	3
<b>Four-spot Chaser</b>	<b>1</b>
Libellula quadrimaculata	1
<b>Great Silver Water Beetle</b>	<b>1</b>
Hydrophilus piceus	1
<b>Grizzled Skipper</b>	<b>1</b>
Pyrgus malvae	1
<b>Hairy Dragonfly</b>	<b>3</b>
Brachytron pratense	3
<b>Harlequin Ladybird</b>	<b>1</b>
Harmonia axyridis	1
<b>Lesser Marsh Grasshopper</b>	<b>1</b>
Chorthippus albomarginatus	1
<b>New Forest Mud Beetle</b>	<b>1</b>
Helophorus laticollis	1
<b>Red-eyed Damselfly</b>	<b>1</b>
Erythromma najas	1
<b>Ruddy Darter</b>	<b>9</b>
Sympetrum sanguineum	9
<b>Short-winged Conehead</b>	<b>2</b>
Conocephalus dorsalis	2
<b>Slender Ground Hopper</b>	<b>1</b>
Tetrix subulata	1
<b>A98 - ST349176</b>	<b>5</b>
<b>a ground beetle</b>	<b>1</b>
Asaphidion curtum	1
<b>Lunar Hornet Moth</b>	<b>1</b>
Sesia bembeciformis	1
<b>New Forest Mud Beetle</b>	<b>1</b>
Helophorus laticollis	1
<b>Ruddy Darter</b>	<b>1</b>
Sympetrum sanguineum	1
<b>Shaded Broad-Bar</b>	<b>1</b>
Scotopteryx chenopodiata	1
<b>A99 - ST350176</b>	<b>8</b>
<b>Cinnabar</b>	<b>3</b>
Tyria jacobaeae	3
<b>Lackey</b>	<b>2</b>
Malacosoma neustria	2
<b>Latticed Heath</b>	<b>1</b>
Chiasmia clathrata	1

Grid ID & BNG Location	Total Invertebrates
<b>Shaded Broad-Bar</b>	<b>1</b>
<i>Scotopteryx chenopodiata</i>	1
<b>White Ermine</b>	<b>1</b>
<i>Spilosoma lubricipeda</i>	1

## 8.0 Invertebrate Species Recorded

<b>Aculeata</b>	<b>Wasps</b>
<b>Vespoidea</b>	
Vespidae	
<i>Vespula vulgaris</i>	Common Wasp
<b>Annelida</b>	<b>Earthworms</b>
<b>Oligochaeta</b>	
Lumbricidae	
<i>Eiseniella tetraedra</i>	an earthworm
<b>Apoidea</b>	<b>Bees</b>
<b>Apidae</b>	
Andreninae	
<i>Andrena wilkella</i>	a mining bee
Apinae	
<i>Apis mellifera</i>	Honey Bee
<i>Bombus bohemicus</i>	a bumblebee
<i>Bombus hypnorum</i>	a bumblebee
<i>Bombus lapidarius</i>	Large Red Tailed Bumble Bee
<i>Bombus lucorum</i>	White-tailed Bumble Bee
<i>Bombus lucorum/terrestris</i>	White-tailed/Buff-tailed Bumble Bee
<i>Bombus pascuorum</i>	Common Carder Bee
<i>Bombus pratorum</i>	Early Bumble Bee
<i>Bombus terrestris</i>	Buff-tailed Bumble Bee
<b>Arachnida</b>	<b>Spiders</b>
<b>Araneae</b>	
Araneidae	
<i>Araneus diadematus</i>	
<i>Larinioides cornutus</i>	
Cybaeidae	
<i>Argyroneta aquatica</i>	
Lycosidae	
<i>Arctosa leopardus</i>	
<i>Pardosa monticola</i>	
<i>Pardosa pullata</i>	
<i>Pirata piraticus</i>	
Pisauridae	
<b>Pisaura mirabilis</b>	
Tetragnathidae	
<i>Pachygnatha clercki</i>	
<i>Pachygnatha degeeri</i>	
<i>Tetragnatha extensa</i>	
<i>Tetragnatha montana</i>	
Thomisidae	
<i>Xysticus cristatus</i>	
<b>Opiliones</b>	

Leiobunidae  
*Leiobunum rotundum*  
 Nemastomatidae  
*Nemastoma bimaculatum*  
 Phalangiidae  
*Mitopus morio*  
*Oligolophus tridens*  
*Paroligolophus agrestis*

**Bivalvia****Bivalves****Veneroida**

## Sphaeriidae

*Musculium lacustre*

Lake or Capped Orb Mussel

*Pisidium amnicum*

River or Giant Pea Shell

*Pisidium nitidum**Pisidium pulchellum*

Horny Orb Mussel

*Sphaerium corneum**Sphaerium lacustre*

Lake or Capped Orb Mussel

*Sphaerium nucleus*

Swamp Orb Mussel

**Diplopoda****Centipedes****Julida**

## Julidae

*Cylindroiulus punctatus*

Blunt-tailed Snake-millipede

**Gastropoda****Slugs and Snails****Basommatophora**

## Ancylidae

*Acroloxus lacustris**Ancylus fluviatilis*

River Limpet

## Lymnaeidae

*Lymnaea stagnalis*

Great Pond Snail

*Radix auricularia*

Ear Pond Snail

## Physidae

*Aplexa hypnorum*

Moss Bladder Snail

*Physa fontinalis*

## Planorbidae

*Anisus leucostoma*

White-lipped Ram's-horn

*Anisus vortex*

Whirlpool Ram's-horn

*Armiger crista*

Nautilus Ram's-horn

*Bathyomphalus contortus*

Twisted Ram's-horn

*Gyraulus albus*

White Ram's-horn

*Gyraulus crista*

Nautilus Ram's-horn

*Hippeutis complanatus*

Flat Ram's-horn

*Planorbarius corneus*

Great Ram's-horn

*Planorbis carinatus*

Keeled Ram's-horn

*Planorbis corneus*

Great Ram's-horn

*Planorbis planorbis*

Margined Ram's-horn

**Mesogastropoda**

## Bithyniidae

*Bithynia leachii*

Leach's Bithynia

*Bithynia tentaculata*

Common Bithynia

## Hydrobiidae

*Potamopyrgus antipodarum*

Jenkins' Spire Snail

## Valvatidae

*Valvata cristata*

Flat Valve Snail

*Valvata piscinalis*

Common Valve Snail

**Stylommatophora**

## Agriolimacidae

*Deroceras laeve*

Marsh Slug

## Arionidae

*Arion ater*

Large Black Slug

## Clausiliidae

*Clausilia bidentata*

Common or Two-toothed Door Snail

## Cochlicopidae

*Cochlicopa lubrica*

Slippery Moss Snail

## Discidae

*Discus rotundatus*

Rounded Snail

## Helicidae

*Ashfordia granulata*

Silky Snail

*Cepaea hortensis*

White-lipped Snail

*Cepaea nemoralis*

Grove or Brown-lipped Snail

*Helix aspersa*

Garden or Common Snail

*Monacha cantiana*

Kentish Snail

*Trichia hispida*

Hairy Snail

*Trichia striolata*

Strawberry Snail

## Succineidae

*Oxyloma elegans*

Pfeiffer's Amber Snail

*Oxyloma pfeifferi*

Pfeiffer's Amber Snail

*Succinea putris*

Large Amber Snail

## Valloniidae

*Vallonia costata*

Ribbed Grass Snail

*Vertigo pygmaea*

Common Whorl Snail

## Vitrinidae

## Zonitidae

*Aegopinella nitidula*

Smooth Glass Snail

**Hemiptera****True Bugs****Heteroptera***Acanthosoma haemorrhoidale*

Hawthorn Shieldbug

*Anthocoris nemorum*

## Coreidae

*Coreus marginatus*

Dock Bug

## Corixidae

*Corixa punctata**Hesperocorixa linnaei**Micronecta scholtzi**Sigara distincta**Sigara falleni*



*Sigara lateralis*  
*Sigara limitata*  
*Sigara nigrolineata*  
 Gerridae  
*Gerris lacustris*  
*Gerris odontogaster*  
*Gerris thoracicus*  
 Hydrometridae  
*Hydrometra stagnorum*  
 Miridae  
*Capsus ater*  
*Closterotomus norwegicus*  
*Liocoris tripustulatus*  
*Lygocoris pabulinus*  
*Notostira elongata*  
*Orthocephalus saltator*  
*Orthops campestris*  
*Pithanus maerkelii*  
*Stenodema calcarata*  
*Stenodema holsata*  
*Stenodema laevigata*  
 Nabidae  
*Nabis rugosus*  
 Naucoridae  
*Ilyocoris cimicoides*  
 Nepidae  
*Nepa cinerea*  
 Notonectidae  
*Notonecta glauca*  
*Notonecta maculata*  
 Pleidae  
*Plea minutissima*  
 Rhopalidae  
*Corizus hyoscyami*  
 Saldidae  
*Saldula saltatoria*  
 Tingidae  
*Tingis ampliata*  
 Veliidae  
*Microvelia reticulata*  
*Velia caprai*

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**Homoptera**
**Leafhoppers**
**Auchenorrhyncha**

Aphrophoridae  
*Philaenus spumarius*  
 Cicadellidae  
*Cicadella viridis*

**Insecta****Coleoptera****Beetles**

## Anthicidae

*Omonadus floralis*

## Apionidae

*Apion cruentatum**Apion frumentarium**Apion nigrirtase**Ceratapion onopordi**Ischnopterapion loti**Ischnopterapion virens**Protapion apricans*

## Cantharidae

*Cantharis decipiens**Cantharis livida**Cantharis nigra**Cantharis paludosa**Rhagonycha fulva*

## Carabidae

*Agonum fuliginosum**Agonum thoreyi**Amara aenea**Amara plebeja**Bembidion aeneum**Bembidion articulatum**Bembidion biguttatum**Bembidion guttula**Bembidion illigeri**Bembidion lampros**Bembidion lunulatum**Bembidion obtusum**Carabus violaceus*

Violet Ground Beetle

*Demetrias atricapillus**Elaphrus riparius**Harpalus rufipes**Notiophilus palustris**Paradromius linearis**Philorhizus melanocephalus**Poecilus cupreus**Pterostichus melanarius**Pterostichus minor**Pterostichus strenuus**Syntomus obscuroguttatus*

## Chrysomelidae

*Altica lythri**Cassida rubiginosa*

Thistle Tortoise Beetle

*Cassida viridis*

Green Tortoise Beetle

*Chrysolina polita*

Green Dock Beetle

*Donacia semicuprea**Donacia simplex*

<i>Galerucella sagittariae</i>	
<i>Gastrophysa viridula</i>	
<i>Hydrothassa marginella</i>	
<i>Longitarsus melanocephalus</i>	
<i>Longitarsus rubiginosus</i>	
<i>Neocrepidodera ferruginea</i>	
<i>Oulema obscura</i>	
<i>Oulema rufocyanea</i>	
<i>Phaedon armoraciae</i>	
<i>Phaedon cochleariae</i>	
<i>Phaedon tumidulus</i>	Celery Leaf Beetle
<i>Plateumaris sericea</i>	
<i>Prasocuris junci</i>	Brooklime Leaf Beetle
<i>Prasocuris phellandrii</i>	
<i>Sphaeroderma testaceum</i>	
Coccinellidae	
<i>Adalia bipunctata</i>	2-spot Ladybird
<i>Adalia decempunctata</i>	10-spot Ladybird
<i>Anisosticta novemdecimpunctata</i>	Water Ladybird
<i>Coccidula rufa</i>	
<i>Coccidula scutellata</i>	
<i>Coccinella septempunctata</i>	7-spot Ladybird
<i>Propylea quattuordecimpunctata</i>	14-spot Ladybird
<i>Psyllobora vigintiduopunctata</i>	22-spot Ladybird
<i>Rhyzobius litura</i>	
<i>Subcoccinella vigintiquattuorpunctata</i>	24-spot Ladybird
Curculionidae	
<i>Gymnetron veronicae</i>	
<i>Gymnetron villosulum</i>	
<i>Liophloeus tessulatus</i>	
<i>Nedys quadrimaculatus</i>	Small Nettle Weevil
<i>Otiorhynchus sulcatus</i>	Vine Weevil
<i>Pelenomus quadrituberculatus</i>	
<i>Phyllobius roboretanus</i>	Small Green Nettle Weevil
<i>Phyllobius viridiaeris</i>	Green Nettle Weevil
<i>Sitona lepidus</i>	
<i>Sitona lineatus</i>	
<i>Sitona sulcifrons</i>	
<i>Sitona suturalis</i>	
Dryopidae	
<i>Dryops luridus</i>	
Dytiscidae	
<i>Acilius sulcatus</i>	
<i>Agabus bipustulatus</i>	
<i>Agabus nebulosus</i>	
<i>Agabus paludosus</i>	
<i>Agabus sturmii</i>	
<i>Colymbetes fuscus</i>	
<i>Dytiscus marginalis</i>	Great Diving Beetle
<i>Graptodytes pictus</i>	

*Hydaticus transversalis*  
*Hydroglyphus pusillus*  
*Hydroporus angustatus*  
*Hydroporus incognitus*  
*Hydroporus palustris*  
*Hydroporus planus*  
*Hydroporus pubescens*  
*Hydroporus striola*  
*Hydroporus tessellatus*  
*Hygrotus impressopunctatus*  
*Hygrotus inaequalis*  
*Hygrotus versicolor*  
*Hyphydrus ovatus*  
*Ilybius ater*  
*Ilybius fuliginosus*  
*Ilybius quadriguttatus*  
*Laccophilus hyalinus*  
*Laccophilus minutus*  
*Liopterus haemorrhoidalis*  
*Nebrioporus elegans*  
*Rhantus grapii*  
*Rhantus suturalis*  
Elmidae  
*Elmis aenea*  
*Oulimnius tuberculatus*  
Eirrhinidae  
*Notaris acridulus*  
Gyrinidae  
*Gyrinus substriatus*  
Haliplidae  
*Haliplus flavicollis*  
*Haliplus fluviatilis*  
*Haliplus immaculatus*  
*Haliplus lineatocollis*  
*Haliplus lineolatus*  
*Haliplus ruficollis*  
*Haliplus sibiricus*  
*Haliplus wehncke*  
*Peltodytes caesus*  
Helophoridae  
*Helophorus aequalis*  
*Helophorus brevipalpis*  
*Helophorus grandis*  
*Helophorus griseus*  
*Helophorus minutus*  
*Helophorus obscurus*  
Hydraenidae  
*Hydraena riparia*  
*Hydraena testacea*  
*Limnebius papposus*

<i>Ochthebius dilatatus</i>	
<i>Ochthebius minimus</i>	
Hydrophilidae	
<i>Anacaena globulus</i>	
<i>Anacaena limbata</i>	
<i>Anacaena lutescens</i>	
<i>Berosus affinis</i>	
<i>Cercyon impressus</i>	
<i>Cercyon marinus</i>	
<i>Cercyon ustulatus</i>	
<i>Coelostoma orbiculare</i>	
<i>Cymbiodyta marginellus</i>	
<i>Enochrus coarctatus</i>	
<i>Enochrus melanocephalus</i>	
<i>Enochrus testaceus</i>	
<i>Helochares lividus</i>	
<i>Hydrobius fuscipes</i>	
<i>Hydrochara caraboides</i>	Lesser Silver Water Beetle
<i>Hydrophilus piceus</i>	Great Silver Water Beetle
<i>Laccobius bipunctatus</i>	
<i>Limnoxenus niger</i>	
<i>Megasternum concinnum</i>	
Hygrobiidae	
<i>Hygrobia hermanni</i>	Screech Beetle
Latridiidae	
<i>Cartodere bifasciata</i>	
<i>Cartodere nodifer</i>	
<i>Corticarina minuta</i>	
<i>Enicmus transversus</i>	
Malachiidae	
<i>Malachius bipustulatus</i>	Malachite Beetle
Mycetophagidae	
<i>Litargus balteatus</i>	
Noteridae	
<i>Noterus clavicornis</i>	
Oedemeridae	
<i>Oedemera lurida</i>	
<i>Oedemera nobilis</i>	Swollen-thighed Beetle
Pyrochroidae	
<i>Pyrochroa serraticornis</i>	Common Cardinal Beetle
Scirtidae	
<i>Cyphon coarctatus</i>	
<i>Cyphon laevipennis</i>	
<i>Scirtes hemisphaericus</i>	
Scraptiidae	
<i>Anaspis maculata</i>	
Staphylinidae	
<i>Cypha longicornis</i>	
<i>Geostiba circellaris</i>	
<i>Habrocerus capillaricornis</i>	

*Lesteva sicula*  
*Mocyta fungi*  
*Paederus fuscipes*  
*Paederus littoralis*  
*Paederus riparius*  
*Philonthus cognatus*  
*Philonthus marginatus*  
*Philonthus varians*  
*Quedius curtipennis*  
*Sepedophilus marshami*  
*Stenus bimaculatus*  
*Stenus binotatus*  
*Stenus boops*  
*Stenus brunnipes*  
*Stenus canaliculatus*  
*Stenus cicindeloides*  
*Stenus clavicornis*  
*Stenus crassus*  
*Stenus fulvicornis*  
*Stenus junco*  
*Stenus ossium*  
*Stenus picipennis*  
*Stenus picipes*  
*Stenus pubescens*  
*Stenus similis*  
*Stenus solutus*  
*Stenus tarsalis*  
*Tachinus rufipes*  
*Tachyporus dispar*  
*Tachyporus hypnorum*  
*Tachyporus nitidulus*  
*Tachyporus pallidus*  
*Xantholinus linearis*  
Tenebrionidae  
*Lagria hirta*  
Throscidae  
*Trixagus obtusus*

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**Dermaptera**

Forficulidae

*Forficula auricularia**Forficula lesnei*

Labiidae

*Labia minor*


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**Earwigs**

Common Earwig

Lesnei's Earwig

Lesser Earwig

Diptera	True Flies
Cylindrotomidae	
<i>Phalacroceras replicata</i>	
Dolichopodidae	
<i>Dolichopus plumipes</i>	
Empididae	
<i>Empis nigripes</i>	
<i>Empis tessellata</i>	
<i>Hilara cornicula</i>	
<i>Hilara maura</i>	
Hybotidae	
<i>Platypalpus agilis</i>	
Limoniidae	
<i>Limnophila pictipennis</i>	
<i>Molophilus obscurus</i>	
Muscidae	
<i>Coenosia pedella</i>	
Opomyzidae	
<i>Geomyza tripunctata</i>	
Ptychopteridae	
<i>Ptychoptera contaminata</i>	
<i>Ptychoptera paludosa</i>	
Rhagionidae	
<i>Chrysopilus cristatus</i>	
Scathophagidae	
<i>Conisternum decipiens</i>	
<i>Cordilura impudica</i>	
<i>Scathophaga furcata</i>	
<i>Scathophaga stercoraria</i>	
Sciomyzidae	
<i>Tetanocera ferruginea</i>	
Stratiomyidae	
<i>Beris vallata</i>	
<i>Chloromyia formosa</i>	
<i>Microchrysa flavicornis</i>	
<i>Oplodontha viridula</i>	
Syrphidae	
<i>Baccha elongata</i>	
<i>Cheilosia ranunculi</i>	
<i>Epistrophe eligans</i>	
<i>Episyrphus balteatus</i>	
<i>Eristalis arbustorum</i>	
<i>Eristalis interruptus</i>	
<i>Eristalis intricaria</i>	
<i>Eristalis pertinax</i>	
<i>Eristalis tenax</i>	
<i>Eupeodes corollae</i>	
<i>Helophilus hybridus</i>	
<i>Helophilus pendulus</i>	
<i>Helophilus trivittatus</i>	

*Lejogaster metallina*  
*Melanogaster hirtella*  
*Melanostoma scalare*  
*Metasyrphus corollae*  
*Myathropa florea*  
*Neoascia tenur*  
*Parasyrphus punctulatus*  
*Platycheirus albimanus*  
*Platycheirus clypeatus*  
*Platycheirus granditarsus*  
*Rhingia campestris*  
*Sphaerophoria scripta*  
*Syrirta pipiens*  
*Syrphus vitripennis*  
*Xylota segnis*  
 Tabanidae  
*Chrysops relictus*  
*Haematopota pluvialis*  
*Tabanus autumnalis*  
*Tabanus bromius*  
 Tachinidae  
*Siphona geniculata*  
 Tipulidae  
*Tipula flavolineata*  
*Tipula fulvipennis*  
*Tipula luteipennis*  
*Tipula oleracea*  
*Tipula paludosa*

**Ephemeroptera****Mayflies**

Baetidae  
*Baetis rhodani*  
*Cloeon dipterum*  
 Ephemerellidae  
*Serratella ignita*

**Lepidoptera****Butterflies and Moths**

Choreutidae	
<i>Anthophila fabriciana</i>	
Geometridae	
<i>Abraxas grossulariata</i>	Magpie Moth
<i>Opisthograptis luteolata</i>	Brimstone Moth
<i>Xanthorhoe fluctuata</i>	Garden Carpet
<i>Xanthorhoe montanata</i>	Silver-ground Carpet
Hepialidae	
<i>Hepialus hecta</i>	Gold Swift
Hesperiidae	



<i>Ochlodes faunus</i>	Large Skipper
<i>Thymelicus sylvestris</i>	Small Skipper
Lasiocampidae	
<i>Euthrix potatoria</i>	Drinker
Lycaenidae	
<i>Celastrina argiolus</i>	Holly Blue
<i>Lycaena phlaeas</i>	Small Copper
Noctuidae	
<i>Autographa gamma</i>	Silver Y
<i>Diarsia rubi</i>	Small Square-spot
<i>Mesapamea secalis</i> agg.	Common Rustic agg.
<i>Rivula sericealis</i>	Straw Dot
Nymphalidae	
<i>Aglais urticae</i>	Small Tortoiseshell
<i>Inachis io</i>	Peacock
<i>Polygonia c-album</i>	Comma
<i>Vanessa atalanta</i>	Red Admiral
<i>Vanessa cardui</i>	Painted Lady
Pieridae	
<i>Colias croceus</i>	Clouded Yellow
<i>Pieris brassicae</i>	Large White
<i>Pieris napi</i>	Green-veined White
<i>Pieris rapae</i>	Small White
Pterophoridae	
<i>Platyptilia pallidactyla</i>	
<i>Pterophorus pentadactyla</i>	White Plume Moth
Pyalidae	
<i>Cataclysta lemnata</i>	Small China-mark
<i>Chrysoteuchia culmella</i>	Garden Grass-veneer
<i>Crambus perlella</i>	
<i>Elophila nymphaeata</i>	Brown China-mark
<i>Pyrausta purpuralis</i>	
Satyridae	
<i>Aphantopus hyperantus</i>	Ringlet
<i>Maniola jurtina</i>	Meadow Brown
<i>Melanargia galathea</i>	Marbled White
<i>Pararge aegeria</i>	Speckled Wood
<i>Pyronia tithonus</i>	Gatekeeper
Sphingidae	
<i>Deilephila elpenor</i>	Elephant Hawk-moth
Zygaenidae	
<i>Zygaena filipendulae</i>	Six-spot Burnet
<i>Zygaena trifolii</i>	Five-spot Burnet
<b>Mecoptera</b>	<b>Scorpion-flies</b>
<b>Panorpidae</b>	
<i>Panorpa germanica</i>	
<b>Megaloptera</b>	<b>Alderflies</b>
Sialidae	
<i>Sialis lutaria</i>	

<b>Odonata</b>	<b>Dragonflies and Damselflies</b>
Aeshnidae	
<i>Aeshna cyanea</i>	Southern Hawker
<i>Aeshna grandis</i>	Brown Hawker
<i>Aeshna juncea</i>	Common Hawker
<i>Aeshna mixta</i>	Migrant Hawker
<i>Anax imperator</i>	Emperor Dragonfly
<i>Brachytron pratense</i>	Hairy Dragonfly
Calopterygidae	
<i>Calopteryx splendens</i>	Banded Demoiselle
<i>Calopteryx virgo</i>	Beautiful Demoiselle
Coenagriidae	
<i>Coenagrion puella</i>	Azure Damselfly
<i>Coenagrion pulchellum</i>	Variable Damselfly
<i>Enallagma cyathigerum</i>	Common Blue Damselfly
<i>Ischnura elegans</i>	Blue-tailed Damselfly
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly
Cordulegasteridae	
<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly
Lestidae	
<i>Lestes sponsa</i>	Emerald Damselfly
Libellulidae	
<i>Libellula depressa</i>	Broad-bodied Chaser
<i>Libellula quadrimaculata</i>	Four-spotted Chaser
<i>Orthetrum cancellatum</i>	Black-tailed Skimmer
<i>Sympetrum fonscolombii</i>	Red-veined Darter
<i>Sympetrum striolatum</i>	Common Darter
<b>Orthoptera</b>	<b>Grasshoppers, Crickets and Groundhoppers</b>
Acrididae	
<i>Chorthippus brunneus</i>	Common Field Grasshopper
<i>Chorthippus parallelus</i>	Meadow Grasshopper
<i>Omocestus viridulus</i>	Common Green Grasshopper
Conocephalidae	
<i>Conocephalus discolor</i>	Long-winged Conehead
<i>Conocephalus dorsalis</i>	Short-winged Conehead
Meconematidae	
<i>Meconema thalassinum</i>	Oak Bush Cricket
Phaneropteridae	
<i>Leptophyes punctatissima</i>	Speckled Bush Cricket
Tetrigidae	
<i>Tetrix subulata</i>	Slender Ground Hopper
<i>Tetrix undulata</i>	Common Ground Hopper
Tettigoniidae	
<i>Pholidoptera griseoaptera</i>	Dark Bush Cricket

<b>Trichoptera</b>	<b>Caddisflies</b>
Glossosomatidae	
<i>Agapetus fuscipes</i>	a caddisfly
Hydropsychidae	
<i>Hydropsyche pellucidula</i>	a caddisfly
Leptoceridae	
<i>Athripsodes aterrimus</i>	a caddisfly
Limnephilidae	
<i>Limnephilus lunatus</i>	a caddisfly
<i>Potamophylax latipennis</i>	a caddisfly
Polycentropodidae	
<i>Plectrocnemia conspersa</i>	a caddisfly
Rhyacophilidae	
<i>Rhyacophila dorsalis</i>	a caddisfly
Sericostomatidae	
<i>Sericostoma personatum</i>	a caddisfly
<b>Malacostraca</b>	<b>Crustacea</b>
<b>Amphipoda</b>	
Crangonyctidae	
<i>Crangonyx pseudogracilis</i>	
Gammaridae	
<i>Gammarus pulex</i>	
<b>Isopoda</b>	
Armadillidiidae	
<i>Armadillidium vulgare</i>	Common Pill Woodlouse
Asellidae	
<i>Asellus aquaticus</i>	a waterlouse
Oniscidae	
<i>Oniscus asellus</i>	Common Shiny Woodlouse
Philosciidae	
<i>Philoscia muscorum</i>	Common Striped Woodlouse
Porcellionidae	
<i>Porcellio scaber</i>	Common Rough Woodlouse
Trichoniscidae	
<i>Trichoniscus pusillus</i>	a common pygmy woodlouse
<b>Uniramia</b>	
Collembola	
<i>Podura aquatica</i>	a springtail

## 9.0 Plant Species Recorded

### Chlorophyta

#### Charales

##### Characeae

*Chara vulgaris* Common Stonewort

### Liliidae (Monocot)

#### Alismatiflorae

##### Alismataceae

*Alisma plantago-aquatica* Water-plantain

*Sagittaria sagittifolia* Arrowhead

##### Hydrocharitaceae

*Elodea canadensis* Canadian Waterweed

*Elodea nuttallii* Nuttall's Waterweed

*Hydrocharis morsus-ranae* Frogbit

##### Potamogetonaceae

*Groenlandia densa* Opposite-leaved Pondweed

*Potamogeton berchtoldii* Small Pondweed

*Potamogeton crispus* Curled Pondweed

*Potamogeton pectinatus* Fennel Pondweed

*Potamogeton pusillus* Lesser Pondweed

##### Zannichelliaceae

*Zanichellia palustris* subsp. *palustris*  
*Zannichellia palustris* Horned Pondweed

#### Areciflorae

##### Araceae

*Arum maculatum* Lords-and-Ladies

##### Lemnaceae

*Lemna gibba* Fat Duckweed

*Lemna minor* Common Duckweed

*Lemna minuta* Least Duckweed

*Lemna trisulca* Ivy-leaved Duckweed

*Spirodela polyrhiza* Greater Duckweed

#### Comeliniflorae

##### Cyperaceae

*Carex flacca* Glaucous Sedge

*Carex hirta* Hairy Sedge

*Carex otrubae* False Fox-sedge

*Carex pendula* Pendulous Sedge

*Carex remota* Remote Sedge

*Carex riparia* Greater Pond-sedge

*Eleocharis palustris* Common Spike-rush

##### Juncaceae

*Juncus acutiflorus* Sharp-flowered Rush

*Juncus articulatus* Jointed Rush

*Juncus conglomeratus* Compact Rush

<i>Juncus effusus</i>	Soft-rush
<i>Juncus inflexus</i>	Hard Rush
Poaceae	
<i>Agrostis gigantea</i>	Black Bent
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Alopecurus geniculatus</i>	Marsh Foxtail
<i>Arrhenatherum elatius</i>	False Oat-Grass
<i>Cynosurus cristatus</i>	Crested Dog's-tail
<i>Dactylis glomerata</i>	Cock's-foot
<i>Elytrigia repens</i>	Common Couch
<i>Glyceria declinata</i>	Small Sweet-grass
<i>Glyceria fluitans</i>	Floating Sweet-grass
<i>Glyceria maxima</i>	Reed Sweet-grass
<i>Glyceria notata</i>	Plicate Sweet-grass
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Lolium multiflorum</i>	Italian Rye-grass
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Phalaris arundinacea</i>	Reed Canary-grass
<i>Phragmites australis</i>	Common Reed
<i>Poa annua</i>	Annual Meadow-grass
<i>Poa trivialis</i>	Rough Meadow-grass
Sparganiaceae	
<i>Sparganium emersum</i>	Unbranched Bur-reed
<i>Sparganium erectum</i>	Branched Bur-reed
Typhaceae	
<i>Typha latifolia</i>	Bulrush
<b>Liliiflorae</b>	
Iridaceae	
<i>Iris pseudacorus</i>	Yellow Iris
Liliaceae	
<i>Allium vineale</i>	Wild Onion

### Magnoliidae(Dicot)

#### Asteriflorae

##### Asteraceae

<i>Artemisia vulgaris</i>	Mugwort
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium palustre</i>	Marsh Thistle
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Pulicaria dysenterica</i>	Common Fleabane
<i>Taraxacum agg.</i>	Dandelion

##### Boraginaceae

<i>Myosotis laxa</i>	Tufted Forget-me-not
<i>Myosotis scorpioides</i>	Water Forget-me-not
<i>Pentaglottis sempervirens</i>	Green Alkanet
<i>Symphytum officinale</i>	Common Comfrey

##### Callitrichaceae

<i>Callitriche agg.</i>	Water-starwort
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<i>Callitriche brutia</i> subsp. <i>hamulata</i>	Intermediate Water-starwort
<i>Callitriche obtusangula</i>	Blunt-fruited Water-starwort
<i>Callitriche palustris</i>	Narrow-fruited Water-starwort
<i>Callitriche platycarpa</i>	Various-leaved Water-starwort
<i>Callitriche</i> sp.	a water-starwort
<i>Callitriche stagnalis</i>	Common Water-starwort
Caprifoliaceae	
<i>Sambucus nigra</i>	Elder
<i>Viburnum opulus</i>	Guelder-rose
Convolvulaceae	
<i>Calystegia sepium</i>	Hedge Bindweed
<i>Calystegia sepium</i> subsp. <i>sepium</i> f. <i>colorata</i>	Hedge Bindweed (Pink Form)
Dipsacaceae	
<i>Dipsacus fullonum</i>	Wild Teasel
Lamiaceae	
<i>Lamium galeobdolon</i> subsp. <i>argentatum</i>	Garden Yellow-archangel
<i>Lycopus europaeus</i>	Gypsywort
<i>Mentha aquatica</i>	Water Mint
<i>Scutellaria galericulata</i>	Skullcap
<i>Stachys palustris</i>	Marsh Woundwort
<i>Stachys sylvatica</i>	Hedge Woundwort
Oleaceae	
<i>Fraxinus excelsior</i>	Ash
Plantaginaceae	
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago major</i>	Greater Plantain
Rubiaceae	
<i>Galium aparine</i>	Cleavers
<i>Galium mollugo</i> subsp. <i>erectum</i>	Upright Hedge-bedstraw
<i>Galium mollugo</i> subsp. <i>mollugo</i>	Hedge Bedstraw
<i>Galium palustre</i>	Marsh-bedstraw
Scrophulariaceae	
<i>Odontites vernus</i>	Red Bartsia
<i>Scrophularia auriculata</i>	Water Figwort
<i>Veronica beccabunga</i>	Brooklime
<i>Veronica catenata</i>	Pink Water-speedwell
Solanaceae	
<i>Solanum dulcamara</i>	Bittersweet
<b>Carophylliflorae</b>	
Caryophyllaceae	
<i>Silene dioica</i>	Red Campion
Chenopodiaceae	
<i>Atriplex patula</i>	Common Orache
<i>Chenopodium giganteum</i>	Tree Spinach
Polygonaceae	
<i>Persicaria amphibia</i>	Amphibious Bistort
<i>Persicaria hydropiper</i>	Water-pepper

<i>Persicaria maculosa</i>	Redshank
<i>Rumex crispus</i>	Curled Dock
<i>Rumex hydrolapathum</i>	Water Dock
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Rumex sanguineus</i>	Wood Dock
<b>Dilleniiflorae</b>	
Brassicaceae	
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Capsella bursa-pastoris</i>	Shepherd's-purse
<i>Cardamine flexuosa</i>	Wavy Bitter-cress
<i>Nasturtium officinale</i>	Water-cress
Primulaceae	
<i>Lysimachia nummularia</i>	Creeping-Jenny
<i>Lysimachia vulgaris</i>	Yellow Loosestrife
Salicaceae	
<i>Salix alba</i>	White Willow
<i>Salix caprea</i>	Goat Willow
<i>Salix cinerea</i>	Grey Willow
<i>Salix euxina</i>	Crack-willow
<i>Salix sp.</i>	a sallow
<i>Salix x fragilis 'fragilis'</i>	Crack-willow
<i>Salix x fragilis sens. lat.</i>	Hybrid Crack-willow
<b>Hamameliflorae</b>	
Betulaceae	
<i>Alnus glutinosa</i>	Alder
<i>Betula pendula</i>	Silver Birch
<i>Corylus avellana</i>	Hazel
Fagaceae	
<i>Quercus robur</i>	Pedunculate Oak
Ulmaceae	
<i>Ulmus agg.</i>	Elm
<i>Ulmus glabra</i>	Wych Elm
Urticaceae	
<i>Urtica dioica</i>	Common Nettle
<b>Magnoliiflorae</b>	
Ceratophyllaceae	
<i>Ceratophyllum demersum</i>	Rigid Hornwort
Ranunculaceae	
<i>Caltha palustris</i>	Marsh-marigold
<i>Ranunculus aquatilis</i>	Common Water-crowfoot
<i>Ranunculus aquatilis sens. lat.</i>	Common Water-crowfoot
<i>Ranunculus circinatus</i>	Fan-leaved Water-crowfoot
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup
<b>Rosiflorae</b>	
Aceraceae	
<i>Acer campestre</i>	Field Maple
Apiaceae	

<i>Angelica sylvestris</i>	Wild Angelica
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Apium nodiflorum</i>	Fool's-water-cress
<i>Berula erecta</i>	Lesser Water-parsnip
<i>Conium maculatum</i>	Hemlock
<i>Heracleum sphondylium</i>	Hogweed
<i>Oenanthe crocata</i>	Hemlock Water-dropwort
<i>Oenanthe fistulosa</i>	Tubular Water-dropwort
<i>Sison amomum</i>	Stone Parsley
<i>Torilis japonica</i>	Upright Hedge-parsley
Aquifoliaceae	
<i>Ilex aquifolium</i>	Holly
Araliaceae	
<i>Hedera helix</i>	Common Ivy
<i>Hedera helix</i> agg.	Ivy
Cornaceae	
<i>Cornus sanguinea</i>	Dogwood
Fabaceae	
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil
<i>Medicago lupulina</i>	Black Medick
<i>Trifolium repens</i>	White Clover
<i>Vicia sepium</i>	Bush Vetch
Geraniaceae	
<i>Geranium robertianum</i>	Herb-Robert
Haloragaceae	
<i>Myriophyllum spicatum</i>	Spiked Water-milfoil
Lythraceae	
<i>Lythrum salicaria</i>	Purple-loosestrife
Onagraceae	
<i>Chamerion angustifolium</i>	Rosebay Willowherb
<i>Epilobium ciliatum</i>	American Willowherb
<i>Epilobium hirsutum</i>	Great Willowherb
<i>Epilobium parviflorum</i>	Hoary Willowherb
Rosaceae	
<i>Agrimonia eupatoria</i>	Agrimony
<i>Crataegus monogyna</i>	Hawthorn
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Malus sylvestris</i>	Crab Apple
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa canina</i>	Dog-rose
<i>Rosa canina</i> agg.	Dog-rose agg
<i>Rubus fruticosus</i> agg.	Bramble agg



**'Vascular Plants'****Equisetopsida**

## Equisetaceae

*Equisetum arvense*

Field Horsetail

*Equisetum fluviatile*

Water Horsetail

*Equisetum palustre*

Marsh Horsetail



**Pteropsida**




## Aspleniaceae




*Asplenium scolopendrium*




Hart's-tongue

## 10.0 Ditch Survey Data




<b>Ditch / Pond ID</b>	P199	<b>Surveyor:</b>	AH/RH; DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Lemna minor</i> ; <i>Crataegus monogyna</i> ; <i>Juncus inflexus</i> ; <i>Solanum dulcamara</i> ; <i>Ranunculus sceleratus</i> ; <i>Alisma plantago-aquatica</i> ; <i>Nasturtium officinale</i> ; <i>Galium palustre</i> ; <i>Persicaria maculosa</i> ; <i>Veronica catenata</i> ; <i>Glyceria fluitans</i> ; <i>Ranunculus aquatilis</i> ; <i>Lycopus europaeus</i> ; <i>Agrostis stolonifera</i> ; <i>Callitriche stagnalis</i> ; <i>Berula erecta</i> ; <i>Atriplex patula</i> ;			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agonum fuliginosum</i> ; <i>Altica lythri</i> ; <i>Anacaena limbata</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion aeneum</i> ; <i>Bembidion articulatum</i> ; <i>Bombus lapidarius</i> ; <i>Cercyon ustulatus</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coenagrion puella</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Dolichopus plumipes</i> ; <i>Elaphrus riparius</i> ; <i>Episyrphus balteatus</i> ; <i>Eristalis tenax</i> ; <i>Gerris lacustris</i> ; <i>Gymnetron veronicae</i> ; <i>Gymnetron villosulum</i> ; <i>Gyrinus substriatus</i> ; <i>Helochares lividus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hilara cornicula</i> ; <i>Hilara maura</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ischnopterapion loti</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Laccophilus minutus</i> ; <i>Libellula depressa</i> ; <i>Melanostoma scalare</i> ; <i>Microvelia reticulata</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Oedemera lurida</i> ; <i>Oxyloma pfeifferi</i> ; <i>Philaenus spumarius</i> ; <i>Philonthus cognatus</i> ; <i>Pieris brassicae</i> ; <i>Pisidium nitidum</i> ; <i>Prasocuris junci</i> ; <i>Pterostichus minor</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Saldula saltatoria</i> ; <i>Scathophaga stercoraria</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sigara lateralis</i> ; <i>Sigara nigrolineata</i> ; <i>Siphona geniculata</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema calcarata</i> ; <i>Stenodema laevigata</i> ; <i>Stenus binotatus</i> ; <i>Stenus boops</i> ; <i>Stenus picipes</i> ; <i>Tachyporus hypnorum</i> ; <i>Tetrix undulata</i> ; <i>Tipula oleracea</i> ;			
<b>Protected / rare species noted?</b>									
<b>Habitat Type</b>	Pond	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m x m)	0.3 X 1.5 X 1.2	<b>Wetland Width (m)</b>			
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	30		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	7.43	<b>Temp (°C)</b>	25.6	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	908	<b>ppm</b>	448	<b>Waterline Profile</b>	Shallow	<b>Waterline Profile</b>	Shallow		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>	<b>Profile:</b>	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent	Pond virtually dry at time of survey	X		
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				



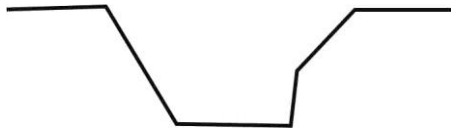
<b>Ditch / Pond ID</b>	P24	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Sparganium erectum</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Ceratophyllum demersum</i> ; <i>Lemna trisulca</i> ; <i>Lemna minor</i> ; <i>Ceratophyllum demersum</i> ; <i>Sparganium erectum</i> ; <i>Oenanthe crocata</i> ; <i>Nasturtium officinale</i>  <b>Invertebrates:</b> <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> (o); <i>Aglais urticae</i> ; <i>Anacaena limbata</i> (o); <i>Anax imperator</i> ; <i>Asellus aquaticus</i> (f); <i>Autographa gamma</i> ; <i>Bembidion guttula</i> (o); <i>Bombus lapidarius</i> ; <i>Bombus terrestris</i> ; <i>Cassida viridis</i> ; <i>Cataclysta lemnata</i> ; <i>Cataclysta lemnata</i> (o); <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Colymbetes fuscus</i> (a); <i>Corixa punctata</i> (o); <i>Crangonyx pseudogracilis</i> (o); <i>Cymbiodyta marginellus</i> (r); <i>Enallagma cyathigerum</i> ; <i>Enochrus testaceus</i> (o); <i>Episyrphus balteatus</i> ; <i>Eristalis arbustorum</i> ; <i>Forficula auricularia</i> ; <i>Gyraulus albus</i> (o); <i>Haliphus ruficollis</i> (o); <i>Helochaeres lividus</i> (o); <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> (f); <i>Helophorus grandis</i> (r); <i>Hepialus hecta</i> ; <i>Hippeutis complanatus</i> (o); <i>Hydrobius fuscipes</i> (o); <i>Hydroporus planus</i> (r); <i>Hygrobia hermanni</i> (o); <i>Hygrotus impressopunctatus</i> (f); <i>Hygrotus inaequalis</i> (o); <i>Ilyocoris cimicoides</i> (f); <i>Ischnura elegans</i> ; <i>Laccophilus minutus</i> (o); <i>Libellula depressa</i> ; <i>Libellula quadrimaculata</i> ; <i>Limnoxenus niger</i> (r); <i>Liopterus haemorrhoidalis</i> (r); <i>Lygocoris pabulinus</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Microvelia reticulata</i> (o); <i>Musculium lacustre</i> (o); <i>Nepa cinerea</i> (o); <i>Noterus clavicornis</i> (o); <i>Notonecta glauca</i> (o); <i>Omocestus viridulus</i> ; <i>Pararge aegeria</i> ; <i>Peltodytes caesus</i> (o); <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> (o); <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> (o); <i>Plea minutissima</i> (o); <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> (a); <i>Rhantus suturalis</i> (o); <i>Rhingia campestris</i> ; <i>Sigara distincta</i> (f); <i>Sigara dorsalis</i> (o); <i>Sigara falleni</i> (o); <i>Sigara lateralis</i> (o); <i>Stenodema holsata</i> ; <i>Stenodema laevigata</i> ; <i>Syrtrita pipiens</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		<i>Limnoxenus niger</i> ; <i>Peltodytes caesus</i>
<b>Habitat Type</b>	Pond	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m x m)	>0.600 x 15.000 8.750	<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	30	<b>Shallows Depth (cm)</b>	3	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	4.3	<b>Temp (°C)</b>	18.5	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	528	<b>ppm</b>	265	<b>Waterline Profile</b>	Stepped and Poached	<b>Waterline Profile</b>	Stepped and Poached	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> "Doughnut" type pond  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  		
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			
<b>Profile:</b>								

<b>Ditch / Pond ID</b>	P207	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Phragmites australis</i> ; <i>Eupatorium cannabinum</i> ; <i>Urtica dioica</i> ; <i>Lemna trisulca</i> ; <i>Rubus fruticosus</i> agg.; <i>Rosa canina</i> ; <i>Salix cinerea</i> ; <i>Cardamine flexuosa</i> ; <i>Typha latifolia</i> ; <i>Pulicaria dysenterica</i> ; <i>Crataegus monogyna</i>  <b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Agonum thoreyi</i> ; <i>Anacaena globulus</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Bombus pascuorum</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus discolor</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Cyphon laevipennis</i> ; <i>Enallagma cyathigerum</i> ; <i>Eristalis tenax</i> ; <i>Gerris odontogaster</i> ; <i>Gyrinus substriatus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hygrotus inaequalis</i> ; <i>Ischnura elegans</i> ; <i>Lagria hirta</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Lycaena phlaeas</i> ; <i>Melanostoma scalare</i> ; <i>Microvelia reticulata</i> ; <i>Nabis rugosus</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Oxyloma pfeifferi</i> ; <i>Pachygnatha clercki</i> ; <i>Paradromius linearis</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pyrrhosoma nymphula</i> ; <i>Saldula saltatoria</i> ; <i>Sialis lutaria</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema laevigata</i> ; <i>Stenus bimaculatus</i> ; <i>Stenus junco</i> ; <i>Sympetrum striolatum</i> ; <i>Vespula vulgaris</i>		
<b>Photo:</b>								
								
<b>Protected / rare species noted?</b>								
<b>Habitat Type</b>	Pond	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m x m)	0.6 x 1.000 x 8.000	<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	60	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>	6.2	<b>Temp (°C)</b>	14	<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	75	
<b>us/cm</b>	902	<b>ppm</b>	450	<b>Waterline Profile</b>	Shallow	<b>Waterline Profile</b>	Shallow	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			
						<b>Profile:</b> 		




<b>Ditch / Pond ID</b>	TEP37	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Phragmites australis</i> ; <i>Urtica dioica</i> ; <i>Elodea nuttallii</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Sparganium erectum</i> ; <i>Hedera helix</i> agg.; <i>Lemna minor</i> ; <i>Carex otrubae</i> ; <i>Nasturtium officinale</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aegopinella nitidula</i> ; <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Bathymphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Cataclysta lemnata</i> ; <i>Celastrina argiolus</i> ; <i>Chorthippus parallelus</i> ; <i>Cochlicopa lubrica</i> ; <i>Colias croceus</i> ; <i>Corticarina minuta</i> ; <i>Dytiscus marginalis</i> ; <i>Epistrophe eligans</i> ; <i>Eristalis pertinax</i> ; <i>Gammarus pulex</i> ; <i>Geostiba circellaris</i> ; <i>Graptodytes pictus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydroporus palustris</i> ; <i>Hygrotus inaequalis</i> ; <i>Inachis io</i> ; <i>Lagria hirta</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Mocytta fungi</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Notonecta glauca</i> ; <i>Omonadus floralis</i> ; <i>Pararge aegeria</i> ; <i>Phaedon armoraciae</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbis planorbis</i> ; <i>Porcellio scaber</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhyzobius litura</i> ; <i>Sialis lutaria</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema holsata</i> ; <i>Stenodema laevigata</i> ; <i>Sympetrum striolatum</i> ; <i>Syrphus vitripennis</i> ; <i>Tachyporus hypnorum</i> ; <i>Tachyporus nitidulus</i>			
						<b>Protected / rare species noted?</b>			Hydrocharis morsus-ranae
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.22 x 1.3	<b>Wetland Width (m)</b>	1.3		
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	No	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	22		
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	5.67	<b>Temp (°C)</b>	17.8	<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	75		
<b>us/cm</b>	1001	<b>ppm</b>	519	<b>Waterline Profile</b>	45° And Vert	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	No	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Lots of dead snails  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Rare				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			









<b>Ditch / Pond ID</b>	TEP47	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Hedera helix</i> agg.; <i>Crataegus monogyna</i> ; <i>Lemna minor</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	.01 x 0.500	<b>Wetland Width (m)</b>	2	
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	No	<b>Shallows %</b>	50	<b>Shallows Depth (cm)</b>	1	
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	50	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			



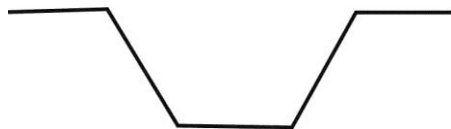
<b>Ditch / Pond ID</b>	TEP50	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Urtica dioica</i> ; <i>Phragmites australis</i> ; <i>Apium nodiflorum</i>		
<b>Photo:</b>								
								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Part Dry	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.03 x 1.0	<b>Wetland Width (m)</b>	1.2	
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	No	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	3	
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	45° And Vert	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	Nth - 100%	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			








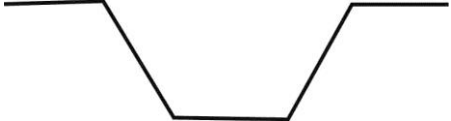
<b>Ditch / Pond ID</b>	TEP52	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Glyceria maxima</i> ; <i>Urtica dioica</i> ; <i>Pulicaria dysenterica</i> ; <i>Rubus fruticosus</i> agg.; <i>Carex otrubae</i> ; <i>Carex riparia</i> ; <i>Persicaria amphibia</i> ; <i>Scrophularia auriculata</i> ; <i>Hydrocharis morsus-ranae</i>			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			<i>Hydrocharis morsus-ranae</i>
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.05 x 1.2	<b>Wetland Width (m)</b>	1.2		
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	No	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	5		
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	No	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Suitable for <i>Hydrochara caraboides</i> : 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			




Ditch / Pond ID	TEP62	Surveyor:	DB/PH	Date:	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
Survey Type	Full	Visit One	Yes			<b>Plants:</b> <i>Sparganium erectum</i> ; <i>Persicaria amphibia</i> ; <i>Rubus fruticosus</i> agg.; <i>Arrhenatherum elatius</i> ; <i>Phalaris arundinacea</i> ; <i>Carex riparia</i> ; <i>Filipendula ulmaria</i> ; <i>Lysimachia vulgaris</i> ; <i>Sison amomum</i> ; <i>Spirodela polyrhiza</i> ; <i>Phragmites australis</i> ; <i>Lemna minor</i> ; <i>Urtica dioica</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Adalia bipunctata</i> ; <i>Aegopinella nitidula</i> ; <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Aglais urticae</i> ; <i>Amara aenea</i> ; <i>Anacaena globulus</i> ; <i>Anax imperator</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Cataclysta lemnata</i> ; <i>Celastrina argiolus</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Colias croceus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Epistrophe eligans</i> ; <i>Eristalis pertinax</i> ; <i>Gastrophysa viridula</i> ; <i>Helochares lividus</i> ; <i>Inachis io</i> ; <i>Lagria hirta</i> ; <i>Leiodunum rotundum</i> ; <i>Mocytta fungi</i> ; <i>Nabis rugosus</i> ; <i>Pachynatha clercki</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Pithanus maerkelii</i> ; <i>Porcellio scaber</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Sitona lineatus</i> ; <i>Stenodema holsata</i> ; <i>Stenodema laevigata</i> ; <i>Subcoccinella vigintiquatuor punctata</i> ; <i>Sympetrum striolatum</i> ; <i>Syrphus vitripennis</i> ; <i>Trichia striolata</i>			
						Protected / rare species noted?			
Habitat Type	Ditch	Flow	No	Water Depth and Width (m x m)	0.37 x 1.400	Wetland Width (m)	1.4		
Grazed E/N	No - Mown / Flailed	Land Use E/N	No	Shallows %	100	Shallows Depth (cm)	40		
Grazed W/S	No - Mown / Flailed	Land Use W/S	No	Lemna cover %	100	Plants for Cocoons?	No		
pH	5.3	Temp (°C)	16.4	Phragmites Bank Cover %	100	Phragmites Habitat Cover %	75		
us/cm	523	ppm	264	Waterline Profile	45° And Vert	Waterline Profile	45° And Vert		
Ditch Cleaned Out?	No	Ditch Undisturbed?	No	Tree/Shrub Shade %	0	Dries / Reduces	Yes		
3-SSB	No	10-SSB	No	Other Fish	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
Invert Predators	No	Small Ramshorns	Absent	Other Molluscs	Absent				
<i>H. piceus</i>	No	GCN	No	S/P Newt	No				

<b>Ditch / Pond ID</b>	TEP73	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Phragmites australis</i> ; <i>Salix alba</i> ; <i>Apium nodiflorum</i> ; <i>Epilobium hirsutum</i> ; <i>Juncus effusus</i> ; <i>Glyceria maxima</i> ; <i>Glyceria notata</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aegopinella nitidula</i> ; <i>Agabus paludosus</i> ; <i>Altica lythri</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Bathymophalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Chrysops relictus</i> ; <i>Coccidula rufa</i> ; <i>Cochlicopa lubrica</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Deroceras laeve</i> ; <i>Discus rotundatus</i> ; <i>Graptodytes pictus</i> ; <i>Harpalus rufipes</i> ; <i>Helophilus pendulus</i> ; <i>Hydroporus striola</i> ; <i>Ilybius quadriguttatus</i> ; <i>Megasternum concinnum</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pirata piraticus</i> ; <i>Prasocuris junci</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Pyrrhosoma nymphula</i> ; <i>Rhingia campestris</i> ; <i>Stenus cicindeloides</i> ; <i>Stenus juno</i> ; <i>Stenus picipennis</i> ; <i>Stenus solutus</i> ; <i>Succinea putris</i> ; <i>Zonitoides nitidus</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.2 x 2.100	<b>Wetland Width (m)</b>	2.8		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	20		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	5.6	<b>Temp (°C)</b>	16.5	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	876	<b>ppm</b>	439	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	5	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	Eel	<b>Notes:</b> Choked with Fool's Water-cress and Glyceria  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				




Ditch / Pond ID	TEP78	Surveyor:	DB/PH	Date:	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
Survey Type	Visual	Visit One	Yes			<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Hedera helix</i> ; <i>Lemna minor</i> ; <i>Urtica dioica</i> ; <i>Solanum dulcamara</i> ; <i>Alisma plantago-aquatica</i> ; <i>Pulicaria dysenterica</i> ; <i>Epilobium hirsutum</i> ; <i>Apium nodiflorum</i> ; <i>Carex riparia</i> ; <i>Persicaria amphibia</i> ; <i>Agrostis gigantea</i> ; <i>Dactylis glomerata</i> ; <i>Arrhenatherum elatius</i> ; <i>Elytrigia repens</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)	1.4	
Grazed E/N	No - Mown / Flailed	Land Use E/N	Arable	Shallows %		Shallows Depth (cm)		
Grazed W/S	No	Land Use W/S	Arable	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	60°	Waterline Profile	60°	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %		Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> :  	
Invert Predators		Small Ramshorns		Other Molluscs				
<i>H. piceus</i>		GCN		S/P Newt				
						<b>Profile:</b> 		

Ditch / Pond ID	TEP114	Surveyor:	DB/PH	Date:	27/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
Survey Type	Visual	Visit One	Yes			<b>Plants:</b> <i>Ulmus agg.</i> ; <i>Crataegus monogyna</i> ; <i>Calystegia sepium</i> ; <i>Rubus fruticosus agg.</i> ; <i>Geranium robertianum</i> ; <i>Sison amomum</i> ; <i>Stachys sylvatica</i> ; <i>Cirsium arvense</i> ; <i>Galium aparine</i> ; <i>Potentilla anserina</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)	1.400 Wide	Wetland Width (m)		
Grazed E/N	Yes, Cattle	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	Yes, Cattle	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	stepped	Waterline Profile	Vertical	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %	100 on North	Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> :  	
Invert Predators		Small Ramshorns		Other Molluscs				
<i>H. piceus</i>		GCN		S/P Newt				
						<b>Profile:</b> 		




<b>Ditch / Pond ID</b>	TEP165	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Sparganium erectum</i> ; <i>Elodea canadensis</i> ; <i>Phragmites australis</i> ; <i>Potamogeton crispus</i> ; <i>Ranunculus circinatus</i> ; <i>Potamogeton pectinatus</i> ; <i>Spirodela polyrhiza</i> ; <i>Equisetum palustre</i> ; <i>Ceratophyllum demersum</i> ; <i>Potamogeton pusillus</i> ; <i>Alisma plantago-aquatica</i> ; <i>Glyceria fluitans</i> ; <i>Phragmites australis</i> ; <i>Elytrigia repens</i> ; <i>Lemna minor</i> ; <i>Spirodela polyrhiza</i> ; <i>Potamogeton berchtoldii</i> ; <i>Equisetum palustre</i> ; <i>Ranunculus repens</i> ; <i>Berula erecta</i> ; <i>Elodea nuttallii</i>			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	1.6 Wide	<b>Wetland Width (m)</b>	3.6		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>			
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>			
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°		
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100% on East	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Photo taken at Junction of TEP165 and TEP174	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>					
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>					




<b>Ditch / Pond ID</b>	TEP174	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Sparganium erectum</i> ; <i>Elodea canadensis</i> ; <i>Phragmites australis</i> ; <i>Potamogeton crispus</i> ; <i>Ranunculus circinatus</i> ; <i>Potamogeton pectinatus</i> ; <i>Spirodela polyrhiza</i> ; <i>Equisetum palustre</i> ; <i>Ceratophyllum demersum</i> ; <i>Potamogeton pusillus</i> ; <i>Alisma plantago-aquatica</i> ; <i>Glyceria fluitans</i> ; <i>Phragmites australis</i> ; <i>Elytrigia repens</i> ; <i>Lemna minor</i> ; <i>Spirodela polyrhiza</i> ; <i>Potamogeton berchtoldii</i> ; <i>Equisetum palustre</i> ; <i>Ranunculus repens</i> ; <i>Berula erecta</i> ; <i>Elodea nuttallii</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>		<b>Waterline Profile</b>		
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Photo taken at Junction of TEP165 and TEP174	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		









<b>Ditch / Pond ID</b>	TEP246	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Juncus inflexus</i> ; <i>Elodea nuttallii</i> ; <i>Phragmites australis</i> ; <i>Glyceria maxima</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Ranunculus repens</i> ; <i>Glyceria fluitans</i> ; <i>Apium nodiflorum</i> ; <i>Agrostis stolonifera</i> ; <i>Galium palustre</i> ; <i>Epilobium hirsutum</i> ; <i>Typha latifolia</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Mentha aquatica</i> ; <i>Callitriche obtusangula</i> ; <i>Eleocharis palustris</i>		
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aeshna grandis</i> ; <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Altica lythri</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bithynia tentaculata</i> ; <i>Brachytron pratense</i> ; <i>Cantharis livida</i> ; <i>Cataclysta lemnata</i> ; <i>Chorthippus parallelus</i> ; <i>Cicadella viridis</i> ; <i>Cloeon dipterum</i> ; <i>Closterotomus norwegicus</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Coenagrion pulchellum</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Cymbiodyta marginellus</i> ; <i>Deilephila elpenor</i> ; <i>Dolichopus plumipes</i> ; <i>Elophila nymphaeata</i> ; <i>Enochrus testaceus</i> ; <i>Episyrphus balteatus</i> ; <i>Galerucella sagittariae</i> ; <i>Gerris lacustris</i> ; <i>Gerris thoracicus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus fluvialis</i> ; <i>Haliphus lineatocollis</i> ; <i>Haliphus ruficollis</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrobia hermanni</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilybius fuliginosus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Limnephilus lunatus</i> ; <i>Megasternum concinnum</i> ; <i>Mocytia fungi</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Orthetrum cancellatum</i> ; <i>Oxyloma elegans</i> ; <i>Oxyloma pfeifferi</i> ; <i>Paradromius linearis</i> ; <i>Peltodytes caesus</i> ; <i>Philaenus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Pirata piraticus</i> ; <i>Pisidium nitidum</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Prasocuris junci</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Pyrochroa serraticornis</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenus boops</i> ; <i>Stenus clavicornis</i> ; <i>Stenus fulvicornis</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus hypnorum</i> ; <i>Tachyporus pallidus</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i>		
<b>Protected / rare species noted?</b>						Peltodytes caesus		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.40 x 2.2	<b>Wetland Width (m)</b>	4	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.21	<b>Temp (°C)</b>	21.2	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	505	<b>ppm</b>	255	<b>Waterline Profile</b>	15°	<b>Waterline Profile</b>	Steep	
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 		
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Rare			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes			
<b>Profile:</b>								








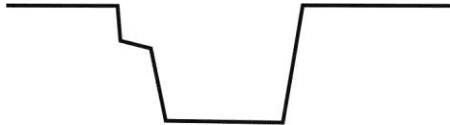
Ditch / Pond ID	TEP301	Surveyor:	DB/PH	Date:	28/8/2013	Initial assessment/species list including flora within the wetland area		
Survey Type	Visual	Visit One	Yes			Plants:		
Photo:								
						Protected / rare species noted?		
Habitat Type	Dry Ditch	Flow		Water Depth and Width (m x m)		Wetland Width (m)		
Grazed E/N	Yes, Cattle	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	Yes, Cattle	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	Shallow	Waterline Profile	Shallow	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %		Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Suitable for <i>Hydrochara caraboides</i> :  	Profile: 	
Invert Predators		Small Ramshorns		Other Molluscs				
<i>H. piceus</i>		GCN		S/P Newt				

Ditch / Pond ID	TEP308	Surveyor:	DB/PH	Date:	28/8/2013	Initial assessment/species list including flora within the wetland area	
Survey Type	Visual	Visit One	Yes			Plants:	
Photo:							
							
						Protected / rare species noted?	
Habitat Type	Dry Ditch	Flow		Water Depth and Width (m x m)		Wetland Width (m)	
Grazed E/N	Yes, Cattle	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)	
Grazed W/S	Yes, Cattle	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?	
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %	
us/cm		ppm		Waterline Profile	Shallow	Waterline Profile	Shallow
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %		Dries / Reduces	Yes
3-SSB		10-SSB		Other Fish		Suitable for <i>Hydrochara caraboides</i> :  	Profile: 
Invert Predators		Small Ramshorns		Other Molluscs			
<i>H. piceus</i>		GCN		S/P Newt			

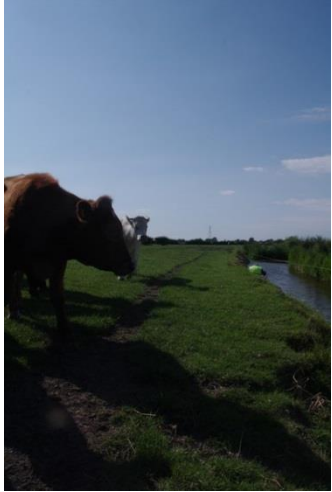


<b>Ditch / Pond ID</b>	TEP320	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Phragmites australis</i> ; <i>Elodea nuttallii</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Spirodela polyrrhiza</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Potamogeton berchtoldii</i> ; <i>Carex riparia</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Juncus inflexus</i> ; <i>Urtica dioica</i> ; <i>Callitriche platycarpa</i> ; <i>Equisetum fluviatile</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Acroloxus lacustris</i> ; <i>Aegopinella nitidula</i> ; <i>Anacaena globulus</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Bathymophalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Cloeon dipterum</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus flavicollis</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus lineolatus</i> ; <i>Haliplus ruficollis</i> ; <i>Haliplus sibiricus</i> ; <i>Hydraena riparia</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Microvelia reticulata</i> ; <i>Noterus clavicornis</i> ; <i>Pachygnatha clercki</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Planorbium corneum</i> ; <i>Planorbis planorbis</i> ; <i>Ptychoptera paludosa</i> ; <i>Rhantus suturalis</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenus fulvicornis</i> ; <i>Sympetrum striolatum</i> ; <i>Tipula paludosa</i> ; <i>Vespula vulgaris</i> ; ;			
						<b>Protected / rare species noted?</b>		<i>Hydrocharis morsus-ranae</i>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.50 x 2.8	<b>Wetland Width (m)</b>	3.8		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	50	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	5.7	<b>Temp (°C)</b>	25	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	805	<b>ppm</b>	397	<b>Waterline Profile</b>	45° And Vert	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			




<b>Ditch / Pond ID</b>	TEP327	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Hydrocharis morsus-ranae</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Sparganium erectum</i> ; <i>Ranunculus sceleratus</i> ; <i>Lemna trisulca</i> ; <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Glyceria maxima</i> ; <i>Glyceria fluitans</i> ; <i>Juncus inflexus</i> ; <i>Myosotis laxa</i> ; <i>Apium nodiflorum</i> ; <i>Equisetum fluviatile</i> ; <i>Epilobium hirsutum</i> ; <i>Lemna minor</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion illigeri</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Cassida rubiginosa</i> ; <i>Cataclysta lemnata</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Cicadella viridis</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Colymbetes fuscus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gammarus pulex</i> ; <i>Gerris odontogaster</i> ; <i>Gerris thoracicus</i> ; <i>Haliphus ruficollis</i> ; <i>Helochares lividus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnura elegans</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Neocrepidodera ferruginea</i> ; <i>Noterus clavicornis</i> ; <i>Paederus littoralis</i> ; <i>Philaeus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbis corneus</i> ; <i>Planorbis carinatus</i> ; <i>Planorbis planorbis</i> ; <i>Rhingia campestris</i> ; <i>Sigara dorsalis</i> ; <i>Sitona lepidus</i> ; <i>Sphaerium corneum</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus nitidulus</i> ; <i>Zygona filipendulae</i>					
						<b>Protected / rare species noted?</b>		<i>Hydrocharis morsus-ranae</i>			
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.7 x 1.9		<b>Wetland Width (m)</b>	2.3	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	50		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.8		<b>Temp (°C)</b>	24		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	797		<b>ppm</b>	404		<b>Waterline Profile</b>	Stepped		<b>Waterline Profile</b>	Stepped	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	<5		<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						

<b>Ditch / Pond ID</b>	TEP341	<b>Surveyor:</b>	AH/RH:D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Juncus inflexus</i> ; <i>Carex riparia</i> ; <i>Lemna trisulca</i> ; <i>Lemna minor</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Elodea nuttallii</i> ; <i>Equisetum fluviatile</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Glyceria notata</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Acroloxus lacustris</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anacaena lutescens</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymophalus contortus</i> ; <i>Bembidion aeneum</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Brachytron pratense</i> ; <i>Cercyon ustulatus</i> ; <i>Chorthippus brunneus</i> ; <i>Cicadella viridis</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coelostoma orbiculare</i> ; <i>Coenagrion puella</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Donacia semicuprea</i> ; <i>Enochrus testaceus</i> ; <i>Galerucella sagittariae</i> ; <i>Gammarus pulex</i> ; <i>Gerris lacustris</i> ; <i>Gerris thoracicus</i> ; <i>Gyraulus albus</i> ; <i>Gyraulus crista</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Helochares lividus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hilara maura</i> ; <i>Hydaticus transversalis</i> ; <i>Hydraena riparia</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrochara caraboides</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Laccophilus minutus</i> ; <i>Leiodorum rotundum</i> ; <i>Lesteva sicula</i> ; <i>Limnebius papposus</i> ; <i>Liophloeus tessulatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Microvelia reticulata</i> ; <i>Mitopus morio</i> ; <i>Molophilus obscurus</i> ; <i>Neocrepidodera ferruginea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Ochthebius minimus</i> ; <i>Oedemera lurida</i> ; <i>Oxyloma pfeifferi</i> ; <i>Pachygnatha clercki</i> ; <i>Pachygnatha degeeri</i> ; <i>Paederus littoralis</i> ; <i>Philaenus spumarius</i> ; <i>Philonthus cognatus</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Pirata piraticus</i> ; <i>Pisidium nitidum</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Plateumaris sericea</i> ; <i>Prasocuris junci</i> ; <i>Prasocuris phellandrii</i> ; <i>Pterostichus melanarius</i> ; <i>Ptychoptera contaminata</i> ; <i>Rhantus suturalis</i> ; <i>Scathophaga furcata</i> ; <i>Scathophaga stercoraria</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenus binotatus</i> ; <i>Stenus cicindeloides</i> ; <i>Sympetrum striolatum</i> ; <i>Tetanocera ferruginea</i> ; <i>Valvata piscinalis</i> ; <i>Vespula vulgaris</i>			
						<b>Protected / rare species noted?</b>		<b>HYDROCHARA CARABOIDES EGG</b> ; <i>Hydaticus transversalis</i> ; <i>Hydrocharis morsus-ranae</i>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.6 x 2.8	<b>Wetland Width (m)</b>	4.		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Sheep	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	10	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	4.72	<b>Temp (°C)</b>	21.1	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	765	<b>ppm</b>	382	<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Stepped		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <i>Hydrochara caraboides</i> was found during Visit One, but not Visit Two. The ditch had been dredged between visits.			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Suitable for <i>Hydrochara caraboides</i>:</b> 	<b>Profile:</b> 		



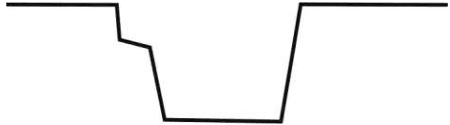
<b>Ditch / Pond ID</b>	TEP388	<b>Surveyor:</b>	AH/RH:D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Sparganium erectum</i> ; <i>Lemna minor</i> ; <i>Glyceria maxima</i> ; <i>Lemna gibba</i> ; <i>Eleocharis palustris</i> ; <i>Juncus effusus</i> ; <i>Potamogeton berchtoldii</i> ;		
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agonum thoreyi</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anaspis maculata</i> ; <i>Anisus vortex</i> ; <i>Anthocoris nemorum</i> ; <i>Aplexa hypnorum</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Cantharis nigra</i> ; <i>Chorthippus brunneus</i> ; <i>Coccidula rufa</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Dolichopus plumipes</i> ; <i>Empis tessellata</i> ; <i>Enochrus coarctatus</i> ; <i>Enochrus melanocephalus</i> ; <i>Enochrus testaceus</i> ; <i>Eristalis tenax</i> ; <i>Galerucella sagittariae</i> ; <i>Gastrophysa viridula</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Haliphus ruficollis</i> ; <i>Haliphus sibiricus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hilara maura</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Limnophila pictipennis</i> ; <i>Musculium lacustre</i> ; <i>Neocrepidodera ferruginea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Pachygnatha clercki</i> ; <i>Paederus littoralis</i> ; <i>Philaenus spumarius</i> ; <i>Pirata piraticus</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Platycheirus clypeatus</i> ; <i>Rhyzobius litura</i> ; <i>Scathophaga stercoraria</i> ; <i>Sitona sulcifrons</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema calcarata</i> ; <i>Stenus brunnipes</i> ; <i>Stenus clavicornis</i> ; <i>Stenus picipes</i> ; <i>Tachinus rufipes</i> ; <i>Tetragnatha extensa</i> ; <i>Tipula oleracea</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i>		
						<b>Protected / rare species noted?</b>		<i>Limnophila pictipennis</i>
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.6 x 3.8	<b>Wetland Width (m)</b>	4	
<b>Grazed E/N</b>	Yes, Sheep	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.13	<b>Temp (°C)</b>	21.4	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	737	<b>ppm</b>	294	<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 		
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Rare			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes			
						<b>Profile:</b> 		









<b>Ditch / Pond ID</b>	TEP416	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Spirodela polyrhiza</i> ; <i>Lemna minor</i> ; <i>Ranunculus repens</i> ; <i>Potamogeton pectinatus</i> ; <i>Phragmites australis</i> ; <i>Juncus inflexus</i> ; <i>Sparganium erectum</i> ; <i>Elodea nuttallii</i> ; <i>Lemna gibba</i> ; <i>Glyceria fluitans</i> ; <i>Lemna trisulca</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aeshna cyanea</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymphalus contortus</i> ; <i>Berosus affinis</i> ; <i>Bithynia tentaculata</i> ; <i>Cloeon dipterum</i> ; <i>Coenagrion puella</i> ; <i>Corixa punctata</i> ; <i>Forficula auricularia</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris lacustris</i> ; <i>Gerris odontogaster</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus ruficollis</i> ; <i>Helophorus lividus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hippeutis complanatus</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Laccophilus minutus</i> ; <i>Lymnaea stagnalis</i> ; <i>Micronecta scholtzi</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Oulema obscura</i> ; <i>Oxyloma pfeifferi</i> ; <i>Paradromius linearis</i> ; <i>Philaenus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Sigara dorsalis</i> ; <i>Sigara falleni</i> ; <i>Sigara lateralis</i> ; <i>Sitona lepidus</i> ; <i>Sphaerium corneum</i> ; <i>Valvata piscinalis</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.5 x 2.8		<b>Wetland Width (m)</b>	4.0	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>	0	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	5		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.56		<b>Temp (°C)</b>	22		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	711		<b>ppm</b>	358		<b>Waterline Profile</b>	stepped		<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>			<b>Ditch Undisturbed?</b>			<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Rare						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes						




<b>Ditch / Pond ID</b>	TEP464	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Ulmus agg.</i> ; <i>Potamogeton pusillus</i> ; <i>Hedera helix</i> ; <i>Acer campestre</i> ; <i>Pulicaria dysenterica</i> ; <i>Chamerion angustifolium</i> ; <i>Apium nodiflorum</i> ; <i>Oenanthe crocata</i> ; <i>Mentha aquatica</i> ; <i>Glyceria fluitans</i> ; <i>Epilobium hirsutum</i> ; <i>Rumex crispus</i> ; <i>Veronica catenata</i> ; <i>Carex otrubae</i> ; <i>Rubus fruticosus agg.</i> ; <i>Galium mollugo subsp. erectum</i> ; <i>Callitriche platycarpa</i> ; <i>Rumex sanguineus</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agabus bipustulatus</i> ; <i>Agabus nebulosus</i> ; <i>Agabus sturmii</i> ; <i>Amara plebeja</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Cassida rubiginosa</i> ; <i>Chorthippus parallelus</i> ; <i>Coccidula rufa</i> ; <i>Colymbetes fuscus</i> ; <i>Forficula auricularia</i> ; <i>Gerris lacustris</i> ; <i>Gerris thoracicus</i> ; <i>Graptodytes pictus</i> ; <i>Gyrulus crista</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus ruficollis</i> ; <i>Helophorus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus tessellatus</i> ; <i>Ilybius ater</i> ; <i>Lymnaea stagnalis</i> ; <i>Musculium lacustre</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Notonecta glauca</i> ; <i>Notonecta maculata</i> ; <i>Paederus littoralis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris rapae</i> ; <i>Planorbis planorbis</i> ; <i>Potamopyrgus antipodarium</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Sitona lineatus</i> ; <i>Stenodema holsata</i> ; <i>Sympetrum fonscolombii</i> ; <i>Sympetrum striolatum</i> ; <i>Trichia striolata</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.6 x 2.000	<b>Wetland Width (m)</b>	3		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	25	<b>Shallows Depth (cm)</b>	30		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>	25	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	5.84	<b>Temp (°C)</b>	18.5	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	696	<b>ppm</b>	332	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% to Sth	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	Eel	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			








<b>Ditch / Pond ID</b>	TEP473	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Veronica catenata</i> ; <i>Ranunculus aquatilis sens. lat.</i> ; <i>Callitriche platycarpa</i> ; <i>Glyceria fluitans</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Agrostis stolonifera</i> ; <i>Spirodela polyrhiza</i> ; <i>Callitriche brutia subsp. hamulata</i> ; <i>Carex otrubae</i> ; <i>Glyceria declinata</i> ; <i>Scrophularia auriculata</i> ; <i>Crataegus monogyna</i> ; <i>Prunus spinosa</i> ; <i>Solanum dulcamara</i>		
<b>Photo:</b>						<b>Protected / rare species noted?</b> Kingfisher		
								
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	.65 x 4.000	<b>Wetland Width (m)</b>	6	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100%	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			
						<b>Profile:</b> 		

<b>Ditch / Pond ID</b>	TEP482	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Phragmites australis</i> ; <i>Lemna minor</i> ; <i>Sparganium erectum</i> ; <i>Nasturtium officinale</i> ; <i>Potamogeton berchtoldii</i> ; <i>Epilobium hirsutum</i> ; <i>Ulmus</i> agg.; <i>Crataegus monogyna</i> ; <i>Filipendula ulmaria</i> ;			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.65 x 2.5				
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Unimproved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Unimproved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	50		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	45° And Vert	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100% to West	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> Nicely vegetated  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Frequent				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				



<b>Ditch / Pond ID</b>	TEP489	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	28/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Poa annua</i> ; <i>Ranunculus repens</i> ; <i>Lolium perenne</i> ; <i>Agrostis stolonifera</i> ; <i>Plantago major</i> ; <i>Trifolium repens</i> ; <i>Taraxacum agg.</i> ; <i>Cirsium arvense</i> ; <i>Elytrigia repens</i> ; <i>Juncus effusus</i> ; <i>Juncus articulatus</i> ; <i>Cynosurus cristatus</i> ; <i>Poa trivialis</i> ; <i>Juncus inflexus</i> ; <i>Alopecurus geniculatus</i> ; <i>Capsella bursa-pastoris</i>		
<b>Photo:</b> 								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	1.5	<b>Wetland Width (m)</b>	1.5	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		




<b>Ditch / Pond ID</b>	TEP528	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Lemna minor</i> ; <i>Crataegus monogyna</i> ; <i>Hedera helix</i> ; <i>Rosa canina</i> agg.			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Anisus vortex</i> ; <i>Bathyomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus brunneus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Musculium lacustre</i> ; <i>Philonthus varians</i> ; <i>Pholidoptera griseoptera</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Rhyzobius litura</i> ; <i>Sigara limitata</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Syntomus obscuroguttatus</i> ; <i>Valvata piscinalis</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.4 x 2.6	<b>Wetland Width (m)</b>	2.6		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	5.4	<b>Temp (°C)</b>	19.2	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	488	<b>ppm</b>	244	<b>Waterline Profile</b>	Steep	<b>Waterline Profile</b>	Steep		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			

<b>Ditch / Pond ID</b>	TEP549	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b>		
<b>Photo:</b> No Image								
<b>Protected / rare species noted?</b>								
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Steep	<b>Waterline Profile</b>	Steep	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Crossing in place  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				


<b>Ditch / Pond ID</b>	TEP550	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Lemna minor</i> ; <i>Typha latifolia</i> ; <i>Ranunculus repens</i> ; <i>Agrostis stolonifera</i> ; <i>Holcus lanatus</i> ; <i>Carex otrubae</i> ; <i>Pulicaria dysenterica</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrhiza</i> ; <i>Carex riparia</i> ; <i>Epilobium hirsutum</i> ; <i>Alisma plantago-aquatica</i> ; <i>Mentha aquatica</i> ; <i>Veronica catenata</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agabus sturmii</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus brunneus</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Enochrus testaceus</i> ; <i>Gerris lacustris</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus ruficollis</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccobius bipunctatus</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Paederus littoralis</i> ; <i>Planorbis planorbis</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Rhyzobius litura</i> ; <i>Sitona lepidus</i> ; <i>Sphaerium corneum</i> ; <i>Tachyporus dispar</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.6 x 1.6		<b>Wetland Width (m)</b>	2	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.6		<b>Temp (°C)</b>	18.8		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	490		<b>ppm</b>	245		<b>Waterline Profile</b>	Stepped		<b>Waterline Profile</b>	Stepped	
<b>Ditch Cleaned Out?</b>	Yes		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						









<b>Ditch / Pond ID</b>	TEP648	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Spirodela polyrhiza</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Rubus fruticosus</i> agg.; <i>Phragmites australis</i> ; <i>Ceratophyllum demersum</i> ; <i>Carex riparia</i> ; <i>Potamogeton pusillus</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agabus sturmii</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Arion ater</i> ; <i>Asellus aquaticus</i> ; <i>Bathyomphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Bithynia tentaculata</i> ; <i>Cepaea hortensis</i> ; <i>Chorthippus parallelus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus ruficollis</i> ; <i>Haliplus wehncke</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hippeutis complanatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hygrobia hermanni</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ischnoptera loti</i> ; <i>Laccobius bipunctatus</i> ; <i>Laccophilus minutus</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Pachygnatha clercki</i> ; <i>Paederus littoralis</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Sitona lineatus</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium lacustre</i> ; <i>Stenodema laevigata</i> ; <i>Stenus brunnipes</i> ; <i>Stenus similis</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Tachyporus hypnorum</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	Slight	<b>Water Depth and Width</b> (m x m)	0.63 x 2.00	<b>Wetland Width (m)</b>	3		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	7.7	<b>Temp (°C)</b>	17.5	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	474	<b>ppm</b>	237	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes: Regularly Cleaned</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>	<b>Profile:</b>	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional		X		
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				




<b>Ditch / Pond ID</b>	TEP715	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit One</b>	Yes	<b>Plants:</b> <i>Hydrocharis morsus-ranae</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Ceratophyllum demersum</i> ; <i>Agrostis stolonifera</i> ; <i>Potamogeton berchtoldii</i> ; <i>Lemna minor</i> ; <i>Glyceria fluitans</i> ; <i>Spirodela polyrhiza</i> ; <i>Potamogeton berchtoldii</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aegopinella nitidula</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena limbata</i> ; <i>Anacaena lutescens</i> ; <i>Anisus leucostoma</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathyomphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Bembidion lunulatum</i> ; <i>Bithynia tentaculata</i> ; <i>Cataclista lemnata</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Colymbetes fuscus</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enochrus coarctatus</i> ; <i>Enochrus testaceus</i> ; <i>Episyrphus balteatus</i> ; <i>Gerris lacustris</i> ; <i>Gerris odontogaster</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus ruficollis</i> ; <i>Haliphus wehnckeii</i> ; <i>Helophorus lividus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Helophorus minutus</i> ; <i>Hepialus hecta</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydrophilus piceus</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrobia hermanni</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Libellula quadrimaculata</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Meconema thalassinum</i> ; <i>Megasternum concinnum</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Oplodontha viridula</i> ; <i>Oxyloma elegans</i> ; <i>Philaenus spumarius</i> ; <i>Pirata piraticus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Scirtes hemisphaericus</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium lacustre</i> ; <i>Sphaerium nucleus</i> ; <i>Stenus brunneipes</i> ; <i>Stenus ciciindeloides</i>			
						<b>Protected / rare species noted?</b>			<i>Hydrophilus piceus</i> ; <i>Hydrocharis morsus-ranae</i>
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.5 x 1.700	<b>Wetland Width (m)</b>	2		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	75	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	7.5	<b>Temp (°C)</b>	17	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	598	<b>ppm</b>	296	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	stepped		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	50% on Nth	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				
<b>Profile:</b>									








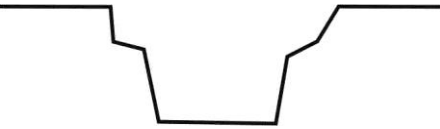
<b>Ditch / Pond ID</b>	TEP733	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	19/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Invertebrates</b> <i>Adalia decempunctata</i> ; <i>Aegopinella nitidula</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena limbata</i> ; <i>Anisus leucostoma</i> ; <i>Anisus vortex</i> ; <i>Apion nigrirtase</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Callicorixa praeusta</i> ; <i>Cataclysta lemnae</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Coenosia pedella</i> ; <i>Colymbetes fuscus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Deroceas laeve</i> ; <i>Dolichopus plumipes</i> ; <i>Enallagma cyathigerum</i> ; <i>Eristalis interruptus</i> ; <i>Galerucella sagittariae</i> ; <i>Gyrinus substriatus</i> ; <i>Helophares lividus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hilara cornicula</i> ; <i>Hydraena riparia</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hydrothassa marginella</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Laccophilus minutus</i> ; <i>Leioabunum rotundum</i> ; <i>Lejogaster metallina</i> ; <i>Lymnaea stagnalis</i> ; <i>Melanogaster hirtella</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Ochthebius minimus</i> ; <i>Oedemera lurida</i> ; <i>Oulema obscura</i> ; <i>Oulema rufocyanea</i> ; <i>Oxyloma elegans</i> ; <i>Oxyloma pfeifferi</i> ; <i>Pachygnatha clercki</i> ; <i>Peltodytes caesus</i> ; <i>Phaedon tumidulus</i> ; <i>Philoscia muscorum</i> ; <i>Pirata piraticus</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rivula sericealis</i> ; <i>Scathophaga stercoraria</i> ; <i>Sialis lutaria</i> ; <i>Sphaerium lacustre</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Stenus picipes</i> ; <i>Tipula oleracea</i> ; <i>Xanthorhoe fluctuata</i>					
<b>Photo:</b> 						<b>Protected / rare species noted?</b> <i>Peltodytes caesus</i>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	Yes		<b>Water Depth and Width (m x m)</b>	1.5 x 1.5		<b>Wetland Width (m)</b>	2.5	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Not Recorded		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>	0	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Not Recorded		<b>Lemna cover %</b>	20		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	Not Recorded		<b>Temp (°C)</b>	Not Recorded		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	Not Recorded		<b>ppm</b>	Not Recorded		<b>Waterline Profile</b>	Stepped		<b>Waterline Profile</b>	Stepped	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>			<b>Profile:</b>		
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>							
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>							

<b>Ditch / Pond ID</b>	TEP815	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Ulmus agg.</i> ; <i>Hedera helix</i> ; <i>Crataegus monogyna</i> ; <i>Phragmites australis</i>	
<b>Photo:</b> 							
						<b>Protected / rare species noted?</b>	
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.3
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>		<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>		<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>		<b>Profile:</b> 	



<b>Ditch / Pond ID</b>	TEP816	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Juncus inflexus</i> ; <i>Glyceria maxima</i> ; <i>Carex otrubae</i> ; <i>Epilobium hirsutum</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Lemna minor</i> ; <i>Spirodela polyrrhiza</i> ; <i>Galium palustre</i> ; <i>Agrostis stolonifera</i> ; <i>Ranunculus repens</i> ; <i>Glyceria fluitans</i> ; <i>Lemna gibba</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aeshna mixta</i> ; <i>Agabus sturmii</i> ; <i>Altica lythri</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymphalus contortus</i> ; <i>Cassida viridis</i> ; <i>Cataclysta lemnata</i> ; <i>Ceratopion onopordi</i> ; <i>Chorthippus parallelus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enochrus testaceus</i> ; <i>Helochares lividus</i> ; <i>Hippeutis complanatus</i> ; <i>Hydrobius fuscipes</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccobius bipunctatus</i> ; <i>Liocoris tripustulatus</i> ; <i>Notostira elongata</i> ; <i>Orthops campestris</i> ; <i>Philoscia muscorum</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhyzobius litura</i> ; <i>Sphaerium comeum</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus dispar</i> ; <i>Tingis ampliata</i> ; <i>Tipula flavolineata</i>			
						<b>Protected / rare species noted?</b>		Hydrocharis morsus-ranae	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.6 x 2.7	<b>Wetland Width (m)</b>	3.2		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	6.7	<b>Temp (°C)</b>	14.7	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	471	<b>ppm</b>	233	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% on Sth	<b>Dries / Reduces</b>			
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				

<b>Ditch / Pond ID</b>	TEP826	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Phragmites australis</i>			
<b>Photo:</b>									
									
<b>Protected / rare species noted?</b>									
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.3 X 1.7	<b>Wetland Width (m)</b>	1.7		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	75		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>	<b>Profile:</b>	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Rare				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				

<b>Ditch / Pond ID</b>	TEP885	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Phragmites australis</i> ; <i>Salix euxina</i> ; <i>Crataegus monogyna</i> ; <i>Rubus fruticosus</i> agg.; <i>Urtica dioica</i> ; <i>Oenanthe crocata</i> ; <i>Calystegia sepium</i> ; <i>Dactylis glomerata</i> ; <i>Elytrigia repens</i> ; <i>Cirsium arvense</i> ; <i>Potentilla anserina</i> ; <i>Phragmites australis</i> ; <i>Solanum dulcamara</i>	
<b>Photo:</b>						<b>Protected / rare species noted?</b>	
							
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>		<b>Wetland Width (m)</b>	1.5
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	No
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>			
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>			




<b>Ditch / Pond ID</b>	TEP891	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Rubus fruticosus</i> agg.; <i>Phragmites australis</i> ; <i>Calystegia sepium</i> ; <i>Urtica dioica</i> ; <i>Persicaria amphibia</i> ; <i>Glyceria maxima</i>	
<b>Photo:</b>							
							
<b>Protected / rare species noted?</b>							
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>		<b>Wetland Width (m)</b>	1.5
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	No
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	100
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>			
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>			
						<b>Profile:</b>	







<b>Ditch / Pond ID</b>	TEP903	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Lemna minor</i> ; <i>Crataegus monogyna</i> ; <i>Phragmites australis</i> ; <i>Glyceria maxima</i> ; <i>Solanum dulcamara</i> ; <i>Cardamine flexuosa</i> ; <i>Agrostis stolonifera</i>	
<b>Photo:</b> 						<b>Invertebrates</b> <i>Psyllobora vigintiduopunctata</i> ; <i>Notostira elongata</i> ; <i>Nabis rugosus</i> ; <i>Sympetrum striolatum</i> ; <i>Philaenus spumarius</i> ; <i>Cassida viridis</i> ; <i>Pieris napi</i> ; <i>Pungitius pungitius</i> ; <i>Aglais urticae</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccobius bipunctatus</i> ; <i>Hydroporus planus</i> ; <i>Dytiscus marginalis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydroporus palustris</i> ; <i>Helophorus grandis</i> ; <i>Gyrinus substriatus</i> ; <i>Asellus aquaticus</i> ; <i>Hydrobius fuscipes</i> ; <i>Rhantus suturalis</i> ; <i>Nepa cinerea</i> ; <i>Agabus bipustulatus</i> ; <i>Pirata piraticus</i> ; <i>Halplus lineolatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Agabus sturmii</i> ; <i>Colymbetes fuscus</i> ; <i>Halplus lineatocollis</i> ; <i>Gerris thoracicus</i> ; <i>Halplus sibiricus</i> ; <i>Phaedon armoraciae</i> ; <i>Bembidion guttula</i> ; <i>Tachyporus hypnorum</i> ; <i>Sitona suturalis</i>	
<b>Protected / rare species noted?</b>							
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	0.85
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	No
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	10	<b>Phragmites Habitat Cover %</b>	100
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	45°
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>			<b>Profile:</b>
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>			


<b>Ditch / Pond ID</b>	TEP952	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>		<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants</b> <i>Chenopodium giganteum</i> ; <i>Crataegus monogyna</i> ; <i>Phragmites australis</i> ; <i>Epilobium hirsutum</i> ; <i>Persicaria amphibia</i> ; <i>Solanum dulcamara</i> ; <i>Carex riparia</i> ; <i>Lemna minor</i> ; <i>Spirodela polyrhiza</i> ; <i>Lemna gibba</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Juncus inflexus</i> ; <i>Glyceria fluitans</i> ; <i>Ranunculus repens</i> ; <i>Iris pseudacorus</i> ; <i>Spirodela polyrhiza</i> ; <i>Pulicaria dysenterica</i> ; <i>Epilobium hirsutum</i>  <b>Invertebrates</b> <i>Aeshna mixta</i> ; <i>Agabus sturmii</i> ; <i>Altica lythri</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymophalus contortus</i> ; <i>Cassida viridis</i> ; <i>Cataclysta lemnata</i> ; <i>Ceratapion onopordi</i> ; <i>Chorthippus parallelus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enochrus testaceus</i> ; <i>Helochares lividus</i> ; <i>Hippeutis complanatus</i> ; <i>Hydrobius fuscipes</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccobius bipunctatus</i> ; <i>Liocoris tripustulatus</i> ; <i>Notostira elongata</i> ; <i>Orthops campestris</i> ; <i>Philoscia muscorum</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhyzobius litura</i> ; <i>Sphaerium corneum</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus dispar</i> ; <i>Tingis ampliata</i> ; <i>Tipula flavolineata</i>				
<b>Photo:</b>						<b>Protected / rare species noted?</b> <i>Hydrocharis morsus-ranae</i>				
<b>Habitat Type</b>		Ditch	<b>Flow</b>		No	<b>Water Depth and Width (m x m)</b>		1.5 x 1.5	<b>Wetland Width (m)</b>	3.0
<b>Grazed E/N</b>		No	<b>Land Use E/N</b>		Arable	<b>Shallows %</b>		10	<b>Shallows Depth (cm)</b>	15
<b>Grazed W/S</b>		Yes	<b>Land Use W/S</b>		Grazing	<b>Lemna cover %</b>		25	<b>Plants for Cocoons?</b>	No
<b>pH</b>		Not Recorded	<b>Temp (°C)</b>		Not Recorded	<b>Phragmites Bank Cover %</b>		50	<b>Phragmites Habitat Cover %</b>	25
<b>us/cm</b>		Not Recorded	<b>ppm</b>		Not Recorded	<b>Waterline Profile</b>		Stepped	<b>Waterline Profile</b>	Stepped
<b>Ditch Cleaned Out?</b>		No	<b>Ditch Undisturbed?</b>		No	<b>Tree/Shrub Shade %</b>		0	<b>Dries / Reduces</b>	No
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>		Suitable for <i>Hydrochara caraboides</i> :  X	<b>Profile:</b>	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>						
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>						






<b>Ditch / Pond ID</b>	TEP991	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Spirodela polyrhiza; Lemna minor; Typha latifolia; Carex otrubae; Carex riparia; Phalaris arundinacea; Lythrum salicaria</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Adalia bipunctata; Aeshna grandis; Agabus bipustulatus; Agabus sturmii; Anacaena globulus; Anacaena limbata; Anacaena lutescens; Anax imperator; Anisus vortex; Arctosa leopardus; Argyroneta aquatica; Asellus aquaticus; Bathyomphalus contortus; Bithynia leachii; Bithynia tentaculata; Cataclysta lemnata; Coccidula rufa; Coenosia pedella; Colias croceus; Conisternum decipiens; Corizus hyoscyami; Crangonyx pseudogracilis; Cymbiodyta marginellus; Demetrias atricapillus; Dolichopus plumipes; Donacia simplex; Enallagma cyathigerum; Enochrus testaceus; Gastrophysa viridula; Geomyza tripunctata; Harpalus rufipes; Helophilus pendulus; Helophorus brevipalpis; Helophorus grandis; Hesperocorixa sahlbergi; Hydrobius fuscipes; Hydroglyphus pusillus; Hydroporus angustatus; Hydroporus incognitus; Hydroporus palustris; Hydroporus planus; Hydroporus pubescens; Hydroporus tessellatus; Hygrotus impressopunctatus; Ilyocoris cimicoides; Ischnura elegans; Laccobius bipunctatus; Larinioides cornutus; Lymnaea stagnalis; Microvelia reticulata; Nepa cinerea; Noterus clavicornis; Oxyloma elegans; Oxyloma pfeifferi; Pachygnatha clercki; Pachygnatha degeeri; Paederus riparius; Pardosa monticola; Paroligolophus agrestis; Philoscia muscorum; Physa fontinalis; Pieris brassicae; Planorbis barbatulus; Planorbis planorbis; Platypalpus agilis; Porcellio scaber; Propylea quattuordecimpunctata; Ptychoptera contaminata; Rhagonycha fulva; Rhantus grapii; Rhantus suturalis; Rhingia campestris; Rhyzobius litura; Scathophaga stercoraria; Scirtes hemisphaericus; Sphaerium corneum; Stenus canaliculatus; Stenus picipes; Subcoccinella vigintiquatuorpuntata; Tachyporus hypnorum; Trichoniscus pusillus</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.5 x 1.7	<b>Wetland Width (m)</b>	1.7		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	5.5	<b>Temp (°C)</b>	16.6	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	506	<b>ppm</b>	253	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				
						<b>Profile:</b> 			

<b>Ditch / Pond ID</b>	TEP992	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Juncus inflexus</i> ; <i>Phalaris arundinacea</i> ; <i>Sparganium erectum</i> ; <i>Lemna trisulca</i> ; <i>Ranunculus sceleratus</i> ; <i>Carex riparia</i> ; <i>Myosotis laxa</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agabus bipustulatus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus pascuorum</i> ; <i>Cataclysta lemnata</i> ; <i>Cloeon dipterum</i> ; <i>Coenagrion puella</i> ; <i>Colias croceus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Dytiscus marginalis</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius ater</i> ; <i>Ischnura elegans</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus suturalis</i> ; <i>Sphaerium corneum</i> ; <i>Succinea putris</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.6 x 1.5	<b>Wetland Width (m)</b>	2.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Arable	<b>Shallows %</b>	50	<b>Shallows Depth (cm)</b>	0.25		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	50	<b>Phragmites Habitat Cover %</b>	10		
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Stepped		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>		<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	no	<b>Small Ramshorns</b>	Yes	<b>Other Molluscs</b>	Yes				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				




<b>Ditch / Pond ID</b>	TEP1001	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Lemna minor</i> ; <i>Glyceria maxima</i> ; <i>Sparganium erectum</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Sagittaria sagittifolia</i> ; <i>Ceratophyllum demersum</i> ; <i>Elodea nuttallii</i> ; <i>Persicaria amphibia</i> ; <i>Spirodela polyrhiza</i>		
<b>Photo:</b>						<b>Invertebrates:</b> <i>Aegopinella nitidula</i> ; <i>Aeshna grandis</i> ; <i>Agabus bipustulatus</i> ; <i>Altica lythri</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Cloeon dipterum</i> ; <i>Closterotomus norwegicus</i> ; <i>Coccidula rufa</i> ; <i>Colias croceus</i> ; <i>Cordilura impudica</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Donacia simplex</i> ; <i>Enochrus testaceus</i> ; <i>Eristalis pertinax</i> ; <i>Galerucella sagittariae</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris lacustris</i> ; <i>Gerris thoracicus</i> ; <i>Gyrulus albus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus immaculatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroglyphus pusillus</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hyphydrus ovatus</i> ; <i>Ischnoptera loti</i> ; <i>Laccobius bipunctatus</i> ; <i>Larinioides cornutus</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Melanogaster hirtella</i> ; <i>Musculium lacustre</i> ; <i>Noterus clavicornis</i> ; <i>Pachygnatha degeeri</i> ; <i>Paederus riparius</i> ; <i>Phaedon armoraciae</i> ; <i>Phaedon cochleariae</i> ; <i>Phaedon tumidulus</i> ; <i>Philoscia muscorum</i> ; <i>Phyllobius roboretanus</i> ; <i>Phylla fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Planorbis corneus</i> ; <i>Planorbis carinatus</i> ; <i>Planorbis planorbis</i> ; <i>Prasocuris junci</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Rhantus grapii</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Sigara dorsalis</i> ; <i>Sigara falleni</i> ; <i>Sphaerium corneum</i> ; <i>Stenus pubescens</i> ; <i>Subcoccinella vigintiquatuordecimpunctata</i> ; <i>Tipula oleracea</i> ; <i>Vallonia costata</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i> ; <i>Vertigo pygmaea</i> ; <i>Zonitoides nitidus</i>		
<b>Protected / rare species noted?</b>								
<b>Habitat Type</b>	Ditch	<b>Flow</b>	Yes	<b>Water Depth and Width (m x m)</b>	0.7 x 5.0	<b>Wetland Width (m)</b>	5	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	No	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	50	<b>Plants for Cocoons?</b>	No	
<b>pH</b>	6.6	<b>Temp (°C)</b>	20.6	<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>	468	<b>ppm</b>	232	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	Vertical & 60°	
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant		<b>Profile:</b> 	
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			


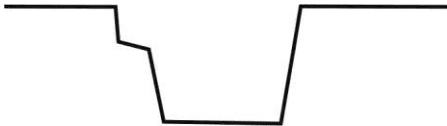
<b>Ditch / Pond ID</b>	TEP1099	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	9/07/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit 2</b>	Yes	<b>Plants</b> <i>Lemna minor</i> ; <i>Lemna gibba</i> ; <i>Glyceria fluitans</i> ; <i>Juncus inflexus</i>	
<b>Photo:</b> No Image						<b>Invertebrates</b> <i>Anacaena limbata</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus pubescens</i> ; <i>Anacaena globulus</i> ; <i>Helophorus grandis</i> ; <i>Helophorus brevipalpis</i> ; <i>Asellus aquaticus</i> ; <i>Hydroporus planus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Hydrobius fuscipes</i> ; <i>Pirata piraticus</i> ; <i>Agabus bipustulatus</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus tessellatus</i> ; <i>Tetragnatha extensa</i> ; <i>Elophila nymphaeata</i> ; <i>Colymbetes fuscus</i> ; <i>Rhantus suturalis</i> ; <i>Agabus nebulosus</i> ; <i>Agabus sturmii</i> ; <i>Ilybius ater</i> ; <i>Ilybius quadriguttatus</i> ; <i>Helophorus griseus</i> ; <i>Laccobius bipunctatus</i> ; <i>Ochthebius dilatatus</i> ; <i>Cyphon laevipennis</i> ; <i>Coccidula rufa</i> ; <i>Stenus binotatus</i> ; <i>Stenus cicindeloides</i> ; <i>Stenus crassus</i> ; <i>Podura aquatica</i> ; <i>Scathophagidae</i> ; <i>Coccinella septempunctata</i> ; <i>Episyrphus balteatus</i> ; <i>Tabanus bromius</i> ; <i>Elophila nymphaeata</i> ; <i>Philaenus spumarius</i> ; <i>Lygocoris pabulinus</i> ; <i>Oplodontha viridula</i> ; <i>Chorthippus parallelus</i> ; <i>Oedemera nobilis</i> ;	
						<b>Protected / rare species noted?</b>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	Not Recorded	<b>Wetland Width (m)</b>	Not Recorded
<b>Grazed E/N</b>	Not Recorded	<b>Land Use E/N</b>	Not Recorded	<b>Shallows %</b>	Not Recorded	<b>Shallows Depth (cm)</b>	Not Recorded
<b>Grazed W/S</b>	Not Recorded	<b>Land Use W/S</b>	Not Recorded	<b>Lemna cover %</b>	Not Recorded	<b>Plants for Cocoons?</b>	Not Recorded
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	Not Recorded	<b>Phragmites Habitat Cover %</b>	Not Recorded
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	Not Recorded	<b>Dries / Reduces</b>	Not Recorded
<b>3-SSB</b>		<b>10-SSB</b>	Y	<b>Other Fish</b>	N	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	N	<b>Other Molluscs</b>	N		
<b><i>H. piceus</i></b>	N	<b>GCN</b>	N	<b>S/P Newt</b>	N		

<b>Ditch / Pond ID</b>	TEP1124	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Lemna minor</i> ; <i>Spirodela polyrhiza</i> ; <i>Phragmites australis</i> ; <i>Glyceria fluitans</i> ; <i>Elodea nuttallii</i> ; <i>Lemna trisulca</i> ; <i>Lemna gibba</i> ; <i>Agrostis stolonifera</i> ; <i>Apium nodiflorum</i> ; <i>Juncus inflexus</i> ; <i>Oenanthe crocata</i> ; <i>Persicaria amphibia</i> ; <i>Carex riparia</i> ; <i>Callitriche agg.</i> ; <i>Chara vulgaris</i> ; <i>Allium vineale</i> ; <i>Zannichellia palustris</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Cataclista lemnae</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Colymbetes fuscus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gerris thoracicus</i> ; <i>Haliplus immaculatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Lymnaea stagnalis</i> ; <i>Musculium lacustre</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Pachygnatha clercki</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Pirata piraticus</i> ; <i>Planorbis planorbis</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Sitona lepidus</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema holsata</i> ; <i>Stenodema laevigata</i> ; <i>Stenus clavicornis</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus nitidulus</i> ; <i>Valvata piscinalis</i>			
						<b>Protected / rare species noted?</b>			<i>Hydrophilus piceus</i> ;
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.6 x 2.4	<b>Wetland Width (m)</b>	4.2		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	5	<b>Shallows Depth (cm)</b>	10		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	75	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	5.7	<b>Temp (°C)</b>	18	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	5		
<b>us/cm</b>	435	<b>ppm</b>	217	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	Stepped		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				


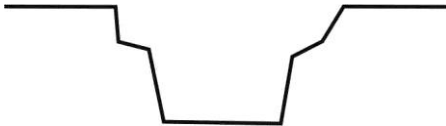
<b>Ditch / Pond ID</b>	TEP1127	<b>Surveyor:</b>	DB/PH	<b>Date:</b>		<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Full	Visit One	Yes	Visit 2	Yes	<b>Plants</b> <i>Elodea canadensis</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Potamogeton crispus</i> ; <i>Spirodela polyrhiza</i> ; <i>Zannichellia palustris</i> ; <i>Lemna trisulca</i> ;	
<b>Photo:</b>						<b>Invertebrates</b> <i>Eristalis arbustorum</i> ; <i>Eristalis intricaria</i> ; <i>Syricta pipiens</i> ; <i>Cantharis livida</i> ; <i>Coenagrion puella</i> ; <i>Tabanus bromius</i> ; <i>Ischnura elegans</i> ; <i>Philaenus spumarius</i> ; <i>Rhagonycha fulva</i> ; <i>Apis mellifera</i> ; <i>Ochlodes faunus</i> ; <i>Malachius bipustulatus</i> ; <i>Maniola jurtina</i> ; <i>Aglais urticae</i> ; <i>Oedemera nobilis</i> ; <i>Bombus lucorum/terrestris</i> ; <i>Pungitius pungitius</i> ; <i>Glyceria maxima</i> ; <i>Ceratophyllum demersum</i> ; <i>Potamogeton berchtoldii</i> ; <i>Crambus perlella</i> ; <i>Asellus aquaticus</i> ; <i>Sigara dorsalis</i> ; <i>Gerris thoracicus</i> ; <i>Cataclysta lemnata</i> ; <i>Haliphus lineatocollis</i> ; <i>Rhantus suturalis</i> ; <i>Corixa punctata</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydroporus palustris</i> ; <i>Erpobdella octoculata</i> ; <i>Agabus sturmii</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Gyrinus substriatus</i> ; <i>Hydroporus planus</i> ; <i>Sialis lutaria</i> ; <i>Libellula quadrimaculata</i> ; <i>Hydrophilus piceus</i> ;	
						<b>Protected / rare species noted?</b> <i>Hydrophilus piceus</i> ;	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	Not Recorded	<b>Wetland Width (m)</b>	Not Recorded
<b>Grazed E/N</b>	Not Recorded	<b>Land Use E/N</b>	Not Recorded	<b>Shallows %</b>	Not Recorded	<b>Shallows Depth (cm)</b>	Not Recorded
<b>Grazed W/S</b>	Not Recorded	<b>Land Use W/S</b>	Not Recorded	<b>Lemna cover %</b>	100%	<b>Plants for Cocoons?</b>	Not Recorded
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	Not Recorded	<b>Phragmites Habitat Cover %</b>	Not Recorded
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	Not Recorded	<b>Dries / Reduces</b>	Not Recorded
<b>3-SSB</b>		<b>10-SSB</b>	Y	<b>Other Fish</b>	N	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	N	<b>Other Molluscs</b>	N		
<b>H. piceus</b>	Yes	<b>GCN</b>	N	<b>S/P Newt</b>	N		



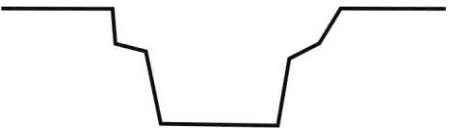





<b>Ditch / Pond ID</b>	TEP1128	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Carex otrubae</i> ; <i>Phragmites australis</i> ; <i>Carex riparia</i> ; <i>Epilobium hirsutum</i> ; <i>Lemna minor</i> ; <i>Urtica dioica</i> ; <i>Agrostis stolonifera</i> ; <i>Juncus inflexus</i> ; <i>Lemna gibba</i> ; <i>Glyceria maxima</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Armiger crista</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Bithynia tentaculata</i> ; <i>Cicadella viridis</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Cymbiodyta marginellus</i> ; <i>Eiseniella tetraedra</i> ; <i>Enochrus testaceus</i> ; <i>Epistrophe eligans</i> ; <i>Episyrphus balteatus</i> ; <i>Eristalis tenax</i> ; <i>Halipus lineatocollis</i> ; <i>Helochares lividus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydraena riparia</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus striola</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnopterapion virens</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Melanostoma scalare</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Phaedon tumidulus</i> ; <i>Philaenus spumarius</i> ; <i>Pieris rapae</i> ; <i>Planorbis planorbis</i> ; <i>Pyroneia tithonus</i> ; <i>Radix auricularia</i> ; <i>Rhantus grapii</i> ; <i>Rhantus suturalis</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium lacustre</i> ; <i>Stenus clavicornis</i> ; <i>Syrirta pipiens</i> ; <i>Tachyporus dispar</i> ; <i>Tetragnatha extensa</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i> ; <i>Vesputia vulgaris</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.4 x 2.0	<b>Wetland Width (m)</b>	3.4		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	No	<b>Shallows %</b>	5	<b>Shallows Depth (cm)</b>	20		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>			
<b>pH</b>	5.3	<b>Temp (°C)</b>	16.9	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	5		
<b>us/cm</b>	443	<b>ppm</b>	228	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Poached		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	50% West	<b>Dries / Reduces</b>			
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			




<b>Ditch / Pond ID</b>	TEP1141	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Rubus fruticosus</i> agg.; <i>Glyceria maxima</i> ; <i>Lycopus europaeus</i> ; <i>Carex otrubae</i> ; <i>Berula erecta</i> ; <i>Solanum dulcamara</i> ; <i>Epilobium hirsutum</i> ; <i>Alisma plantago-aquatica</i> ; <i>Agrostis stolonifera</i> ; <i>Lemna minor</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathyomphalus contortus</i> ; <i>Cataclysta lemnata</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Cymbiodyta marginellus</i> ; <i>Eristalis arbustorum</i> ; <i>Eristalis tenax</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus ruficollis</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydraena riparia</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Laccobius bipunctatus</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Paederus fuscipes</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pieris brassicae</i> ; <i>Rhantus grapii</i> ; <i>Rhantus suturalis</i> ; <i>Rivula sericealis</i> ; <i>Sphaerium corneum</i> ; <i>Stenus brunnipes</i> ; <i>Stenus cindeloides</i> ; <i>Stenus fulvicornis</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus hypnorum</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.1 x 1.4		<b>Wetland Width (m)</b>	1.61	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	10	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	100		<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.1		<b>Temp (°C)</b>	15		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	540		<b>ppm</b>	270		<b>Waterline Profile</b>	Stepped		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	5		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Crossing Point present	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						

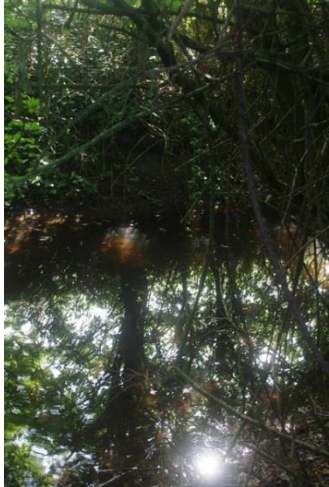




<b>Ditch / Pond ID</b>	TEP1148	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	20/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Ranunculus sceleratus</i> ; <i>Glyceria maxima</i> ; <i>Sparganium erectum</i> ; <i>Ranunculus repens</i> ; <i>Juncus inflexus</i> ; <i>Phalaris arundinacea</i> ; <i>Lemna minor</i> ; <i>Spirodela polyrhiza</i> ; <i>Iris pseudacorus</i> ; <i>Lemna gibba</i> ; <i>Carex otrubae</i> ; <i>Apium nodiflorum</i> ; <i>Holcus lanatus</i> ; <i>Cardamine flexuosa</i> ; <i>Persicaria amphibia</i> ; <i>Ceratophyllum demersum</i> ; <i>Elodea nuttallii</i> ; <i>Agrostis stolonifera</i> ; <i>Lemna gibba</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aegopinella nitidula</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Apion frumentarium</i> ; <i>Asellus aquaticus</i> ; <i>Bathomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Bombus lucorum/terrestris</i> ; <i>Cataclista lemnae</i> ; <i>Ceratapion onopordi</i> ; <i>Chorthippus brunneus</i> ; <i>Cicadella viridis</i> ; <i>Coccinella septempunctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enochrus testaceus</i> ; <i>Episyrphus balteatus</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus inaequalis</i> ; <i>Hygrotus versicolor</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Melanostoma scalare</i> ; <i>Microvelia reticulata</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Oxyloma elegans</i> ; <i>Pirata piraticus</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Pyronia tithonus</i> ; <i>Rhyzobius litura</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium lacustre</i> ; <i>Stenus binotatus</i> ; <i>Stenus boops</i> ; <i>Stenus cicindeloides</i> ; <i>Tachyporus hypnorum</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.7 x 6.0		<b>Wetland Width (m)</b>	8	
<b>Grazed E/N</b>	Yes, Sheep		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	100		<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.5		<b>Temp (°C)</b>	17		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	450		<b>ppm</b>	225		<b>Waterline Profile</b>	Stepped		<b>Waterline Profile</b>	Stepped	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes						




Ditch / Pond ID	TEP1178	Surveyor:	AH/RH;D B/PH	Date:		Initial assessment/species list including flora within the wetland area		
Survey Type	Full	Visit One	Yes	Visit Two	Yes	<b>Plants:</b> <i>Lemna trisulca</i> ; <i>Glyceria maxima</i> ; <i>Lemna minor</i> ; <i>Nasturtium officinale</i> ; <i>Pulicaria dysenterica</i> ; <i>Epilobium hirsutum</i> ; <i>Sparganium erectum</i> ; <i>Rubus fruticosus</i> agg.; <i>Mentha aquatica</i> ; <i>Glyceria fluitans</i> ; <i>Berula erecta</i>		
<b>Photo:</b> 						<b>Invertebrates</b> <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Altica lythri</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Aplexa hypnorum</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bembidion lunulatum</i> ; <i>Cataclysta lemnae</i> ; <i>Chrysolina polita</i> ; <i>Coccidula rufa</i> ; <i>Coelostoma orbiculare</i> ; <i>Coenagrion puella</i> ; <i>Colymbetes fuscus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Dolichopus plumipes</i> ; <i>Gerris odontogaster</i> ; <i>Gerris thoracicus</i> ; <i>Gyrinus substriatus</i> ; <i>Halipus ruficollis</i> ; <i>Helophorus lividus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Limnephilus lunatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Microvelia reticulata</i> ; <i>Neoascia tenur</i> ; <i>Nepa cinerea</i> ; <i>Notonecta glauca</i> ; <i>Notonecta maculata</i> ; <i>Ochthebius minimus</i> ; <i>Oxyloma elegans</i> ; <i>Oxyloma pfeifferi</i> ; <i>Pachygnatha clercki</i> ; <i>Paederus riparius</i> ; <i>Pardosa pullata</i> ; <i>Phaedon cochleariae</i> ; <i>Phyllobius roboretanus</i> ; <i>Physa fontinalis</i> ; <i>Pieris napi</i> ; <i>Planorbis comeus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus graii</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium comeum</i> ; <i>Sphaerium nucleus</i> ; <i>Stenus cicindeloides</i> ; <i>Stenus clavicornis</i> ; <i>Tipula oleracea</i>		
Protected / rare species noted?								
Habitat Type	Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)		
Grazed E/N	Yes, Cattle	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	Yes, Cattle	Land Use W/S	Improved Grassland	Lemna cover %	100	Plants for Cocoons?	Yes	
pH		Temp (°C)		Phragmites Bank Cover %	i	Phragmites Habitat Cover %	i	
us/cm		ppm		Waterline Profile	stepped	Waterline Profile	stepped	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %	50	Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> :	
Invert Predators		Small Ramshorns		Other Molluscs			<b>Profile:</b> 	
<i>H. piceus</i>		GCN		S/P Newt				




Ditch / Pond ID	TEP1212	Surveyor:	DB/PH	Date:	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
Survey Type	Visual	Visit One	Yes			<b>Plants:</b> <i>Typha latifolia</i> ; <i>Lemna minor</i> ; <i>Epilobium parviflorum</i> ; <i>Urtica dioica</i> ; <i>Juncus inflexus</i> ; <i>Berula erecta</i> ; <i>Scrophularia auriculata</i> ; <i>Phragmites australis</i> ; <i>Sparganium erectum</i> ; <i>Carex otrubae</i> ; <i>Prunus spinosa</i> ; <i>Salix cinerea</i> ; <i>Epilobium hirsutum</i> ; <i>Solanum dulcamara</i> ; <i>Equisetum arvense</i>	
<b>Photo:</b> 						<b>Protected / rare species noted?</b>	
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)	1.4
Grazed E/N	No	Land Use E/N	Improved Grassland	Shallows %	0	Shallows Depth (cm)	
Grazed W/S	No	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?	
pH		Temp (°C)		Phragmites Bank Cover %	0	Phragmites Habitat Cover %	0
us/cm		ppm		Waterline Profile	Vertical	Waterline Profile	45°
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %	100% to South	Dries / Reduces	Yes
3-SSB		10-SSB		Other Fish		Notes:  Suitable for <i>Hydrochara caraboides</i> :  	Profile: 
Invert Predators		Small Ramshorns		Other Molluscs			
<i>H. piceus</i>		GCN		S/P Newt			




<b>Ditch / Pond ID</b>	TEP1213	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Pulicaria dysenterica</i> ; <i>Berula erecta</i> ; <i>Solanum dulcamara</i> ; <i>Juncus inflexus</i> ; <i>Epilobium parviflorum</i> ; <i>Scrophularia auriculata</i> ; <i>Alisma plantago-aquatica</i> ; <i>Ranunculus sceleratus</i> ; <i>Carex otrubae</i> ; <i>Lemna minor</i> ; <i>Glyceria notata</i> ; <i>Sambucus nigra</i> ; <i>Prunus spinosa</i> ; <i>Crataegus monogyna</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Abraxas grossulariata</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Asellus aquaticus</i> ; <i>Coccinella septempunctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus angustatus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Laccobius bipunctatus</i> ; <i>Megasternum concinnum</i> ; <i>Philaeus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Porcellio scaber</i> ; <i>Rhyzobius litura</i> ; <i>Stenus clavicornis</i> ; <i>Stenus junco</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Tachyporus dispar</i> ; <i>Tachyporus hypnorum</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.15 x 1.50		<b>Wetland Width (m)</b>	1.6	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	15	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	100		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	4.5		<b>Temp (°C)</b>	16.4		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	1810		<b>ppm</b>	920		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	45°	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100% to South		<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						

<b>Ditch / Pond ID</b>	TEP1233	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Sambucus nigra</i> ; <i>Rubus fruticosus</i> agg.; <i>Hedera helix</i> agg.; <i>Arum maculatum</i> ; <i>Asplenium scolopendrium</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Epilobium parviflorum</i> ; <i>Angelica sylvestris</i> ; <i>Urtica dioica</i> ; <i>Phalaris arundinacea</i> ; <i>Galium mollugo</i> subsp. <i>Mollugo</i>					
<b>Photo:</b> 						<b>Invertebrates</b> <i>Acanthosoma haemorrhoidale</i> ; <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bembidion illigeri</i> ; <i>Bembidion obtusum</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus brunneus</i> ; <i>Chrysops relictus</i> ; <i>Cloeon dipterum</i> ; <i>Coccinella septempunctata</i> ; <i>Coreus marginatus</i> ; <i>Diarsia rubi</i> ; <i>Eristalis pertinax</i> ; <i>Eristalis tenax</i> ; <i>Forficula auricularia</i> ; <i>Gammarus pulex</i> ; <i>Gyraulus albus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Ilybius fuliginosus</i> ; <i>Longitarsus melanocephalus</i> ; <i>Lymnaea stagnalis</i> ; <i>Megasternum concinnum</i> ; <i>Oligolophus tridens</i> ; <i>Paederus riparius</i> ; <i>Pararge aegeria</i> ; <i>Paroligolophus agrestis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris brassicae</i> ; <i>Pirata piraticus</i> ; <i>Pisaura mirabilis</i> ; <i>Porcellio scaber</i> ; <i>Rhagonycha fulva</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Stenus clavicornis</i> ; <i>Tachyporus hypnorum</i> ; <i>Tachyporus nitidulus</i> ; <i>Tetragnatha extensa</i>					
						<b>Protected / rare species noted?</b>		Badger Evidence			
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.5 x 3.600		<b>Wetland Width (m)</b>	3.6	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Arable		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Unmanaged		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.64		<b>Temp (°C)</b>	16.3		<b>Phragmites Bank Cover %</b>	100		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	873		<b>ppm</b>	436		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						



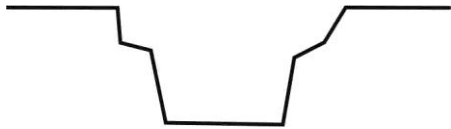



Ditch / Pond ID	TEP1263	Surveyor:	DB/PH	Date:	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
Survey Type	Visual	Visit One	Yes			<b>Plants:</b> <i>Urtica dioica</i> ; <i>Calystegia sepium</i> ; <i>Holcus lanatus</i> ; <i>Solanum dulcamara</i> ; <i>Arrhenatherum elatius</i> ; <i>Rubus fruticosus</i> agg.; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Prunus spinosa</i> ; <i>Sambucus nigra</i> ; <i>Corylus avellana</i> ; <i>Acer campestre</i> ; <i>Cornus sanguinea</i> ; <i>Oenanthe crocata</i> ; <i>Stachys sylvatica</i> ; <i>Heracleum sphondylium</i> ; <i>Phalaris arundinacea</i> ; <i>Epilobium hirsutum</i> ; <i>Rosa canina</i> agg.; <i>Galium aparine</i>	
<b>Photo:</b> 						<b>Protected / rare species noted?</b>	
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)	1.1
Grazed E/N	No	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)	
Grazed W/S		Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?	
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %	
us/cm		ppm		Waterline Profile	45°	Waterline Profile	45°
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %		Dries / Reduces	Yes
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> :  
Invert Predators		Small Ramshorns		Other Molluscs			
<i>H. piceus</i>		GCN		S/P Newt			
						<b>Profile:</b> 	




<b>Ditch / Pond ID</b>	TEP1298	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Epilobium ciliatum</i> ; <i>Crataegus monogyna</i> ; <i>Agrostis stolonifera</i> ; <i>Ranunculus repens</i> ; <i>Hedera helix</i> agg.; <i>Urtica dioica</i> ; <i>Oenanthe crocata</i> ; <i>Phalaris arundinacea</i> ; <i>Solanum dulcamara</i> ; <i>Epilobium hirsutum</i> ; <i>Rosa canina</i> agg.; <i>Fraxinus excelsior</i> ; <i>Alnus glutinosa</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Acanthosoma haemorrhoidale</i> ; <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bembidion illigeri</i> ; <i>Bembidion obtusum</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus brunneus</i> ; <i>Chrysops relictus</i> ; <i>Cloeon dipterum</i> ; <i>Coccinella septempunctata</i> ; <i>Coreus marginatus</i> ; <i>Diarsia rubi</i> ; <i>Eristalis pertinax</i> ; <i>Eristalis tenax</i> ; <i>Forficula auricularia</i> ; <i>Gammarus pulex</i> ; <i>Gyraulus albus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Ilybius fuliginosus</i> ; <i>Longitarsus melanocephalus</i> ; <i>Lymnaea stagnalis</i> ; <i>Megasternum concinnum</i> ; <i>Oligolophus tridens</i> ; <i>Paederus riparius</i> ; <i>Pararge aegeria</i> ; <i>Paroligolophus agrestis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris brassicae</i> ; <i>Pirata piraticus</i> ; <i>Pisaura mirabilis</i> ; <i>Porcellio scaber</i> ; <i>Rhagonycha fulva</i> ; <i>Rhyzobius litura</i> ; <i>Sigara dorsalis</i> ; <i>Stenus clavicornis</i> ; <i>Tachyporus hypnorum</i> ; <i>Tachyporus nitidulus</i> ; <i>Tetragnatha extensa</i>					
						<b>Protected / rare species noted?</b>		Otter Spraints			
<b>Habitat Type</b>	Stream		<b>Flow</b>	Yes		<b>Water Depth and Width (m x m)</b>	0.15 x 3.15		<b>Wetland Width (m)</b>	3.15	
<b>Grazed E/N</b>	Yes, Sheep		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	15	
<b>Grazed W/S</b>	Yes, Sheep		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.8		<b>Temp (°C)</b>	18		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	590		<b>ppm</b>	286		<b>Waterline Profile</b>	Shallow		<b>Waterline Profile</b>	Shallow	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	Bullhead	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Rare						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						




<b>Ditch / Pond ID</b>	TEP1312	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Veronica beccabunga</i> ; <i>Rubus fruticosus</i> agg.; <i>Fraxinus excelsior</i> ; <i>Urtica dioica</i> ; <i>Prunus spinosa</i> ; <i>Crataegus monogyna</i> ; <i>Ranunculus repens</i> ; <i>Hedera helix</i> ; <i>Dactylis glomerata</i> ; <i>Ulmus</i> agg.; <i>Ulmus glabra</i> ; <i>Asplenium scolopendrium</i> ; <i>Sambucus nigra</i> ; <i>Lolium multiflorum</i> ; <i>Oenanthe crocata</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Anthophila fabriciana</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bombus hypnorum</i> ; <i>Bombus lucorum</i> ; <i>Bombus pascuorum</i> ; <i>Bombus pratorum</i> ; <i>Calopteryx splendens</i> ; <i>Cantharis livida</i> ; <i>Cartodere bifasciata</i> ; <i>Cassida viridis</i> ; <i>Chorthippus parallelus</i> ; <i>Clausilia bidentata</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Cordulegaster boltonii</i> ; <i>Elmis aenea</i> ; <i>Episyrphus balteatus</i> ; <i>Eristalis arbustorum</i> ; <i>Forficula auricularia</i> ; <i>Gammarus pulex</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Orthops campestris</i> ; <i>Paradromius linearis</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Plectrocnemia conspersa</i> ; <i>Potamophylax latipennis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Sericostoma personatum</i> ; <i>Stenus clavicornis</i> ; <i>Succinea putris</i> ; <i>Syrphus vitripennis</i> ; <i>Tetragnatha montana</i> ; <i>Trichia striolata</i> ; <i>Velia caprai</i> ; <i>Vespula vulgaris</i>			
						<b>Protected / rare species noted?</b>		Badger Evidence	
<b>Habitat Type</b>	Stream	<b>Flow</b>	Yes	<b>Water Depth and Width</b> (m x m)	.05 X 1.500	<b>Wetland Width (m)</b>	3.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	5		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.58	<b>Temp (°C)</b>	18.6	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	1109	<b>ppm</b>	553	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				






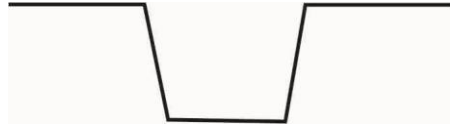
<b>Ditch / Pond ID</b>	TEP1323	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Nasturtium officinale</i> ; <i>Apium nodiflorum</i> ; <i>Acer campestre</i> ; <i>Oenanthe crocata</i> ; <i>Equisetum palustre</i> ; <i>Corylus avellana</i> ; <i>Scrophularia auriculata</i> ; <i>Persicaria maculosa</i> ; <i>Persicaria hydropiper</i> ; <i>Juncus inflexus</i> ; <i>Ranunculus sceleratus</i> ; <i>Cornus sanguinea</i> ; <i>Epilobium ciliatum</i> ; <i>Prunus spinosa</i> ; <i>Crataegus monogyna</i> ; <i>Agrostis stolonifera</i> ; <i>Ranunculus repens</i> ; <i>Quercus robur</i> ; <i>Callitriche palustris</i> ; <i>Callitriche platycarpa</i> ; <i>Holcus lanatus</i> ; <i>Veronica beccabunga</i> ; <i>Urtica dioica</i> ; <i>Solanum dulcamara</i> ; <i>Lycopus europaeus</i> ; <i>Stachys sylvatica</i> ; <i>Epilobium hirsutum</i> ;		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	4.	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Yes SI	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Yes SI	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b> 	<b>Profile:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				

<b>Ditch / Pond ID</b>	TEP1333	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	9/07/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes	<b>Visit 2</b>		<b>Plants</b>	
<b>Photo:</b> No Image						<b>Invertebrates</b> <i>Pholidoptera griseoptera; Rhyzobius litura; Coccidula rufa; Tachyporus nitidulus; Neocrepidodera ferruginea; Amara aenea; ;</i>	
						<b>Protected / rare species noted?</b>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	Not Recorded	<b>Wetland Width (m)</b>	Not Recorded
<b>Grazed E/N</b>	Not Recorded	<b>Land Use E/N</b>	Not Recorded	<b>Shallows %</b>	Not Recorded	<b>Shallows Depth (cm)</b>	Not Recorded
<b>Grazed W/S</b>	Not Recorded	<b>Land Use W/S</b>	Not Recorded	<b>Lemna cover %</b>	Not Recorded	<b>Plants for Cocoons?</b>	Not Recorded
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	Not Recorded	<b>Phragmites Habitat Cover %</b>	Not Recorded
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	Not Recorded	<b>Dries / Reduces</b>	Not Recorded
<b>3-SSB</b>	N	<b>10-SSB</b>	N	<b>Other Fish</b>	N	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	N	<b>Other Molluscs</b>	N		
<b><i>H. piceus</i></b>	N	<b>GCN</b>	N	<b>S/P Newt</b>	N		



<b>Ditch / Pond ID</b>	TEP1338	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Angelica sylvestris</i> ; <i>Berula erecta</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Caltha palustris</i> ; <i>Carex riparia</i> ; <i>Chara vulgaris</i> ; <i>Eleocharis palustris</i> ; <i>Elodea nuttallii</i> ; <i>Filipendula ulmaria</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Glyceria notata</i> ; <i>Juncus articulatus</i> ; <i>Lemna gibba</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Lysimachia nummularia</i> ; <i>Lythrum salicaria</i> ; <i>Nasturtium officinale</i> ; <i>Phragmites australis</i> ; <i>Ranunculus repens</i> ; <i>Spirodela polyrhiza</i> ; <i>Veronica catenata</i>  <b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anax imperator</i> ; <i>Asellus aquaticus</i> ; <i>Chorthippus parallelus</i> ; <i>Chrysops relictus</i> ; <i>Cloeon dipterum</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus dorsalis</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Eristalis tenax</i> ; <i>Gammarus pulex</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus immaculatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Haliphus sibiricus</i> ; <i>Helophares lividus</i> ; <i>Helophorus brevipalpis</i> ; <i>Ilybius ater</i> ; <i>Ilybius fuliginosus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Maniola jurtina</i> ; <i>Omocestus viridulus</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Rhantus suturalis</i> ; <i>Sialis lutaria</i> ; <i>Stenus canaliculatus</i> ; <i>Sympetrum striolatum</i>			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.350 x 1.500	<b>Wetland Width (m)</b>	3.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	35		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	50	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	8.83	<b>Temp (°C)</b>	21	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	15		
<b>us/cm</b>	455	<b>ppm</b>	228	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	stepped		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				
						<b>Profile:</b> 			



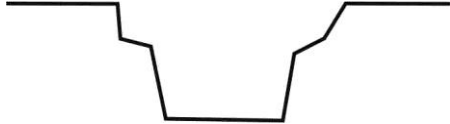
<b>Ditch / Pond ID</b>	TEP1348	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Carex otrubae</i> ; <i>Carex riparia</i> ; <i>Cornus sanguinea</i> ; <i>Corylus avellana</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum fluviatile</i> ; <i>Hedera helix</i> ; <i>Iris pseudacorus</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Quercus robur</i> ; <i>Ranunculus repens</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix caprea</i> ; <i>Salix euxina</i> ; <i>Salix x fragilis</i> sens. lat.	
<b>Photo:</b> 						<b>Protected / rare species noted?</b> Badger Evidence;	
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.5
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	100
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	50	<b>Dries / Reduces</b>	No
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>		<b>Profile:</b>	
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>			

<b>Ditch / Pond ID</b>	TEP1379	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	22/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Callitriche</i> sp.; <i>Elodea nuttallii</i> ; <i>Equisetum palustre</i> ; <i>Lemna minor</i> ; <i>Myriophyllum spicatum</i> ; <i>Oenanthe crocata</i> ; <i>Persicaria amphibia</i> ; <i>Phalaris arundinacea</i> ; <i>Phragmites australis</i> ; <i>Potamogeton pectinatus</i> ; <i>Spirodela polyrhiza</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Acanthosoma haemorrhoidale</i> ; <i>Agabus bipustulatus</i> ; <i>Anisus vortex</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Cataclysta lemnae</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Colymbetes fuscus</i> ; <i>Gammarus pulex</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus sibiricus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus planus</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Melanostoma scalare</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Oxyloma elegans</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pirata piraticus</i> ; <i>Pisidium pulchellum</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Sialis lutaria</i> ; <i>Sphaerium corneum</i> ; <i>Stenus ciciindeloides</i> ; <i>Valvata cristata</i> ; <i>Valvata piscinalis</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.7 x 2.700		<b>Wetland Width (m)</b>	3	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	100		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.3		<b>Temp (°C)</b>	19.2		<b>Phragmites Bank Cover %</b>	100		<b>Phragmites Habitat Cover %</b>	15	
<b>us/cm</b>	620		<b>ppm</b>	310		<b>Waterline Profile</b>	45°		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	Yes		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant						
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						




<b>Ditch / Pond ID</b>	TEP1382	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Arrhenatherum elatius</i> ; <i>Carex hirta</i> ; <i>Carex remota</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Holcus lanatus</i> ; <i>Juncus effusus</i> ; <i>Lemna minor</i> ; <i>Persicaria amphibia</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Salix euxina</i> ; <i>Sparganium erectum</i> ; <i>Urtica dioica</i>			
<b>Photo:</b>						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion illigeri</i> ; <i>Bembidion lunulatum</i> ; <i>Chrysops relictus</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Eristalis tenax</i> ; <i>Helophilus hybridus</i> ; <i>Helophilus pendulus</i> ; <i>Ischnura elegans</i> ; <i>Maniola jurtina</i> ; <i>Mocytta fungi</i> ; <i>Musculium lacustre</i> ; <i>Notonecta glauca</i> ; <i>Orthetrum cancellatum</i> ; <i>Pararge aegeria</i> ; <i>Paroligolophus agrestis</i> ; <i>Pelenomus quadrituberculatus</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris napi</i> ; <i>Planorbarius corneus</i> ; <i>Podura aquatica</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Stenodema laevigata</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Sympetrum striolatum</i> ; <i>Tachyporus nitidulus</i> ; <i>Trixagus obtusus</i> ; <i>Vanessa atalanta</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.150 x 3.000	<b>Wetland Width (m)</b>	3		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	15		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.8	<b>Temp (°C)</b>	15.2	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	404	<b>ppm</b>	205	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Silty	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				








<b>Ditch / Pond ID</b>	TEP1402	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Carex hirta</i> ; <i>Carex remota</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum fluviatile</i> ; <i>Galium aparine</i> ; <i>Glyceria fluitans</i> ; <i>Glyceria maxima</i> ; <i>Iris pseudacorus</i> ; <i>Lemna minor</i> ; <i>Malus sylvestris</i> ; <i>Phragmites australis</i> ; <i>Poa trivialis</i> ; <i>Prunus spinosa</i> ; <i>Quercus robur</i> ; <i>Spirodela polyrhiza</i> ; <i>Urtica dioica</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Acroloxus lacustris</i> ; <i>Aeshna cyanea</i> ; <i>Agabus sturmii</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Bembidion lunulatum</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus parallelus</i> ; <i>Chrysops relictus</i> ; <i>Coccidula rufa</i> ; <i>Crambus perlella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Forficula auricularia</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris lacustris</i> ; <i>Graptodytes pictus</i> ; <i>Gyrinus substriatus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydraena riparia</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hygrobia hermanni</i> ; <i>Lymnaea stagnalis</i> ; <i>Microvelia reticulata</i> ; <i>Musculium lacustre</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Ochlodes faunus</i> ; <i>Pachygnatha clercki</i> ; <i>Paederus fuscipes</i> ; <i>Paederus littoralis</i> ; <i>Paradromius linearis</i> ; <i>Peltodytes caesus</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhingia campestris</i> ; <i>Sphaerium corneum</i> ; <i>Stenus similis</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Sympetrum striolatum</i> ; <i>Tetragnatha montana</i> ; <i>Trichia hispida</i> ; <i>Zygaena trifolii</i>					
<b>Protected / rare species noted?</b>						<i>Peltodytes caesus</i>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.700 x 4.000		<b>Wetland Width (m)</b>	4	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Arable		<b>Shallows %</b>	30		<b>Shallows Depth (cm)</b>	30	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Arable		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	6.76		<b>Temp (°C)</b>	16.9		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	398		<b>ppm</b>	200		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100% on North		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes						



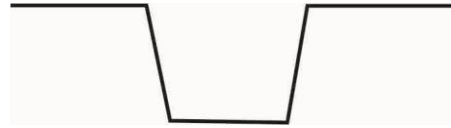
<b>Ditch / Pond ID</b>	TEP1410	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrimonia eupatoria</i> ; <i>Alisma plantago-aquatica</i> ; <i>Apium nodiflorum</i> ; <i>Callitriche brutia subsp. hamulata</i> ; <i>Carex otrubae</i> ; <i>Carex remota</i> ; <i>Carex riparia</i> ; <i>Ceratophyllum demersum</i> ; <i>Elodea nuttallii</i> ; <i>Elytrigia repens</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum palustre</i> ; <i>Filipendula ulmaria</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Juncus inflexus</i> ; <i>Lemna gibba</i> ; <i>Lemna minor</i> ; <i>Myriophyllum spicatum</i> ; <i>Nasturtium officinale</i> ; <i>Odontites vernus</i> ; <i>Oenanthe crocata</i> ; <i>Persicaria amphibia</i> ; <i>Persicaria maculosa</i> ; <i>Phragmites australis</i> ; <i>Potamogeton berchtoldii</i> ; <i>Potamogeton crispus</i> ; <i>Potamogeton pectinatus</i> ; <i>Potamogeton pusillus</i> ; <i>Pulicaria dysenterica</i> ; <i>Ranunculus repens</i> ; <i>Ranunculus sceleratus</i> ; <i>Salix cinerea</i> ; <i>Spirodela polyrhiza</i> ; <i>Urtica dioica</i> ; <i>Veronica beccabunga</i>			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.750 x 2.800	<b>Wetland Width (m)</b>	3.8		
<b>Grazed E/N</b>	Yes, Horse	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	5	<b>Shallows Depth (cm)</b>	30		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.87	<b>Temp (°C)</b>	20	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	643	<b>ppm</b>	318	<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>			
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				








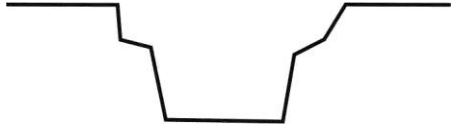
<b>Ditch / Pond ID</b>	TEP1420	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Angelica sylvestris</i> ; <i>Arrhenatherum elatius</i> ; <i>Berula erecta</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Dipsacus fullonum</i> ; <i>Elytrigia repens</i> ; <i>Epilobium hirsutum</i> ; <i>Heracleum sphondylium</i> ; <i>Holcus lanatus</i> ; <i>Iris pseudacorus</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Medicago lupulina</i> ; <i>Mentha aquatica</i> ; <i>Persicaria maculosa</i> ; <i>Phragmites australis</i> ; <i>Plantago major</i> ; <i>Salix euxina</i> ; <i>Typha latifolia</i> ; <i>Urtica dioica</i> ; <i>Vicia sepium</i>					
<b>Photo:</b>											
											
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.01 x 1.500		<b>Wetland Width (m)</b>	3.8	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Arable		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	1	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Arable		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	6.53		<b>Temp (°C)</b>	14.2		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	950		<b>ppm</b>	462		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	100		<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						

Ditch / Pond ID	TEP1426	Surveyor:	DB/PH	Date:	2/9/2013	Initial assessment/species list including flora within the wetland area		
Survey Type	Visual	Visit One	Yes			Plants: <i>Lemna minor</i>		
Photo:								
								
Protected / rare species noted?								
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)		
Grazed E/N	No	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	No	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	45°	Waterline Profile	45°	
Ditch Cleaned Out?	No	Ditch Undisturbed?	No	Tree/Shrub Shade %	100	Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Notes:  Suitable for <i>Hydrochara caraboides</i> :  <b>X</b>	Profile: 	
Invert Predators		Small Ramshorns		Other Molluscs				
<i>H. piceus</i>		GCN		S/P Newt				




Ditch / Pond ID		TEP1441	Surveyor:		DB/PH	Date:		3/9/2013	Initial assessment/species list including flora within the wetland area								
Survey Type		Visual	Visit One		Yes				Plants: <i>Agrostis stolonifera</i> ; <i>Carex riparia</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum arvense</i> ; <i>Galium palustre</i> ; <i>Glyceria maxima</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Rubus fruticosus</i> agg.; <i>Sparganium erectum</i> ; <i>Typha latifolia</i>								
Photo:									Incidental invertebrate records while netting for fish.								
																	
Protected / rare species noted?																	
Habitat Type		Ditch		Flow		No		Water Depth and Width (m x m)				Wetland Width (m)					
Grazed E/N		No		Land Use E/N		Arable		Shallows %				Shallows Depth (cm)					
Grazed W/S		No		Land Use W/S		Arable		Lemna cover %		100		Plants for Cocoons?		No			
pH		7.0		Temp (°C)		14.6		Phragmites Bank Cover %		100		Phragmites Habitat Cover %		100			
us/cm		804		ppm		402		Waterline Profile		Vertical		Waterline Profile		Vertical			
Ditch Cleaned Out?		No		Ditch Undisturbed?		Yes		Tree/Shrub Shade %		0		Dries / Reduces		No			
3-SSB		No		10-SSB		Yes		Other Fish		No		Notes:		Suitable for <i>Hydrochara caraboides</i> :  		Profile: 	
Invert Predators		No		Small Ramshorns		Absent		Other Molluscs		Absent							
<i>H. piceus</i>		No		GCN		No		S/P Newt		No							




<b>Ditch / Pond ID</b>	TEP1447	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	3/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Arrhenatherum elatius</i> ; <i>Carex riparia</i> ; <i>Lemna minor</i> ; <i>Persicaria maculosa</i> ; <i>Phragmites australis</i> ; <i>Rubus fruticosus</i> agg.; <i>Urtica dioica</i>			
<b>Photo:</b> 						<b>Invertebrates</b> <i>Acilius sulcatus</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Agonum thoreyi</i> ; <i>Anacaena limbata</i> ; <i>Aphantopus hyperantus</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Beris vallata</i> ; <i>Bombus lucorum</i> ; <i>Bombus pascuorum</i> ; <i>Bombus pratorum</i> ; <i>Chorthippus parallelus</i> ; <i>Chrysops relictus</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Forficula auricularia</i> ; <i>Gastrophysa viridula</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Ilybius quadriguttatus</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Lygocoris pabulinus</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Nabis rugosus</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Oedemera nobilis</i> ; <i>Oligolophus tridens</i> ; <i>Orthocephalus saltator</i> ; <i>Pachygnatha clercki</i> ; <i>Pararge aegeria</i> ; <i>Paroligolophus agrestis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Planorbis planorbis</i> ; <i>Platycheirus granditarsus</i> ; <i>Podura aquatica</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhagonycha fulva</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema laevigata</i> ; <i>Stenus fulvicornis</i> ; <i>Stenus ossium</i> ; <i>Stenus solutus</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Syrirta pipiens</i> ; <i>Velia caprai</i> ; <i>Vittrina pellucida</i> ; <i>Xylota segnis</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.600 x 1.500	<b>Wetland Width (m)</b>	6.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	No	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.98	<b>Temp (°C)</b>	14	<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	100		
<b>us/cm</b>	751	<b>ppm</b>	378	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Occasional				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			

<b>Ditch / Pond ID</b>	TEP1471	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Alisma plantago-aquatica</i> ; <i>Berula erecta</i> ; <i>Ceratophyllum demersum</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Elytrigia repens</i> ; <i>Equisetum palustre</i> ; <i>Glyceria fluitans</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Potamogeton berchtoldii</i> ; <i>Potamogeton crispus</i> ; <i>Potamogeton pectinatus</i> ; <i>Potamogeton pusillus</i> ; <i>Ranunculus circinatus</i> ; <i>Ranunculus repens</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrhiza</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Athripsodes aterrimus</i> ; <i>Autographa gamma</i> ; <i>Beris vallata</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Bombus lucorum</i> ; <i>Bombus pascuorum</i> ; <i>Brachytron pratense</i> ; <i>Cataclysta lemnata</i> ; <i>Chloromyia formosa</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus dorsalis</i> ; <i>Crambus perlella</i> ; <i>Dryops luridus</i> ; <i>Gammarus pulex</i> ; <i>Gastrophysa viridula</i> ; <i>Graptodytes pictus</i> ; <i>Gyraulus albus</i> ; <i>Gyraulus crista</i> ; <i>Gyrinus substriatus</i> ; <i>Haematopota pluvialis</i> ; <i>Haliphus lineolatus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydrophilus piceus</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Inachis io</i> ; <i>Ischnura elegans</i> ; <i>Laccophilus hyalinus</i> ; <i>Libellula depressa</i> ; <i>Limnephilus lunatus</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Microchrysa flavicornis</i> ; <i>Microvelia reticulata</i> ; <i>Musculium lacustre</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Oligolophus tridens</i> ; <i>Omocestus viridulus</i> ; <i>Oplodontha viridula</i> ; <i>Parasyrphus punctulatus</i> ; <i>Philaenus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Pisidium nitidum</i> ; <i>Planorbarius comeus</i> ; <i>Planorbis planorbis</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Rhyzobius litura</i> ; <i>Rivula sericealis</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Tetragnatha extensa</i> ; <i>Tetrix undulata</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i> ; <i>Tipula luteipennis</i> ; <i>Valvata cristata</i> ; <i>Xylota segnis</i>					
						<b>Protected / rare species noted?</b>		<i>Hydrophilus piceus</i> ;			
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.900 x 2.800		<b>Wetland Width (m)</b>	4.3	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	8.87		<b>Temp (°C)</b>	20.1		<b>Phragmites Bank Cover %</b>	100		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	352		<b>ppm</b>	176		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant						
<b><i>H. piceus</i></b>	Yes	<b>GCN</b>	No	<b>S/P Newt</b>	No						




<b>Ditch / Pond ID</b>	TEP1491	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrimonia eupatoria; Alisma plantago-aquatica; Eleocharis palustris; Elodea nuttallii; Equisetum arvense; Galium aparine; Galium palustre; Glyceria fluitans; Lemna minor; Lemna trisulca; Myriophyllum spicatum; Phragmites australis; Potamogeton berchtoldii; Potamogeton crispus; Potamogeton pectinatus; Ranunculus circinatus; Ranunculus repens; Solanum dulcamara; Spirodela polyrhiza; Zanicellia palustris</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus; Aglais urticae; Anacaena limbata; Anax imperator; Anisus vortex; Asellus aquaticus; Bathyomphalus contortus; Bithynia leachii; Bithynia tentaculata; Chorthippus brunneus; Chorthippus parallelus; Coccinella septempunctata; Coenagrion puella; Colymbetes fuscus; Crambus perlella; Enochrus testaceus; Gammarus pulex; Graptodytes pictus; Gyraulus albus; Gyraulus crista; Halipilus lineatocollis; Hippeutis complanatus; Hydrophilus piceus; Hydroporus angustatus; Hydroporus palustris; Hyphydrus ovatus; Ilyocoris cimicoides; Ischnura elegans; Laccophilus minutus; Lygocoris pabulinus; Lymnaea stagnalis; Maniola jurtina; Microvelia reticulata; Musculium lacustre; Noterus clavicornis; Notonecta glauca; Notostira elongata; Omocestus viridulus; Phalacrocer replicata; Philaenus spumarius; Pholidoptera griseoaptera; Physa fontinalis; Planorbis planorbis; Planorbis planorbis; Potamopyrgus antipodarum; Propylea quattuordecimpunctata; Psyllobora vigintiduopunctata; Sigara dorsalis; Sphaerium corneum; Stenodema laevigata; Tabanus bromius; Tetragnatha extensa; Tipula fulvipennis; Valvata cristata; Valvata piscinalis</i>			
						<b>Protected / rare species noted?</b>		<i>Phalacrocer replicata; Hydrophilus piceus;</i>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.75 x 3.0	<b>Wetland Width (m)</b>	3.5		
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	5	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	8.25	<b>Temp (°C)</b>	20	<b>Phragmites Bank Cover %</b>	5	<b>Phragmites Habitat Cover %</b>	5		
<b>us/cm</b>	489	<b>ppm</b>	247	<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Stepped		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  		
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant	<b>Profile:</b> 			
<b>H. piceus</b>	Yes	<b>GCN</b>		<b>S/P Newt</b>					







<b>Ditch / Pond ID</b>	TEP1525	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Berula erecta</i> ; <i>Carex remota</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum fluviale</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Glyceria maxima</i> ; <i>Hedera helix</i> ; <i>Juncus effusus</i> ; <i>Lemna minor</i> ; <i>Lycopus europaeus</i> ; <i>Myosotis laxa</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Ranunculus repens</i> ; <i>Rubus fruticosus</i> agg.; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrhiza</i>		
<b>Photo:</b>								
								
<b>Protected / rare species noted?</b>								
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.1 x 3.4	<b>Wetland Width (m)</b>	3.4	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	10	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Stepped	<b>Waterline Profile</b>	Stepped	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	No	<b>Other Molluscs</b>	No			
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			




<b>Ditch / Pond ID</b>	TEP1586	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Carex remota</i> ; <i>Crataegus monogyna</i> ; <i>Hedera helix</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Phragmites australis</i> ; <i>Rubus fruticosus</i> agg.; <i>Sambucus nigra</i> ; <i>Urtica dioica</i>			
<b>Photo:</b>									
									
						<b>Protected / rare species noted?</b>		<i>Hydrocharis morsus-ranae</i>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.50 x 2.500	<b>Wetland Width (m)</b>	2.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	45° And Vert	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> Suitable for <i>Hydrochara caraboides</i> : 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b>			



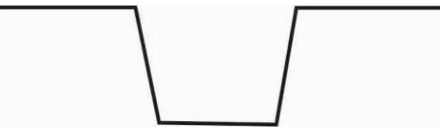




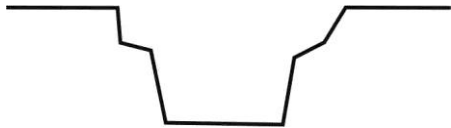
<b>Ditch / Pond ID</b>	TEP1606	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Carex riparia</i> ; <i>Eleocharis palustris</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Equisetum fluviatile</i> ; <i>Groenlandia densa</i> ; <i>Lemna minor</i> ; <i>Myriophyllum spicatum</i> ; <i>Persicaria amphibia</i> ; <i>Persicaria maculosa</i> ; <i>Phragmites australis</i> ; <i>Potamogeton berchtoldii</i> ; <i>Potamogeton pectinatus</i> ; <i>Potamogeton pusillus</i> ; <i>Ranunculus circinatus</i> ; <i>Ranunculus repens</i> ; <i>Rumex crispus</i> ; <i>Spirodela polyrhiza</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Aeshna grandis</i> ; <i>Agabus bipustulatus</i> ; <i>Anacaena limbata</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymophalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Cantharis livida</i> ; <i>Cassida viridis</i> ; <i>Cataclysta lemnata</i> ; <i>Chloromyia formosa</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus dorsalis</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gerris odontogaster</i> ; <i>Graptodytes pictus</i> ; <i>Gyraulus crista</i> ; <i>Gyrinus substriatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus sibiricus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hydroporus palustris</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccophilus hyalinus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Microchrysa flavicornis</i> ; <i>Microvelia reticulata</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Philaenus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Pisidium nitidum</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Succinea putris</i> ; <i>Sympetrum striolatum</i> ; <i>Tabanus autumnalis</i> ; <i>Tabanus bromius</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i> ; <i>Tipula luteipennis</i> ; <i>Trichia hispida</i> ; <i>Valvata piscinalis</i>					
<b>Protected / rare species noted?</b>						<i>Groenlandia densa</i>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.900 x 3.000		<b>Wetland Width (m)</b>	4	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	0		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	8.5		<b>Temp (°C)</b>	18.7		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	750		<b>ppm</b>	375		<b>Waterline Profile</b>	stepped		<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	Stone Loach	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						

<b>Ditch / Pond ID</b>	TEP1647	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Asplenium scolopendrium</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Fraxinus excelsior</i> ; <i>Hedera helix</i> ; <i>Lemna minor</i> ; <i>Lycopus europaeus</i> ; <i>Prunus spinosa</i> ; <i>Ranunculus repens</i> ; <i>Rubus fruticosus</i> agg.; <i>Urtica dioica</i>				
<b>Photo:</b> 										
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.250 x 1.400		<b>Wetland Width (m)</b>	2.8
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	25
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	95		<b>Plants for Cocoons?</b>	No
<b>pH</b>			<b>Temp (°C)</b>			<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>			<b>ppm</b>			<b>Waterline Profile</b>	45°		<b>Waterline Profile</b>	45°
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100		<b>Dries / Reduces</b>	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	n	<b>Notes:</b>	Suitable for <i>Hydrochara caraboides</i> :  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent					
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					




<b>Ditch / Pond ID</b>	TEP1674	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	2/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants</b> <i>Apium nodiflorum</i> ; <i>Arum maculatum</i> ; <i>Crataegus monogyna</i> ; <i>Filipendula ulmaria</i> ; <i>Fraxinus excelsior</i> ; <i>Hedera helix</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lysimachia nummularia</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Rubus fruticosus</i> agg.					
<b>Photo:</b>						<b>Invertebrates:</b> <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Anthophila fabriciana</i> ; <i>Asellus aquaticus</i> ; <i>Cantharis paludosa</i> ; <i>Cataclysta lemnata</i> ; <i>Chloromyia formosa</i> ; <i>Chorthippus parallelus</i> ; <i>Cicadella viridis</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Crambus perlella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Episyrphus balteatus</i> ; <i>Euthrix potatoria</i> ; <i>Forficula lesnei</i> ; <i>Galerucella sagittariae</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris lacustris</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Ilybius ater</i> ; <i>Ischnura elegans</i> ; <i>Limnephilus lunatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Maniola jurtina</i> ; <i>Megasternum concinnum</i> ; <i>Melanargia galathea</i> ; <i>Microchrysa flavicornis</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Notostira elongata</i> ; <i>Oedemera nobilis</i> ; <i>Orthocephalus saltator</i> ; <i>Oulema obscura</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Philaenus spumarius</i> ; <i>Phyllobius viridiaeris</i> ; <i>Pieris brassicae</i> ; <i>Pirata piraticus</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Stenus tarsalis</i> ; <i>Tetragnatha extensa</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.280 x 2.200		<b>Wetland Width (m)</b>	2.2	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	28	
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>			<b>Plants for Cocoons?</b>	No	
<b>pH</b>	7.01		<b>Temp (°C)</b>	12.1		<b>Phragmites Bank Cover %</b>			<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>	714		<b>ppm</b>	254		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	100		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						



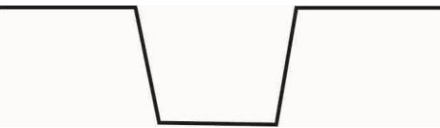
<b>Ditch / Pond ID</b>	TEP1921	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Berula erecta</i> ; <i>Calystegia sepium</i> ; <i>Carex flacca</i> ; <i>Cirsium arvense</i> ; <i>Cirsium palustre</i> ; <i>Crataegus monogyna</i> ; <i>Glyceria fluitans</i> ; <i>Hedera helix</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lemna minuta</i> ; <i>Lotus pedunculatus</i> ; <i>Lycopus europaeus</i> ; <i>Lysimachia nummularia</i> ; <i>Nasturtium officinale</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Ranunculus repens</i> ; <i>Ranunculus sceleratus</i> ; <i>Rubus fruticosus</i> agg.; <i>Urtica dioica</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anisus vortex</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Bathyomphalus contortus</i> ; <i>Bembidion lunulatum</i> ; <i>Beris vallata</i> ; <i>Bombus pascuorum</i> ; <i>Bombus terrestris</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Episyrphus balteatus</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris lacustris</i> ; <i>Gerris thoracicus</i> ; <i>Gyrinus substriatus</i> ; <i>Haematopota pluvialis</i> ; <i>Haliplus immaculatus</i> ; <i>Haliplus lineatocollis</i> ; <i>Haliplus lineolatus</i> ; <i>Haliplus ruficollis</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Helophorus minutus</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydrothassa marginella</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnura elegans</i> ; <i>Labia minor</i> ; <i>Laccobius bipunctatus</i> ; <i>Limnephilus lunatus</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Notostira elongata</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Philonthus marginatus</i> ; <i>Philoscia muscorum</i> ; <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Scirtes hemisphaericus</i> ; <i>Serratella ignita</i> ; <i>Sigara limitata</i> ; <i>Sitona lineatus</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Stenus clavicornis</i> ; <i>Tachyporus dispar</i> ; <i>Tipula paludosa</i> ; <i>Valvata cristata</i> ; <i>Velia caprai</i>		
<b>Protected / rare species noted?</b>								
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.250 x 1.500	<b>Wetland Width (m)</b>	2.5	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	75	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.61	<b>Temp (°C)</b>	15	<b>Phragmites Bank Cover %</b>	75	<b>Phragmites Habitat Cover %</b>	50	
<b>us/cm</b>	576	<b>ppm</b>	287	<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% on Sth	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			
<b>Profile:</b>								

<b>Ditch / Pond ID</b>	TEP1927	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Glyceria maxima</i> ; <i>Hedera helix</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix euxina</i> ; <i>Solanum dulcamara</i>				
<b>Photo:</b>										
										
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.050 x 1.400		<b>Wetland Width (m)</b>	1.4
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Yes SI		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	5
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Yes SI		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No
<b>pH</b>			<b>Temp (°C)</b>			<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>			<b>ppm</b>			<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100		<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Silty and vegetated	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	No	<b>Other Molluscs</b>	No					
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					




<b>Ditch / Pond ID</b>	TEP1969	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Arum maculatum</i> ; <i>Hedera helix</i> ; <i>Lemna minor</i> ; <i>Phragmites australis</i> ; <i>Rosa canina</i> ; <i>Salix cinerea</i> ; <i>Torilis japonica</i> ; <i>Urtica dioica</i>			
<b>Photo:</b> 						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.200 X 1.600	<b>Wetland Width (m)</b>	1.8		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	20		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Hawthorn covered	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>					
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>					









<b>Ditch / Pond ID</b>	TEP1977	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Calystegia sepium</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Fraxinus excelsior</i> ; <i>Hedera helix</i> ; <i>Juncus effusus</i> ; <i>Lemna minor</i> ; <i>Persicaria maculosa</i> ; <i>Phalaris arundinacea</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Salix cinerea</i> ; <i>Solanum dulcamara</i> ; <i>Stachys sylvatica</i> ; <i>Typha latifolia</i> ; <i>Urtica dioica</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Anacaena globulus</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bembidion guttula</i> ; <i>Coccidula rufa</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Forficula auricularia</i> ; <i>Gastrophysa viridula</i> ; <i>Hydrobius fuscipes</i> ; <i>Notostira elongata</i> ; <i>Paradromius linearis</i> ; <i>Pieris brassicae</i> ; <i>Planorbis planorbis</i> ; <i>Sympetrum striolatum</i> ; <i>Vanessa cardui</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.05 x 0.600	<b>Wetland Width (m)</b>	1		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	5		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.1	<b>Temp (°C)</b>	14	<b>Phragmites Bank Cover %</b>	50	<b>Phragmites Habitat Cover %</b>	25		
<b>us/cm</b>	555	<b>ppm</b>	275	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% to west	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>	<b>Profile:</b>	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Rare				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				




Ditch / Pond ID	TEP2069	Surveyor:	DB/PH	Date:	29/8/2013	Initial assessment/species list including flora within the wetland area	
Survey Type	Visual	Visit One	Yes			Plants:	
Photo:							
							
Protected / rare species noted?							
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)	1
Grazed E/N	No	Land Use E/N	Arable	Shallows %		Shallows Depth (cm)	
Grazed W/S	No	Land Use W/S	Arable	Lemna cover %		Plants for Cocoons?	
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %	
us/cm		ppm		Waterline Profile	Vertical	Waterline Profile	Vertical
Ditch Cleaned Out?	No	Ditch Undisturbed?	Yes	Tree/Shrub Shade %	100	Dries / Reduces	Yes
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> :  
Invert Predators		Small Ramshorns		Other Molluscs			
<i>H. piceus</i>		GCN		S/P Newt			
Profile:							








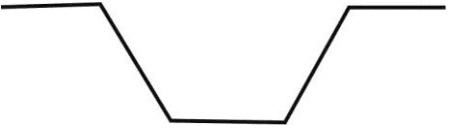
<b>Ditch / Pond ID</b>	TEP2086	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Arrhenatherum elatius</i> ; <i>Arum maculatum</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum arvense</i> ; <i>Fraxinus excelsior</i> ; <i>Heracleum sphondylium</i> ; <i>Juncus effusus</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Salix cinerea</i> ; <i>Solanum dulcamara</i> ; <i>Stachys sylvatica</i> ; <i>Urtica dioica</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	0.9	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Arable	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% to East	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		

<b>Ditch / Pond ID</b>	TEP2116	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Carex otrubae</i> ; <i>Carex riparia</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Hedera helix</i> ; <i>Holcus lanatus</i> ; <i>Ranunculus repens</i> ; <i>Rubus fruticosus</i> agg.; <i>Sambucus nigra</i> ; <i>Solanum dulcamara</i> ; <i>Urtica dioica</i>		
<b>Photo:</b> 								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.4	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				




<b>Ditch / Pond ID</b>	TEP2118	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Angelica sylvestris</i> ; <i>Calystegia sepium</i> ; <i>Carex riparia</i> ; <i>Ceratophyllum demersum</i> ; <i>Dipsacus fullonum</i> ; <i>Epilobium hirsutum</i> ; <i>Filipendula ulmaria</i> ; <i>Hedera helix</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Juncus effusus</i> ; <i>Lamium album</i> ; <i>Lamium purpureum</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Persicaria amphibia</i> ; <i>Scutellaria galericulata</i> ; <i>Spirodela polyrrhiza</i> ; <i>Stachys palustris</i> ; <i>Urtica dioica</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmi</i> ; <i>Anacaena globulus</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Ashfordia granulata</i> ; <i>Bathymophalus contortus</i> ; <i>Bembidion lunulatum</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus pascuorum</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Colymbetes fuscus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Galerucella sagittariae</i> ; <i>Gastrophysa viridula</i> ; <i>Halipus lineatocollis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccophilus minutus</i> ; <i>Lymnaea stagnalis</i> ; <i>Monacha cantiana</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Oulema obscura</i> ; <i>Oulema rufocyanea</i> ; <i>Paradromius linearis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Planorbis planorbis</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Rhyzobius litura</i> ; <i>Sialis lutaria</i> ; <i>Subcoccinella vigintiquatuor punctata</i> ; <i>Tetrix subulata</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i> ; <i>Tipula luteipennis</i> ; <i>Vespa vulgaris</i>		
						<b>Protected / rare species noted?</b>		<i>Hydrocharis morsus-ranae</i>
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.700 x 2.000	<b>Wetland Width (m)</b>	2	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	80	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.09	<b>Temp (°C)</b>	16.9	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	644	<b>ppm</b>	310	<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Frequent	<b>Profile:</b> 		
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes			




<b>Ditch / Pond ID</b>	TEP2119	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Berula erecta</i> ; <i>Carex hirta</i> ; <i>Carex riparia</i> ; <i>Dipsacus fullonum</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum fluviatile</i> ; <i>Filipendula ulmaria</i> ; <i>Galium palustre</i> ; <i>Hedera helix</i> ; <i>Iris pseudacorus</i> ; <i>Juncus acutiflorus</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Mentha aquatica</i> ; <i>Persicaria amphibia</i> ; <i>Solanum dulcamara</i> ; <i>Stachys palustris</i>		
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.600 x 3.000	<b>Wetland Width (m)</b>	3	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Vegetated base	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		

<b>Ditch / Pond ID</b>	TEP2128	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Berula erecta</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Carex otrubae</i> ; <i>Carex riparia</i> ; <i>Ceratophyllum demersum</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum fluviatile</i> ; <i>Equisetum palustre</i> ; <i>Galium palustre</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Phalaris arundinacea</i> ; <i>Phragmites australis</i> ; <i>Potamogeton berchtoldii</i> ; <i>Potamogeton pectinatus</i> ; <i>Potentilla anserina</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrrhiza</i> ; <i>Urtica dioica</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena limbata</i> ; <i>Anisosticta novemdecimpunctata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Brachytron pratense</i> ; <i>Cataclysta lemnata</i> ; <i>Chorthippus parallelus</i> ; <i>Cicadella viridis</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Colymbetes fuscus</i> ; <i>Conocephalus discolor</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enochrus testaceus</i> ; <i>Gerris lacustris</i> ; <i>Haematopota pluvialis</i> ; <i>Haliplus immaculatus</i> ; <i>Haliplus lineolatus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Ischnura elegans</i> ; <i>Laccophilus minutus</i> ; <i>Lestes sponsa</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Musculium lacustre</i> ; <i>Nabis rugosus</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Omocestus viridulus</i> ; <i>Oxyloma elegans</i> ; <i>Paroligolophus agrestis</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pirata piraticus</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> ; <i>Rivula sericealis</i> ; <i>Scathophaga stercoraria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema laevigata</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i> ; <i>Xylota segnis</i>		
<b>Protected / rare species noted?</b>						<i>Hydrocharis morsus-ranae</i>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.700 x 2.000	<b>Wetland Width (m)</b>	4	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	5	<b>Shallows Depth (cm)</b>	25	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	80	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.73	<b>Temp (°C)</b>	19.4	<b>Phragmites Bank Cover %</b>	25	<b>Phragmites Habitat Cover %</b>	25	
<b>us/cm</b>	481	<b>ppm</b>	235	<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b> 	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes			
						<b>Profile:</b> 		



<b>Ditch / Pond ID</b>	TEP2137	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Callitriche palustris</i> ; <i>Callitriche platycarpa</i> ; <i>Carex otrubae</i> ; <i>Carex riparia</i> ; <i>Elodea nuttallii</i> ; <i>Equisetum fluviale</i> ; <i>Groenlandia densa</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Juncus inflexus</i> ; <i>Lemna trisulca</i> ; <i>Mentha aquatica</i> ; <i>Nasturtium officinale</i> ; <i>Oenanthe fistulosa</i> ; <i>Phragmites australis</i> ; <i>Potamogeton crispus</i> ; <i>Potamogeton pectinatus</i> ; <i>Potentilla anserina</i> ; <i>Scutellaria galericulata</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrrhiza</i> ; <i>Urtica dioica</i> ; <i>Veronica catenata</i>  <b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Beris vallata</i> ; <i>Bithynia tentaculata</i> ; <i>Chloromyia formosa</i> ; <i>Chrysops relictus</i> ; <i>Cicadella viridis</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus dorsalis</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gerris lacustris</i> ; <i>Haematopota pluvialis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Ilybius ater</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Musculium lacustre</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Phaedon armoraciae</i> ; <i>Philaenus spumarius</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Rhantus suturalis</i> ; <i>Scathophaga stercoraria</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Succinea putris</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i>					
<b>Photo:</b> 						<b>Protected / rare species noted?</b>		<i>Groenlandia densa</i> ; <i>Hydrocharis morsus-ranae</i>			
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.35 x 1.000		<b>Wetland Width (m)</b>	3	
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	35	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	5.58		<b>Temp (°C)</b>	15.4		<b>Phragmites Bank Cover %</b>	100		<b>Phragmites Habitat Cover %</b>	50	
<b>us/cm</b>	524		<b>ppm</b>	263		<b>Waterline Profile</b>	60°		<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						



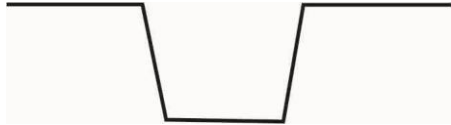





<b>Ditch / Pond ID</b>	TEP2139	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	29/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Callitriche agg.</i> ; <i>Ceratophyllum demersum</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Equisetum fluviatile</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Oenanthe crocata</i> ; <i>Phragmites australis</i> ; <i>Potamogeton pectinatus</i> ; <i>Pulicaria dysenterica</i> ; <i>Sagittaria sagittifolia</i> ; <i>Spirodela polyrhiza</i>	
<b>Photo:</b> 							
						<b>Protected / rare species noted?</b> <i>Hydrocharis morsus-ranae</i> ; <i>Oenanthe fistulosa</i> ; <i>Groenlandia densa</i>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.45 x 2.000	<b>Wetland Width (m)</b>	2.5
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Yes SI	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	80	<b>Plants for Cocoons?</b>	Yes
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant		
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No		
						<b>Profile:</b> 	




<b>Ditch / Pond ID</b>	TEP2197	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants</b> <i>Apium nodiflorum</i> ; <i>Asplenium scolopendrium</i> ; <i>Berula erecta</i> ; <i>Carex remota</i> ; <i>Elodea nuttallii</i> ; <i>Filipendula ulmaria</i> ; <i>Glyceria fluitans</i> ; <i>Hedera helix</i> ; <i>Holcus lanatus</i> ; <i>Lemna minor</i> ; <i>Myosotis scorpioides</i> ; <i>Persicaria maculosa</i> ; <i>Phragmites australis</i> ; <i>Rumex hydrolapathum</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Spirodela polyrrhiza</i> ; <i>Urtica dioica</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Anacaena globulus</i> ; <i>Anisus vortex</i> ; <i>Aplexa hypnorum</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bembidion lunulatum</i> ; <i>Bithynia tentaculata</i> ; <i>Cartodere nodifer</i> ; <i>Chorthippus brunneus</i> ; <i>Coccidula rufa</i> ; <i>Elmis aenea</i> ; <i>Forficula auricularia</i> ; <i>Gammarus pulex</i> ; <i>Gerris lacustris</i> ; <i>Gyrinus substriatus</i> ; <i>Haliphus lineatocollis</i> ; <i>Helophorus brevipalpis</i> ; <i>Hydroporus pubescens</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Leiobunum rotundum</i> ; <i>Limnephilus lunatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Musculium lacustre</i> ; <i>Nebrioporus elegans</i> ; <i>Noterus clavicornis</i> ; <i>Notostira elongata</i> ; <i>Oniscus asellus</i> ; <i>Orthops campestris</i> ; <i>Oxyloma elegans</i> ; <i>Pachygnatha clercki</i> ; <i>Pararge aegeria</i> ; <i>Phaedon tumidulus</i> ; <i>Phalacrocer replicata</i> ; <i>Philoscia muscorum</i> ; <i>Pholidoptera griseoptera</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Pisaura mirabilis</i> ; <i>Pisidium nitidum</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema laevigata</i> ; <i>Subcoccinella vigintiquatuor punctata</i> ; <i>Tipula flavolineata</i> ; <i>Tipula fulvipennis</i> ; <i>Tipula luteipennis</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Stream		<b>Flow</b>	Yes		<b>Water Depth and Width (m x m)</b>	0.200 x 2.000		<b>Wetland Width (m)</b>	2.4	
<b>Grazed E/N</b>	Yes, Sheep		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	20	
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	No		<b>Lemna cover %</b>	50		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	6.26		<b>Temp (°C)</b>	17.2		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	601		<b>ppm</b>	300		<b>Waterline Profile</b>	45°		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	100% to South		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	Stone Loach	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No						









Ditch / Pond ID		TEP2203		Surveyor:		Ph/db		Date:		30/8/2013		Initial assessment/species list including flora within the wetland area					
Survey Type		Visual		Visit One		Yes		Visit 2									
Photo: No Image																	
												Plants					
												Invertebrates					
												Protected / rare species noted?					
Habitat Type		Ditch		Flow		No		Water Depth and Width (m x m)		0.4x2.00		Wetland Width (m)		2.00			
Grazed E/N		Yes		Land Use E/N		Grazing		Shallows %		25%		Shallows Depth (cm)		N			
Grazed W/S		Yes		Land Use W/S		Grazing		Lemna cover %		N		Plants for Cocoons?		N			
pH		Not Recorded		Temp (°C)		Not Recorded		Phragmites Bank Cover %		N		Phragmites Habitat Cover %		N			
us/cm		Not Recorded		ppm		Not Recorded		Waterline Profile		Vertical		Waterline Profile		Poached			
Ditch Cleaned Out?		Yes		Ditch Undisturbed?		No		Tree/Shrub Shade %		No		Dries / Reduces		No			
3-SSB		Yes		10-SSB		N		Other Fish		N		Notes:		Suitable for <i>Hydrochara caraboides</i> :  		Profile: 	
Invert Predators		No		Small Ramshorns		Yes		Other Molluscs		Yes							
<i>H. piceus</i>		N		GCN		N		S/P Newt		N							

<b>Ditch / Pond ID</b>	TEP2208	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Carex otrubae</i> ; <i>Ceratophyllum demersum</i> ; <i>Filipendula ulmaria</i> ; <i>Galium aparine</i> ; <i>Galium palustre</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Iris pseudacorus</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Lotus pedunculatus</i> ; <i>Oenanthe crocata</i> ; <i>Oenanthe fistulosa</i> ; <i>Persicaria amphibia</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Rosa canina</i> ; <i>Rubus fruticosus</i> agg.; <i>Rumex hydrolapathum</i> ; <i>Salix</i> sp.; <i>Sambucus nigra</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Urtica dioica</i> ; <i>Veronica catenata</i> ; <i>Viburnum opulus</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Anthophila fabriciana</i> ; <i>Apion cruentatum</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Ashfordia granulata</i> ; <i>Bembidion guttula</i> ; <i>Bembidion lunulatum</i> ; <i>Beris vallata</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lucorum</i> ; <i>Bombus terrestris</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Chrysops relictus</i> ; <i>Coccidula rufa</i> ; <i>Coccinella septempunctata</i> ; <i>Cochlicopa lubrica</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Episyrphus balteatus</i> ; <i>Eupeodes corollae</i> ; <i>Forficula auricularia</i> ; <i>Gyrinus substriatus</i> ; <i>Haematopota pluvialis</i> ; <i>Haliplus lineatocollis</i> ; <i>Helophilus pendulus</i> ; <i>Helophilus trivittatus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydraena riparia</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Ilybius quadriguttatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Maniola jurtina</i> ; <i>Melanostoma scalare</i> ; <i>Microvelia reticulata</i> ; <i>Monacha cantiana</i> ; <i>Notaris acridulus</i> ; <i>Oedemera nobilis</i> ; <i>Paederus fuscipes</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Pirata piraticus</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbarius comeus</i> ; <i>Planorbis planorbis</i> ; <i>Platyptilia pallidactyla</i> ; <i>Podura aquatica</i> ; <i>Psyllobora vigintiduopunctata</i> ; <i>Pterostichus strenuus</i> ; <i>Quedius curtipennis</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Rhingia campestris</i> ; <i>Scirtes hemisphaericus</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Stenus junco</i> ; <i>Syrphus vitripennis</i> ; <i>Vertigo pygmaea</i> ; <i>Xylota segnis</i>			
						<b>Protected / rare species noted?</b>			<i>Hydrocharis morsus-ranae</i> ; <i>Oenanthe fistulosa</i>
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.500 x 1.400	<b>Wetland Width (m)</b>	6.8		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Yes, Rush Pasture	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>			
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Yes, Rush Pasture	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.06	<b>Temp (°C)</b>	15	<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	100		
<b>us/cm</b>	472	<b>ppm</b>	231	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			




<b>Ditch / Pond ID</b>	TEP2218	<b>Surveyor:</b>	PH/DB	<b>Date:</b>	19/7/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes	<b>Visit 2</b>		<b>Plants</b>		
<b>Photo:</b> 						<b>Invertebrates</b>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	Not Recorded	<b>Wetland Width (m)</b>	Not Recorded	
<b>Grazed E/N</b>	Yes	<b>Land Use E/N</b>	Grazing	<b>Shallows %</b>	Not Recorded	<b>Shallows Depth (cm)</b>	Not Recorded	
<b>Grazed W/S</b>	Yes	<b>Land Use W/S</b>	Grazing	<b>Lemna cover %</b>	N	<b>Plants for Cocoons?</b>	N	
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	N	<b>Phragmites Habitat Cover %</b>	N	
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	45° and vertical	<b>Waterline Profile</b>	45° and vertical	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	No	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>		<b>10-SSB</b>	N	<b>Other Fish</b>	N	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	N	<b>Other Molluscs</b>	N			
<b><i>H. piceus</i></b>	N	<b>GCN</b>	N	<b>S/P Newt</b>	N			



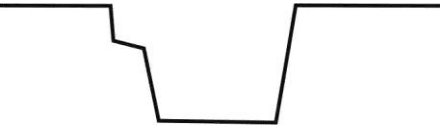
<b>Ditch / Pond ID</b>	TEP2223	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants</b> <i>Angelica sylvestris</i> ; <i>Filipendula ulmaria</i> ; <i>Glyceria maxima</i> ; <i>Hydrocharis morsus-ranae</i> ; <i>Iris pseudacorus</i> ; <i>Lemna minor</i> ; <i>Lemna trisulca</i> ; <i>Phragmites australis</i> ; <i>Spirodela polyrhiza</i> ; <i>Urtica dioica</i>				
<b>Photo:</b>										
										
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.400 x 2.000		<b>Wetland Width (m)</b>	2
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	25		<b>Shallows Depth (cm)</b>	40
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No
<b>pH</b>			<b>Temp (°C)</b>			<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>			<b>ppm</b>			<b>Waterline Profile</b>	Poached		<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	Yes		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Rare					
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					

<b>Ditch / Pond ID</b>	TEP2928	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Angelica sylvestris; Filipendula ulmaria; Glyceria maxima; Hydrocharis morsus-ranae; Iris pseudacorus; Lemna minor; Lemna trisulca; Phragmites australis; Spirodela polyrhiza; Urtica dioica</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus; Agabus sturmii; Anacaena limbata; Anisus vortex; Armadillidium vulgare; Asellus aquaticus; Bathyomphalus contortus; Bithynia tentaculata; Cataclista lemnae; Crangonyx pseudogracilis; Forficula auricularia; Hesperocorixa linnaei; Hygrotus impressopunctatus; Hyphydrus ovatus; Ilybius quadriguttatus; Ilyocoris cimicoides; Nabis rugosus; Notonecta glauca; Pachygnatha clercki; Paradromius linearis; Philaenus spumarius; Philoscia muscorum; Pirata piraticus; Tipula fulvipennis</i>			
						<b>Protected / rare species noted?</b>		Hydrocharis morsus-ranae	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.400 x 1.600	<b>Wetland Width (m)</b>	4		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Arable	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	40		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	5.87	<b>Temp (°C)</b>	15.6	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	525	<b>ppm</b>	263	<b>Waterline Profile</b>	45° And Vert	<b>Waterline Profile</b>	45° And Vert		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Suitable for <i>Hydrochara caraboides</i> : 		<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				




<b>Ditch / Pond ID</b>	TEP2282	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Calystegia sepium</i> ; <i>Eleocharis palustris</i> ; <i>Elodea nuttallii</i> ; <i>Glyceria maxima</i> ; <i>Persicaria amphibia</i> ; <i>Phragmites australis</i> ; <i>Salix euxina</i> ; <i>Sparganium erectum</i>				
<b>Photo:</b> 										
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.320 x 2.000		<b>Wetland Width (m)</b>	2
<b>Grazed E/N</b>	No		<b>Land Use E/N</b>	Tall Ruderal		<b>Shallows %</b>	100		<b>Shallows Depth (cm)</b>	32
<b>Grazed W/S</b>	No		<b>Land Use W/S</b>	Tall Ruderal		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	Yes
<b>pH</b>			<b>Temp (°C)</b>			<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>			<b>ppm</b>			<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant					
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					









<b>Ditch / Pond ID</b>	TEP2286	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Calystegia sepium</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Galium aparine</i> ; <i>Hedera helix</i> ; <i>Iris pseudacorus</i> ; <i>Mentha aquatica</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix euxina</i> ; <i>Sparganium erectum</i> ; <i>Urtica dioica</i>	
<b>Photo:</b>							
							
<b>Protected / rare species noted?</b>						Badger evidence, latrines and runs.	
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	Suitable for <i>Hydrochara caraboides</i> :  
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>			
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>			
						<b>Profile:</b>	


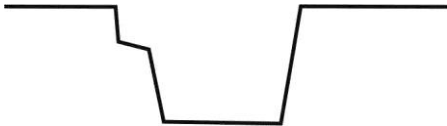
<b>Ditch / Pond ID</b>	TEP2294	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Berula erecta</i> ; <i>Calystegia sepium</i> ; <i>Carex remota</i> ; <i>Corylus avellana</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Filipendula ulmaria</i> ; <i>Fraxinus excelsior</i> ; <i>Galium aparine</i> ; <i>Ilex aquifolium</i> ; <i>Lemna minor</i> ; <i>Oenanthe crocata</i> ; <i>Phragmites australis</i> ; <i>Quercus robur</i> ; <i>Rubus fruticosus</i> agg.; <i>Scrophularia auriculata</i> ; <i>Symphytum officinale</i> ; <i>Urtica dioica</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agapetus fuscipes</i> ; <i>Aglais urticae</i> ; <i>Ancylus fluviatilis</i> ; <i>Anisus vortex</i> ; <i>Apion frumentarium</i> ; <i>Asellus aquaticus</i> ; <i>Baccha elongata</i> ; <i>Baetis rhodani</i> ; <i>Bembidion lampros</i> ; <i>Calopteryx splendens</i> ; <i>Cataclysta lemnae</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Elmis aenea</i> ; <i>Gammarus pulex</i> ; <i>Gastrophysa viridula</i> ; <i>Gyrinus substriatus</i> ; <i>Haematopota pluvialis</i> ; <i>Haliphus lineatocollis</i> ; <i>Helix aspersa</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus grandis</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus pubescens</i> ; <i>Hydropsyche pellucidula</i> ; <i>Ilybius fuliginosus</i> ; <i>Laccobius bipunctatus</i> ; <i>Limnephilus lunatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Malachius bipustulatus</i> ; <i>Maniola jurtina</i> ; <i>Nabis rugosus</i> ; <i>Notonecta maculata</i> ; <i>Omocestus viridulus</i> ; <i>Oulimnius tuberculatus</i> ; <i>Paederus fuscipes</i> ; <i>Paederus littoralis</i> ; <i>Panorpa germanica</i> ; <i>Phalacrocer replicata</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Physa fontinalis</i> ; <i>Pisidium amnicum</i> ; <i>Pisidium nitidum</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Potamophylax latipennis</i> ; <i>Propylea quattuordecimpunctata</i> ; <i>Protapion apricans</i> ; <i>Radix auricularia</i> ; <i>Rhagonycha fulva</i> ; <i>Rhyacophila dorsalis</i> ; <i>Rhyzobius litura</i> ; <i>Sepedophilus marshami</i> ; <i>Sericostoma personatum</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Stenodema laevigata</i> ; <i>Stenus brunnipes</i> ; <i>Stenus juno</i> ; <i>Succinea putris</i> ; <i>Syntomus obscuroguttatus</i> ; <i>Tachyporus dispar</i> ; <i>Tipula fulvipennis</i> ; <i>Tipula luteipennis</i> ; <i>Tipula paludosa</i> ; <i>Trichia hispida</i> ; <i>Trichia striolata</i> ; <i>Valvata piscinalis</i> ; <i>Velia caprai</i>			
						<b>Protected / rare species noted?</b>			<i>Phalacrocer replicata</i> ;
<b>Habitat Type</b>	Stream	<b>Flow</b>	Yes	<b>Water Depth and Width (m x m)</b>	0.250 x 1.300	<b>Wetland Width (m)</b>	1.6		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	25		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Arable	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	Yes		
<b>pH</b>	9.45	<b>Temp (°C)</b>	17	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	637	<b>ppm</b>	317	<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	stepped		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	Bullhead	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Frequent				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
						<b>Profile:</b> 			



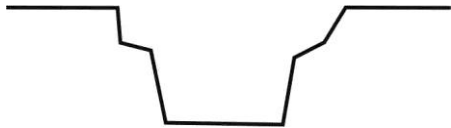





<b>Ditch / Pond ID</b>	TEP2314	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Alisma plantago-aquatica</i> ; <i>Callitriche brutia</i> subsp. <i>hamulata</i> ; <i>Callitriche obtusangula</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum arvense</i> ; <i>Glyceria maxima</i> ; <i>Glyceria notata</i> ; <i>Lemna minor</i> ; <i>Nasturtium officinale</i> ; <i>Phragmites australis</i> ; <i>Potamogeton berchtoldii</i> ; <i>Sparganium emersum</i> ; <i>Sparganium erectum</i> ; <i>Veronica catenata</i>				
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agabus nebulosus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Anthophila fabriciana</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Callicorixa praeusta</i> ; <i>Cataclista lemnae</i> ; <i>Chrysopilus cristatus</i> ; <i>Coccinella septempunctata</i> ; <i>Colymbetes fuscus</i> ; <i>Conocephalus dorsalis</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gammarus pulex</i> ; <i>Gerris thoracicus</i> ; <i>Gyrinus substriatus</i> ; <i>Haematopota pluvialis</i> ; <i>Haliplus sibiricus</i> ; <i>Helophilus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Helophorus minutus</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus pubescens</i> ; <i>Hydroporus tessellatus</i> ; <i>Hygrotus impressopunctatus</i> ; <i>Ilybius fuliginosus</i> ; <i>Laccobius bipunctatus</i> ; <i>Limnephilus lunatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Lymnaea stagnalis</i> ; <i>Malachius bipustulatus</i> ; <i>Maniola jurtina</i> ; <i>Musculium lacustre</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Oplodontha viridula</i> ; <i>Oxyloma elegans</i> ; <i>Philaenus spumarius</i> ; <i>Philoscia muscorum</i> ; <i>Pteris rapae</i> ; <i>Pirata piraticus</i> ; <i>Pisidium nitidum</i> ; <i>Pithanus maerkelii</i> ; <i>Planorbis barbus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Rhantus suturalis</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sigara falleni</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerium nucleus</i> ; <i>Stenodema laevigata</i> ; <i>Stenus ciciindeloides</i> ; <i>Tipula fulvipennis</i>				
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.550 x 2.500		<b>Wetland Width (m)</b>	5
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	50		<b>Shallows Depth (cm)</b>	35
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	20		<b>Plants for Cocoons?</b>	Yes
<b>pH</b>	6.58		<b>Temp (°C)</b>	18.7		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0
<b>us/cm</b>	575		<b>ppm</b>	287		<b>Waterline Profile</b>	Poached		<b>Waterline Profile</b>	Poached
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	Yes	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant					
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					

<b>Ditch / Pond ID</b>	TEP2333	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>				
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Alnus glutinosa; Angelica sylvestris; Carex pendula; Elodea canadensis; Elodea nuttallii; Epilobium hirsutum; Galium aparine; Glyceria fluitans; Lemna minor; Nasturtium officinale; Oenanthe crocata; Phragmites australis; Rubus fruticosus agg.; Sparganium erectum; Symphytum officinale; Ulmus glabra</i>				
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Anisus vortex; Asellus aquaticus; Baetis rhodani; Bembidion lampros; Bithynia tentaculata; Calopteryx virgo; Cepaea hortensis; Cepaea nemoralis; Coccidula rufa; Coccinella septempunctata; Cyndroiulus punctatus; Demetrias atricapillus; Elmis aenea; Epistrophe eligans; Episyrrhus balteatus; Gammarus pulex; Gastrophysa viridula; Haliplus fluviatilis; Haliplus lineatocollis; Helix aspersa; Helophilus pendulus; Helophorus brevipalpis; Hippeutis complanatus; Lygocoris pabulinus; Lymnaea stagnalis; Nabis rugosus; Orthops campestris; Oulimnius tuberculatus; Paederus littoralis; Pararge aegeria; Philoscia muscorum; Pholidoptera griseoaptera; Pieris napi; Pirata piraticus; Planorbis planorbis; Podura aquatica; Radix auricularia; Rhingia campestris; Serratella ignita; Sialis lutaria; Sigara dorsalis; Sphaerium corneum; Sphaerophoria scripta; Stenodema laevigata; Stenus clavicornis; Syntomus obscuriguttatus; Syrphus vitripennis; Valvata piscinalis</i>				
						<b>Protected / rare species noted?</b>				
<b>Habitat Type</b>	Stream		<b>Flow</b>	Slow		<b>Water Depth and Width (m x m)</b>	0.75 x 4.000		<b>Wetland Width (m)</b>	4
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	5		<b>Shallows Depth (cm)</b>	30
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	25		<b>Plants for Cocoons?</b>	No
<b>pH</b>	7.0		<b>Temp (°C)</b>	16.3		<b>Phragmites Bank Cover %</b>			<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>	640		<b>ppm</b>	320		<b>Waterline Profile</b>	Vertical		<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	Yes		<b>Tree/Shrub Shade %</b>			<b>Dries / Reduces</b>	No
<b>3-SSB</b>	Yes	<b>10-SSB</b>	No	<b>Other Fish</b>	Stone Loach	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant					
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No					



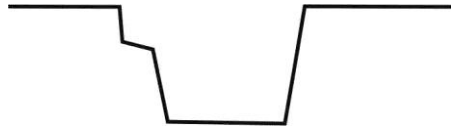
<b>Ditch / Pond ID</b>	TEP2341	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	23/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alnus glutinosa</i> ; <i>Apium nodiflorum</i> ; <i>Callitriche stagnalis</i> ; <i>Carex hirta</i> ; <i>Epilobium hirsutum</i> ; <i>Equisetum palustre</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Holcus lanatus</i> ; <i>Juncus effusus</i> ; <i>Mentha aquatica</i> ; <i>Persicaria amphibia</i> ; <i>Persicaria maculosa</i> ; <i>Potentilla anserina</i> ; <i>Ranunculus repens</i> ; <i>Silene dioica</i> ; <i>Solanum dulcamara</i> ; <i>Stachys sylvatica</i>	
<b>Photo:</b> 						<b>Protected / rare species noted?</b>	
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	2.4
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	Vertical
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>		<b>Profile:</b>	
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>			




<b>Ditch / Pond ID</b>	TEP2349	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	23/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Apium nodiflorum</i> ; <i>Elodea canadensis</i> ; <i>Epilobium hirsutum</i> ; <i>Galium palustre</i> ; <i>Glyceria maxima</i> ; <i>Holcus lanatus</i> ; <i>Lemna minor</i> ; <i>Oenanthe crocata</i> ; <i>Persicaria hydropiper</i> ; <i>Persicaria maculosa</i> ; <i>Phalaris arundinacea</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium emersum</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathymophalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus pascuorum</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Coccidula rufa</i> ; <i>Coccidula scutellata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Episyrphus balteatus</i> ; <i>Gyraulus albus</i> ; <i>Gyraulus crista</i> ; <i>Haliplus immaculatus</i> ; <i>Haliplus sibiricus</i> ; <i>Helophilus pendulus</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Ilybius quadriguttatus</i> ; <i>Limnephilus lunatus</i> ; <i>Lymnaea stagnalis</i> ; <i>Megasternum concinnum</i> ; <i>Nemastoma bimaculatum</i> ; <i>Nepa cinerea</i> ; <i>Pachygnatha clercki</i> ; <i>Paroligolophus agrestis</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Planorbis planorbis</i> ; <i>Rhyzobius litura</i> ; <i>Stenodema holsata</i> ; <i>Stenodema laevigata</i> ; <i>Stenus cicindeloides</i> ; <i>Stenus clavicornis</i> ; <i>Subcoccinella vigintiquatuorpunctata</i> ; <i>Tachyporus dispar</i> ; <i>Valvata piscinalis</i> ; <i>Velia caprai</i> ; <i>Vespula vulgaris</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.6 x 4.000		<b>Wetland Width (m)</b>	5	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	50		<b>Shallows Depth (cm)</b>	15	
<b>Grazed W/S</b>	Yes, Sheep		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	0		<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.15		<b>Temp (°C)</b>	16		<b>Phragmites Bank Cover %</b>	100		<b>Phragmites Habitat Cover %</b>	80	
<b>us/cm</b>	430		<b>ppm</b>	205		<b>Waterline Profile</b>	stepped		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b> Floating vegetation raft	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  X	<b>Profile:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes						

Ditch / Pond ID	TEP2369	Surveyor:	DB/PH	Date:	23/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
Survey Type	Visual	Visit One	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Apium nodiflorum</i> ; <i>Calystegia sepium</i> ; <i>Oenanthe crocata</i> ; <i>Phragmites australis</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix x fragilis</i> 'fragilis'; <i>Urtica dioica</i>		
<b>Photo:</b> 								
						Protected / rare species noted?		
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)		
Grazed E/N	Yes, Cattle	Land Use E/N	Improved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	Yes, Sheep	Land Use W/S	Improved Grassland	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	stepped	Waterline Profile	stepped	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %		Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Notes:	Suitable for <i>Hydrochara caraboides</i> : 	
Invert Predators		Small Ramshorns		Other Molluscs		Profile:		
<i>H. piceus</i>		GCN		S/P Newt				




<b>Ditch / Pond ID</b>	TEP2375	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	23/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>					
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Callitriche obtusangula</i> ; <i>Epilobium hirsutum</i> ; <i>Juncus inflexus</i> ; <i>Lemna minor</i> ; <i>Lycopus europaeus</i> ; <i>Oenanthe crocata</i> ; <i>Phalaris arundinacea</i> ; <i>Potamogeton pusillus</i> ; <i>Sparganium erectum</i> ; <i>Symphytum officinale</i> ; <i>Urtica dioica</i> ; <i>Veronica beccabunga</i> ; <i>Zannichellia palustris</i>					
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bathynomphalus contortus</i> ; <i>Bithynia leachii</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Cochlicopa lubrica</i> ; <i>Colymbetes fuscus</i> ; <i>Conocephalus discolor</i> ; <i>Corixa punctata</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Dytiscus marginalis</i> ; <i>Eristalis arbustorum</i> ; <i>Gammarus pulex</i> ; <i>Gerris odontogaster</i> ; <i>Haliphus lineatocollis</i> ; <i>Haliphus sibiricus</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius ater</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccophilus minutus</i> ; <i>Melanostoma scalare</i> ; <i>Myathropa florea</i> ; <i>Nebrioporus elegans</i> ; <i>Notonecta glauca</i> ; <i>Oxyloma elegans</i> ; <i>Philaenus spumarius</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Pirata piraticus</i> ; <i>Planorbis planorbis</i> ; <i>Platycheirus albimanus</i> ; <i>Potamopyrgus antipodarum</i> ; <i>Pterostichus strenuus</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sigara falleni</i> ; <i>Sphaerophoria scripta</i> ; <i>Sympetrum striolatum</i> ; <i>Syntomus obscuroguttatus</i> ; <i>Trichia striolata</i> ; <i>Valvata piscinalis</i> ; <i>Vespa vulgaris</i>					
						<b>Protected / rare species noted?</b>					
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.45 x 2.500		<b>Wetland Width (m)</b>	3.7	
<b>Grazed E/N</b>	Yes, Cattle		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	25		<b>Shallows Depth (cm)</b>	20	
<b>Grazed W/S</b>	Yes, Cattle		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	35		<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	6.4		<b>Temp (°C)</b>	21		<b>Phragmites Bank Cover %</b>	0		<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	422		<b>ppm</b>	210		<b>Waterline Profile</b>	stepped		<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>	Yes		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0		<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>			
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Frequent	<b>Other Molluscs</b>	Abundant						
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes						







<b>Ditch / Pond ID</b>	TEP2380	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	30/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Calystegia sepium</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium ciliatum</i> ; <i>Epilobium hirsutum</i> ; <i>Glyceria notata</i> ; <i>Holcus lanatus</i> ; <i>Persicaria hydropiper</i> ; <i>Persicaria maculosa</i> ; <i>Prunus spinosa</i> ; <i>Ranunculus repens</i> ; <i>Rosa canina</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix cinerea</i> ; <i>Solanum dulcamara</i> ; <i>Urtica dioica</i>		
<b>Photo:</b> 								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.5	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		




<b>Ditch / Pond ID</b>	TEP2444	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial Only	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Apium nodiflorum</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Holcus lanatus</i> ; <i>Juncus conglomeratus</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Nasturtium officinale</i> ; <i>Phragmites australis</i> ; <i>Sparganium erectum</i> ; <i>Typha latifolia</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aphantopus hyperantus</i> ; <i>Bombus bohemicus</i> ; <i>Bombus lucorum</i> ; <i>Bombus pratorum</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Enallagma cyathigerum</i> ; <i>Episyrphus balteatus</i> ; <i>Eristalis tenax</i> ; <i>Haematopota pluvialis</i> ; <i>Helophilus pendulus</i> ; <i>Ischnura elegans</i> ; <i>Maniola jurtina</i> ; <i>Melanargia galathea</i> ; <i>Melanostoma scalare</i> ; <i>Ochlodes faunus</i> ; <i>Orthetrum cancellatum</i> ; <i>Philaenus spumarius</i> ; <i>Pholidoptera griseoptera</i> ; <i>Pieris brassicae</i> ; <i>Platycheirus albimanus</i> ; <i>Rhagonycha fulva</i> ; <i>Rhingia campestris</i> ; <i>Thymelicus sylvestris</i> ; <i>Zygaena filipendulae</i>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.5	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b><i>H. piceus</i></b>		<b>GCN</b>		<b>S/P Newt</b>				
						<b>Profile:</b>		





<b>Ditch / Pond ID</b>	TEP2446	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial Only	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants</b> <i>Apium nodiflorum</i> ; <i>Galium palustre</i> ; <i>Glyceria fluitans</i> ; <i>Holcus lanatus</i> ; <i>Juncus conglomeratus</i> ; <i>Juncus effusus</i> ; <i>Juncus inflexus</i> ; <i>Nasturtium officinale</i> ; <i>Phragmites australis</i> ; <i>Sparganium erectum</i> ; <i>Typha latifolia</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aphantopus hyperantus</i> ; <i>Bombus bohemicus</i> ; <i>Bombus lucorum</i> ; <i>Bombus pratorum</i> ; <i>Chorthippus parallelus</i> ; <i>Coccinella septempunctata</i> ; <i>Enallagma cyathigerum</i> ; <i>Episyrphus balteatus</i> ; <i>Eristalis tenax</i> ; <i>Haematopota pluvialis</i> ; <i>Helophilus pendulus</i> ; <i>Ischnura elegans</i> ; <i>Maniola jurtina</i> ; <i>Melanargia galathea</i> ; <i>Melanostoma scalare</i> ; <i>Ochlodes faunus</i> ; <i>Orthetrum cancellatum</i> ; <i>Philaenus spumarius</i> ; <i>Pholidoptera griseoptera</i> ; <i>Pieris brassicae</i> ; <i>Platycheirus albimanus</i> ; <i>Rhagonycha fulva</i> ; <i>Rhingia campestris</i> ; <i>Thymelicus sylvestris</i> ; <i>Zygaena filipendulae</i>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	1.5	
<b>Grazed E/N</b>	Yes, Cattle	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	Yes, Cattle	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	Vertical	<b>Waterline Profile</b>	Vertical	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>	<b>Suitable for <i>Hydrochara caraboides</i>:</b>  	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				
							<b>Profile:</b> 	




<b>Ditch / Pond ID</b>	TEP2484	<b>Surveyor:</b>	AG/RH;D B/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants</b> <i>Phragmites australis</i> ; <i>Typha latifolia</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Aglais urticae</i> ; <i>Anacaena globulus</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Bathymphalus contortus</i> ; <i>Bithynia tentaculata</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Coenagrion puella</i> ; <i>Conocephalus discolor</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Dytiscus marginalis</i> ; <i>Enallagma cyathigerum</i> ; <i>Eristalis tenax</i> ; <i>Gerris lacustris</i> ; <i>Gyrinus substriatus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydrometra stagnorum</i> ; <i>Hydroporus palustris</i> ; <i>Hydroporus planus</i> ; <i>Hydroporus tessellatus</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Liopterus haemorrhoidalis</i> ; <i>Lycaena phlaeas</i> ; <i>Nabis rugosus</i> ; <i>Nepa cinerea</i> ; <i>Notonecta glauca</i> ; <i>Notostira elongata</i> ; <i>Orthops campestris</i> ; <i>Oxyloma pfeifferi</i> ; <i>Pararge aegeria</i> ; <i>Philaenus spumarius</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Planorbis corneus</i> ; <i>Rhantus suturalis</i> ; <i>Sialis lutaria</i> ; <i>Stenodema laevigata</i> ; <i>Sympetrum striolatum</i> ; <i>Vespula vulgaris</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)	0.350 x 2.500	<b>Wetland Width (m)</b>	2.5		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	35		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.36	<b>Temp (°C)</b>	16.3	<b>Phragmites Bank Cover %</b>	50	<b>Phragmites Habitat Cover %</b>	50		
<b>us/cm</b>	750	<b>ppm</b>	370	<b>Waterline Profile</b>	30°	<b>Waterline Profile</b>	30°		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> <b>Suitable for <i>Hydrochara caraboides</i>:</b> 			
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Absent				
<b><i>H. piceus</i></b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				
<b>Profile:</b>									

<b>Ditch / Pond ID</b>	TEP2489	<b>Surveyor:</b>	AH/RH	<b>Date:</b>	May 2015	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit 2</b>		<b>Plants</b> None	
<b>Photo:</b> No Image						<b>Invertebrates</b> <i>Coccidula rufa</i> ; <i>Prasocuris junci</i> ; <i>Scathophaga stercoraria</i> ; <i>Bombus lapidarius</i> ; <i>Tachyporus hypnorum</i> ; <i>Pardosa pullata</i> ; <i>Phaedon tumidulus</i> ; <i>Geomyza tripunctata</i> ; <i>Cantharis nigra</i> ; <i>Lejogaster metallina</i> ; <i>Apion nigritarse</i> ; <i>Platycheirus clypeatus</i> ; <i>Gastrophysa viridula</i> ; <i>Sialis lutaria</i> ; <i>Hydroporus planus</i> ; <i>Ischnura elegans</i> ; <i>Nepa cinerea</i> ; <i>Gyrinus substriatus</i> ; <i>Gerris lacustris</i> ; <i>Hydrometra stagnorum</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Coenagrion puella</i> ; <i>Microvelia reticulata</i> ; <i>Hygrotus inaequalis</i> ; <i>Corixa punctata</i> ; <i>Noterus clavicornis</i> ; <i>Sigara dorsalis</i> ; <i>Prasocuris junci</i> ; <i>Cloeon dipterum</i> ; <i>Notonecta glauca</i> ; <i>Sigara lateralis</i> ; <i>Helophorus grandis</i> ; <i>Pyrrhosoma nymphula</i> ; <i>Plea minutissima</i> ;	
						<b>Protected / rare species noted?</b>	
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	Not Recorded	<b>Wetland Width (m)</b>	Not Recorded
<b>Grazed E/N</b>	Not Recorded	<b>Land Use E/N</b>	Not Recorded	<b>Shallows %</b>	Not Recorded	<b>Shallows Depth (cm)</b>	Not Recorded
<b>Grazed W/S</b>	Not Recorded	<b>Land Use W/S</b>	Not Recorded	<b>Lemna cover %</b>	Not Recorded	<b>Plants for Cocoons?</b>	Not Recorded
<b>pH</b>	Not Recorded	<b>Temp (°C)</b>	Not Recorded	<b>Phragmites Bank Cover %</b>	Not Recorded	<b>Phragmites Habitat Cover %</b>	Not Recorded
<b>us/cm</b>	Not Recorded	<b>ppm</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded	<b>Waterline Profile</b>	Not Recorded
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	Not Recorded	<b>Dries / Reduces</b>	Not Recorded
<b>3-SSB</b>		<b>10-SSB</b>	N	<b>Other Fish</b>	N	<b>Notes:</b>  <b>Suitable for <i>Hydrochara caraboides</i>:</b>  	<b>Profile:</b>
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	N	<b>Other Molluscs</b>	N		
<b><i>H. piceus</i></b>	N	<b>GCN</b>	N	<b>S/P Newt</b>	N		




<b>Ditch / Pond ID</b>	TEP2490	<b>Surveyor:</b>	AH/RH;D B/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>	
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Acer campestre</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Galium aparine</i> ; <i>Hedera helix</i> ; <i>Rubus fruticosus</i> agg.	
<b>Photo:</b>							
							
<b>Protected / rare species noted?</b>							
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>		<b>Wetland Width (m)</b>	1.5
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>			
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>			

Ditch / Pond ID	TEP2510	Surveyor:	DB/PH	Date:	21/8/2013	Initial assessment/species list including flora within the wetland area		
Survey Type	Terrestrial	Visit One	Yes			Plants: <i>Calystegia sepium</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Galium aparine</i> ; <i>Quercus robur</i> ; <i>Urtica dioica</i>		
Photo:						Protected / rare species noted?		
								
Habitat Type	Dry Ditch	Flow	No	Water Depth and Width (m x m)		Wetland Width (m)	1.5	
Grazed E/N	No	Land Use E/N	Unimproved Grassland	Shallows %		Shallows Depth (cm)		
Grazed W/S	No	Land Use W/S	Unimproved Grassland	Lemna cover %		Plants for Cocoons?		
pH		Temp (°C)		Phragmites Bank Cover %		Phragmites Habitat Cover %		
us/cm		ppm		Waterline Profile	60°	Waterline Profile	60°	
Ditch Cleaned Out?		Ditch Undisturbed?		Tree/Shrub Shade %	100% to west	Dries / Reduces	Yes	
3-SSB		10-SSB		Other Fish		Suitable for Hydrochara caraboides:  <b>X</b>	Profile: 	
Invert Predators		Small Ramshorns		Other Molluscs				
<i>H. piceus</i>		GCN		S/P Newt				



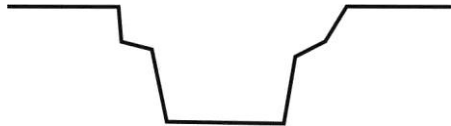
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<b>Ditch / Pond ID</b>	TEP2514	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants</b> <i>Alisma plantago-aquatica</i> ; <i>Callitriche</i> agg.; <i>Carex riparia</i> ; <i>Epilobium hirsutum</i> ; <i>Lemna minor</i> ; <i>Lycopus europaeus</i> ; <i>Potamogeton berchtoldii</i> ; <i>Scrophularia auriculata</i> ; <i>Solanum dulcamara</i> ; <i>Sparganium erectum</i> ; <i>Typha latifolia</i> ; <i>Zanichellia palustris</i>			
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Adalia decempunctata</i> ; <i>Aeshna cyanea</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Asellus aquaticus</i> ; <i>Callicorixa praeusta</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Coenagrion puella</i> ; <i>Colias croceus</i> ; <i>Discus rotundatus</i> ; <i>Dytiscus marginalis</i> ; <i>Enicmus transversus</i> ; <i>Forficula auricularia</i> ; <i>Gastrophysa viridula</i> ; <i>Haliphus lineatocollis</i> ; <i>Haliphus ruficollis</i> ; <i>Haliphus sibiricus</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus angustatus</i> ; <i>Hydroporus palustris</i> ; <i>Ilybius ater</i> ; <i>Ilybius fuliginosus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Ilyocoris cimicoides</i> ; <i>Laccophilus minutus</i> ; <i>Longitarsus rubiginosus</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Otiorhynchus sulcatus</i> ; <i>Paradromius linearis</i> ; <i>Philaenus spumarius</i> ; <i>Pieris brassicae</i> ; <i>Pieris rapae</i> ; <i>Rhantus grapii</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaeroderma testaceum</i> ; <i>Sphaerophoria scripta</i> ; <i>Xantholinus linearis</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.3 x 1.500	<b>Wetland Width (m)</b>	2.8		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Unimproved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	30		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Unimproved Grassland	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.2	<b>Temp (°C)</b>	17.2	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0		
<b>us/cm</b>	630	<b>ppm</b>	318	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°		
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>	<b>Suitable for Hydrochara caraboides:</b>	<b>Profile:</b>	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Absent	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	Yes				









<b>Ditch / Pond ID</b>	TEP2522	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis stolonifera</i> ; <i>Alisma plantago-aquatica</i> ; <i>Carex otrubae</i> ; <i>Epilobium hirsutum</i> ; <i>Epilobium parviflorum</i> ; <i>Lycopus europaeus</i> ; <i>Persicaria amphibia</i> ; <i>Ranunculus repens</i> ; <i>Rubus fruticosus</i> agg.; <i>Solanum dulcamara</i> ; <i>Typha latifolia</i>		
								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Unimproved Grassland	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Unimproved Grassland	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>		<b>Dries / Reduces</b>		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes: Ditch Crossing in place</b>	<b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				




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<b>Ditch / Pond ID</b>	TEP2564	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants</b> <i>Agrostis stolonifera</i> ; <i>Alopecurus geniculatus</i> ; <i>Carex otrubae</i> ; <i>Crataegus monogyna</i> ; <i>Epilobium hirsutum</i> ; <i>Glyceria fluitans</i> ; <i>Holcus lanatus</i> ; <i>Juncus effusus</i> ; <i>Mentha aquatica</i> ; <i>Phalaris arundinacea</i> ; <i>Rumex crispus</i> ; <i>Solanum dulcamara</i> ; <i>Urtica dioica</i>		
								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	2.000 wide	<b>Wetland Width (m)</b>	2	
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	Unmanaged	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	Unmanaged	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	stepped	<b>Waterline Profile</b>	stepped	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100% to South	<b>Dries / Reduces</b>		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				









<b>Ditch / Pond ID</b>	TEP2570	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Crataegus monogyna</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix x fragilis</i> 'fragilis'		
								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	1.000 wide	<b>Wetland Width (m)</b>	1	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Tall Ruderal	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Tall Ruderal	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100%	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b>  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				



<b>Ditch / Pond ID</b>	TEP2574	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Elodea nuttallii</i> ; <i>Epilobium hirsutum</i> ; <i>Lemna minor</i> ; <i>Potamogeton berchtoldii</i> ; <i>Sparganium erectum</i>		
						<b>Invertebrates</b> <i>Acroloxus lacustris</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Arion ater</i> ; <i>Asellus aquaticus</i> ; <i>Bithynia tentaculata</i> ; <i>Coenagrion puella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Gerris lacustris</i> ; <i>Halipus ruficollis</i> ; <i>Hippeutis complanatus</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilybius quadriguttatus</i> ; <i>Leiobunum rotundum</i> ; <i>Liocoris tripustulatus</i> ; <i>Lygocoris pabulinus</i> ; <i>Nepa cinerea</i> ; <i>Noterus clavicornis</i> ; <i>Notonecta glauca</i> ; <i>Pachygnatha clercki</i> ; <i>Physa fontinalis</i> ; <i>Pirata piraticus</i> ; <i>Planorbium corneum</i> ; <i>Planorbis planorbis</i> ; <i>Sphaerium corneum</i>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.3 x 2.400	<b>Wetland Width (m)</b>	3	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Tall Ruderal	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	30	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Tall Ruderal	<b>Lemna cover %</b>	70	<b>Plants for Cocoons?</b>	Yes	
<b>pH</b>	6.1	<b>Temp (°C)</b>	15.2	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	732	<b>ppm</b>	360	<b>Waterline Profile</b>	vertical	<b>Waterline Profile</b>	vertical	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Abundant	<b>Other Molluscs</b>	Abundant			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			



<b>Ditch / Pond ID</b>	TEP2584	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Terrestrial	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Berula erecta</i> ; <i>Carex riparia</i> ; <i>Persicaria amphibia</i> ; <i>Phalaris arundinacea</i> ; <i>Sparganium erectum</i>		
								
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.35 x 2.300	<b>Wetland Width (m)</b>	2.5	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Tall Ruderal	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Tall Ruderal	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	Yes	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> ; Ditch Crossing in place  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			

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<b>Ditch / Pond ID</b>	TEP2589	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Elodea nuttallii</i> ; <i>Filipendula ulmaria</i> ; <i>Lemna minor</i> ; <i>Phalaris arundinacea</i> ; <i>Potamogeton berchtoldii</i> ; <i>Urtica dioica</i>			
						<b>Invertebrates</b> <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Anacaena limbata</i> ; <i>Anacaena lutescens</i> ; <i>Asellus aquaticus</i> ; <i>Bithynia tentaculata</i> ; <i>Cepaea nemoralis</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Cyphon coarctatus</i> ; <i>Enochrus testaceus</i> ; <i>Forficula auricularia</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus palustris</i> ; <i>Hygrotus inaequalis</i> ; <i>Ilybius ater</i> ; <i>Laccobius bipunctatus</i> ; <i>Monacha cantiana</i> ; <i>Nedyus quadrimaculatus</i> ; <i>Nepa cinerea</i> ; <i>Oxyloma elegans</i> ; <i>Philaenus spumarius</i> ; <i>Pholidoptera griseoaptera</i> ; <i>Physa fontinalis</i> ; <i>Pieris brassicae</i> ; <i>Planorbarius comeus</i> ; <i>Planorbis planorbis</i> ; <i>Rhantus suturalis</i> ; <i>Sitona suturalis</i> ; <i>Tachyporus dispar</i> ; <i>Tachyporus hypnorum</i>			
						<b>Protected / rare species noted?</b>			
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.3 x 1.900	<b>Wetland Width (m)</b>	2.1		
<b>Grazed E/N</b>	No - Mown / Flailed	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	30		
<b>Grazed W/S</b>	No - Mown / Flailed	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No		
<b>pH</b>	6.0	<b>Temp (°C)</b>	19	<b>Phragmites Bank Cover %</b>	15	<b>Phragmites Habitat Cover %</b>	15		
<b>us/cm</b>	750	<b>ppm</b>	370	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°		
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No		
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 		
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Abundant				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				

<b>Ditch / Pond ID</b>	TEP2622	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	04/09/13	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Ceratophyllum demersum</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Lemna gibba</i> ; <i>Lemna minor</i> ; <i>Phalaris arundinacea</i> ; <i>Potamogeton berchtoldii</i> ; <i>Sparganium erectum</i>		
<b>Photo:</b> 						<b>Invertebrates:</b> <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Anacaena limbata</i> ; <i>Anisus vortex</i> ; <i>Asellus aquaticus</i> ; <i>Bembidion guttula</i> ; <i>Bithynia tentaculata</i> ; <i>Cercyon marinus</i> ; <i>Coccidula rufa</i> ; <i>Coenagrion puella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Demetrias atricapillus</i> ; <i>Haliphus immaculatus</i> ; <i>Haliphus ruficollis</i> ; <i>Haliphus sibiricus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hippeutis complanatus</i> ; <i>Hydroporus angustatus</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Laccobius bipunctatus</i> ; <i>Nepa cinerea</i> ; <i>Notiophilus palustris</i> ; <i>Oxyloma elegans</i> ; <i>Physa fontinalis</i> ; <i>Planorbarius corneus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Rhantus suturalis</i> ; <i>Rhyzobius litura</i> ; <i>Sialis lutaria</i> ; <i>Stenus boops</i> ; <i>Stenus junco</i> ; <i>Valvata cristata</i> ; <i>Xysticus cristatus</i>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.35 X 2.200	<b>Wetland Width (m)</b>	2.8	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Improved Grassland	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	35	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Improved Grassland	<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	100	<b>Phragmites Habitat Cover %</b>	75	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	60°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>	Yes	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No	
<b>3-SSB</b>	Yes	<b>10-SSB</b>	Yes	<b>Other Fish</b>	No	<b>Notes:</b>  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	Yes	<b>Small Ramshorns</b>	Rare	<b>Other Molluscs</b>	Occasional			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			



<b>Ditch / Pond ID</b>	TEP2623	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	4/9/2013	<b>Initial assessment/species list including flora within the wetland area</b>			
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes	<b>Visit Two</b>	Yes	<b>Plants:</b> <i>Alliaria petiolata</i> ; <i>Berula erecta</i> ; <i>Cardamine flexuosa</i> ; <i>Carex riparia</i> ; <i>Ceratophyllum demersum</i> ; <i>Conium maculatum</i> ; <i>Crataegus monogyna</i> ; <i>Elodea canadensis</i> ; <i>Elodea nuttallii</i> ; <i>Epilobium hirsutum</i> ; <i>Filipendula ulmaria</i> ; <i>Galium palustre</i> ; <i>Lemna minor</i> ; <i>Potamogeton berchtoldii</i> ; <i>Rubus fruticosus</i> agg.; <i>Sparganium erectum</i> ; <i>Spirodela polyrrhiza</i> ; <i>Zannichellia palustris</i>  <b>Invertebrates:</b> <i>Aeshna cyanea</i> ; <i>Aeshna mixta</i> ; <i>Agabus bipustulatus</i> ; <i>Agabus sturmii</i> ; <i>Aglais urticae</i> ; <i>Anax imperator</i> ; <i>Anisus vortex</i> ; <i>Apis mellifera</i> ; <i>Asellus aquaticus</i> ; <i>Autographa gamma</i> ; <i>Bithynia tentaculata</i> ; <i>Bombus lapidarius</i> ; <i>Bombus lucorum</i> ; <i>Bombus pascuorum</i> ; <i>Bombus pratorum</i> ; <i>Bombus terrestris</i> ; <i>Chorthippus brunneus</i> ; <i>Chorthippus parallelus</i> ; <i>Cloeon dipterum</i> ; <i>Coccinella septempunctata</i> ; <i>Coenagrion puella</i> ; <i>Crambus perlella</i> ; <i>Crangonyx pseudogracilis</i> ; <i>Enallagma cyathigerum</i> ; <i>Episyrphus balteatus</i> ; <i>Gastrophysa viridula</i> ; <i>Gerris thoracicus</i> ; <i>Gyrinus substriatus</i> ; <i>Halipilus sibiricus</i> ; <i>Helophorus pendulus</i> ; <i>Helophorus brevipalpis</i> ; <i>Hesperocorixa linnaei</i> ; <i>Hesperocorixa sahlbergi</i> ; <i>Hippeutis complanatus</i> ; <i>Hydrobius fuscipes</i> ; <i>Hydroporus palustris</i> ; <i>Hygrotus inaequalis</i> ; <i>Hyphydrus ovatus</i> ; <i>Ilybius ater</i> ; <i>Ilyocoris cimicoides</i> ; <i>Inachis io</i> ; <i>Ischnura elegans</i> ; <i>Laccobius bipunctatus</i> ; <i>Leptophyes punctatissima</i> ; <i>Libellula depressa</i> ; <i>Lygocoris pabulinus</i> ; <i>Maniola jurtina</i> ; <i>Meconema thalassinum</i> ; <i>Melanargia galathea</i> ; <i>Nepa cinerea</i> ; <i>Notonecta glauca</i> ; <i>Oxyloma elegans</i> ; <i>Philaenus spumarius</i> ; <i>Pieris brassicae</i> ; <i>Pieris napi</i> ; <i>Pieris rapae</i> ; <i>Planorbis corneus</i> ; <i>Planorbis planorbis</i> ; <i>Podura aquatica</i> ; <i>Rhagonycha fulva</i> ; <i>Rhantus suturalis</i> ; <i>Sialis lutaria</i> ; <i>Sigara dorsalis</i> ; <i>Sphaerium corneum</i> ; <i>Sphaerophoria scripta</i> ; <i>Sympetrum striolatum</i> ; <i>Thymelicus sylvestris</i>			
<b>Photo:</b>						<b>Protected / rare species noted?</b>			
									
<b>Habitat Type</b>	Ditch		<b>Flow</b>	No		<b>Water Depth and Width (m x m)</b>	0.35 x 2.200	<b>Wetland Width (m)</b>	2.8
<b>Grazed E/N</b>	No - Mown / Flailed		<b>Land Use E/N</b>	Improved Grassland		<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	35
<b>Grazed W/S</b>	No - Mown / Flailed		<b>Land Use W/S</b>	Improved Grassland		<b>Lemna cover %</b>	100	<b>Plants for Cocoons?</b>	Yes
<b>pH</b>	6.2		<b>Temp (°C)</b>	20		<b>Phragmites Bank Cover %</b>	50	<b>Phragmites Habitat Cover %</b>	50
<b>us/cm</b>	960		<b>ppm</b>	470		<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°
<b>Ditch Cleaned Out?</b>	No		<b>Ditch Undisturbed?</b>	No		<b>Tree/Shrub Shade %</b>	0	<b>Dries / Reduces</b>	No
<b>3-SSB</b>	No	<b>10-SSB</b>	Yes	<b>Other Fish</b>	N	<b>Notes:</b>	<b>Suitable for Hydrochara caraboides:</b>  X	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	Occasional	<b>Other Molluscs</b>	Frequent				
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No				

<b>Ditch / Pond ID</b>	TEP2700	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Arrhenatherum elatius</i> ; <i>Artemisia vulgaris</i> ; <i>Arum maculatum</i> ; <i>Asplenium scolopendrium</i> ; <i>Calystegia sepium</i> ; <i>Cirsium arvense</i> ; <i>Crataegus monogyna</i> ; <i>Dactylis glomerata</i> ; <i>Hedera helix</i> agg.; <i>Heracleum sphondylium</i> ; <i>Pentaglottis sempervirens</i> ; <i>Phalaris arundinacea</i> ; <i>Potentilla reptans</i> ; <i>Prunus spinosa</i> ; <i>Rubus fruticosus</i> agg.; <i>Salix x fragilis</i> 'fragilis'; <i>Sison amomum</i> ; <i>Stachys sylvatica</i> ; <i>Urtica dioica</i>		
								
<b>Photo:</b>						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width</b> (m x m)		<b>Wetland Width (m)</b>	2.8	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Unmanaged	<b>Shallows %</b>	0	<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Unmanaged	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	45°	
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes: Overgrown</b>	<b>Suitable for Hydrochara caraboides:</b>	<b>Profile:</b>
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>		X		
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				



<b>Ditch / Pond ID</b>	TEP2702	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Full	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Agrostis gigantea; Anthriscus sylvestris; Apium nodiflorum; Arrhenatherum elatius; Artemisia vulgaris; Arum maculatum; Asplenium scolopendrium; Berula erecta; Betula pendula; Calystegia sepium; Carex otrubae; Cirsium arvense; Crataegus monogyna; Cynosurus cristatus; Dactylis glomerata; Epilobium hirsutum; Eupatorium cannabinum; Fraxinus excelsior; Heracleum sphondylium; Holcus lanatus; Lemna minor; Lolium perenne; Lycopodium europaeus; Medicago lupulina; Persicaria amphibia; Plantago lanceolata; Prunus spinosa; Pulicaria dysenterica; Rosa canina agg.; Rubus fruticosus agg.; Rumex obtusifolius; Rumex sanguineus; Salix caprea; Sambucus nigra; Sison amomum; Solanum dulcamara; Stachys sylvatica; Taraxacum agg.; Typha latifolia; Urtica dioica;</i>		
						<b>Invertebrates</b> <i>Asellus aquaticus; Crangonyx pseudogracilis; Hydroporus angustatus; Hydroporus palustris; Ilybius ater; Oxyloma elegans; Pachygnatha clercki</i>		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>	0.25 x 1.4	<b>Wetland Width (m)</b>	3.4	
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Unmanaged	<b>Shallows %</b>	100	<b>Shallows Depth (cm)</b>	25	
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Unmanaged	<b>Lemna cover %</b>	0	<b>Plants for Cocoons?</b>	No	
<b>pH</b>	5.92	<b>Temp (°C)</b>	16.3	<b>Phragmites Bank Cover %</b>	0	<b>Phragmites Habitat Cover %</b>	0	
<b>us/cm</b>	1375	<b>ppm</b>	673	<b>Waterline Profile</b>	45°	<b>Waterline Profile</b>	60°	
<b>Ditch Cleaned Out?</b>	No	<b>Ditch Undisturbed?</b>	No	<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>	Yes	
<b>3-SSB</b>	No	<b>10-SSB</b>	No	<b>Other Fish</b>	No	<b>Notes:</b> Polluted  <b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b> 	
<b>Invert Predators</b>	No	<b>Small Ramshorns</b>	No	<b>Other Molluscs</b>	No			
<b>H. piceus</b>	No	<b>GCN</b>	No	<b>S/P Newt</b>	No			



<b>Ditch / Pond ID</b>	TEP2707	<b>Surveyor:</b>	DB/PH	<b>Date:</b>	21/8/2013	<b>Initial assessment/species list including flora within the wetland area</b>		
<b>Survey Type</b>	Visual	<b>Visit One</b>	Yes			<b>Plants:</b> <i>Calystegia sepium</i> ; <i>Phragmites australis</i> ; <i>Prunus spinosa</i> ; <i>Rubus fruticosus</i> agg.		
						<b>Protected / rare species noted?</b>		
<b>Habitat Type</b>	Dry Ditch	<b>Flow</b>	No	<b>Water Depth and Width (m x m)</b>		<b>Wetland Width (m)</b>		
<b>Grazed E/N</b>	No	<b>Land Use E/N</b>	Tall Ruderal	<b>Shallows %</b>		<b>Shallows Depth (cm)</b>		
<b>Grazed W/S</b>	No	<b>Land Use W/S</b>	Tall Ruderal	<b>Lemna cover %</b>		<b>Plants for Cocoons?</b>		
<b>pH</b>		<b>Temp (°C)</b>		<b>Phragmites Bank Cover %</b>		<b>Phragmites Habitat Cover %</b>		
<b>us/cm</b>		<b>ppm</b>		<b>Waterline Profile</b>		<b>Waterline Profile</b>		
<b>Ditch Cleaned Out?</b>		<b>Ditch Undisturbed?</b>		<b>Tree/Shrub Shade %</b>	100	<b>Dries / Reduces</b>		
<b>3-SSB</b>		<b>10-SSB</b>		<b>Other Fish</b>		<b>Notes:</b> Filled with fly-tipping	<b>Suitable for Hydrochara caraboides:</b>  	<b>Profile:</b>
<b>Invert Predators</b>		<b>Small Ramshorns</b>		<b>Other Molluscs</b>				
<b>H. piceus</b>		<b>GCN</b>		<b>S/P Newt</b>				

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National Biodiversity Network ([www.nbn.org.uk](http://www.nbn.org.uk))



## Appendix 8O – Impacts on National, County & Local Designated Sites





# **Hinkley Point C Connection Project Environmental Statement Volume 5.8.2 Ecology Appendix 80 Effects on National, County and Local Designations**

February 2014  
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**Version B**

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**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
Ecology Appendix 8O  
Effects on National, County and Local Designations  
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# DESIGNATED SITES POTENTIALLY PHYSICALLY AFFECTED BY THE PROPOSED DEVELOPMENT

## 1.0 INTRODUCTION

- 1.1 The tables below list the national, county and local designated sites scoped into the EclA, as listed in **Volume 5.8, Appendix 8A**. Sites which are subject to more than one designation, designated for the same qualifying features, are assessed under the highest designation to avoid double counting of effects. The tables below include sites that are within the Order Limits, but this does not necessarily imply that National Grid intends or requires to do any work in the site. Within the tables the column titled 'Relevant Development Components' provides a detailed description of the Development Components affected the designated site in question.
- 1.2 This appendix does not include distant national designated sites which support species that may move through, or feed in the area of the Proposed Development e.g. the Mendips Bat Caves SAC and many of its constituent SSSIs. Indirect effects on these distant sites are considered in the EIA and Applicant's HRA Report.
- 1.3 The designated sites are discussed on an individual basis, listing the specific Development Components relevant to each site both within the site boundaries and in the immediate vicinity of the site. The tables below addresses only construction effects on designated sites, operational effects are not discussed. Permanent and temporary habitat loss calculations are provided, along with a percentage indicating the proportion of the overall site affected. Potential direct and indirect effects are described referencing all available field survey data. The potential effects listed are prior to mitigation.
- 1.4 There are habitats that cannot be reinstated following completion of the works, which are associated with overhead safety clearances to overhead lines and the need to avoid deep rooting species over underground cables, such as woodland and tree groups/individual trees. As this is not an area of habitat affected it is reported under a 'habitat change' heading within the detailed potential effects section of the table. The percentages associated with woodland loss are reported under the temporary loss column to distinguish between temporary and permanent Development Components but its impact is quantified within the potential effects section.
- 1.5 **Volume 5.8**, Section 8.5 sets out the 'Approach to Habitat Loss Calculations'. The description and measurement of effects is conservative, based on worst-case interpretation of the construction plans. Although the habitat calculations show temporary habitat impacts to SSSI's based on the construction layout, National Grid has committed to avoid encroachment into the SSSI's at detailed design. The indicative temporary working areas around each new pylon proposed (the 'pylon working area'), each pylon to be removed (the 'dismantling working area') and scaffold have been identified as a standard 'squared-off' area within the construction plans. These areas are shown to incur habitat losses associated with Phase 1

habitats that the GIS overlies; losses which are tabulated below. In practice, there will be a further design stage of detailed design, during which the actual working areas would be adjusted where practicable to avoid encroachment into designated sites or particularly sensitive and valuable habitat types. Within the tables, the description of effects prior to mitigation (final column) highlights where such over estimations arise. Further details on how these impacts will be minimised are provided in the Biodiversity Mitigation Strategy (**Volume 8.26 (CEMP), Appendix 2**) and the Environmental Statement (**Volume 5.8**).

- 1.6 Permanent losses are identified where existing habitats within the designated site will be removed and replaced by permanent hard surfaces or structures. Temporary losses are identified where existing habitats within the designated site will be removed for the period of construction, but reinstated or replaced by other habitats on completion of construction. Tree and woodland losses are recorded separately as habitat change. The effect of tree and woodland removal is long-term recognising the time frame that such habitats take to establish and mature, and further, as National Grid cannot generally reinstate trees or woodlands in situ. Other habitats will be allowed to develop in their place. The measure of tree losses set out in the statements below may therefore overlap with the measure of temporary loss as tree losses have been determined based on canopy size and not on ground cover.

## Potential Effects On National Wildlife Designations

**Table 1: Potential Effects on National Designated Wildlife Sites**

<b>National Designated Wildlife Sites</b>								
<b>Key:</b> SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Huntspill River NNR	148.97	<p>The existing 132kV F-Route overflies the river. Existing pylon F149 located within the NNR on the south bank will be removed. The associated working area and access inevitably fall within the NNR.</p> <p>The proposed 400kV line overflies the NNR. Working areas for new pylons LD-3 (south bank) and LD-4 (north), plus scaffold working area for works spanning 'Causeway' overlie the edge of the NNR.</p>	2.157	0	-	0.341	0.23%	<p><u>Temporary habitat loss:</u> Localised loss of semi-improved, species-poor neutral grassland and dense scrub (0.333ha) where detailed design cannot entirely avoid encroachment. The remainder (0.008ha) is made up of roads. Linear boundary features will be retained.</p> <p><u>Habitat change:</u> Loss of 2 hawthorn and pruning of 1 crack willow trees associated with the scaffolding working area for the 400kV and 132kV removal.</p> <p><u>Other effects:</u> Small-scale gain (0.001ha) of grassland through removal of pylon from within designated land.</p> <p>No direct effects on riparian corridor or associated fauna. The NNR is known to support otter. Any potential disturbance of otter moving through the river corridor during pylon construction would be short-term and restricted to daylight hours.</p>
Catcott Edington &	1,085.17	The SSSI lies 1.8km east of the	0	0	-	0	-	No direct or indirect effect

<b>National Designated Wildlife Sites</b>								
<b>Key:</b> SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Chilton Moors SSSI		Order Limits.						predicted on the hydrological function of the wetland habitats within the SSSI. <u>Other effects:</u> Potential effects on qualifying bird species are assessed as part of the Somerset Levels & Moors SPA Ramsar, which the SSSI forms a component part of.
Crook Peak to Shute Shelve Hill SSSI	332.71	The existing 132kV F-Route runs c.260m west of SSSI, alongside M5. Barton Road (follows north west boundary of the SSSI) will be used for construction access. A construction compound is proposed where the F-Route veers from the M5, between pylons F97 & F98. Proposed 400kV underground line follows similar alignment to the existing F-Route (c.160m west at closest point).	0	0	-	0	-	No direct or indirect effects predicted on habitats within the SSSI. <u>Other effects:</u> Potential indirect effects on greater horseshoe bats are assessed as part of the Mendip Limestone Grasslands SAC, which the SSSI forms a component part of.
Max Bog SSSI	10.31	The SSSI includes three sections, the closest of which lies c.410m upslope to the east of the Proposed Development. The Lox Yeo River drains Max Bog and is crossed by the existing F-Route (overhead) and by the proposed 400kV underground line (HDD at least 3m below the river bed), c.1km downstream of the SSSI.	0	0	-	0	-	The Proposed Development lies c.410m distance downslope of the SSSI and, taking into account the mitigation measures set out in <b>Volume 5.10.1, Section 10.7</b> , works are not anticipated to speed or hinder drainage of the peatland habitats. No adverse effects are anticipated on the hydrological function of the calcareous lowland mire or wet grassland habitats of the SSSI.

National Designated Wildlife Sites								
Key: SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Banwell Caves SSSI	1.64	The SSSI lies c.1.7km west of the closest Development Component – the proposed 400kV underground line.  The existing 132kV F-Route to be removed follows a similar alignment (c.1.8km west at the closest point).	0	0	-	0	-	Potential indirect effects on greater horseshoe bats are assessed as part of the North Somerset & Mendip Bats SAC, which the SSSI forms a component part of.
Yanal Bog SSSI	1.56	The SSSI lies c.0.74km upslope of the closest development component which is the 400kV overhead line, beyond Sandmead Rhyne.	0	0	-	0	-	The Proposed Development lies c.740m distance downslope of the SSSI and, taking into account the mitigation measures set out in <b>Volume 5.10.1, Section 10.7</b> , works are not anticipated to speed or hinder drainage of the the peatland habitats. No adverse effects are anticipated on the hydrological function of the calcareous lowland mire or wet grassland habitats of the SSSI.
Puxton Moor SSSI	37.09	Existing 132kV AT-Route (to be removed and re-routed outside of SSSI, c.300m to south west) crosses the southern end of the SSSI, oversailing several rhynes. Working area to remove existing pylon AT28 overlies a designated rhyne, as does scaffold working area spanning Drove Way within GIS; both will avoid encroachment at detailed design.  Proposed construction access runs east of designated Moor Wall Rhyne (east boundary). However, 6m stand-off to be enforced on all	1.127	0	-	0.447	1.2%	<u>Temporary habitat loss:</u> Localised loss of improved and semi-improved grassland during removal of 132kV AT-Route. Designated rhynes and linear features will be retained. No tree loss anticipated within the SSSI.  * Effects will be minimised at detailed design following NG commitment to avoid encroachment into this SSSI. <u>Other effects:</u> Access will use existing

National Designated Wildlife Sites								
Key: SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		Development Components during detailed design. Existing F-Route runs just outside the eastern edge of the SSSI (c.30m at closest point). Working areas for removal avoid SSSI. Proposed 400kV overhead line lies east of F-Route, outside of SSSI east boundary (c.60m east at the closest point).						easement rights; no new watercourse crossings are proposed.
Biddle Street Yatton SSSI	44.69	Existing F-Route oversails the Congresbury Yeo (southern boundary) and several rhynes in the western corner of the SSSI. Working areas for removal of pylon F61 overlies the Congresbury Yeo, and overlies pylon F59 a designated ditch. The scaffold working area spanning the railway line also overlies a designated ditch. However, a 6m stand-off from SSSI ditches will be enforced on all Development Components during detailed design, thereby avoiding any encroachment into designated land at these locations. No loss of aquatic habitat is predicted. Three watercourse crossings (two culverts, one bridge) are proposed to facilitate construction access. Proposed 400kV line lies immediately west of the existing F-Route; hence, similarly oversails the SSSI. Working areas for proposed pylons LD-52 and LD-53 (& assoc. EPZ) overlie the Congresbury Yeo	2.706	0	-	1.182	2.64%	<u>Temporary habitat loss:</u> Localised loss of semi-improved, tall ruderal herb and dense scrub. However, a 6m standoff will be applied to the ditch bank therefore reducing overall temporary habitat loss within SSSI. Temporary loss of 2 short sections of species-poor intact hedgerow as a result of the haul road for the 400kV overhead line. * Effects will be minimised at detailed design following NG commitment to avoid encroachment into this SSSI. <u>Habitat change:</u> Loss of 1 ash tree and pruning of another within the SSSI as a consequence of the electrical safety clearance required. <u>Other effects:</u> Designated rhynes and linear features will be retained. Installation of three watercourse

National Designated Wildlife Sites								
Key: SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		within GIS, and LD-54 a designated ditch. Again, any such encroachment will be avoided at detailed design.						crossings for the duration of works, in accordance with mitigation measures set out in <b>Volume 5.10, , Section 10.7</b> , will incur habitat loss of 18m in the medium-term and additional 12m to dry working in the short-term during installation and removal. However, these are not anticipated to pose any discernible effect on the integrity of the ditch network (particularly in terms of fragmentation) in the long term. In worst-case scenario, localised extinction of rare species may occur as a result of such habitat loss. No adverse effects on designated ditches would occur as a result of oversailing lines.
Kings Wood & Urchins Wood SSSI	130.37	Ancient woodland located 1.34km north of Churchill substation.	0	0	-	0	-	No direct or indirect effects on ancient woodland habitats or dormice are predicted as a result of the Proposed Development. <u>Other effects:</u> Potential indirect effects on greater horseshoe bat associated with removal of hedgerow and trees to facilitate works are assessed as part of the North Somerset and Mendip Bats SAC, of which the SSSI forms a component part.

National Designated Wildlife Sites								
Key: SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Tickenham, Nailsea & Kenn Moors SSSI	167.00	<p>Existing F-Route traverses the western half of the SSSI and oversails Parish Brook for much of the eastern half. Working areas associated with removal of 11 pylons (F46 to F44, F40, F39, F37 to F34, F30 &amp; F29) overlie designated ditches within GIS. However, 6m stand-off would be enforced on all Development Components during detailed design wherever practicable.</p> <p>Proposed 400kV line oversails the SSSI, aligned to a single crossing of Parish Brook but a greater number of ditches. Pylons will be positioned outside the designated network of ditches and watercourses at detailed design; no permanent habitat losses incurred. Working areas for 12x new pylons (LD-67 to LD-80) or associated EPZ overlie designated ditches within GIS. Again, 6m stand-off to be enforced on all Development Components during detailed design, thereby avoiding any such encroachment.</p> <p>A total of 7x scaffold working areas overlie the SSSI. In reality NG will seek to protect the ditches in question and direct encroachment will be avoided.</p> <p>Existing W-Route overflies the east-most end of the SSSI. The working area for removal of pylon W27 overlies Parish Brook within GIS,</p>	13.704	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	3.093 (+ impacts on treed habitats as detailed in the potential effects column.)	1.85%	<p><u>Temporary habitat loss:</u> Localised loss of amenity grassland, arable, improved grassland, marshy grassland and semi-improved grassland (2.5ha). The remainder (0.593ha) is made up of bareground, hardstanding and roads. However, a 6m standoff will be applied to the ditch bank therefore reducing temporary habitat loss within SSSI. Temporary loss of 21 short sections of hedgerows totalling 549m.</p> <p>* Effects will be minimised at detailed design following NG commitment to avoid encroachment into this SSSI.</p> <p><u>Habitat change:</u> Loss of 27 trees and pruning of 24 trees within the SSSI. Specifically at Parish Brook, loss of 5 trees at the crossing point of the W-route access road for the 132kV underground works. Additionally loss of trees within 8 tree groups to the overhead easement. These tree group areas are broken down into 2 scattered tree groups, 4 dense scrub and 2 overgrown hedgerows. The total loss of tree groups comes to 0.0974ha, of which 0.0626ha will be temporary with hedgerows being replaced insitu on</p>



National Designated Wildlife Sites								
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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		although encroachment will be avoided at detailed design. Proposed underground W-Route passes below the SSSI via HDD, avoiding direct effects on Parish Brook, Tickenham Boundary Rhyne and Middle Yeo.  6m stand-off will be enforced on all construction accesses wherever practicable, however, 32 watercourse crossings (28 culverts, four bridges) are proposed.						completion of works and the remaining 0.0348ha will be permanent. <u>Other effects:</u> The 28 culverts and four bridges would incur medium term loss of 320m watercourse whilst in place for the duration of works and 128m short-term loss to dry working during installation or removal. However, these are not anticipated to pose any discernible effect on the integrity of the ditch network (particularly in terms of fragmentation) in the long term. In worst-case scenario, localised extinction of rare species may occur as a result of such habitat loss. The SSSI supports otter (numerous records relate specifically to Parish Brook). Any potential disturbance to otter moving through the SSSI will be restricted to daytime working hours.
Severn Estuary SSSI	10,001.17	Existing G-Route overflies River Avon (pylons G17 on south bank & G18 on north), to be removed. Proposed 400kV overflies river (pylons LD-107 on south bank & LD-108 on north), aligned west of the G-Route.  Working areas for pylon removal and construction overlie the outer edge of designated land within GIS. However, encroachment into	2.187	0	-	0.151	<0.01%	<u>Temporary habitat loss:</u> Localised loss of saltmarsh and modified neutral grassland (0.013ha). The remainder (0.138ha) is made up of industrial buildings and hardstanding. However, encroachment into designated land will be avoided at detailed design where possible.  * Effects will be minimised at

National Designated Wildlife Sites								
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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		designated land will be avoided at detailed design.						<p>detailed design following NG commitment to avoid encroachment into this SSSI.</p> <p><u>Habitat Change:</u></p> <p>Pruning of 1 goat willow tree will be required due to electrical safety clearances from the proposed 400kV overhead line.</p> <p><u>Other effects:</u></p> <p>Potential effects on birds and intertidal habitats are assessed as part of the Severn Estuary SAC SPA. No encroachment into designated land and following implementation of mitigation measures set out in <b>Volume 5.10, Section 10.7</b>, no direct or indirect effects on intertidal habitats or fauna are anticipated.</p>
Bridgwater Bay SSSI (Note Bridgwater Bay NNR designation does not fall within the Order Limits)	SSSI: 6,237.47  NNR: 2,639.10	3x existing lines (1x 275kV and 2x 400kV) cross the SSSI with pylons in Wick Moor & North Moor. North-most 400kV line (pylons ZG1 to ZG7) would remain unchanged. 1) South-most 400kV line (pylons ZZ1 to ZZ7) re-routed into the existing Shurton substation – 2x pylon removed within SSSI (working areas inevitably fall within designated land), 4x pylons constructed outside the SSSI (working areas avoid encroachment). The line almost entirely circumnavigates south of the SSSI, although the very south	SSSI: 15.142  NNR: 0	<0.001  0	<0.01%  0	4.038  0	0.06%  0	Potential effects on birds and intertidal habitats are assessed as part of the Severn Estuary SAC SPA Ramsar within which the SSSI falls. 1) Re-routing of south-most 400kV line would incur 0.61ha temporary loss of semi-improved neutral grassland to dismantling working area, scaffold and access. Habitat gain following removal of 2x pylons would be small-scale (<0.001ha grassland). 2) Re-routing of 275kV line would incur 0.52ha temporary

National Designated Wildlife Sites								
Key: SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>west tip is overflown (no loss of treed habitats). Designated land between East and West Brooks, currently overflown, would remain so. The scaffold working area spanning Wick Moor Drove is shown in GIS to fall within the SSSI; at detailed design linear boundary features will be avoided.</p> <p>2) 275kV line to be re-routed into Shurton substation. Runs immediately north of re-routed 400kV line, along the southern edge of SSSI – 2x existing pylons removed within SSSI (dismantling areas inevitably fall within designated land), 1x pylon (VQ3A) constructed inside southern edge of SSSI (working area avoids encroachment), 1x pylon (VQ2) &lt;50m outside. Again, land between East and West Brooks, currently overflown, would remain so.</p> <p>3) 1x new 400kV line (pylons JP1 to JP6) proposed between Hinkley and Shurton substation – 2x new pylons (JP2 &amp; JP3) and associated EPZ fall within the SSSI. The scaffold working area overlies the SSSI but encroachment would be avoided at detailed design.</p> <p>Construction accesses utilise existing accesses and/or fall outside of the SSSI where practical but short stretches inevitably fall within designated land to access the pylons. A single culvert is</p>		column.)				<p>loss of semi-improved neutral grassland to dismantling and no greater than 0.83ha to construction (further minimised at detailed design). Net gain following removal of 1x pylon would be small-scale (&lt;0.001ha).</p> <p>3) New 400kV line incurs temporary working areas of 2.05ha semi-improved neutral grassland and 0.0026ha permanent loss of wooded habitat (blackthorn and elm hawthorn) which has established along the new access road.</p> <p>Temporary loss of 3 sections of species-poor hedgerow, all lying on the site boundaries, totalling 164.5m.</p> <p><u>Habitat change:</u> Loss of 1 tree and pruning of 7 trees within the SSSI.</p> <p><u>Permanent loss:</u> Permanent loss to 2x pylon feet would be small-scale (&lt;0.001ha grassland), negating any gain from the lines described above.</p> <p><u>Other effects:</u> Installation of a single culvert to facilitate access for the duration of works (medium-term loss of a short stretch of watercourse, plus localised disturbance during installation and removal) is not anticipated to incur any</p>

<b>National Designated Wildlife Sites</b>								
<b>Key:</b> SSSI (Site of Special Scientific Interest), NNR (National Nature Reserve), SPA (Special Protection Area), SAC (Special Area of Conservation)								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		proposed.						discernible effect on the integrity of the SSSI.
Chew Valley Lake SSSI	575.94	Chew Valley Lake SSSI lies over 9km to the east the Order Limits.	0	0	-	0	-	Chew Valley SSSI has been considered in respect of possible collision risk for northern shoveler and migratory waterbirds, but due lack of bird movement between the Severn Estuary and Chew Valley Lake no collision risk for SSSI birds has been identified.

## Potential Effects On County And Local Wildlife Designations

**Table 2: Potential Effects on County and Local Wildlife Designated Sites**

<b>County and Local Designated Wildlife Sites</b> Key: LNR (Local Nature Reserve), LWS (Local Wildlife Site), CWS (County Wildlife Site), SNCI (Site of Nature Conservation Importance), WTR (Avon Wildlife Trust Reserve), WNS (Wildlife Network Sites).								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Hinkley LWS	38.91	<p>Two existing 400kV overhead lines (ZZ-Route) connecting into Hinkley substation will be removed within the LWS. The line will be replaced with a new 400kV overhead line into Shurton Substation south of the designated site.</p> <p>The proposed 400kV overhead line overflies the LWS with the working areas for 3x lattice pylons lying within the site (JP5, ZG1 &amp; JP6).</p> <p>A construction access road is located adjacent to the southern boundary of the site and two access roads are located within the site.</p>	1.111	<0.001	<0.01%	0.256	1.42%	<p><u>Temporary habitat loss:</u> Localised loss of modified neutral grassland and semi-improved neutral grassland (0.256ha). Temporary loss of 94m of hedgerow related to pylon working area and access road.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland loss related to pylon feet which is &lt;0.01%.</p> <p><u>Other effects:</u> Potential pollution of a ditch (TEP519), adjacent to the southern boundary of the site from access road construction and use for the 400kV overhead line. Disturbance/loss of two trees with bat roost potential during construction activities.</p>
Hinkley Point Nature Reserve	7.41	<p>The proposed 400kV line lies 100m to the south of the Nature Reserve.</p> <p>An access road for the 400kV construction lies adjacent to the south boundary crossing the boundary for a short section</p>	0.029	0	-	0.03	0.4%	<p><u>Temporary habitat loss:</u> Localised loss of semi-improved neutral grassland for construction of access road. Loss of scattered scrub bordering the area of semi-natural woodland within the nature reserve.</p> <p><u>Other effects:</u> Loss of nesting bird habitat.</p>

County and Local Designated Wildlife Sites								
Key: LNR (Local Nature Reserve), LWS (Local Wildlife Site), CWS (County Wildlife Site), SNCI (Site of Nature Conservation Importance), WTR (Avon Wildlife Trust Reserve), WNS (Wildlife Network Sites).								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Upper Dunwear Brick Pits LWS	2.45	The LWS lies c.390m south of the Order Limits. The existing F-Route removal is the closest Development Component with the proposed 400kV c.4km to the north.	0	0	-	0	-	No direct or indirect effects predicted on the LWS.
Beeches Pond LWS	2.08	The LWS lies c.40m west of the Order Limits. The existing F-Route to be removed lies c.70m east of the LWS, with existing access road off Westonzoyland Road c.55m east. The proposed 400kV lies 3.2km to the north.	0	0	-	0	-	No direct or indirect effects predicted on the LWS.
Little Wall Lane LWS	1.03	The F-Route overflies the western end of the LWS. With a pylon working area for removal works located c.50m south of the LWS.	0.036	0	-	0	-	No direct or indirect effects predicted on the LWS as a result of removal of the existing F-Route.
New Ground Covert LWS	3.64	An existing track lies along the southern boundary of the site. The track will be improved for construction traffic. The proposed 400kV overhead line lies c.265m to the west of the LWS.	0.021	0	-	0	-	No direct or indirect effects predicted on the LWS.
Stoning Pound Field South & Stoning Pound Rhynes LWS	1.68	The existing 132kV overhead line (F-Route) overflies the LWS and an existing pylon to be removed, plus associated working area, lies within the eastern end of the LWS, including Stoning Pound Rhyne.	0.097	0	-	0.045	2.65%	<u>Temporary habitat loss:</u> Localised loss of semi-improved grassland and swamp (0.04ha) if detailed design cannot entirely avoid encroachment. The remainder (0.005ha) is made up of hardstanding. Habitat loss is related to the working area for the removal

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				Area (ha)	%	Area (ha)	%	
		The proposed 400kV line overflies Stoning Pound Rhyne to the east of the designation. Pylon ZGA-11 and associated working area lies adjacent to the south of the site boundary. Whilst construction accesses use existing tracks where possible, an access road runs along Moormeade Drove adjacent to Stoning Pound Rhyne at the eastern edge of the LWS.						of 132kV overhead line and construction of pylon ZGA-11 for the proposed 400kV overhead line. <u>Habitat change:</u> Pruning of 1 willow tree lying on the edge of Stoning pound rhyne.
Puriton Rhynes & Ponds LWS	28.86	The north eastern corner of the site is within the Order Limits and a temporary pylon (ZGO42ATEMP) and associated working area are located within the site boundary for the existing 400kV overhead line. The EPZ for the pylon is also located in the north eastern corner of the site. The temporary pylon is facilitating the removal of an existing section of the 400kV overhead line and the redirecting of the existing line along a new route.	0.762	0	-	0.211	0.73%	<u>Temporary habitat loss:</u> Localised loss of 0.171ha of semi-improved grassland as a result of the temporary pylon. The remaining temporary habitat loss is related to an existing track (0.04ha). <u>Other effects:</u> There is no associated tree or hedge loss.
Borrow Pit, Puriton LWS	4.49	The existing F-Route overflies the eastern boundary of the LWS and the working area for one pylon to be removed falls within the designated area.	0.145	0	-	0.004	0.09%	<u>Temporary habitat loss:</u> Localised loss of 0.004ha of swamp habitat resulting from the removal of an existing 132kV pylon (F-Route). <u>Other effects:</u> There is no associated tree or

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				Area (ha)	%	Area (ha)	%	
		The existing access road for the F-Route runs adjacent to the south east LWS boundary.						hedge loss. Loss of terrestrial GCN habitat and associated risk of killing and injury.
'Bridgwater Bay NNR' LWS	134.87	The proposed 400kV and existing F-Route overflies the LWS at the eastern end. An existing 132kV pylon on the F-Route due for removal is located within the LWS with associated working area and scaffolding. An access road for the existing F-Route is located within the site, providing access from Causeway Road. The 400kV overhead line traverses the site. Scaffolding and associated working is located within the LWS on the southern boundary, facilitating the line over Causeway Road. Pylon LD-3 and the associate working area are located c.40m south of the site. Pylon LD-4 and associated working area are located adjacent to the northern boundary of the LWS.	2.111	0	-	0.341	0.27%	<u>Temporary habitat loss:</u> Localised loss of semi-improved, modified neutral grassland and dense scrub (0.333ha) where detailed design cannot entirely avoid encroachment. The remainder (0.008ha) is made up of roads. Linear boundary features will be retained. <u>Habitat change:</u> Loss of 2 hawthorn and pruning of 1 crack willow trees associated with the scaffolding working area for the 400kV and 132kV removal. <u>Other effects:</u> Small-scale gain (0.001ha) of grassland through removal of pylon from within designated land. No direct effects on riparian corridor or associated fauna. The LWS is known to support otter. Any potential disturbance of otter moving through the river corridor during pylon construction would be short-term and restricted to daylight hours.
River Brue LWS	15.67	The existing F-Route and proposed 400kV line oversails the River Brue. Scaffold working areas lie adjacent to both north and southern boundaries of the	0.153	0	-	0	-	<u>Temporary habitat loss:</u> Potential temporary loss of 47m of species-poor hedgerow on the northern bank associated with the scaffolding working area. <u>Habitat change:</u>



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				Area (ha)	%	Area (ha)	%	
		LWS.						Pruning of an ash and hawthorn tree along the southern bank of the River Brue just outside the LWS boundary. <u>Other effects:</u> No direct or indirect effects predicted on the grassland habitats within the LWS as a result of the construction of the proposed 400kV overhead line and removal of the 132kV. The river will be oversailed and therefore no direct or indirect effects predicted on riparian habitat.
River Axe LWS	36.38	Existing F-Route overflies the River Axe and an access road to an existing pylon to be removed runs along the north bank of the river. Proposed 400kV underground line would cross the River Axe via either a permanent clear-span cable bridge or HDD option. An additional temporary bridge will also be required to allow construction access for the cable bridge. Habitat calculations have been based on the permanent cable bridge therefore if the HDD option is selected the habitat losses stated will be reduced.	0.930	0.023	0.06%	0.052	0.14%	<u>Temporary habitat loss:</u> Localised loss of 0.052ha of semi-improved grassland habitat during construction of the permanent cable bridge and temporary bridge to facilitate construction over the River Axe and the removal of the F-Route. <u>Permanent habitat loss:</u> The clear span cable bridge across the River Axe is a permanent feature and will therefore have permanent habitat loss to some bankside habitat. If the HDD option is selected no impact on the bankside habitat will be generated. <u>Habitat change:</u> Potential loss of 1 ash tree located 5m to the south of the River Axe LWS. <u>Other effects:</u>

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				Area (ha)	%	Area (ha)	%	
								Pollution/disturbance of River Axe and adjacent ditches with water vole from removal of pylon for the 132kV existing overhead line and construction of access road and associated trenching works and machinery for the 400kV underground line.
Lox Yeo River SNCI	12.68	The Lox Yeo is overflowed by the existing F-Route to be removed and the proposed 400kV underground line where HDD is proposed. The online underground haul road crosses the Lox Yeo therefore a temporary bridge will be installed. One existing F-Route pylon is scheduled for removal lies within the designated riparian corridor.  2.3km of the Lox Yeo runs alongside the Proposed Development, between the point of crossing and the M5, 460m away to the north west at its widest point.	1.035	0  (+ impacts on treed habitats as detailed in the potential effects column.)	-	0.096	2.89%	<u>Temporary habitat loss:</u> Localised loss of arable, improved grassland (0.096ha) along the banks of the river for construction of online access road, temporary bridge, scaffolding and associated working areas. The remainder is semi-natural broadleaved woodland. <u>Habitat change:</u> Loss of 1 crack willow tree associated with the underground cable works. In addition potential loss of 12 ash and crack willow trees located along the banks of the Lox Yeo, although these trees will only be impacted if the preferred HDD option is not used. Loss of 0.0195ha of semi-natural broad-leaved woodland along the river to allow the construction of the on line haul road for the underground cable works. <u>Other effects:</u> Potential disturbance of water voles in ditches connected to the Lox Yeo

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				Area (ha)	%	Area (ha)	%	
								and within the River itself.
Max Bog, Winscombe Stream & Adjacent Fields SNCI	31.35	The site lies outside of the Order Limits. The existing 132kV overhead line (F-Route) for removal lies c.335m to the west of the SNCI. The proposed 400kV underground line works lies c.540m to the west of the SNCI.	0	0	-	0	-	<u>Other effects:</u> The Proposed Development lies c.335m distance downslope of the SNCI. The Lox Yeo River SNCI connects the construction activity with the SNCI, Taking into account the mitigation measures set out in <b>Volume 5.10, Section 10.7</b> , works are not anticipated to speed or hinder drainage of the peatland habitats. No adverse effects are anticipated on the hydrological function of the calcareous lowland mire or wet grassland habitats of the SSSI.
Dismantled Railway & Adjacent Fields, Winscombe SNCI	10.37	The 400kV underground line works lie c.100m west of the SNCI at the closest point.	0.012	0	-	0	-	No direct or indirect effects predicted on the SNCI.
Cheddar Valley Railway Walk LNR	28.59	A section of the Cheddar Valley Railway LNR lies adjacent to the new proposed Sandford substation. The 132kV underground line (A-T route) lies within this compound, falling within 10m of a section of the LNR. The proposed 400kV underground and overhead route runs alongside the LNR with c.3.7km being within 1km from construction proposals. Access routes for proposed routes crosses a section of the LNR.	0.137	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	0.012	0.08%	<u>Temporary habitat loss:</u> Localised loss of arable farmland (0.012ha) with construction access road. <u>Habitat change:</u> Loss of young plantation (0.014ha) through construction of A-T Route underground line into Sandford Substation.

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				Area (ha)	%	Area (ha)	%	
Banwell Hill SNCI	17.98	The SNCI lies c.880m north west of the order limit. The existing F-Route for removal lies c.1.1km to the south east of the SNCI. Construction of the proposed 400kV underground line is located c.940m south east of the SNCI.	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.
Banwell Wood SNCI	39.67	The existing F-Route to be removed lies c.10m east of the SNCI, and an existing access runs along the northern SNCI boundary. The proposed 400kV underground line lies c.60m east of the SNCI beyond the F-Route.	0	0	-	0	-	<u>Other effects:</u> Severance of 'important' Hedgerows 56a and 56b extending north and east from the SNCI (but not within the SNCI ) as a result of the 400kV underground line. Potential effect on commuting and foraging bats.
Towerhead Brook (part of) & Adjacent Land SNCI	37.42	The brook is crossed by the existing F-Route. Scaffold and working areas associated with pylon removal overlie the designated riparian corridor. The proposed 400kV underground line runs alongside (west) of the Brook for c.1.1km, crossing it via a clear-span cable bridge. The bridge carries the permanent emergency access to Sandford Substation. Two scaffolding areas and associated working areas are located within the site for the	1.091	0.017	0.06%	0.251	0.67%	<u>Temporary habitat loss:</u> Localised loss of improved and semi-improved grassland adjacent to the brook through construction of the access bridges (both the cable bridge and construction access bridge). The effect to the brook and marginal habitats along Towerhead Brook would be minimal with construction of a clear span cable bridge. Temporary loss of 52m of species-poor hedgerow with trees. <u>Permanent habitat loss:</u> The cable bridge across the River Axe is a permanent feature and will

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				Area (ha)	%	Area (ha)	%	
		existing overhead line (F-Route) due for removal.						therefore have permanent habitat loss. Permanent loss of 7m of species-poor hedgerow as the cable bridge over Towerhead Brook will be a permanent structure. <u>Habitat change:</u> Loss of 2 ash trees along the banks of Towerhead Brook, both of which were considered to have bat roosting potential. <u>Other effects:</u> There are an additional 3 trees along Towerhead Brook with bat potential that may be disturbed during construction works. Confirmed bat roost (tree 191) is located c.30m to the east of construction works. Mitigation requirements will be implemented as in the NE licence to avoid impact. Loss of terrestrial GCN habitat and associated risk of killing and injury.
Yanal Bog & Adjacent Rhyne SNCI	2.18	The existing 132kV overhead line lies c.820m to the west of the site. The proposed 400kV overhead line lies c.650m to the west of the SNCI. A section of the AT-Route undergrounding into Sandford Substation lies c.620m to the south west.	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.
Puxton Moor SSSI &	241.75	The existing 132kV overhead	13.06	<0.001	<0.01%	3.382	1.39%	<u>Temporary habitat loss:</u>

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				Area (ha)	%	Area (ha)	%	
Surrounding Rhynes SNCI		<p>line (F-Route) for removal overflies the SNCI, with 2 pylons lying within the SNCI boundary and 1 bordering to northern edge.</p> <p>The existing 132kV overhead line (AT-Route) for removal overflies the SNCI with 3 pylons due for removal lying within the site.</p> <p>The proposed 400kV overhead line overflies the SNCI with 2 pylons (LD-44 and LD-45) lying within and 2 pylons lying adjacent to the east boundary (LD-46 and LD-48). Pylon LD-47 is located approximately 60m east of the site boundary. The access road for the 400kV overhead line is culverted over 6 ditches in the site.</p>						<p>Localised loss of dense scrub, improved grassland, semi-improved grassland and tall ruderal herbs (2.908ha) related to both construction working areas of 2 pylons for the proposed 400kV overhead line and the removal of 5 132kV pylons from within the site boundary. The remainder of the impact is existing roads.</p> <p>There will be temporary impact to ditch habitat during the installation of the culverts for the construction access roads.</p> <p>Temporary loss of 5 short sections of species-poor hedgerow totalling 79m in length.</p> <p><u>Permanent habitat loss:</u></p> <p>There will be a small amount of grassland loss related to pylon feet of the 400kV which is &lt;0.01%.</p> <p><u>Habitat change:</u></p> <p>Loss of 4 trees and pruning of 5 trees within the SNCI of crack willow or poplar species.</p> <p><u>Other effects:</u></p> <p>However due to the removal of 5 132kV pylons there will be a small-scale gain (0.001ha) of grassland through removal of pylon from within designated land.</p>
Puxton Moor Avon WTR	69.40ha	Puxton Moor Avon Wildlife Trust Reserve encompasses the majority of the same area as Puxton Moor SSSI (surrounding rhynes). In	0	0	-	0	-	No direct or indirect effects identified on the Avon WTR.

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				Area (ha)	%	Area (ha)	%	
		<p>addition to the SNCI which also extends to the east.</p> <p>No construction works fall within the Avon WTR.</p> <p>The existing 132kV overhead line (F-Route) lies c.35m to the east of the site. The existing 132Kv overhead line (AT-Route) lies c.200m to the south.</p> <p>The proposed 400kV overhead line lies c.80m to the east at its closest point.</p>						
Rhynes South of Dolemoor Lane SNCI	11.55	<p>The existing F-Route lies c.20m to the west of the site boundary.</p> <p>The proposed 400kV line overflies the west boundary of the SNCI along approximately the same alignment as the existing F-Route.</p> <p>Part of the working areas for pylon LD-49 falls within the north west corner of the SNCI.</p> <p>A construction access road, bellmouth and scaffolding over Dolemoor Lane also lies within the north west corner of the site.</p>	0.403	0	-	0.074	0.64%	<p><u>Temporary habitat loss:</u></p> <p>Localised loss of 0.069ha of semi-improved grassland related to construction working areas. The remainder of the habitat impacted is existing roads (0.005ha).</p> <p>Temporary loss of a total of 276m of hedgerow that lies along Dolemoor Lane to the north of the SNCI.</p>
Congresbury Yeo Adjacent Land & Rhynes SNCI	283.24	<p>The existing F-Route crosses the SNCI and the proposed 400kV runs alongside to the west.</p> <p>The SNCI encompasses</p>	10.101	0	-	2.272	1.36%	<p>See Biddle Street Yatton SSSI above.</p> <p><u>Temporary habitat loss:</u></p> <p>Localised loss of dense scrub, improved grassland, semi-improved</p>

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				Area (ha)	%	Area (ha)	%	
		<p>Biddle Street Yatton SSSI (which is tightly tied to the watercourses); hence, potential effects on the SNCI include those on the SSSI as follows:</p> <ul style="list-style-type: none"> <li>- Temporary loss of running/standing water.</li> <li>- Disturbance and fragmentation to water vole habitat.</li> <li>- Pollution of watercourses including the Congresbury Yeo River from construction activities.</li> </ul> <p>Additionally, scaffold areas overlie the designated rhynes that flank Wemberham Lane and the railway line.</p> <p>The SNCI includes all land inbetween the SSSI designated rhynes; hence, incurs a larger area of habitat loss.</p>						<p>grassland and tall ruderal herbs (2.272ha) part of which will also impact the SSSI.</p> <p>Temporary loss of 106m of species-poor hedgerow.</p> <p><u>Habitat change:</u></p> <p>Loss of 1 ash tree and pruning of another will take place within the SNCI as a consequence to the clearance requirements to the proposed 400kV overhead line.</p> <p><u>Other effects:</u></p> <p>Installation of three watercourse crossings for the duration of works, in accordance with mitigation measures set out in <b>Volume 5.10</b>, <b>Section 10.7</b>, will incur habitat loss of 18m in the medium-term and additional 12m to dry working in the short-term during installation and removal. However, these are not anticipated to pose any discernible effect on the integrity of the ditch network (particularly in terms of fragmentation) in the long term. In worst-case scenario, localised extinction of rare species may occur as a result of such habitat loss.</p> <p>No adverse effects on designated ditches as a result of proposed oversailing lines.</p>
Nailsea and Tickenham Moors SNCI	1001.95	The existing F-Route crosses the entire length of the SNCI and the existing W-Route crosses the north east tip.	62.106	0.0063 (+ impacts on treed habitats as	<0.01%	21.22	2.12%	<p><u>Temporary habitat loss:</u></p> <p>Localised loss of amenity grassland, arable, improved grassland, marshy grassland and</p>



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				Area (ha)	%	Area (ha)	%	
		<p>The proposed 400kV runs alongside the existing F-Route, diverting farther north along a more direct route toward Tickenham.</p> <p>The F-route and W-Route 132kV pylons will be removed (totalling 13 pylons) and the 400kV pylons installed (15 pylons). The 132kV W-route will be undergrounded across the SNCI.</p> <p>The SNCI encompasses Tickenham Nailsea &amp; Kenn Moors SSSI (which is tightly tied to the watercourses); hence, potential effects on the SNCI include those on the SSSI as follows:</p> <ul style="list-style-type: none"> <li>- Temporary loss of running/standing water.</li> <li>- Disturbance and fragmentation to water vole habitat.</li> <li>- Pollution of watercourses including the Congresbury Yeo River from construction activities.</li> </ul> <p>The SNCI includes all land in between the SSSI designated rhynes; hence, incurs a larger area of grassland habitat loss or modification.</p> <p>6m stand-off will be enforced on all construction accesses</p>		detailed in the potential effects column.)				<p>semi-improved grassland (19.256ha); encroachment minimised at detailed design. The remainder (1.964ha) of impacted habitat is bareground, hardstanding, private house and garden or roads.</p> <p>Temporary loss of 1,135m of hedgerow located within the SNCI including 6.589m of 'important' hedgerow.</p> <p><u>Permanent habitat loss:</u></p> <p>There will be a small amount of grassland loss related to pylon feet of the 400kV which is &lt;0.01%.</p> <p><u>Habitat change:</u></p> <p>Loss of 39 trees to the overhead easement and, specifically at Parish Brook, loss of 5 trees at the crossing point of the W-route access road for the 132kV underground works. Additionally there will be pruning of 24 trees to facilitate works. Loss of sections of 4 tree groups which are made up of 2 scattered tree groups (0.0389ha) and 2 outgrown hedgerows (0.0932ha). The 'outgrown hedgerows' tree groups will be replaced by hedgerows on completion of works and therefore impacts are only temporary.</p> <p><u>Other effects:</u></p> <p>The 28 culverts and four bridges would incur medium term loss of</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		wherever practicable, however, 32 watercourse crossings (28 culverts, four bridges) are proposed. A total of 7x scaffold working areas overlie the SNCI. In reality NG seek to protect the ditches in question and direct encroachment will be avoided.						<p>320m watercourse whilst in place for the duration of works and 128m short-term loss to dry working during installation or removal. However, these are not anticipated to pose any discernible effect on the integrity of the ditch network (particularly in terms of fragmentation) in the long term. In worst-case scenario, localised extinction of rare species may occur as a result of such habitat loss.</p> <p>The SNCI supports otter (numerous records relate specifically to Parish Brook), although no evidence was recorded within the surveyed stretch during 2012-13. Any potential disturbance to otter moving through the SNCI will be restricted to daytime working hours. Disturbance of great crested newt (GCN) terrestrial habitat from construction works (Site 11). Disturbance/loss to 18 trees with bat roost potential along the length of the construction route. Disturbance of water vole. Potential pollution of ditches from construction activities. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p>
Nursebatch Farm Fields SNCI	11.28	The existing 132kV overhead line for removal (W-Route)	0.156	0	-	0.092	0.82%	<p><u>Temporary habitat loss:</u> Localised loss of semi-improved</p>

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				Area (ha)	%	Area (ha)	%	
		crosses the south and east of the site. 1 pylon for removal lies within the eastern corner. The proposed undergrounding of the W-Route lies c.50m to the north east of the site.						grassland (0.091ha) related to removal of the 132kV pylon working area.
Batch Farm Meadow SNCI	2.85	The existing 132kV overhead line (F-Route) for removal is located c.380m east and c.480m west of the SNCI.  The 132kV undergrounding of the W-Route and associated compound and access roads lies c.440m north east of the SNCI.  The proposed 400kV overhead line works lie c.710m north west of the SNCI.	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.
Fields along Youngwood Lane SNCI	5.90	An access route for the removal of the existing 132kV overhead line (W-Route) lies c.480m east of the SNCI.  The 132kV undergrounding of the W-Route and associated compound and access roads lies c.510m north east of the SNCI.	0	0	-	0	-	The site lies 510m upstream of the Proposed Development and, following implementation of mitigation measures set out in <b>Volume 5.10, Section 10.7</b> , no direct or indirect effects predicted on the SNCI.
West End Meadows, Nailsea SNCI	1.31	The existing 132kV overhead line (W-Route) for removal is located c.210m to the west.  The closest element of proposed construction is an access road for the 132kV overhead line (W-Route)	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.

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				Area (ha)	%	Area (ha)	%	
		removal c.25m to the north of the SNCI. Additionally, construction of the W-Route 132kV underground line is located c.220m north of the SNCI.						
Summerhouse Wood SNCI	3.3	No construction works lie directly within the SNCI although a number of elements are in close proximity. The existing 132kV overhead line (F-Route) for removal is located c.235m to the north west of the site. The existing 132kV overhead line (W-Route) for removal is located 210m to the north west. The proposed 400kV overhead line works lie c.170m north west. The proposed undergrounding of the 132kV W-Route works lie 125m to the north west.	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.
Tickenham Hill Avon WTR	17.35	No construction works fall within the Wildlife Trust Reserve. The closest Development Component is over 1km to the east.	0	0	-	0	-	No direct or indirect effects identified on the Avon WTR.
Abbot's Horn SNCI	1.2	The existing 132kV overhead lines F-Route and W-Route pass within 10m of the	0.245	0	-	0	-	Severance of 'important' Hedgerows 106-108, which lie outside but are connected to the

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		southern boundary of the SNCI. The 132kV underground W-Route passes c.90m to the south of the SNCI. The proposed 400kV overhead line (pylon LD-84) lies c.50m south of the SNCI. Additionally, there are associated access roads to the pylon locations.						SNCI and therefore have implication to bat foraging activity. Temporary loss of 52.53m of hedgerow.
Tickenham Hill, Cadbury Camp & Chummock Wood Complex SNCI	156.58	The SNCI includes one land parcel north of the Order Limits (woodland complex centred around Chummock Wood) and one to the south (centred around Mogg's Wood). The northern woodland lie adjacent to the Order Limits. The existing 132kV overhead lines F-Route and W-Route overfly Mogg's Wood. A 132kV pylon from each of the W-Route and F-Route located within the SNCI would require removal with associated working areas and access roads. One 132kV F-route is removed and the other W-route is undergrounded which would run beneath the woodland using HDD.	1.674	<0.001 (+ impacts on treed habitats as detailed in the potential effects column.)	<0.01%	0.850	0.54%	<u>Temporary habitat loss:</u> Localised habitat loss of amenity grassland, improved grassland and semi-improved grassland (0.760ha). The remainder is semi-natural woodland and roads. Loss of an 'important' species-rich hedgerow along Cadbury Camp Lane on the northern edge of the SNCI totalling 66m in length. The hedgerow contains 6 trees with bat roosting potential that will be removed to facilitate scaffolding works. <u>Permanent habitat loss:</u> There will be a small amount of grassland loss related to pylon feet of the 400kV which is <0.01%. <u>Habitat change:</u> Woodland canopy loss is considered permanent habitat

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		The proposed 400kV line overflies the north west tip of the southern SNCI parcel. Pylon LD-87, associated working area and accesses fall within the SNCI.						modification due to on-going management. Therefore the permanent woodland change within the SNCI based on canopy size is 0.361ha. Although the canopy will be impacted the ground flora will be retained. <u>Other effects:</u> Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Potential disturbance of two badger setts on the edge of Chummock Wood (Setts 16 & 16.1) from the trenching works associated with the underground line (W-Route). Although a 30m buffer will be secured as in NE licence.
Gordano Valley, Clapton Moor, Middle Bridge & Rhynes SNCI	279.88	The Order Limits lie c.420m to the east of the SNCI and lies c.1.5km adjacent to the development. The closest Development Component is the removal of the 132kV overhead line (F-Route) lying c.420m east.	0	0	-	0	-	<u>Other effects:</u> As the SNCI is hydrologically linked to the development site there is potential risk of transfer of construction-related pollutants into site during works, although pollution prevention measures will be put into place during construction works.
Fields West of Lower Caswell House SNCI	19.81	The existing 132kV overhead line (F-Route) for removal overflies the SNCI. Two pylons to be removed and associated accesses fall within the SNCI.	1.242	0	-	0.64	3.23%	<u>Temporary habitat loss:</u> Localised loss of semi-improved grassland from the removal of the existing pylons in the site. Associated accesses will use existing routes therefore causing no impact to ditch habitat.

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Birch Wood & Prior's Wood SNCI	89.21	<p>The existing 132kV overhead line (W-Route) for removal lies c.35m to the west at its closest point.</p> <p>The proposed W-Route undergrounding line and online haul road cross the north west corner of the SNCI.</p> <p>The proposed 400kV lies c.70m to the west of the SNCI.</p> <p>Scaffold and working areas associated with pylon LD-93 over the M5 lies within the north west corner of the SNCI; the pylon itself lies c.30m outside the SNCI.</p>	0.224	0	-	0.224	0.25%	<p><u>Temporary habitat loss:</u> Localised loss of arable, continuous bracken and semi-improved grassland.</p> <p>Temporary loss of 2 sections of species-poor hedgerows along Caswell Hill totalling 59m.</p> <p><u>Habitat change:</u> Loss of 1 ash tree within the north west tip of the site.</p>
Prior's Wood Avon WTR	62.13	<p>There are no construction works within the Avon Wildlife Trust Reserve.</p> <p>The existing 132kV overhead line (W-Route) that is to be removed is currently located c.50m to the west of the Avon Wildlife Trust Reserve.</p> <p>Undergrounding of the 132kV W-Route lies immediately to the west of the Avon WTR.</p>	0	0	-	0	-	No direct or indirect effects identified on the Avon Wildlife Trust Reserve.
Fields on Caswell Moor SNCI	18.93	<p>The existing 132kV overhead line (W-Route) for removal lies c.100m to the west of the SNCI.</p> <p>The proposed undergrounding of the 132kV W-Route lies</p>	3.892	<p>Option A: &lt;0.001</p> <p>Option B: 0</p> <p>(+ impacts</p>	<p>&lt;0.01%</p> <p>-</p>	<p>Option A: 0.9</p> <p>Option B: 0</p>	<p>4.75%</p> <p>-</p>	<p><b>Preferred Route (Option A)</b></p> <p><u>Temporary habitat loss:</u> Localised loss of arable and semi-improved grassland associated with pylon working areas (0.83ha). The remainder of the temporary loss</p>

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				Area (ha)	%	Area (ha)	%	
		<p>c.35m to the west.</p> <p><b>Preferred Route (Option A)</b> The proposed 400kV line overflies the south of the SNCI, alongside the M5. Pylons LD-96 &amp; LD-97, associated working areas and accesses fall within the SNCI.</p> <p><b>Alternative Route (Option B)</b> The proposed 400kV line lies c.15m to the west adjacent to the site boundary. Pylon P-LD95 and associated access roads lie just outside the SNCI.</p>		on treed habitats as detailed in the potential effects column.)				<p>figure is existing roads. Temporary loss of 1 section of species-poor hedgerow 33m in length.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland loss related to pylon feet of the 400kV which is &lt;0.01%.</p> <p><u>Habitat change:</u> Additional loss of 14 trees and pruning of 8 trees (crack willow, ash and sessile oak) located within the SNCI as a result of construction activities, 4 of which were found to have roosting bat potential. There is no habitat loss associated with the <b>Alternative Route (Option B)</b></p>
Drove Rhyne & Adjacent Fields SNCI	19.64	<p>Existing G-Route overflies the SNCI. 2x pylons to be removed, associated working areas and scaffold flanking Drove Rhyne overlie the SNCI.</p> <p><b>Preferred Route (Option A)</b> Proposed 400kV line overflies the SNCI. Pylon LD-100, associated working areas and scaffold flanking Drove Rhyne lie adjacent to the south SNCI boundary.</p> <p><b>Alternative Route (Option B)</b> Proposed 400kV line overflies the SNCI. Pylon P-LD102B associated working areas and accesses lies within the SNCI.</p>	4.294	<p>Option A: &lt;0.001</p> <p>Option B: &lt;0.001 (+ impacts on treed habitats as detailed in the potential effects column.)</p>	<p>&lt;0.01%</p> <p>&lt;0.01%</p>	<p>Option A: 0.557</p> <p>Option B: 0.553</p>	<p>2.84%</p> <p>2.82%</p>	<p><u>Temporary habitat loss:</u> Localised loss of modified neutral grassland and dense scrub (0.292ha) habitat associated with the 132kV overhead line (G-Route) removal works.</p> <p><u>Other effects:</u> Loss of foraging habitat for bats in dense scrub areas, plantation woodland, and swamp areas. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p> <p><b>Preferred Route (Option A)</b> <u>Temporary habitat loss:</u> Localised loss of dense/continuous scrub and tall ruderal herbs</p>



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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		Pylon P-LD102C abuts the east SSCI boundary.						<p>(0.239ha) associated with the construction of the Preferred Route (Option A). The remainder falls on existing areas of hardstanding (0.025ha).</p> <p><u>Habitat change:</u></p> <p>Loss of 16 crack willow, ash, birch, grey poplar and lombardy poplar trees within the SSCI as a result of safety clearance of the 400kV overhead line. In addition there will be pruning of 20 trees within the SSCI. Loss of 1 tree group within the SSCI with a canopy size of 0.066ha.</p> <p><b>Alternative Route (Option B)</b></p> <p><u>Temporary habitat loss:</u></p> <p>Localised loss of dense/continuous scrub, modified neutral grassland and species-poor modified neutral grassland.</p> <p>Temporary loss of a total of 32.4m of species-poor hedgerow to facilitate construction.</p> <p><u>Habitat change:</u></p> <p>Loss of 8 and pruning of 1 ash, grey poplar and oak trees within the SSCI, 3 of which were considered to have bat roosting potential.</p>
Portbury Wharf Nature Reserve SSCI -includes Portbury Wharf Nature Reserve Avon WTR	47.99	The SSCI and Avon WTR designations form part of the same functional reserve and there is some overlap of the designations.	14.232	Option A: 0	-	Option A: 8.038	16.75%	<p><b>The following section relates to impacts common to both routes.</b></p> <p><u>Temporary habitat loss:</u></p> <p>Localised loss of semi-improved grassland, modified neutral</p>
				Option B:	<0.01%	Option B:	17.87%	

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>The existing F-Route (2x pylons to be removed) and W-Route (3x pylons to be removed) overfly the SNCI on route to Portishead substation.</p> <p>The proposed W-Route underground line runs along similar alignment for approximately half this distance but diverts east for the remainder, crossing the SNCI.</p> <p>The existing G-Route overflies the northern tip of the SNCI, including 1 pylon to be removed.</p> <p><b>Alternative Route (Option B)</b></p> <p>The proposed 400kV line crosses the centre of the SNCI. Pylons P-LD98, associated working areas, scaffold, accesses and EPZ fall within the SNCI.</p>		<0.001 (+ impacts on treed habitats as detailed in the potential effects column.)		8.574		<p>grassland, tall ruderal, swamp and scattered scrub (7.778ha) associated with the removal of the 132kv pylons and undergrounding works of the W-Route. The remainder is hardstanding and existing roads and tracks (0.260ha).</p> <p>Temporary loss of 199m of hedgerow within the SNCI.</p> <p><u>Habitat change:</u></p> <p>2 tree groups will be lost to facilitate construction consisting of tree species willow, hawthorn, blackthorn and sea buckthorn totalling 0.05ha based on canopy size. An additional 8 individual trees will also be lost and 1 tree pruned as a result of Development Components. 2 of the trees to be lost were identified as having bat roosting potential.</p> <p><u>Other effects:</u></p> <p>Small-scale gain (0.001ha) of grassland through removal of pylon from within designated land.</p> <p>There are 8 GCN ponds in the site and a further 5 within 250m. The 8 ponds within the site are not directly affected however an existing pylon due for removal is located adjacent to one of the ponds. National Grid has committed to zero loss of pond habitat. Potential risk for disturbance/kill/injury to GCNs and</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
								<p>loss and fragmentation of potential GCN foraging and refuge terrestrial habitats.</p> <p>Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p> <p>Disturbance to water vole and fragmentation of water vole habitat from culverting suitable ditch habitat.</p> <p>Pollution of other ditches in the site from the construction activities.</p> <p>Fragmentation of species-poor intact hedgerows and species-poor hedge and trees during construction of the 132kv underground line (W-Route).</p> <p><b>Alternative Route (Option B)</b></p> <p><u>Temporary habitat loss:</u> There will be localised loss of semi-improved grassland, tall ruderal herbs and dense/continuous scrub (0.525ha) associated with the construction of the 400Kv overhead line on the Alternative Route (Option B). The remainder falls on areas of existing hardstanding (0.011ha).</p> <p>Temporary loss of 96.98m of hedgerow associated only with Option B.</p> <p><u>Habitat change:</u> 2 tree group (0.06ha) consisting of hawthorn and elm species will be lost to construction of the</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
								<p>Alternative Route (Option B). An additional 16 trees will be lost to the construction and a further 4 trees will be pruned.</p> <p><u>Permanent habitat loss:</u></p> <p>There will be a small amount of permanent grassland loss related to pylon feet of the 400kV which is &lt;0.01%.</p> <p><u>Other effects:</u></p> <p>Loss of 2 bat roosts, 91a and 118a, due to overhead line clearance distances for the 400kV overhead line. Loss/pruning of 5 trees with bat roost potential within the site. Additional construction related to the Alternative Route (Option B) increasing potential risk for disturbance/kill/injury to GCNs and loss and fragmentation of potential GCN foraging and refuge terrestrial habitats.</p> <p>Fragmentation of species-poor intact hedgerows and species-poor hedge and trees during construction of the 400kV overhead line access road and the construction of pylon P-LD97.</p>
Portbury Wharf SNCI	16.29	<p>The existing G-Route overflies the SNCI, with 2 x132kV pylons to be removed located within the SNCI boundary.</p> <p><b>Alternative Route (Option B)</b></p>	8.904	<p>Option A: 0</p> <p>Option B: &lt;0.001</p> <p>(+ impacts on treed</p>	<p>-</p> <p>&lt;0.01%</p>	<p>Option A: 4.061</p> <p>Option B: 5.941</p>	<p>24.93%</p> <p>36.47%</p>	<p><b>The following section relates to impacts common to both routes.</b></p> <p><u>Temporary habitat loss:</u></p> <p>Localised loss of semi-improved grassland, dense/continuous scrub and tall ruderal herbs (3.864ha) associated with the removal of the</p>

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				Area (ha)	%	Area (ha)	%	
		<p>The proposed 400kv overhead line bisects the SNCI. Pylons P-LD99, P-LD100 and associated working areas, scaffolding, accesses and EPZ fall within the SNCI. The working area for P-LD101 abuts the north east corner of the SNCI.</p> <p>The existing BW-Route overflies the SNCI, with 1 x132kV pylons to be removed located within the SNCI boundary.</p> <p>The proposed underground BW-Route crosses through the centre of the SNCI into Portishead Substation with associated online haul road.</p>		habitats as detailed in the potential effects column.)				<p>G-Route pylons. The remainder of impact is associated with existing tracks (0.167ha).</p> <p><u>Other effects:</u></p> <p>There are 4 GCN ponds in the site and a further 7 within 250m. The 4 ponds within the site are not directly affected however an existing pylon due for removal is located adjacent to one of the ponds. National Grid has committed to zero loss of pond habitat. Potential disturbance/killing/injury to GCNs and loss and fragmentation of potential GCN foraging and refuge terrestrial habitats.</p> <p>Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p> <p>Fragmentation of species-poor intact hedgerows and species-poor hedge and trees during construction activities.</p> <p>Disturbance of water vole in ditches within and adjacent to the site.</p> <p>Potential pollution of ditches across the site from the construction.</p> <p><b>Alternative Route (Option B)</b></p> <p><u>Temporary habitat loss:</u></p> <p>Localised loss of semi-improved grassland, marshy grassland and dense/continuous scrub (1.803ha) associated with the re-routing of the BW-Route overhead line</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
								<p>underground into Portishead Substation and the construction of the proposed 400kV overhead line. Temporary loss of 292m of hedgerow associated with Option B.</p> <p><u>Habitat change:</u> Loss of 5 tree groups within the SNCI totalling an area of 0.58ha based on canopy size due to construction of the 400kV Alternative Route (Option B). An additional loss of 4 trees within the SNCI.</p> <p><u>Other effects:</u> There are 4 GCN ponds in the site and a further 7 within 250m. The four ponds within the site are not directly affected however a pond is located within the working area of the EPZ for pylon P-LD99. Potential disturbance/killing/injury to GCNs and loss and fragmentation of potential GCN foraging and refuge terrestrial habitats. Loss of bat roost (Tree 118a) on the southern boundary of the SNCI. The roost is located in close proximity of P-LD99. Loss of bat roost (Tree 91a) located c.200m to the south of the SNCI boundary. Disturbance/loss of 7 trees with bat roost potential within the site boundary from scaffolding and associated working areas for the</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
								400kV overhead line in the middle of the site.
Portbury Dock Wood SNCI	1.94	The existing 132kV overhead line (G-Route) for removal lies c.30m to the south of the SNCI. <b>Alternative Route (Option B)</b> The 400kV overhead line overflies the south western corner of the site. Pylon P-LD102C is located adjacent to the south SNCI boundary.	0.283	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	0	-	<b>Alternative Route (Option B)</b> <u>Habitat change:</u> Pruning of 4 grey poplar and balsam poplar trees within Portbury Dock Wood which were considered to have bat roosting potential. Additionally 0.002ha of semi-natural broad-leaved woodland of the edge of the SNCI will be lost. <u>Other effects:</u> Disturbance to nesting bird habitat (particularly trees, hedgerows and scrub habitats).
Priory Farm Avon WTR	0.66	<b>Preferred Route (Option A)</b> The site lies entirely within the Fields Between Railway Line & A369 Portbury SNCI as described below. Proposed 400kV bisects the site. Pylon LD-99, associated working area and access lie immediately adjacent to the south west site boundary.	0.630	0	-	Option A: 0.043	6.51%	<b>Preferred Route (Option A)</b> Temporary habitat loss: Localised loss of modified neutral grassland and fragmentation of outgrown hedgerows (0.072ha). <u>Habitat change:</u> Loss of 9 trees and pruning of 2 trees within the Avon WTR none of which were found to have bat roosting potential.
Fields between A369 & M5 Motorway, Portbury SNCI	6.98	<b>Preferred Route (Option A)</b> The proposed 400kV overhead line lies c.30m to the north. No Development Component lies within the boundaries of the SNCI.	0.006	0	-	0	-	<b>Preferred Route (Option A)</b> No direct or indirect effects identified on the SNCI.
Fields Between Railway Line & A369 Portbury SNCI	5.73	<b>Preferred Route (Option A)</b> Proposed 400kV bisects the site to the south west. Pylon	1.144	0 (+ impacts on treed	-	Option A: 0.244	4.26%	<b>Preferred Route (Option A)</b> <u>Temporary habitat loss:</u> Localised loss of modified neutral

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		LD-99, associated working area and access abuts the west SNCI boundary. Pylons LD-100, LD-101 and LD-102 of the new proposed 400kV lies adjacent to the north of the SNCI.		habitats as detailed in the potential effects column.)				grassland from scaffolding working area and construction access road. Temporary loss of 31m of hedgerow within the SNCI. <u>Habitat change:</u> Loss of scrub, hedgerow and plantation woodland within the SNCI. Tree group loss within the SNCI totals 0.118ha, these are effectively outgrown hedgerows. Loss of 12 individual trees and pruning of 2 trees within the SNCI. <u>Other effects:</u> Loss of confirmed bat roost (Tree 653) located along the north SNCI boundary. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Potential pollution of ditches within the site from proximity of construction works.
Fields north of Upper Caswell Farm SNCI	6.03	The existing 132kV overhead line (G-Route) for removal lies c.50m to the east of the SNCI. The existing 132kV overhead line (F-Route) for removal lies c.230m to the west of the SNCI Undergrounding of the 132kV W-Route lies c.60m to the east. <b>Alternative Route (Option B)</b> The proposed 400kV overhead	0	0	-	0	-	No direct or indirect effects predicted on the SNCI.



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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		line lies c.100m to the east of the SNCI.						
Severn Estuary SNCI - Within Severn Estuary SSSI	12504.19	The existing 132kV overhead line G-Route overflies the River Avon with 1x existing pylon on the north bank to be removed, which lies within the designated estuary.  The proposed 400kV line overflies the river. Pylon LD-108 overflies the SNCI on the northern bank adjacent to the existing pylon to be removed. This 400kV pylon is a Special Lattice Pylon.	2.044	0	-	0.174	<0.01%	<u>Temporary habitat loss:</u> Localised loss of dense continuous saltmarsh. However, at detailed design stage the working area for the proposed 400kV pylon will be designed to avoid any encroachment into the SNCI. National Grid has committed to avoid any temporary or permanent loss of saltmarsh and therefore areas of loss shown within the temporary column will not be reflected at detailed design. <u>Habitat change:</u> Pruning of 1 goat willow tree on the northern river bank. <u>Other effects:</u> Potential pollution of the estuary from machinery and access road construction.
Land adjacent to Severn Estuary SSSI (Portbury) SNCI - Within Severn Estuary SSSI	231.63	The site is adjacent to the Severn Estuary Ramsar site, SPA, SAC and SNCI.  The northern section of the site is within the Order Limits, lying adjacent to the River Avon. The central and south eastern ends of the site are outside the Order Limits.  The existing line for removal (G-Route) overflies the site. A pylon and associated working	0.826	0	-	0.076	0.03%	<u>Temporary habitat loss:</u> Localised loss of modified neutral grassland related to the proposed 400kV pylon working area. At detailed design stage the SNCI will be avoided where possible. <u>Other effects:</u> Potential pollution of running water and salt marsh from construction activities. Disturbance of breeding birds in dense scrub and scattered scrub

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		area for this line is located adjacent to the southern boundary of the site. The proposed 400kV overhead line crosses the site. Pylon LD-107 and working area are located adjacent to the southern SNCI boundary. Part of the pylon working area falls within the SNCI.						areas from pylon construction.
River Avon (part of) SNCI	170.73	The SNCI is located c.1km south of the Order Limits. The closest element of work is the removal of the 132kv overhead line (G-Route) located c.750m south.	0	0	-	0	-	<u>Other effects:</u> Potential pollution of running water within SNCI from construction activities.
Gloucester Road Railway Sidings SNCI	3.83	The proposed 400kV overhead line passes through the middle of the site with associated access roads, scaffolding and EPZ. Pylons LD-110 and LD-111 are located within the site. Pylon LD-109 lies adjacent to the east SNCI boundary.	3.748	<0.001 (+ impacts on treed habitats as detailed in the potential effects column.)	<0.01%	0.872	22.7%	<u>Temporary habitat loss:</u> Localised loss of modified neutral grassland and dense continuous scrub (0.586ha). The remainder of land impacted by construction is hardstanding the remainder is woodland. <u>Habitat change:</u> Woodland canopy loss is considered permanent habitat modification due to on-going management. Therefore the permanent semi-natural woodland change within the SNCI based on canopy size is 1.2ha. Although the canopy will be impacted the ground flora will be retained. Loss of 25 trees and pruning of 5 trees within the site, of which 9 are

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				Area (ha)	%	Area (ha)	%	
								considered to have bat roosting potential. <u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is <0.01%. <u>Other effects:</u> Temporary loss/fragmentation of linear habitats.
Railway adjacent to Gloucester Road Sidings WNS	2.34	The northern and southern end of the site is outside the Order Limits for the scheme only the central section lies within.  The existing 132kV line (G-route) crosses the site, near the south eastern end, adjacent to the boundary of the order limit.  The proposed 400Kv overhead line lies adjacent to the WNS, with the working area for pylon LD-109 lying just within the WNS.  Scaffolding and associated working areas over the railway line lie within the WNS boundary.	0.404	0	-	0.225	9.62%	<u>Temporary habitat loss:</u> All proposed Development Components are located on areas of existing hardstanding. <u>Habitat change:</u> Loss of 5 trees poplar sp. and pruning of 1 poplar sp. tree within the WNS boundary. <u>Other effects:</u> Potential disturbance to 1 bat roost (Tree 106a) located c.90m to the south west of the site.
Docks Railway Line WNS	8.67	The proposed 400kV overhead line overflies the WNS across the centre of the site.  An EPZ working area for pylon LD-113 is located within the site.	0.198	0	-	0.087	1%	<u>Temporary habitat loss:</u> Localised loss of dense/continuous scrub (0.069ha) related to the EPZ working area, with the remainder existing areas of hardstanding. <u>Habitat change:</u>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		Pylon LD-113 and its associated working area are located c.17m west of the site. Two scaffolding sections and working areas are located adjacent to the eastern and western boundaries of the site.						Loss of 1 goat willow tree within the WNS site boundary. <u>Other effects:</u> Loss/disturbance of nesting bird habitat (particularly trees, hedgerows and scrub habitats).
Land West of King Street WNS	0.35	The proposed 400Kv overhead line lies adjacent to the WNS. The working area for Pylon LD-113 is located c.20m west of the northern end of the site and pylon LD-112 for the 400kV overhead line and its associated working area is located c.50m west of the southern end of the site.	0	0	-	0	-	No direct or indirect effects predicted on the WNS.
Land South of King Road Avenue WNS	0.65	The proposed 400kV overhead line crosses the site at the northern end.  Scaffolding and associated working area over King Road Avenue is situated within the northern end of site.	0.313	0	-	0.198	30.46%	<u>Temporary habitat loss:</u> Localised loss of 0.197ha of dense/continuous scrub and modified neutral grassland, with the remainder existing roads.  <u>Habitat change:</u> Loss of 2 poplar sp. trees within the WNS site boundary.
Land South West of Kings Weston Lane Rhine WNS	33.89	The existing 132kV overhead line (G-route) for removal crosses the north eastern corner of the site. There are 3 pylons and associated working areas in the site which are due for removal.  The 132kV G-Route underground line is located	9.910	<0.001 (+ impacts on treed habitats as detailed in the potential effects column.)	<0.01%	4.304	12.6%	<u>Temporary habitat loss:</u> Localised loss of amenity grassland, dense/continuous scrub and modified neutral grassland (3.873ha). The remainder is roads, hardstanding and woodland.  <u>Habitat change:</u> Woodland canopy loss is considered permanent habitat modification due to on-going

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>adjacent to the southern boundary of the site.</p> <p>The proposed 400kV overhead line crosses the site with 2 pylons within the site LD-118 and LD-119.</p> <p>An access road traverses the gap between the two pylons for the 400kV overhead line.</p> <p>1 EPZ and working area for pylon LD-120 is located within the site.</p> <p>2 areas of scaffolding are located in the site.</p> <p>There are 2 bell mouths into the southern side of the site to facilitate entry to the access road for the 132kV G-route underground line.</p> <p>A third bell mouths located within the centre of the site adjacent to the access road for the 400kV overhead line.</p> <p>There are 5 culverts within the designated site.</p>						<p>management. Therefore the permanent woodland change within the WNS based on canopy size is as follows; 0.42ha of broad-leaved plantation, 0.3ha of semi-natural broad-leaved woodland, 0.015ha of scrub and 0.18ha of scattered tree groups. Although the canopy will be impacted the ground flora will be retained.</p> <p>In addition 6 trees will be pruned and 18 will be felled within the WNS to facilitate the construction works. Of which 6 were considered to have roosting bat potential.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is &lt;0.01%.</p> <p><u>Other effects:</u> Disturbance to water vole habitat due to trenching works associated with the 132kV G-route underground line and disturbance through installation of culverts for construction access roads. Short term fragmentation of rhines and water vole habitat within the site during installation of culverts.</p>
Kings Weston Lane Rhine SNCI	2.74	<p>The existing 132kV overhead line (G-Route) for removal overflies the site towards the southern end. Part of the pylon working area crosses the SNCI.</p> <p>The proposed 400kV overhead</p>	0.359	0 (+ impacts on treed habitats as detailed in the potential effects	-	0.242	8.83%	<p><u>Temporary habitat loss:</u> Localised loss of amenity grassland, dense/continuous scrub, semi-improved grassland and modified neutral grassland (0.198ha), with the remainder existing roads.</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>line passes over the south eastern end of the site.</p> <p>Scaffolding and working areas over King Weston Road are adjacent to the eastern boundary of the site and within the site on the western side.</p> <p>The 132kV G-route underground line traverses the south eastern end of the site. The line will be HDD under the SNCI and therefore reduce the effects.</p> <p>Two access roads for the G-route 132kv underground line are located adjacent to the eastern and western boundaries of the site, with one running adjacent to the rhine.</p> <p>Access road for the 132kv underground line crosses the site at the south eastern end.</p> <p>1 culvert located within the site and 1 immediately adjacent for construction access roads.</p>		column.)				<p><u>Habitat change:</u> Loss of part of 1 tree group covering an area of 0.053ha within the designated site. Pruning of 2 crack willow trees located to the north of the SNCI boundary.</p> <p><u>Other effects:</u> Potential disturbance to water vole in the rhine from nearby trench works and HDD works for the 132kv underground line and the culverting works over the two rhines with water vole evidence.</p> <p>Temporary fragmentation of water vole habitat caused by culverting works.</p>
Land South of Sewage Treatment Works WNS	33.48	<p>North western sections of the site are located outside the Order Limits.</p> <p>The existing 132kV overhead line (G-Route) is located within the site and travels adjacent to the northern boundary, crossing the north western</p>	15.507	<0.001 (+ impacts on treed habitats as detailed in the potential effects	<0.01%	14.497	43.3%	<p><u>Temporary habitat loss:</u> Localised loss of dense/continuous scrub, modified neutral grassland and semi-improved neutral grassland (12.009ha). The remainder of area impacted is bareground, hardstanding, industrial, roads or tracks (0.211ha)</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>section of the site to the south west of the sewage works.</p> <p>There are 3 existing pylons and associated working areas in the site for the existing 132kV overhead line (G-route) which are due for removal.</p> <p>There is an access road from Kings Weston Lane to the west of the site, which facilitates access to one of the pylons due for removal on the 132kV overhead line.</p> <p>The proposed 400kV overhead line crosses the length of the site, with three pylons and associated working areas situated in the site (LD-120, LD-121 and LD-122).</p> <p>3 areas of scaffolding and associated working areas are located within the site.</p> <p>An access road for the 400kV overhead line is located within the site and provides an access to pylons LD-121 and LD-122.</p> <p>The 132kV underground line (G-route) crosses the site in the south eastern corner.</p> <p>There is a reception site for the HDD of the cable underneath Kings Weston Lane. In addition there are 3 route options to cross the M49:</p>		column.)				<p>and plantation woodland which is addressed below. This area is a combination of cable swathes and is based on all 3 options to cross the M49. In reality only 1 option will be chosen and the area of impact will be significantly reduced.</p> <p><u>Habitat change:</u> Loss of 3 tree groups within the WNS totalling 0.5ha. Additionally there are 10 individual trees that will be impacted (3 will be felled and 7 will require pruning) to facilitate construction. The tree impacts listed are related to all 3 crossing options, impact will in reality to be reduced when 1 option is selected.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is &lt;0.01%.</p> <p><u>Other effects:</u> Potential disturbance to water vole ditch habitat in during installation of culverts. Potential pollution of ditches and water courses from machinery and access road construction. Loss of 3 trees with bat roost potential located within the site from construction of the 400kV overhead line. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<ul style="list-style-type: none"> <li>• Option 1= HDD(Ref HDD11)</li> <li>• Option 2= HDD(Ref HDD12)</li> <li>• Option 3= Open cut</li> </ul> <p>All options lie within the WNS to some degree.</p> <p>There are 2 culverts within the designated site with an additional culvert for Option 1 and an additional culvert for Option 3 of the G-Route undergrounding.</p>						
Avonmouth Sewage Works & Hoar Gout SNCI	19.75	<p>The SNCI lies outside the Order Limits.</p> <p>The closest element of construction is the 132kV overhead line (G-route) for removal located c.550m south west.</p> <p>The proposed 400kV overhead line lies c.670m to the south west of the SNCI.</p> <p>The undergrounding of the 132kV G-route lies c.850m to the south west.</p>	0	0	-	0	-	<p><u>Other effects:</u></p> <p>Mere Bank Rhine provides connectivity between the proposed route and the SNCI. Potential for habitat degradation as a result of accidental pollution during construction works.</p>
Lawrence Weston Road Rhines SNCI	3.90	<p>The existing 132kV overhead line (G-Route) for removal passes over the site. The working area for the pylon removal is located within the SNCI boundary.</p> <p>The proposed 400kV overhead line passes over the site at the south eastern end. LD-122 pylon is located c.20m south</p>	0.711	0	-	0.562	14.41%	<p><u>Temporary habitat loss:</u></p> <p>Localised loss of modified neutral grassland and semi-improved grassland (0.361ha). The remainder is existing roads and hardstanding.</p> <p>Loss of 4m of hedgerow that crosses into the SNCI.</p> <p><u>Habitat change:</u></p> <p>Loss of 7 trees that lie within the</p>



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				Area (ha)	%	Area (ha)	%	
		<p>west of the site.</p> <p>Scaffolding for the 400kV line over Lawrence Weston Road located at the south eastern end.</p> <p>132kv underground line G-Route crosses the south eastern end of the site with all proposed Options.</p> <p>132kV undergrounding of the G Route is culverted over a ditch in the site due to an online haul road.</p>						<p>SNCI boundary to facilitate development.</p> <p><u>Other effects:</u></p> <p>Disturbance of water voles from trenching the 132kV line Route-G and the culvert over the ditch.</p> <p>Pollution of ditches and water courses from machinery, access road construction and trenching works.</p>
Land between M49 and M5 WNS	11.95	<p>A section of the existing 132kV overhead line (BW-Route) crosses the north western edge of the site, with an existing pylon located within the site which is to be retained.</p> <p>The 132kV G-route underground line traverses the entire length of the site. There are 3 route options to cross the M49, all of which fall within the WNS:</p> <ul style="list-style-type: none"> <li>• Option 1= HDD(Ref HDD11)</li> <li>• Option 2= HDD(Ref HDD12)</li> <li>• Option 3= Open cut</li> </ul> <p>The G-Route site compound lies within the WNS. A section of the line is to be HDD underneath the M49 which ends in the WNS.</p>	10.777	0	-	10.777	90.18%	<p><u>Temporary habitat loss:</u></p> <p>Localised loss of 10.305ha of modified neutral grassland associated with construction works. The remainder is existing hardstanding and roads (0.149ha) and woodland (the woodland losses are addressed below).</p> <p>This area is a combination of cable swathes and is based on all 3 options to cross the M49. In reality only 1 option will be chosen and the area of impact will be significantly reduced.</p> <p>Temporary hedgerow loss within the site will be 123m.</p> <p><u>Habitat change:</u></p> <p>Loss of 1 tree group within the SNCI boundary totalling 0.07ha based on canopy size. An additional English oak tree located within the WNS will also be lost.</p>

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				Area (ha)	%	Area (ha)	%	
								<u>Other effects:</u> Potential pollution of ditches in the site from the construction activity. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Disturbance of water vole in ditches with records less than 5m north of the site from construction of the access road for the 132kV Route G underground line access road and trenching works.
Fields along M5, Hallen SNCI	8.52	There are no works within the southern section of the SNCI. The G-Route undergrounding crosses the northern tip of the SNCI.	0.161	0	-	0.161	1.9%	<u>Temporary habitat loss:</u> Loss of modified neutral grassland and semi-improved grassland associated with the undergrounding of the G-Route. Temporary hedgerow loss of 2m within the site boundary. <u>Other effects:</u> Potential disturbance to water vole in ditches from nearby trench works from the 132kv underground line. Temporary fragmentation of water vole habitat.
Land between Lawrence Weston Rhine and Salt Rhine, east of M49 WNS	9.71	The 132kV underground line (G-Route) traverses the site north to south under all Options, crossing the middle of the site.  The online haul road for the 132kv G-Route underground line is culverted at both the northern and southern edges of the site.  A section of the existing 132kV	2.130	0	-	2.130	21.94%	<u>Temporary habitat loss:</u> Loss of semi-improved grassland related to the G-Route undergrounding. <u>Habitat change:</u> Loss of 7 trees on the drain adjacent to the northern boundary although not within the site itself. <u>Other effects:</u> Disturbance of water voles from trenching the 132kV G-route

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				Area (ha)	%	Area (ha)	%	
		overhead line (BW-Route) crosses the site in a north to south direction, with an existing pylon within the site which is to be retained.						underground line and installation of culverts over the ditches to facilitate a construction access road.
Salt Rhine & Moorhouse Rhine SNCI	7.46	The northern and south eastern ends of the site are outside the Order Limits with only the centre falling within. The existing 132kV overhead line (G-Route) for removal overflies the site. The proposed 400kV overhead line traverses the site, near the centre. The 132kV underground line G-Route traverses the site to the east of the 400kV overhead line. The online haul road crosses two ditches which will be culverted to allow construction access. Installation of a further 2 culverts within the site are required within the northern section for construction access to pylon LD-124.	0.695	0	-	0.559	7.49%	<u>Temporary habitat loss:</u> Loss of modified neutral grassland and semi-improved grassland (0.466ha), with the remainder existing hardstanding or roads. Temporary loss of 127m of hedgerow from within the SNCI. <u>Habitat change:</u> Loss of 7 trees within the SNCI of crack willow, grey willow and oak species. <u>Other effects:</u> Disturbance of water voles from trenching the 132kV line G-Route and the culverts over rhines with water vole evidence.
Land Around Moorhouse Caravan Park WNS	13.66	The site comprises two parcels of land, one large parcel and one smaller parcel located approximately 3m east of the larger site. The 132kV G-route underground line ends in the south west corner of the site and transfers to the existing	2.663	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	1.765	12.92%	<u>Temporary habitat loss:</u> Localised loss of modified neutral grassland and semi-improved grassland within the WNS related to G-Route undergrounding works. Temporary loss of 32m of hedgerow within the WNS for the G-Route undergrounding. <u>Habitat change:</u>

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				Area (ha)	%	Area (ha)	%	
		<p>132kV overhead line (G-Route) and sealing end pylon located in the north-western corner of the site.</p> <p>The existing 132kV overhead lines (BW-Route and G-Route) crosses the site. The BW-Route will be retained but the section of G-Route currently overflying the WNS would be removed.</p> <p>There are 3 culverts to be installed at access road crossing points over ditches.</p>						<p>Loss of 2 tree groups within the WNS totalling an area of 0.233ha based on canopy size. An additional loss of 6 trees within the WNS of willow, field maple and ash species will result from construction activities.</p> <p><u>Other effects:</u></p> <p>Potential pollution of ditches to the south of the site boundary which contain evidence of water vole from machinery and the construction of the access road to facilitate the 132kV G-route underground line.</p>
Railway Line South of Hallen WNS	13.18	<p>The existing 132kV overhead lines (BW-Route and G-Route) overfly the WNS. The 132kV overhead lines are to be retained from just before the WNS and therefore there would be no effects on the designated site.</p> <p>The proposed 400kV overhead line overflies the site, towards the south eastern end of the site.</p> <p>Working areas for scaffolding to cross both the railway line and Moorhouse Lane are within the WNS.</p> <p>Pylon LD-124 and associated working area is located approximately 17m south of the site boundary.</p>	0.426	0	-	0.031	0.44%	<p><u>Temporary habitat loss:</u></p> <p>Location of Development Components based on existing areas of hardstanding and therefore no impact.</p> <p><u>Habitat change:</u></p> <p>Loss of 4 trees of ash, wych elm and hawthorn species along the railway line and pruning of an additional 5 trees. Loss of part of 1 tree group totalling 0.031ha within the WNS.</p> <p><u>Other effect:</u></p> <p>Loss/disturbance of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Potential pollution of ditches from construction activities.</p> <p>Temporary fragmentation of linear habitat from the construction of the 400kV overhead line.</p>

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
Land West of M49 & South of Moorhouse Rhine WNS	3.02	<p>The site is split into two parcels of land, which are adjoined. The northern parcel is smaller than the southern parcel.</p> <p>The existing 132kV overhead line (G-Route) for removal crosses the WNS. A pylon due for removal on the existing line is located adjacent to the southern boundary of the southern land parcel.</p> <p>The proposed 400kV overhead line travels the length of the southern land parcel and crosses the northern land parcel at its eastern end. Pylon LD-123 falls within the WNS.</p> <p>The access road for pylon LD-123 crosses the WNS.</p> <p>Scaffolding and associated working areas are located in the land parcels around pylon LD-123.</p>	2.179	<0.001	<0.01%	0.869	28.77%	<p><u>Temporary habitat loss:</u> Localised loss of modified neutral grassland (0.593ha) related to construction of the 400kV pylon. The remainder is made up of roads, tracks and hardstanding.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is &lt;0.01%.</p> <p><u>Habitat change:</u> Pruning of 2 trees and loss of 3 trees within the WNS boundary consisting of crack willow and white poplar species.</p> <p><u>Other effects:</u> Potential pollution of standing water from the construction of the access road and construction works and machinery in the site due to the proximity of a pond. Loss of 1 tree with bat roost potential located within the site located beneath the 400kV overhead line. Loss/disturbance of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p>
Agricultural Land South of Railway WNS	4.45	<p>The existing 132kV overhead line (G-Route) for removal oversails the southern end of the site.</p> <p>The proposed 400kV overhead line crosses the eastern side of the site and runs adjacent to the eastern boundary of the</p>	2.019	0.000144	<0.01%	0.923	20.74%	<p><u>Temporary habitat loss:</u> Localised loss of modified neutral grassland associated with the construction of the 400kV pylon. Loss and fragmentation of 29m of species-poor defunct hedgerow and species-poor intact hedgerow from the installation of the access roads</p>

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				Area (ha)	%	Area (ha)	%	
		<p>site along its entire length. LD-124 pylon for the 400kV line is located within the site, in the north eastern corner.</p> <p>The scaffolding and working area over the railway line is located within the north of the site.</p> <p>A section of ditch is culverted on the western boundary of the site to facilitate the access road for the pylon construction. A second culvert is located crossing a ditch within the centre of the site.</p>						<p>into the site.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is &lt;0.01%.</p> <p><u>Habitat change:</u> Loss of 2 trees within the site consisting of hawthorn and grey willow species with pruning of 1 crack willow tree within the site.</p> <p><u>Other effects:</u> Disturbance of water voles from culverting ditches to facilitate the access road. Loss of nesting bird habitat (particularly trees, hedgerows and scrub habitats).</p>
Land West of M49 & North of Moorhouse Rhine WNS	0.82	<p>The existing 132kV overhead line (G-Route) for removal crosses the southern end of the site.</p> <p>The proposed 400Kv overhead line lies adjacent to the west site boundary. Pylon LD-124 working area is located within 5m to the west of the site boundary.</p> <p>Scaffolding and associated working areas are located within the north of the site.</p>	0.338	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	0.009	1.1%	<p><u>Temporary habitat loss:</u> Localised loss of modified neutral grassland related to scaffolding working areas.</p> <p><u>Habitat change:</u> Loss of part of a tree group that lies within the WNS totalling 0.084ha based on canopy size.</p> <p><u>Other effects:</u> Potential pollution of the pond in the site from adjacent site works and machinery in the working area for the 400kV overhead line. And associated access road.</p>
Land between Moorend Farm Avenue and Moorhouse Lane WNS	4.18	<p>No construction works lie within the WNS site.</p> <p>The proposed 400kv overhead line lies c.85m to the east of the site.</p>	0	0	-	0	-	<p><u>Other effects:</u> Potential pollution of rhines within the site on the eastern and southern boundaries from machinery and access road</p>

<b>County and Local Designated Wildlife Sites</b>								
Key: LNR (Local Nature Reserve), LWS (Local Wildlife Site), CWS (County Wildlife Site), SNCI (Site of Nature Conservation Importance), WTR (Avon Wildlife Trust Reserve), WNS (Wildlife Network Sites).								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		The closest Development Component is an access road adjacent to the south east boundary. The access road crosses 2 ditches and therefore 2 culverts will be installed.						construction. These rhines do not have evidence of water vole but are in close proximity (less than 10m) to rhines which do have evidence of water vole.
Land Around Hallen Farm WNS	32.12	The existing 132kV overhead lines (G-Route and BW-Route) overfly the centre of the site. These lines are to be retained insitu.  The proposed 400kV overhead line lies c.50m to the west of the site lying adjacent to the western boundary.	0.001	0	-	0	-	No direct or indirect effects identified on the WNS.
Moorhouse Farm & Stuppill Rhines SNCI	4.41	The existing 132kV overhead lines (G-Route and BW-Route) overfly the south of the site. These lines are to be retained insitu.  The proposed 400kV overhead line overflies the site within the centre of the SNCI.  An access road is located along an existing track within the site which runs adjacent to the rhines in the site and crosses it. A culvert will be installed at this location.	0.225	0	-	0	-	<u>Habitat change:</u> Loss of 2 crack willow tree and pruning of another within the WNS site boundary.
Hallen Marsh Agricultural Land WNS	113.92	The existing 132kV overhead lines (G-Route and BW-Route) lie to the east of the site c.160m away.	10.638	<0.001 (+ impacts on treed habitats as	<0.01%	4.873	4.28%	<u>Temporary habitat loss:</u> Localised loss of arable, dense/continuous scrub, modified neutral grassland and semi-improved grassland (4.037ha)

### County and Local Designated Wildlife Sites

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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>The proposed 400kV overhead line oversails the WNS, with 5 pylons located within the site (Pylons LD-125 to LD-129). Scaffolding and the associated working area in proximity of LD-125 and LD-129 are located within the site.</p> <p>An EPZ and working area related to pylon LD-127 are located adjacent near to the northern boundary of the site.</p> <p>The access road for the 400kv overhead line traverses the eastern side of the site and is culverted over four ditches.</p>		detailed in the potential effects column.)				<p>related to construction of pylons for the 400kV overhead line. The remainder is hardstanding, roads and tracks.</p> <p>Temporary loss and fragmentation of 315m of species poor intact hedgerows in the site from construction of the 400kV overhead line access road.</p> <p><u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is &lt;0.01%.</p> <p><u>Habitat change:</u> Loss of 6 tree groups within the WNS, totalling an area of 0.189ha. Additional loss of 40 trees and pruning of 16 further trees located within the WNS to facilitate construction.</p> <p><u>Other effects:</u> Temporary loss and fragmentation of potential bat foraging routes. Loss/disturbance of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Potential pollution of ditches from culverting works for the access road for the 400kv overhead line and use of the access roads during construction by machinery.</p>
Former Shell Tank site WNS	15.69	<p>The WNS lies 8m south of the Order Limits.</p> <p>The closest construction component is a construction</p>	0	0	-	0	-	No direct or indirect effects identified on the WNS.



County and Local Designated Wildlife Sites								
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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		access road to pylon LD-132.						
Rhine bordering former Sevalco Site North WNS	1.26	The proposed 400kV overhead line lies alongside the WNS. The scaffolding that is required to facilitate works crosses into the WNS. A ditch is culverted adjacent to the eastern edge of the site.	0.330	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	0.051	4.05%	<u>Temporary habitat loss:</u> The construction footprint falls on existing areas of hardstanding therefore causing no detrimental effect. <u>Habitat change:</u> Loss of 4 tree groups that fall within the WNS totalling an area of 0.027ha. Additionally there is pruning of 5 willow trees that also fall within the WNS. <u>Other effects:</u> Temporary effect to ditch and associated marginal habitats during culvert installation and scaffold assembly.
Crook's Marsh WNS	14.59	The existing 132kV overhead lines (G-Route and BW-Route) overfly the WNS. This section of the 132kV overhead lines will be removed. 4 pylons fall within the designated site that will be removed. These sections of line will be undergrounded into Seabank Substation. A short section of the existing 132kV overhead DA-Route is also due to be removed within the WNS. There are no pylons to be removed in this section. The proposed 400kV overhead line overflies the site. Pylons LD-131 and LD-132 and their	8.755	<0.001 (+ impacts on treed habitats as detailed in the potential effects column.)	<0.01%	6.659	45.64%	<u>Temporary habitat loss:</u> Localised loss of semi-improved neutral grassland (6.570ha). The remainder is hardstanding and roads. <u>Habitat change:</u> Loss of 1 tree group within the WNS boundary totalling 0.002ha. Pruning of 1 oak tree along the eastern boundary of the site with bat potential. <u>Permanent habitat loss:</u> There will be a small amount of grassland/loss related to pylon feet which is <0.01%.

County and Local Designated Wildlife Sites								
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Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		<p>associated working areas are located within the site. Pylon LD-131 is located adjacent to the western boundary of the site and LD-132 is located in the south-eastern corner of the site.</p> <p>The access road for the 400kV overhead line traverses the centre of the southern sections of the site, providing access to the two pylons.</p> <p>A works compound is located within the east of the site.</p>						
South West of Seabank Power Station WNS	12.60	<p>There are 3 existing pylons from 3 different routes (G-route, BW-Route and DA-Route) in the WNS associated with the 132kV existing overhead lines which will be removed.</p> <p>The sections of 132kV routes (G-route, BW-Route and DA-Route) are to be undergrounded into Seabank Substation. This is to make room for the new 400kV overhead line entry.</p> <p>The proposed 400kV overhead line is located c.30m east of the site entering Seabank Substation.</p> <p>The access road for the 132Kv</p>	0.697	0 (+ impacts on treed habitats as detailed in the potential effects column.)	-	0.419	3.33%	<p><u>Temporary habitat loss:</u> The construction footprint falls on existing areas of hardstanding therefore causing no detrimental effect. Temporary loss of 158m of hedgerow that falls within the WNS.</p> <p><u>Habitat change:</u> Loss of 0.152ha of plantation woodland mainly surrounding the existing pylons due to be removed.</p> <p><u>Other effects:</u> Loss/disturbance of nesting bird habitat (particularly trees, hedgerows and scrub habitats). Disturbance to water voles in ditches during construction of the access road for the 400kV overhead line.</p>

County and Local Designated Wildlife Sites								
Key: LNR (Local Nature Reserve), LWS (Local Wildlife Site), CWS (County Wildlife Site), SNCI (Site of Nature Conservation Importance), WTR (Avon Wildlife Trust Reserve), WNS (Wildlife Network Sites).								
Site	Site Area (ha)	Relevant Development Components	Area of Designation Within Order Limits (ha)	Permanent Loss		Temporary Loss		Potential Effects Prior to Mitigation
				Area (ha)	%	Area (ha)	%	
		removal and undergrounding works is located within the south eastern corner of the site and traverses the eastern edge of the site.  The access road crosses two ditches and therefore 2 culverts will be installed.						





## Appendix 8P – Overview of the Potential Effects of Climate Change on Designated Sites and Priority Species





# **Hinkley Point C Connection Project** **Environmental Statement Volume 5.8.2** **Ecology Appendix 8P** **Climate Change** **March 2014** **1979.40.021** **Version B**

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**Hinkley Point C Connection Project  
Environmental Statement Volume 5.8.2  
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Version B**

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## OVERVIEW OF THE POTENTIAL EFFECTS OF CLIMATE CHANGE ON KEY ECOLOGICAL RECEPTORS POTENTIALLY AFFECTED BY THE HINKLEY POINT C CONNECTION PROJECT

### 1.0 Purpose and scope

- 1.1 This paper considers how the effects of climate change can be taken into account in the prediction of effects from the Hinkley Point C Connection Project (the “Proposed Development”) on ecological receptors, notably those with highest levels of policy and statutory protection.
- 1.2 **Volume 5.8 of the Environmental Statement** predicts the effects of the Proposed Development on ecological receptors, and also summarises how climate change might act in combination with the Proposed Development to exacerbate or alleviate adverse effects. This paper provides evidence to support the climate change analysis presented in ES Volume 5.8.
- 1.3 This paper does not present an exhaustive analysis of climate change effects on all receptors. Rather, it provides guiding principles to enable the ecological impact assessment to take account of climate change. It focuses on receptors which are both:
  - a. of highest value and
  - b. potentially affected by the operational phase of the Proposed Development i.e. 20 or more years from the present.
- 1.4 This focus is because effects that are temporary or short term are assessed on the basis of the current climate, as explained below.
- 1.5 The paper therefore considers climate change-related effects on the Somerset Levels and Moors SPA/Ramsar Sites, the Severn Estuary SPA/Ramsar Sites and the qualifying bird species that are potentially affected by collision risk from overhead lines (direct effect) and consequent population fragmentation (indirect effect).
- 1.6 It considers the North Somerset and Mendips Bat SAC and the Mendip Limestone Grasslands SAC, in respect of the bats for which these sites are designated.
- 1.7 It also applies the assessment principles (set out in EC guidance described below) to other designated sites potentially affected by the Proposed Development, including Strategic Nature Areas (SNAs). These are broad landscapes prioritised in the SW Biodiversity Implementation Plan.

## 2.0 Policy, guidance and sources of information

- 2.1 The EU biodiversity strategy, 'Our life insurance, our natural capital: an EU biodiversity strategy to 2020', underlines the importance of addressing climate change. Central to achieving the 2020 biodiversity targets is the effective management of the Natura 2000 network designated under the Habitats and Birds Directives.
- 2.2 The EC's "Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment" (European Union, 2013) encourages environmental assessment practitioners to consider how the receiving environment may be affected by climate change, both with and without the project, and how mitigation may be designed to encourage environmental resilience.
- 2.3 Of particular relevance to the consideration of this Proposed Development, the guidance distinguishes between "short-term" (within the forthcoming 20 years) and "longer-term" assessments. This project entails temporary construction activity, followed by reinstatement of all habitats and wildlife corridors, apart from small areas of permanent infrastructure (substations and cable sealing end compounds). The only significant residual effects persisting beyond 20 years from the date of the Environmental Statement (ES) (i.e. beyond the mid 2030's) arise from the presence of overhead pylons and conductors.
- 2.4 The habitat reinstatement and mitigation measures must also be effective in the long-term, so it is important they are resilient to a changing climate.
- 2.5 UK Energy Policy Statement 1 considers climate change adaptation and advises (at para. 4.8.6) that new infrastructure should be resilient to climate change and that assessments and designs should take account of the latest UK Climate Projections available at the time of ES preparation. These projections are summarised at **Volume 5.4** of the ES.
- 2.6 The EC "Guidelines on Climate Change and Natura 2000" (European Union, 2013), emphasises that an effectively managed, functionally coherent and well-connected Natura 2000 Network plays a vital role in helping society adapt to the impacts of climate change. The guidance also advises how to ensure that Natura 2000 sites, and the species and habitats they protect, are managed in a way that is adapted to the potential effects of climate change.
- 2.7 Although directed at policy-makers and site managers, rather than development managers, some of its recommendations enable a strategic assessment of the effect of the Proposed Development on the Natura 2000 network in the light of climate change.
- 2.8 These recommendations can also be applied to a strategic assessment of the effect of the Proposed Development on other designated sites in the light of climate change.
- 2.9 This EC guidance has a supplement, "Managing climate change for the Natura 2000 network: Assessment of the vulnerability of Natura 2000 species and habitats for climate change: species and habitat types most at risk. Overall approach and the result of the analyses". This document is a helpful summary of the current level of knowledge

regarding vulnerability of species groups such as birds and bats that are potentially affected by the Proposed Development.

- 2.10 In the UK, Defra is managing an observatory project, the Biological Impacts of Climate Change Observation Network (BICCO-Net)<sup>1</sup>. The project uses data from long-term climatic and biological recording programmes, coupled with various scenarios for climatic modelling. Project outputs are used to predict changes, and just as importantly to retrodict climate change effects that may have already occurred. Crucially this project identifies the extent to which climate change effects interact with, or amplify land-use changes.
- 2.11 Most data is available for birds, but the project aims to increase the bank of knowledge in relation to other taxa.
- 2.12 Another source of guidance arises from the recent examination, by the UK Secretary of State, of National Grid's proposed 400kV overhead line connection serving the King's Lynn B Power Station<sup>2</sup>. The issue of bird collisions associated with large birds in general, and wildfowl associated with the Ouse Washes SPA in particular, was considered using the process of EIA and Habitats Regulation Assessment (HRA). The EIA and HRA concluded that collision and displacement risk was very low and that it was not necessary to fit bird flight diverters to mitigate adverse effects on either the SPA or large birds in general.
- 2.13 During examination, the question of whether future climatic changes might affect bird activity in the project area was explored, specifically whether the decision not to fit diverters was resilient to future changes in climate and land use; for example if repeated flooding or changes in weather patterns resulted in birds flying through the project area far more frequently.
- 2.14 The EC guidelines referred to above (at that time in draft form) were used to inform the assessment. The Secretary of State concluded that National Grid's Bird Flight Diverter Protocol was acceptable. The protocol indicates how National Grid would, if evidence pointed in that direction, fit diverters.

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<sup>1</sup> <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=16065>

<sup>2</sup> [http://infrastructure.planningportal.gov.uk/wp-content/uploads/projects/EN020003/3.%20Post%20Decision%20Information/Decision/Secretary\\_of\\_State\\_Decision\\_letter.pdf](http://infrastructure.planningportal.gov.uk/wp-content/uploads/projects/EN020003/3.%20Post%20Decision%20Information/Decision/Secretary_of_State_Decision_letter.pdf)

### 3.0 Climate change – predicted changes in the project area

- 3.1 Climate change leads to increasing temperatures, shifting seasons, changing precipitation patterns, the potential increase of weather extremes and sea level rise. Human responses to climate change will inevitably result in amendments to patterns of land use and cultivation.
- 3.2 Whilst it is generally agreed that the world's climate is warming, the specific effects of global warming on Britain's climate are very hard to predict (Sparks et al., 2002). The map presented at Figure 1 summarises the main predicted impacts of climate change in the different bio-geographical regions of Europe (EEA, 2010).

**Figure 1: Key past and projected effects for the main biogeographic regions of Europe**

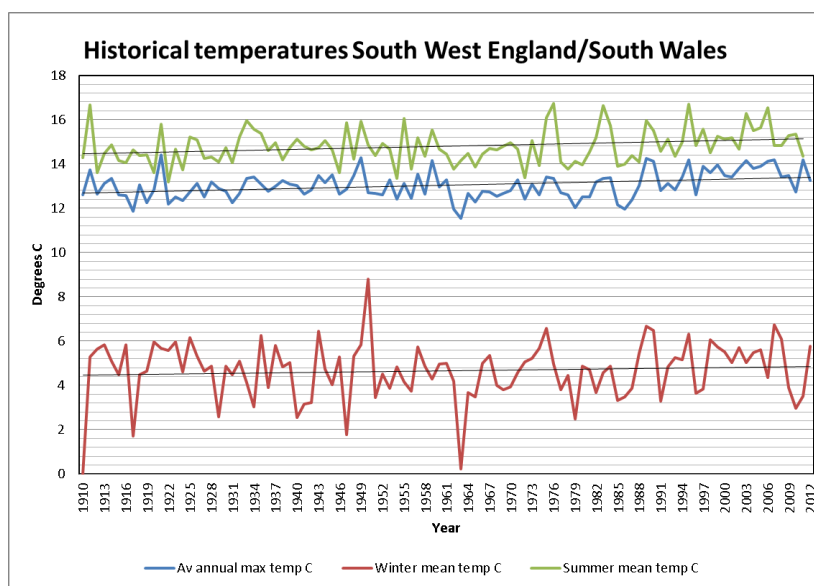
**Map S.1 Key past and projected impacts and effects on sectors for the main biogeographic regions of Europe**





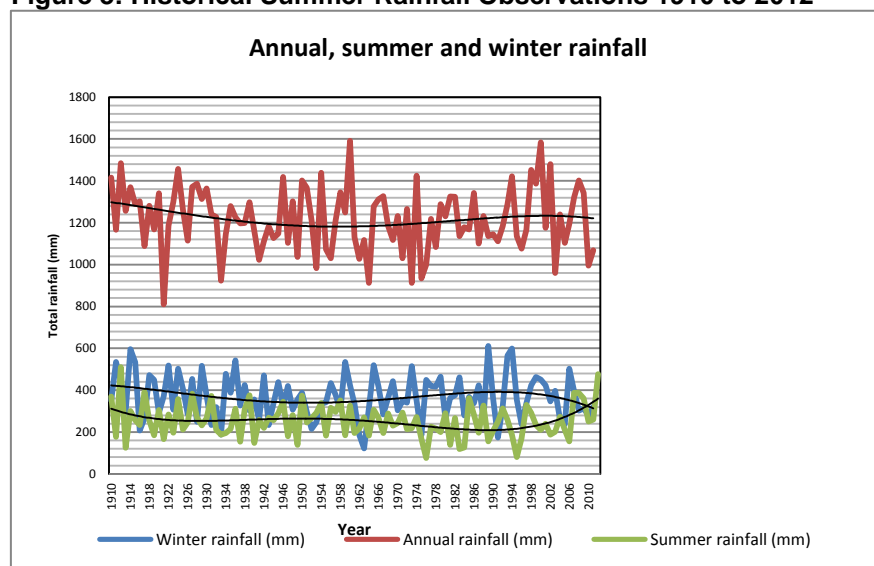
- 3.3 Current predictions are for warmer, wetter winters and drier summers. These conditions may lead to increased flooding in the winter, and an increase in drought conditions in the summer. Within the UK, such effects are likely to be greater in the south and east than the north and west. There is also likely to be an increase in frequency of extreme weather events (Crick, 2004).
- 3.4 The Met Office Climate data for the South West of England and Wales describes temperatures and rainfall from 1910 to 2012. Charts illustrating the observed data are given in Figures 2 and 3.
- 3.5 Figure 2 shows a rising trend in winter and summer mean temperatures of approximately 0.5 °C over the past one hundred years. This is in line with the trends observed for the UK.

**Figure 2: Historical Temperature Observations 1910 to 2012**



Source: Met Office

- 3.6 Figure 3 shows annual, summer and winter precipitation (rainfall). The trend in summer rainfall is generally a decreasing one, although there has been a steady increase in the past twenty years, illustrating the unpredictable and complex nature of climate change. Annual and winter rainfall in the South West also shows a declining rainfall over the period, until approximately 1961, then an increasing trend until approximately 2002 when rainfall begins to decrease again.

**Figure 3: Historical Summer Rainfall Observations 1910 to 2012**

Source: Met Office

- 3.7 Whilst the warming temperatures trend is quite clear from the data, the rainfall data is much less clear. Uncertainty in terms of rainfall may be the most important observation from these charts, although a precautionary approach suggests that intensity of rainfall events will increase, resulting in more rapid flooding of land.
- 3.8 The future baseline for a changing climate is difficult to predict. The UK Climate Projections 2009 offer a set of scenarios for the UK and its regions, describing possible future climates for the years 2020s, 2050s and 2080s. Table 1 represents the mean values likely under the High Emissions scenarios.

**Table 1: UKCP09 High Emissions Scenarios for South West England**

Impact	2020s	2050s	2080s
Summer			
Temp°C	+1.2	+3.1	+5.0
Precipitation	-5%	-20%	-30%
Winter			
Temp°C	+1.5	+2.3	+3.4
Precipitation	+6%	+18%	+31%
Annual			
Precipitation	0%	0%	+1%

- 3.9 These changes in the climate are predicted to be accompanied by increases in storm surges and relative sea levels are predicted to continue to rise; they could be as much as 80cm higher by the 2080s.
- 3.10 The climate scenarios for the South West have been used to predict potential impacts on a variety of sectors in the region by the group Climate South West. In respect of biodiversity, their report on the potential effects includes:
- a. The drying of important peatlands as a result of increased drought, endangering ecosystems and public water supplies;
  - b. Increased uncertainty for the agricultural sector with regard to crop types, water availability, pests and diseases. This is significant for the South West where 70% of land is taken up by agriculture. These changes could also lead to indirect changes to landscape. Some benefits may arise as a result of longer growing seasons and increased potential for novel agricultural crops;
  - c. Changes to important “island” habitats, such as the Puriton Hills and the Mendip Hills, where species are likely to begin to move “uphill” until they can go no further;
  - d. Changes to designated landscapes and features as a result of changes in water level, temperature and storminess, for example the rhines in the Levels, designated geomorphological features (SAC, SSSIs);
  - e. Increased storminess, erosion and a sea level rise of 20 centimetres by 2030 would cause changes to the freshwater habitats in the Somerset Levels, compromise sea defences and increase the frequency of coastal flood events with associated effects on the tourism economy;
  - f. Increased flood risk from rivers and drains;
  - g. Increased soil erosion and runoff from agricultural land and any land exposed through construction activities;
  - h. Increases in demand for water from domestic and commercial sources, especially for use in irrigation at the same time as decreases in supply;
  - i. Reduced water quality in summer as reduced river levels decrease dilution. Increased summer temperatures in rivers could also threaten important fish species. Increased likelihood of flash floods can also cause fish deaths as sewers overflow into warm, low level rivers;
- 3.11 However, many uncertainties exist in predicting future climate. These uncertainties stem from incomplete understanding about how the earth’s climatic system works, but also from future socio-economic developments and their impacts on the climate (EEA-JRCWHO, 2008<sup>3</sup>).

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<sup>3</sup> Cited in EEA, 2010

#### 4.0 Effects on management of Natura 2000 sites in the face of climate change

- 4.1 The EC guidance emphasises the importance of keeping the Natura 2000 network under pro-active management. Guidance on what constitutes good management is set out in a list of criteria on page 91 onwards. These criteria have been adapted by the authors of this National Grid paper into a “decision framework” to assess whether the Proposed Development will affect the management of the Natura 2000 network in the face of climate change pressures.

***Does the project contribute to the reduction of existing pressures on the Natura 2000 network? (Maintaining flyways for birds and migration routes for other fauna is one aspect that is specifically cited).***

- 4.2 The project has a small permanent direct effect on the Severn Estuary SPA/Ramsar site at the Hinkley Line Entires. This direct effect is loss of semi-improved grassland and is non-significant in respect of Natura 2000 objectives or SPA birds.
- 4.3 The project has a non-significant direct effect on the Hallen Marsh area which is currently undesignated and not of significant interest to Natura 2000 birds. However, it is allocated as compensatory land associated with damage to the Severn Estuary SPA arising from the proposed Avonmouth/Severnside development.
- 4.4 Nevertheless, the presence of overhead lines at various places along the Proposed Development results in a potential collision risk to bird flyways and migration associated with Natura 2000 birds. The key questions are whether there are currently adverse pressures on flyways, whether climate change will worsen adverse pressures and whether the project exacerbates or alleviates such pressures?
- 4.5 The process of EIA and HRA has identified that the Natura 2000 sites are not currently considered vulnerable in respect of fragmentation of flyways. It has also concluded that collision and displacement effects on existing migratory and foraging corridors are unlikely to have an adverse effect on SPA integrity, based on current patterns of activity, and taking account of the proposed mitigation, notably the fitting of bird flight diverters. In some cases, the dismantling of existing infrastructure may reduce obstacles.
- 4.6 This suggests that any existing pressures on bird flyways (if present) would not be worsened by the project. The question of whether climate change effects will exacerbate pressures on migration and dispersal routes is considered in more detail in later sections relating to birds and bats.

***Does the project contribute to, or restrain, information-sharing?***

- 4.7 The project has contributed to an increase in the body of knowledge about faunal activity in and around the Natura 2000 network.

***Does the project constrain the possibility of adaptive management plans for SPA/SAC/Ramsar sites themselves?***

- 4.8 The project has no direct effect on existing Natura 2000 sites, other than the pylon feet and oversailing at Hinkley Line Entires and the oversailing of the River Avon (Severn

Estuary SPA/SAC/Ramsar). This is not a factor which could constrain adaptive management for the site.

- 4.9 In relation to the Hallen Marsh SPA compensatory area, the presence of the overhead line would impose some constraints on management of the site; to avoid any increase in collision risk, habitat enhancement is appropriate at least 50m from overhead lines. However, the site is not yet under management for SPA birds, and National Grid proposes to fund habitat enhancement, including removal of hedgerows and creation of wetland scrapes. These measures would be implemented by Bristol City Council using funds provided under s106 contribution by National Grid.

***Does the project constrain the ability to influence adaptive landscape management practices around and between Natura 2000 sites?***

- 4.10 The wayleave agreements with landowners along the route restrict, to some extent, measures such as tree-planting and the creation of waterbodies. However these restrictions are local in extent and do not prevent the introduction of landscape management practices (such as farmland stewardship schemes) in the broader countryside.
- 4.11 Existing corridors (such as watercourses and hedgerows) important for the integrity of Natura 2000 sites have been identified during the process of EIA and HRA and mitigation proposals have been formulated for such corridors.

***Does the project constrain future monitoring of climate change effects on biodiversity within the sites?***

- 4.12 Aside from the oversailing of the River Avon, the project does not involve any landtake, or restriction of access, within existing Natura 2000 sites, so is not expected to adversely affect existing or future monitoring arrangements.

***Would the project affect the ability for site managers to maintain dialogue with a range of stakeholders whose activities may affect Natura 2000 sites?***

- 4.13 National Grid is a stakeholder and has indicated its continuing commitment to dialogue with Natural England and site managers.

***Summary of Strategic Assessment against Natura 2000 management objectives***

- 4.14 In summary, the Proposed Development will not adversely affect the ability of Natura 2000 site managers to maintain the sites in a state of pro-active management, responsive to effects arising from changing climate.
- 4.15 The issue of whether the overhead lines may fragment bird flyways in a future changing climate is considered below in relation to the specific climate projections for the area and in relation to the types of species that are most likely to experience collisions.

## 5.0 Climate change effects on British birds – general

- 5.1 The supplement to the EC Guidance notes specific vulnerabilities of species groups to climate change effects. In the project area (Atlantic Regions), breeding birds are considered to be of higher vulnerability than overwintering birds.
- 5.2 The BICCO-Net reports confirm that for farmland birds, land use practices have been, and will remain, the primary determinant of bird populations. In semi-natural habitats less affected by agricultural intensification, climate change effects are almost as important as land-use practices.

### *Effects on breeding birds*

- 5.3 A detailed analysis in respect of breeding birds is provided in Huntley et al. (2008) who investigated the adaption strategies for biodiversity conservation focussing on predicting the quantitative magnitude, direction and rates of potential changes of the distributions of birds. The species distributions of 431 European breeding birds were modelled under six possible climate scenarios for the period 2070-99. Specifically predictions were made for large ensembles of species (a large number of species of one or more taxonomic groups), rather than individual species, covering extensive (sub-continental or continental) regions.
- 5.4 It was determined that the mean range centroid, in other words the centre of mass of a species' distribution, could potentially shift 258 to 882 km either in a NNW or a NE direction depending on the climate scenario considered. For many species groups the potential future ranges were also predicted to decrease to between 72 and 89% of their current range and overlapped between 31 and 53% of their current range. However for many species endemic or near endemic to Europe little or no overlap between their present and future range is predicted; such species face a greater risk of extinction as a consequence of climatic change.
- 5.5 Huntley demonstrates that the potential impact of climatic change on European birds is a combination of: very rapid potential range displacements of large magnitude, generally in a northward direction; an average reduction in the extent of species' ranges; a limited mean overlap between species' potential future and present ranges; a general reduction in the number of species breeding in any area; and an increased extinction risk for some species, including a number of those endemic or near endemic to Europe.
- 5.6 Species in the UK that are at the south extent of their current breeding distribution in Europe or birds that live in mountainous areas are at risk of becoming locally extinct due to the effects of climate change. This is the case for the UK breeding species red-necked phalarope and ptarmigan which are likely to be affected by shifting climate zones and may disappear from the UK. This is not relevant to the project area.
- 5.7 Conversely, species that are more common further south are likely to become better established in the UK if the correct habitats for those species are present and sufficiently widespread.
- 5.8 One study considered the likely importance of prey abundance in driving the demographics of a European golden plover population at its southern range margin

(Pearce-Higgins et al., 2010a). Previous studies have correlated plover productivity with the abundance of adult crane fly (Tipulidae) prey and modeled the phenology of plover breeding and crane fly emergence in relation to temperature. A future scenario of increasing August temperatures predicts a significant risk of extinction of the golden plover population over the next 100 years, depending on the magnitude of global warming. Direct effects of climate warming on crane fly populations would cause northward range contractions of golden plover. Crane flies are an important food source for many upland and northern birds so the findings of this study have potentially wide ranging implications for other bird species. Another more broad ranging study concluded that the distribution of upland bird species in the UK is threatened by potential reductions in abundance of Tipulidae, Chironomidae and Lumbricidae prey items brought about by future summer temperature rises (Pearce-Higgins et al., 2010b).

- 5.9 Eglinton (2012) suggests likely recoveries (or continued recoveries) in corn bunting, European goldfinch, common linnet, common reed bunting and skylark populations as a result of increased survival in milder winters, and increases in grey partridge, yellow wagtail and potentially western jackdaw populations as a result of increased productivity in warmer, drier summers. In respect of lapwing, one of the species potentially vulnerable to collision risk, the picture is less clear, as the benefits of warmer summer temperatures may be offset by the reduced soil invertebrate faunal productivity associated with drier summers.

#### ***Effects on wintering birds***

- 5.10 There is evidence to indicate that important populations of waterbirds in the UK, particularly waders, are already affected by climate change. So far changes in distribution and timing of arrival to winter have all been linked to climate change.
- 5.11 Since the 1980s the estuarine distributions of seven out of nine common wader species have moved in an eastwards direction across winter isotherms with smaller species exhibiting the largest shifts. These changes were driven by temperature change.
- 5.12 Data gathered during winter surveys of Britain's non-estuarine coasts between 1984-85 and 1997-98 showed the distributions of eight wader species moved in an eastwards and/or northwards direction with increasingly mild winter temperatures and changes in mean rainfall, wind speed and wind chill. (Rehfishch et al., 2004).
- 5.13 In both instances the waders appear to be wintering closer to their breeding grounds, which are predominantly to the north and east of Britain, as the risk of cold-induced mortality in the colder east has reduced. Indeed it is possible that the recent decline in 8 out of 14 species of common coastal wader in Britain could be due to waders now wintering even further north and east, on mainland Europe (Rehfishch & Crick, 2003).
- 5.14 It is also possible that if global warming leads to milder winters across northern Europe and Russia, other winter visitors to the UK including ducks, geese and swans may also choose to spend winters closer to their breeding grounds, such as in the Netherlands or the Baltic. This would lead to a decrease in the numbers of wildfowl species visiting UK shores (Sparks et al., 2002).

- 5.15 There is also evidence that a range of qualifying species associated with Natura 2000 sites on the west coast of Britain have declined to such an extent that their population size has fallen below the thresholds used to identify populations of National and International importance. For example, the number of dunlin wintering on the Severn Estuary has dropped from an average of 40,000 individuals in the mid-1970s to below the International threshold of 14,000 in 2000-01.
- 5.16 Similarly, Bewick's swan has displayed a marked eastwards movement in its British winter distribution, with western estuaries and farmland experiencing significant declines.
- 5.17 Many other wader species are declining more rapidly in the west of Britain than in the east, as illustrated by the common ringed plover. The "State of the UK's Birds, 2013" (RSPB, 2013) also confirms the eastwards shift for many wintering waterbirds.
- 5.18 Sea-level rise may not have a major impact on the capacity of estuaries to hold waders if landward estuary rollback is permitted (Austin & Rehfish 2003). However, milder winters are known to result in a reduction in benthic invertebrate biomass in tidal mudflats (Beukema, 1992) in the following years. This would therefore result in a reduction of food resources for wintering waders.
- 5.19 Extensive winter flooding, and drought conditions during the summer are likely to alter the suitability of existing habitats for feeding birds. This may increase the wintering resources available for waders and wildfowl, but limit the breeding areas available.
- 5.20 The increase in extreme weather events such as spells of freezing weather conditions in the winter may encourage birds to move to more suitable foraging areas. This may include moving from frozen inland areas to land at the coast that has not yet frozen due to saline conditions, or the generally milder weather conditions found with proximity to the coast. Conversely, it may encourage birds to become more sedentary and 'sit out' the cold weather conditions to minimise energy loss over a short period.

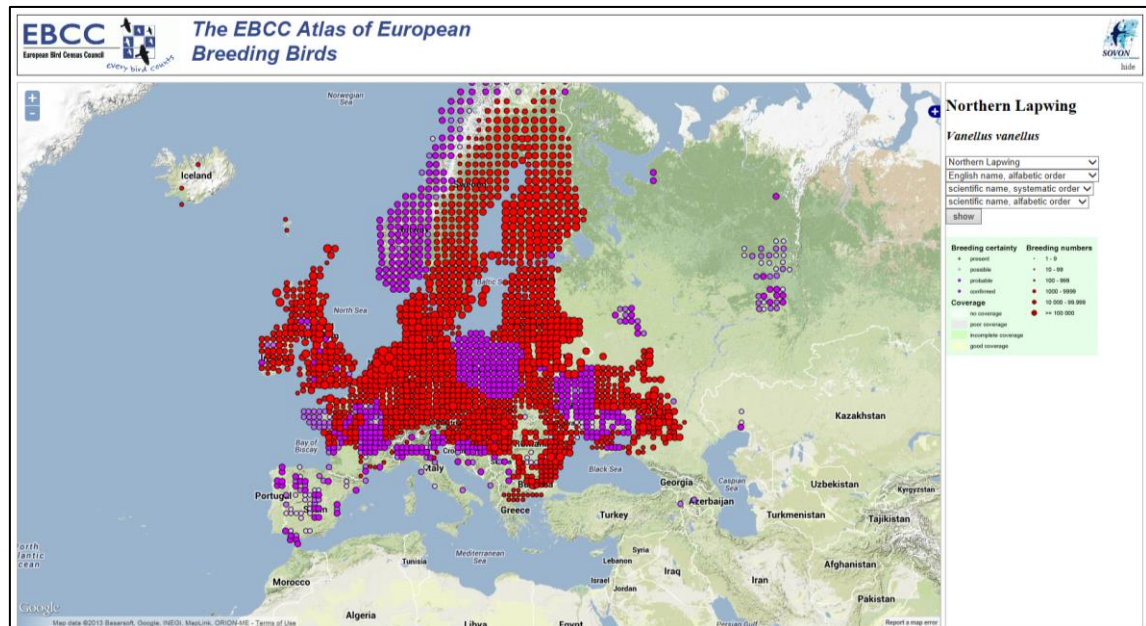


## 6.0 Possible climate change effects on birds in the project area

- 6.1 As the effects of global warming are not yet well understood, particularly in reference to the British climate, it is difficult to predict the likely effects of a single project on birds. However it is possible to estimate some possible broad outcomes.
- 6.2 The Somerset Levels is used by large numbers of wintering wildfowl and waders. Recent years have seen parts of the Somerset Levels flooded during winter months, and climate change is likely to exacerbate this effect in the future. This is likely to benefit wildfowl, especially dabbling ducks, in particular during the winter months.
- 6.3 For example, RSPB (2013) notes the presence of 45,000 teal on the Somerset Levels and Moors in February 2011.
- 6.4 The ability of the Levels to support waders such as lapwing will depend on the severity of the flooding, with the possibility of some waders being displaced under extreme flooding events. It is also possible that a succession of large flooding events over consecutive winters could deplete the soil invertebrate food resource, especially if large areas of grasslands were flooded for a continuous period of more than 120 days (Ausden et al., 2001). This would also reduce the food resource available for wading birds.
- 6.5 It is possible, as noted above, that use of the UK's western shores by waders and wildfowl could decrease over the long term due to milder winters, if as many studies predict, migratory species choose to spend winters closer to their breeding grounds in northern Europe. This would lead to a decrease in the populations of qualifying species using the Somerset Levels and Moors SPA and the Severn Estuary SPA.

### ***Effects on lapwing***

- 6.6 It is worthwhile considering the potential effects of climate change on lapwing wintering and breeding populations associated with the project area since the Ornithological Assessment has predicted collision mortality on lapwing as being the most likely frequent collision risk, and the species is a qualifying feature for the Somerset Levels and Moors SPA/Ramsar. In order to do this the relative current value of the study area is first summarised.
- 6.7 Breeding lapwing are at greatest densities in the north and north east of England and lowest in the west, from Scotland, through Scotland and Wales to Cornwall. In the winter the situation reverses, with greater numbers being recorded in Ireland and southwest, southern and eastern England, and a lack of birds on the high ground in Scotland and Wales. The breeding distribution of lapwing in Europe is illustrated in Figure 4.

**Figure 4: EBCC Atlas of European Breeding Birds – Northern Lapwing**

- 6.8 Lapwing migration movements are complex but it is known that lapwing are partial migrants, with many remaining through the winter on suitable fields close to their breeding grounds. Lapwing associated with the Somerset Levels are likely to migrate south to the coasts of France and Iberia if they do leave their breeding grounds in the winter. Lapwing that remain in the UK are joined by birds from North mainland Europe from June onwards with peak immigration occurring in October and November.
- 6.9 There is considerable variation in the maxima count of lapwing on the Somerset Levels. In January 2011 an exceptional count of 72,319 was recorded at the Somerset Levels, the most ever recorded there. This count is believed to represent a redistribution of lapwing from elsewhere during the harshest of the frozen mid-winter conditions. Overall numbers of lapwing in the UK are known to vary in response to temperatures both here and in continental Europe since the UK's population is supplemented by continental birds in the winter.
- 6.10 As previously explained, the progressive effects of climate change are likely to result in many species, including lapwing, shifting their winter and breeding distributions northwards and eastwards. Warmer winter temperatures in mainland Europe are likely to result in fewer birds migrating to the UK each winter, instead wintering close to their wintering grounds. However lapwing within the study area will also be more likely to winter close to their breeding grounds rather than migrating to France and Iberia. However the predicted increased flooding during the winter time may make parts of the Somerset Levels unsuitable for lapwing since this species prefer damp ground to flooded land. Parts of the Somerset Levels which flood for short periods of time, which are currently favoured for lapwing, such as Tealham and Tadham Moors SSSI, may become largely unsuitable for wintering lapwing due to floods being more severe and repeated.

- 6.11 Conversely, it is possible that parts of the Levels currently too dry for substantial winter flocks of lapwing, may become wetter, enabling the species to adjust.
- 6.12 The breeding distribution of lapwing extends southwards from the study area to include northern France therefore in the first instance one might not predict a reduction in the density of lapwing nesting in the study area as the effects of climate change intensify. However lapwing favour damp or flooded grassland habitat during the breeding period because these habitats provide good foraging for insect prey needed for chick rearing. The predicted drought weather conditions in the breeding period are likely to result in damp and flooded grassland becoming a rarer habitat within the study area. Increasing temperatures in the summer could also result in a reduction in the abundance of some types of insect prey species although lapwing tend to be generalists rather than relying on one particular prey item. Huntley (2008) predicted that the majority of species will experience contractions in range and reductions in abundance. This is likely to be the case for breeding lapwing associated with the Somerset Levels.
- 6.13 A decrease in the winter and breeding populations of lapwing on the Somerset Levels could make the population of this species more sensitive to other causes of mortality such as overhead line collision mortality. However, given the widespread distribution and high population numbers of lapwing, any such population diminution would have to be extremely significant for the additional mortality arising from collisions to be significant at a population level.
- 6.14 In fact, fewer migration movements in the early winter months would mean that lapwing may become more sedentary resulting in a reduced risk of collision mortality occurring. Increased flooding in the winter and reduced prey availability in the breeding season may both cause lapwing to make more local flights either to leave unfavourable flooded habitat or go further afield to forage when brooding young.
- 6.15 The proposed alignment is located within fields dominated by improved pasture with the vast majority of fields not being seasonally flooded. Survey findings during the winter bird surveys have shown that there are very few fields along the route of the proposed overhead line that attract wintering or breeding lapwing. Therefore the flight movements of lapwing recorded during the vantage point survey were likely to be associated with lapwing flying to favoured sites associated with the Somerset Levels and the Severn Estuary coastline.
- 6.16 It is possible that lapwing collision mortality due to the proposed overhead line could increase if habitats along the route of the proposed alignment became more suitable for lapwing in the future. The fields associated with the study area are well drained so it is possible that wintering lapwing might use them in the event that their favoured areas in the Somerset Levels became permanently flooded in the winter. It is also possible that the lapwing would make more use of higher ground in order to avoid flooding, such as fields around the Mendip Hills.
- 6.17 The above narrative perhaps highlights the uncertainty of predicting how climate change may affect flight movements of lapwing in the project area.

## **7.0 Other influences on future bird movements in the project area**

- 7.1 A managed realignment scheme (allowing the sea to penetrate existing sea walls and create intertidal habitats behind the sea wall rising up to higher ground or newly constructed sea defences) is currently being carried out at Steart near to the River Parrett to the south west of the southern end of the proposed Hinkley Point C Connection route. These works are likely to increase the suitability of these habitats for waders and wildfowl associated with the Severn Estuary SPA/Ramsar. A possible outcome of this could be that larger numbers of waders and wildfowl may undertake local migration from the Somerset Levels and Moors to this part of the Severn Estuary during extreme weather events in the winter such as severe cold spells. Another potential outcome is that larger numbers of waders and wildfowl stay on the Severn Estuary during the winter period rather than move to the Somerset Levels and Moors due to the increase in the availability of suitable habitat at the estuary.
- 7.2 There are a small number of existing managed realignment projects which have already been implemented elsewhere in the UK. A study was carried out to determine the effects of managed realignment on usage by birds at two sites in Essex (Atkinson et al., 2004). During the winter following the breach, both realignment sites showed an increase in the number of waders using the site and held bird communities that were intermediate between those of the adjacent mudflats and saltmarsh. The first waders to use the sites were redshank, grey plover and dunlin, species that prefer fine mud sediments. Numbers of knot continued to increase over subsequent winters. Shelduck and Brent goose also used the newly created area. Some realignment sites may develop habitats that are unsuitable for species, e.g. species that rely on large bivalves such as oystercatcher.
- 7.3 In the context of works at Steart, it is likely that the habitat enhancement works will increase food availability for the majority of qualifying species for both the Severn Estuary SPA and the Somerset Levels and Moors SPA.
- 7.4 Bristol City Council has aspirations for a wintering bird habitat creation project at Hallen Marsh, to offset adverse impacts arising from continuing industrial development associated with Bristol Port. Given the purposes of the scheme, it is likely to be regarded as net-neutral in terms of its effect on wintering birds.

## **8.0 Conclusions regarding climate change effects on SPA birds in the project area**

- 8.1 There is significant uncertainty as to how overwintering waders and wildfowl will respond to climate change effects, and this creates uncertainty as to how their migratory and daily feeding flight patterns may change.
- 8.2 Despite strong evidence that winter rainfall and flooding will increase, there is no strong evidence that this will result in significant climate-related alterations to the overall availability and quality of habitats on and around the Somerset Levels and Moors SPA/Ramsar site. Some wet fields may become even more regularly flooded to such an extent that they decline in value, but this trend would simultaneously result in drier fields becoming wetter and increasing in value.
- 8.3 There is no specific evidence that predictable climate changes will result in significant alterations to regular patterns of bird flight across the proposed new overhead line, which, in relation to the Somerset Levels and Moors SPA/Ramsar, is located largely on reasonably well-drained farmland which is less attractive to wintering waders and wildfowl.
- 8.4 Nevertheless, there is a strong likelihood that shifts in winter bird distribution and daily flight patterns will occur, and such shifts may occur more frequently as a result of milder wetter winters. It is not possible to predict if this would result in less, more or the same number of flights across the overhead sections of the route.
- 8.5 The Severn Estuary SPA/Ramsar is undergoing some sea-level rise and consequent coastal squeeze, resulting in reduction of intertidal mudflats and saltmarsh. However the Steart managed realignment scheme is responding to this.
- 8.6 Both Natura 2000 sites are under monitoring schemes and subject to management measures which enable site managers to respond to climate changes and take actions to conserve the species for which the sites are designated.
- 8.7 There may be short-term and unpredictable extreme weather events, such as flooding after intense rainfall or short periods of freezing weather. These may cause a short-term increase in collision mortality should daily feeding flight patterns change on farmland surrounding the SPAs or along the proposed alignment, near the SPAs.
- 8.8 In response to the Ornithological Assessment and following advice from Natural England, National Grid has identified three sections of the route, lying between the Somerset Levels and Moors SPA/Ramsar and the Severn Estuary SPA/Ramsar where it is most likely that bird flight movements will occur in response to weather events and changes in food availability. These sections will be fitted with Bird Flight Diverters.
- 8.9 National Grid's Bird Flight Diverter Protocol also sets out procedures for responding to evidence of collisions. This provides an additional layer of mitigation should climate change affect bird flight activity in unforeseeable ways. On receipt of evidence of adverse effects on statutory interests (such as SPA birds), National Grid will consider fitting of diverters if such a new collision risk cannot be addressed at source (e.g. by alleviating the flooding of fields).

## 9.0 Climate change effects on bats

- 9.1 The potential climate change effects on bats are less well researched than for birds, and there remains considerable uncertainty. The following narrative is taken, virtually unedited from the Bat Conservation Trust's summary assessment, reported on their website.
- 9.2 Bats may be affected at all stages in their annual cycle: temperature changes may affect hibernation of bats, both in terms of the availability of suitable sites and behaviour, length and timing of hibernation. Changes in temperature and precipitation may affect breeding success of female bats through changes in prey availability, including the time of year when insects are abundant. Climate change may also affect the habitat types and insect prey types available for bats for foraging, which could have indirect effects on bat populations. The distribution of UK bat species may also change in response to climate change.
- 9.3 To date there is some evidence that climate has had an impact on horseshoe bats. It is likely that the very cold winters in the second half of last century reduced population sizes of horseshoe bats, but it has been suggested that more recently the mild winters have allowed populations of both lesser and greater horseshoe bat to recover (Ransome 1989; Battersby 2005). Spring temperature is also important for some bat species: greater horseshoe bat numbers increased after a period of warm springs for example (Ransome & McOwat 1994) and the timing of births is influenced by spring temperatures in pipistrelles (Racey & Swift 1981) and greater horseshoe bats. However it is not yet known whether reproductive success of bats is directly related to climate or to the availability of their insect prey (which may also be affected by climate) and it is possible that there could be mismatches between timing of breeding and the availability of food, particularly for specialist species of bat reliant on particular prey types (Rebelo et al. 2010). Bats may emerge from hibernation earlier in the year if spring temperatures are higher and then could be at risk from mortality during subsequent cold periods (Jones et al. 2009).
- 9.4 In respect of horseshoe bats, the qualifying features for the SAC's potentially affected indirectly by the project, the current research suggests that they are rather more likely to benefit from climate change than to be adversely affected. Taking account of the project's mitigation proposals for habitat reinstatement, there is no evidence that climate change would have an adverse cumulative effect on the bats or the SACs.

## **10.0 Resilience of habitat mitigation to climate change**

- 10.1 Following construction, habitats will be reinstated, using indigenous trees and shrubs for hedgerow and tree replacement. In semi-natural grasslands, locally-native seed mixes will be employed. In agricultural areas, reinstatement will normally match the former or surrounding land use, in agreement with the landowner.
- 10.2 Additional tree, hedge and woodland planting will be carried out around Sandford substation and in offsite areas under the Off Site Planting Enhancement Scheme (OSPES).
- 10.3 The proposed tree and hedge mixes are indicated on landscape drawings included with the DCO. Species choice to build in resilience to climate change is influenced by study of Forestry Commission guidance on species choice to take account of climate change, the Somerset Woodland Strategy (Somerset County Council, 2010) and Flora of the Bristol Region (Green et al., 2000).
- 10.4 Good planting techniques and protection during the early establishment phase are important to ensure that hedges rapidly establish to form canopy conditions that provide ground-level shade and drought resilience.

## **11.0 Assessment of climate change effects on non-Natura 2000 designated sites potentially affected by the Proposed Development**

- 11.1 Guidance on EIA and climate change restricts the scope of assessment to those projects, or components of projects, which have a longer-term effect (>20 years) on ecological receptors, and therefore might act in combination with future climate change to adversely affect receptors.
- 11.2 As outlined in the introduction to this paper, the mitigation associated with the Proposed Development will result in successful habitat reinstatement within 20 years of the date of this ES. In terms of the broad-scale assessment of the effects of climate change, the only significant residual effect during the >20 year operational phase relates to the presence of overhead pylons and conductors and their potential effect on birds.
- 11.3 Sites designated under Natura 2000 have been considered above using the EC decision framework (section 4), and their qualifying bird and bats species considered in sections 8 and 9.
- 11.4 Long-term residual direct effects on other designated sites are not expected, other than very small areas of permanent habitat loss arising from pylon feet or cable link box pillars in certain Local Wildlife Sites. Relative to the size of the designated sites, these losses are not of a proportion where additional pressures from a changing climate would render the Local Wildlife Site in an unfavourable condition.
- 11.5 At Portbury Wharf (Avon Wildlife Trust Reserve), the Ornithological assessment in the ES predicts that there will not be an increased collision risk for birds associated with the site. However, National Grid the Bird Flight Diverter Protocol will be triggered if evidence points that way. Such evidence may arise from changes in climate which alter bird flight patterns.
- 11.6 Similarly at Hallen Marsh, a site which is likely to develop increased bird interest as a result of habitat enhancement works, monitoring and triggering of the Bird Flight Diverter Protocol will apply.
- 11.7 The decision framework for Natura 2000 sites (at section 4 above) is extrapolated to other designated sites and the Strategic Nature Areas, as follows:

### ***Does the project contribute to the reduction of existing pressures on designated sites?***

- 11.8 In the long-term, following habitat reinstatement, the project will not add to any existing pressures on Wildlife Sites. The possibility of specific collision-related pressures relating to Portbury Wharf and Hallen Marsh is recognised, and mitigation in the form of monitoring and the Bird Flight Diverter Protocol is proposed.

### ***Does the project contribute to, or restrain, information-sharing?***

- 11.9 The project has contributed to an increase in the body of knowledge about the Wildlife Sites.



***Does the project constrain the possibility of adaptive management plans for designated sites themselves?***

- 11.10 The project will result in the oversailing of some designated sites and will have small residual habitat losses in others. However, the areas permanently affected are minimal in relation to the site and will not constrain adaptive management. Wayleave agreements with landowners restrict, to some extent, measures such as future tree-planting and the creation of waterbodies along the route. There may therefore be increased difficulty in managing certain woodland or wetland sites in the face of climate change.
- 11.11 Strategic Nature Areas are broad landscapes prioritised in the SW Biodiversity Implementation Plan. They are of such a scale that the local restrictions on land management imposed by wayleave agreements will not compromise delivery of biodiversity improvements.

***Does the project constrain the ability to influence adaptive landscape management practices around and between designated sites?***

- 11.12 The wayleave agreements with landowners along the route restrict, to some extent, measures such as future tree-planting and the creation of waterbodies. However these restrictions are local in extent and do not prevent the introduction of landscape management practices (such as farmland stewardship schemes) in the broader countryside.

***Does the project constrain future monitoring of climate change effects on biodiversity within the sites?***

- 11.13 The project does not result in any obstruction of access for monitoring, nor does it impose any significant restrictions on use of monitoring equipment.

***Would the project affect the ability for site managers to maintain dialogue with a range of stakeholders whose activities may affect designated sites?***

- 11.14 National Grid is a stakeholder and has indicated its continuing commitment to dialogue with Natural England and site managers.

***Summary of Strategic Assessment of the impact of the project on designated sites in the face of climate change***

- 11.15 Other than in one regard, the Proposed Development will not affect the ability of managers of designated sites to maintain the sites in a state of pro-active management, responsive to effects arising from changing climate. The exception is for sites where wetlands or woodlands form the special interest, and the presence of electrical infrastructure significantly curtails the ability of the manager to create new wetlands or establish new woodlands in response to climate change.

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