

The Lighthouse Green Fuels Order

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**Results of a Diurnal Lepidoptera
Survey for the Alfamar
'Lighthouse Green Fuels' Project**

Robert Woods



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Executive Summary

This report was commissioned by the client, Alfamar Projects (hereafter referred to as 'Alfamar'), details investigations into the diurnal Lepidopteran populations which are present in selected areas of the 'Lighthouse Green Fuels' Project within the Borough of Stockton-on-Tees.

The report details surveys of diurnal Lepidoptera by the Industry Nature Conservation Association (INCA) which took place through the 2025 season. These found a total of 18 species of butterfly including Dingy Skipper, Grayling and Small Blue, all of which are UK Biodiversity Action Plan (BAP) Priority species. There were also 11 species of moth. Of these none are nationally significant.

As a result of analysing the significant data obtained during the course of the study recommendations are made for areas that are more sensitive because they support significant populations of scarce lepidoptera. These are areas where any disturbance should be avoided or minimised.

1. Introduction

1.1 Overview

This report details a study, carried out in 2025, of the diurnal Lepidoptera which are present within the boundaries of selected areas of the 'Lighthouse Green Fuels' project at Seal Sands as illustrated in figure 1 and advised by the client.

The areas, indicated by coloured polygons and annotated with numbers in the same figure, refer to specific habitat types that were surveyed. Wider areas in the Tees estuary which are appropriate to the same project, but beyond the boundaries shown in figure 1, were scoped out of relevance for lepidoptera survey in a meeting between Alfano and INCA on 7th May 2025. This is because, given INCA's detailed knowledge of the wider project area, those areas not selected for survey, containing species-poor scrub or species-poor neutral grassland with a tall, closed sward, are unremarkable and would be likely to support only a range of fairly common, widespread, lepidoptera and other invertebrate species.

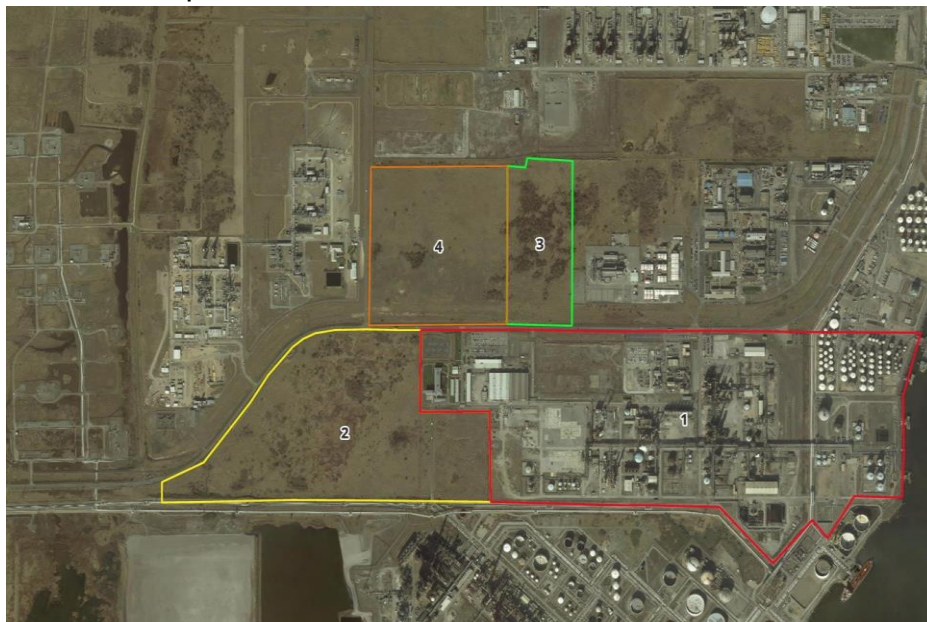


Figure 1. Showing the Study Area at Seal Sands
(note: the aerial is prior to demolition of all structures on the site)

By agreement with Alfano, surveys of invertebrates on the subject sites used diurnal lepidoptera and specifically those butterflies which have national conservation priority, which in the Tees estuary are the Dingy Skipper *Erynnis tages*, Grayling *Hipparchia semele* and Small Blue *Cupido minimus*. These are key indicator species for such a study as they are ecologically significant and have different niche requirements. They are therefore highly suitable as indicators of the ecological health of the habitats that they use and are also considered by INCA to be a suitable proxy for the wider range of invertebrate species which may be present. It was agreed that any other butterflies plus any incidentally day-flying moths would also be recorded.

1.2 Aim of this Report

The results of the current study are part of informing a planning application for the 'Lighthouse Green Fuels' project.

2. Legislation, Planning Policy and Guidance

2.1 Legislation

Some invertebrates are protected under the Conservation of Habitats and Species Regulations (2017). Additionally, others are protected under the Wildlife and Countryside Act (1981)¹. However, since the subject of this report is the Lepidoptera specifically within an industrialised sub-region of north-east England there are no species residing in this sub-region that are listed within the legislation concerned.

2.2 Planning Policy & Guidance

Many invertebrates are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (NERC) (2006)². There must be regard for the conservation of Section 41 species as part of planning decisions. Within the Lepidoptera occurring in the Tees sub-region of North-east England these species include:

Butterflies

- Dingy Skipper *Erynnis tages*
- Grayling *Hipparchia semele*
- Small Heath *Coenonympha pamphilus*
- Small Blue *Cupido minimus*
- White-letter Hairstreak *Satyrrium w-album*

Moths

There are around 140 moth species listed within Section 41 of the NERC Act and many of these occur within this sub-region. They are, however, too extensive to list here. These species derive from a review by the charity Butterfly Conservation of the UK BAP Priority moth species (Butterfly Conservation, 2007). This review also includes many common and widespread species that are thought to be declining and are therefore subject to long-term research to determine their status. Such species are therefore not taken as priorities for discussion within this report, as any conclusions relating to their inclusion could be misleading. Conclusions relating to moths are therefore based upon the author's own knowledge and experience of which species are of particular significance in this sub-region.

3. Methodology

3.1 Desk Study

There is no significant historical data for Lepidoptera covering the project area that has not been generated by INCA, which holds all of the significant data here. It was therefore not considered necessary to consult the Environmental Records Information Centre (ERIC) North East. There have been no species found that have legal protection, although a number are of conservation significance as discussed later.

Of the BAP priority butterfly species to be found in the Tees estuary there is a regionally significant population of Dingy Skipper within area 4 in figure 1. Grayling butterfly is resident here but with a relatively modest population in comparison to what some sites in the Tees estuary can support. Small Blue also uses this area. This is a re-introduced species, a partnership project between the CATS Terminal, INCA and the charity Butterfly Conservation. The introduction site was at the CATS terminal in 2019 but the species has since spread to surrounding areas, including to area 4. Small Blue is a UK BAP Priority species.

Of the other species noted in this area during previous diurnal surveys by INCA most are common and widespread, although Small Heath *Coenonympha pamphilus* and Cinnabar moth *Tyria jacobaeae* are thought to be in decline nationally but are the subject of national research to assess the true position of their status. Outside of data held by INCA there is a record of two specimens of the day-flying moth, the Six-belted Clearwing *Bembecia ichneumoniformis* from area 4. This moth uses Bird's-foot Trefoil *Lotus corniculatus* as a larval foodplant. The moths were attracted to a pheromone lure in open mosaic grassland on 10th July 2022 (D Wainwright, pers.comm.). Despite use of the appropriate lure (API) by INCA in 2023 further evidence of this species during its normal flight period (late June to mid-July) could not be found. This is a significant record of a nationally scarce moth.

The extensive *Phragmites* reedbed at the INEOS Nitriles site (part of area 2 in figure 2) supports many of the scarce *Phragmites*-feeding moths that occur in such reedbeds on Teesside, most of which are also uncommon nationally. These include Brown-veined Wainscot *Archana dissoluta*, Chilo *phragmitella*, Fen Wainscot *Arenostola phragmitidis*, Obscure Wainscot *Leucania obsoleta*, Silky Wainscot *Chilodes maritima* and Southern Wainscot *Mythimna straminea*. Although much of the significant interest is associated with the reedbeds at INEOS Nitriles the species-rich grassland along trackways bordering the reedbed and also to the immediate east supports a range of specialised moths, which use a range of forbs. These include Aproaerema *anthyllidella* which uses Kidney Vetch *Anthyllis vulneraria*, Bordered Sallow *Pyrrhia umbra* on Common Restharrow *Ononis repens*, Broom moth *Ceramica pisi* on Broom *Cytisus scoparius* and other plants; and *Stenoptilia zophodactylus* on Common Centaury *Centaureum erythraea* and Yellow-wort *Blackstonia perfoliata*. There are also a suite of commoner moths occurring here.

The only significant lepidoptera record from the birch woodland of area 3 in figure 1 is of two Large Red-belted Clearwing moth *Synanthedon culiciformis* which assembled to a CUL pheromone lure on 1st June 2023 and were subsequently reported to INCA (D Wainwright, pers.comm.). This nationally scarce species is known to be associated with light birch woodland.

3.2 Field Survey

The work was carried out by Robert Woods and Mark Morris of INCA. Both are ecologists of more than 15 years' experience and are members of the Chartered Institute of Ecology and Environmental Management (CIEEM). This work was aided on occasion by Graham Megson, an experienced ecologist and Associate of INCA.

Given that the work commission was focused upon the priority butterfly species, Dingy Skipper, Grayling and Small Blue, visits were conducted at times of the year when these are active; being May to early-June for Dingy Skipper and Small Blue, and mid-June through July for Grayling (and second brood Small Blue). Surveys took the form of slow, systematic site walkovers using an entomological hand-net to investigate species in flight that needed closer examination.

Weather is a key factor for invertebrate activity so visits to each site were made only during favourable weather conditions. This comprises dry, sunny weather with a wind speed of less than Beaufort scale five and a minimum temperature of 15°C. Visits were made between 10.00 and 15.00 to take advantage of the time of day when the temperature is highest.

3.3 Assumptions and Limitations

There were no limitations to this survey.

4. Results

4.1 Habitats Present

The nature of the habitat in areas 1 to 4, as shown in figure 1, are described subsequently.

4.1.1. Area 1

Apart from roadways and concrete hard standing, which are of no ecological significance, much of this area consists of large areas of 'sparsely vegetated land' (vacant/ derelict land). These are areas of former operational land which supports frequent Butterfly Bush *Buddleia davidii*, Narrow-leaved Ragwort *Senecio inaequidans* but includes some other ruderal plant species and scattered grasses, including Fescues *Festuca* sp. (see photograph 1).



Photograph 1



Photograph 2



Photograph 3

There are also several enclosures in the north-western part of this area which are adjacent to Seal Sands Road (see photographs 2 and 3). These are essentially of the same broad habitat type as mentioned for the bulk of area 1 but are a little more diverse, with scattered Silver Birch *Betula pendula*, Bramble *Rubus fruticosus* agg., St. John's-wort *Hypericum* sp., and more frequent patches of grasses including fescues. Cotoneasters *Cotoneaster* sp. are much in evidence here.

4.1.2. Area 2

At its centre is a large area of reed swamp dominated by Common Reed *Phragmites australis*, with a scrub comprising mainly of Goat Willow *Salix caprea* and Grey Willow *Salix cinerea*. Neutral grassland of varying quality is present along the southern and northern boundaries of this area (see photographs 4 and 5), with grassland along the southern boundary having a slag-rich, low nutrient, substrate supporting a wide range of forbs such as Bird's-foot Trefoil *Lotus corniculatus*, Hawkweeds *Hieracium* sp., Kidney Vetch *Anthyllis vulneraria*, Perennial Wall-rocket *Diplotaxis tenuifolia*, Pyramidal Orchid *Anacamptis pyramidalis*, Tall Melilot *Melilotus altissimus*, Wild Carrot *Daucus carota*, Wild Parsnip *Pastinaca sativa* and Yarrow *Achillea millefolium*. The invasive Sea Buckthorn *Hippophae rhamnoides* is frequent here which does reduce its overall ecological value somewhat.



Photograph 4



Photograph 5

Bordering this reed swamp to the east is an area of fairly poor-quality mixed grassland of varied sward height and occasional forbs including Bird's-foot Trefoil, Carlina Thistle *Carlina vulgaris*, Pyramidal Orchid *Anacamptis pyramidalis*, Ribbed Melilot *Melilotus officinalis*, White Clover *Trifolium repens* and Yellow-wort *Blackstonia perfoliata*. Frequent Hemp-agrimony *Eupatorium cannabinum*, Northern Marsh Orchid *Dactylorhiza purpurella*, the occasional stand of Common Reed and Bulrush *Typha latifolia* are testament to more water retentive areas of substrate. There is also a scattered scrub, mainly of Bramble *Rubus fruticosus* agg., birches, Goat Willow and Grey Willow. Cotoneaster is frequent.

4.1.3. Area 3

The majority of this area is Birch Woodland, which is likely to be around 20-30 years old. Along the northern margin of the woodland is a banded strip of dune grassland with dominant Marram Grass *Ammophila arenaria* and a light, short, open, grassland growing on sandy substrate where plants such as Bird's-foot trefoil are occasional. In places the sward is relatively closed and less forb-rich (see photograph 6).



Photograph 6

4.1.4. Area 4

Area 4 is a westward continuation of area 3 (see photograph 7). There is a small copse of birch woodland here but the area otherwise comprises mainly of the same grassland characters as for area 3. Although there are pockets of Marram across this area much of the dune grassland is associated with the bund which demarcates the northern boundary of the area. This is also where it is most botanically diverse and sheltered from wind which makes it attractive to invertebrates.



Photograph 7

4.2 Results of Lepidoptera Survey of Habitats Detailed

Three surveys were undertaken during the Dingy Skipper / Small Blue flight period, on 14 May, 23 May and 11 June, while further surveys were conducted for Grayling, on 11 June, 25 June, 3 July and 16 July. Note: given the early flight season for many species in 2025 the 11 June survey was potentially appropriate both for late individuals of Dingy Skipper and early individuals of Grayling. The timing and weather for the surveys was as follows:

- 14 May: 13.00 -15.30; 80-90% sun, light NE breeze, 16°C.
- 23 May: 09.30 -11.00; full sun, light SW breeze, 17°C.
- 11 June: 10 -13.30; full sun, calm, 21°C
- 25 June: 9 -10.30: full sun, calm, 19°C.
- 3 July: 09.00 -12.00; full sun, calm, 19°C.
- 16 July: 10.30 -14.30; full sun, light SW breeze, 23°C.

Results of these lepidoptera surveys on the study sites, plus any incidental results obtained while surveying for other fauna as part of this project, are shown in the appendix. A total of 18 species of butterfly and 11 moth species were found. Most of these species are considered as common and widespread. Those that are of conservation significance are discussed subsequently.

5. Discussion

Dingy Skipper, a UK and Tees Valley BAP Priority Species, is a species associated with Bird's-foot trefoil as a larva and is to be found in short, open, grassland with occasional bare ground where the butterflies prefer to bask in the sunshine. Such habitat is frequent along the southern edge of area 2 and along the bund at the northern edge of area 4. These locations are where the highest density of Dingy Skipper butterfly were recorded in 2025, with peak daily counts of 19 and 25 butterflies observed in areas 2 and 4 respectively on 14 May (see figure 2 for locations). It should be noted that the guidelines for the selection of Local Wildlife Sites in the Tees Valley³ includes a designation criterion of a population of Dingy Skipper of ten or more, therefore area 2 and 4 are of county significance with respect to Dingy Skipper.

Bird's-foot trefoil is present across the entirety of area 4 but much of this location is very flat, open and exposed. Dingy Skipper is present at low density across that whole area but most of the population exists close to the shelter of the bund mentioned earlier. It is of note that there was a single butterfly recorded here on 16 July. This is very unusual in northern England and is evidence of a partial second brood which is a facet of the higher temperatures and frequent sunshine through the spring and summer of 2025.

Grayling butterfly, one of the other UK BAP Priority and Tees Valley BAP species, did not appear until 19 June so was not seen in the first survey for it on 11 June. This would have been a very early date but had been thought feasible given the unusually hot year.

Throughout the main emergence in July, it was found in the short grassland along the southern margin of area 2 and also along the trackway which bounds the northern edge of this area but the largest densities were in the two enclosures beside Seal Sands Road at the northern edge of area 1 (see figure 2 for locations). The density of butterflies occurring here is of sub-regional importance. The species prefers a low nutrient substrate where the grassland is short and open, with lots of bare ground, and where the larval foodplants, grasses such as Fescue species, are abundant. It was therefore found scattered across virtually the entirety of area 1 but the highest density was undoubtedly where mentioned in the two enclosures. The butterfly was also found in reasonable numbers at the northern end of area 4 in the lee of the bund but not in the same density as in the northern part of area 1, just 500 metres to the south.

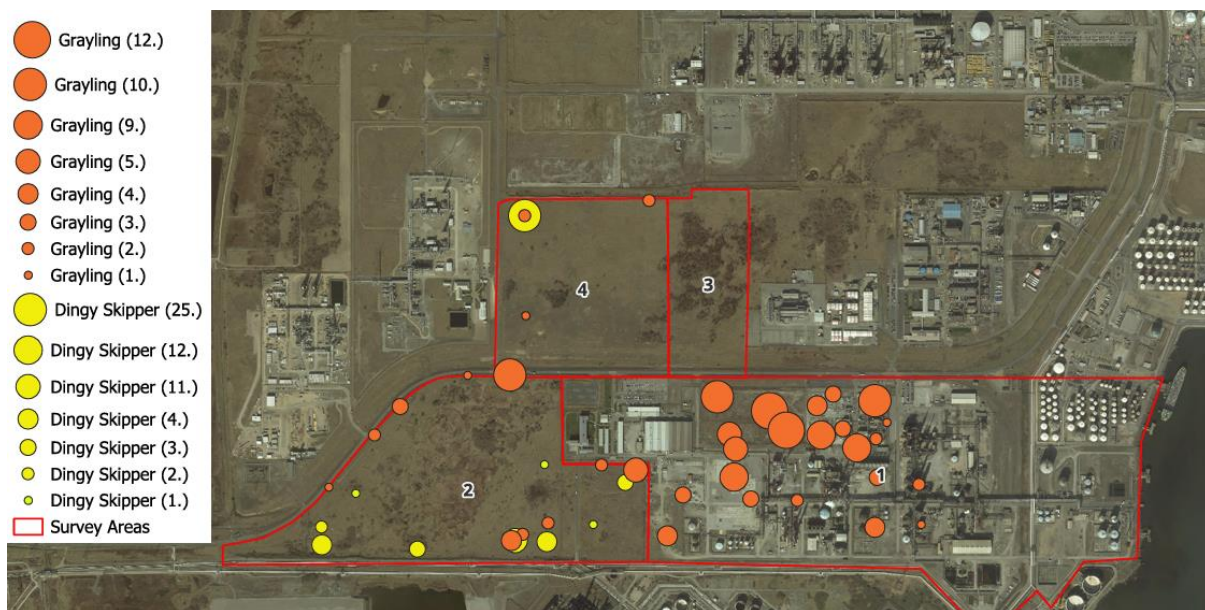


Figure 2. Showing records of Dingy Skipper (yellow dots) and Grayling (orange dots) within numbered areas 1 to 4

There were also four records of Small Blue, a UK BAP Priority Species, which has colonised the Tees Estuary following an introduction project, detailed earlier. Two of these are from an existing site, area 4, but the additional two records are evidence of a southwards spread from the introduction site at CATS and were south of the Seal Sands Road just within the INEOS boundary, one at the western end and the other at the eastern end.

In general, the butterfly diversity was highest across areas 2 and 4 and included a range of fairly generalist, common, grassland species such as Meadow Brown *Maniola jurtina* and Small Skipper *Thymelicus sylvestris*. Brown Argus *Aricia agestis*, a relatively scarce species in the Tees Valley, was seen as singletons in each of the four areas surveyed. This probably uses Common Stork's-bill *Erodium cicutarium* as its larval foodplant here.

There were no species recorded that are protected, or nationally rare. Of the moths that were found diurnally in 2025, there were no significant species recorded. Outside of the scope of this survey, however, it is known that the extensive *Phragmites* reedbed in area 2 is one of the most important components of such habitat in the region and is therefore among the most susceptible to potential harm from development. It supports many of the scarce *Phragmites*-feeding moths that occur in such reedbeds, most of which are also uncommon nationally. These include Brown-veined Wainscot, *Chilo phragmitella*, Fen Wainscot, Obscure Wainscot, Silky Wainscot and Southern Wainscot. In addition, the birch woodland in area 3 is known to support a population of Large Red-belted Clearwing, as mentioned earlier in section 3.1., although this moth was not specifically surveyed for in 2025 since is already known from there.

6. Conclusion and Recommendations

The surveys found no species which have statutory protection.

The areas that this study considers as having the highest importance for lepidoptera and therefore as a proxy for many other species of invertebrate, are shown within figure 3. These areas are represented by red polygons.

Development of the most biodiverse areas, as indicated by the lepidoptera, should be avoided where at all possible as ecological damage to these areas is likely to significantly impair the ability of some of the scarcer species to continue to survive in these areas and many will not be able to re-colonise from other areas due to their scarcity. Should development of these areas be required it will be very important to minimise impacts by limiting the footprint of any damage that occurs by adopting appropriate working practices such as ensuring that vehicular access to carry out works is via single trackways that are carefully chosen to avoid the most sensitive areas. This must also bear in mind any footprint that is used for lay-down, which can be as ecologically destructive as the main development itself.



Figure 3. *Project areas at Seal Sands of highest value to Lepidoptera (and likely other invertebrates)*

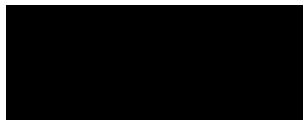
7. References

1. Wildlife and Countryside Act 1981, Schedule 5, <https://www.legislation.gov.uk/ukpga/1981/69/schedule/5>, Defra (accessed 23rd September 2025).
2. Natural Environment and Rural Communities Act 2006, Section 41, <https://www.legislation.gov.uk/ukpga/2006/16/section/41>, Defra (accessed 23rd September 2025).
3. Guidelines for the Selection of Local Wildlife Sites in the Tees Valley, version 7 <https://teesvalleynaturepartnership.org.uk/wp-content/uploads/2012/11/LWS-Guidelines-V7.pdf>, Tees Valley Biodiversity Partnership (accessed 24th September 2025).

8. Disclaimer

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Report prepared for and on behalf of the
Industry Nature Conservation Association by:



Robert Woods, Ecologist; September 2025

Checked by:



Ian Bond, Ecologist; September 2025

Appendix

Vernacular name	Scientific name	Area	Grid reference	Date	Frequency
Blackneck	<i>Lygephila pastinum</i>	2	NZ5234923922	11.6.25	1
Brown Argus	<i>Aricia agestis</i>	1	NZ5275623871	16.7.25	1
Brown Argus	<i>Aricia agestis</i>	2	NZ5191623940	16.7.25	1
Brown Argus	<i>Aricia agestis</i>	3	NZ5275224557	16.7.25	1
Brown Argus	<i>Aricia agestis</i>	4	NZ5230124503	14.5.25	1
Brown Argus	<i>Aricia agestis</i>	4	NZ5230124503	16.7.25	1
Brown Argus	<i>Aricia agestis</i>	4	NZ5230424246	16.7.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5235623713	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5251723866	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5234923922	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5227024094	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5215524093	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	2	NZ5198224013	11.6.25	1
Cinnabar	<i>Tyria jacobaeae</i>	4	NZ5230124503	22.5.25	2
Common Blue	<i>Polyommatus icarus</i>	1	NZ5263723729	11.6.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5227723669	14.5.25	5
Common Blue	<i>Polyommatus icarus</i>	2	NZ5202623647	14.5.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5178023704	23.5.25	3
Common Blue	<i>Polyommatus icarus</i>	2	NZ5210823641	23.5.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5227723669	23.5.25	4
Common Blue	<i>Polyommatus icarus</i>	2	NZ5235823666	23.5.25	10
Common Blue	<i>Polyommatus icarus</i>	2	NZ5248023641	23.5.25	2
Common Blue	<i>Polyommatus icarus</i>	2	NZ5257023835	23.5.25	5
Common Blue	<i>Polyommatus icarus</i>	2	NZ5229623686	11.6.25	3
Common Blue	<i>Polyommatus icarus</i>	2	NZ5235223864	11.6.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5234923922	11.6.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5227024094	11.6.25	2
Common Blue	<i>Polyommatus icarus</i>	2	NZ5215524093	11.6.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5198224013	11.6.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5227024094	3.7.25	1
Common Blue	<i>Polyommatus icarus</i>	2	NZ5179923806	16.7.25	4
Common Blue	<i>Polyommatus icarus</i>	2	NZ5191623940	16.7.25	8
Common Blue	<i>Polyommatus icarus</i>	2	NZ5203424056	16.7.25	8
Common Blue	<i>Polyommatus icarus</i>	2	NZ5226723669	16.7.25	2
Common Blue	<i>Polyommatus icarus</i>	2	NZ5249823863	16.7.25	10
Common Blue	<i>Polyommatus icarus</i>	3	NZ5259524369	16.7.25	4
Common Blue	<i>Polyommatus icarus</i>	3	NZ5275224557	16.7.25	50
Common Blue	<i>Polyommatus icarus</i>	4	NZ5230124503	22.5.25	20
Common Blue	<i>Polyommatus icarus</i>	4	NZ5230124503	16.7.25	30
Common Blue	<i>Polyommatus icarus</i>	4	NZ5230424246	16.7.25	20
Common Blue	<i>Polyommatus icarus</i>	4	NZ5238724390	16.7.25	3
Common Blue	<i>Polyommatus icarus</i>	4	NZ5262024542	16.7.25	10
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5255923818	14.5.25	3
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5235823666	14.5.25	2
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5227723669	14.5.25	11
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5202623647	14.5.25	3
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5178023704	23.5.25	2
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5178123658	23.5.25	4
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5227723669	23.5.25	4
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5235823666	23.5.25	4
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5247723710	23.5.25	1
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5257023835	23.5.25	1
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5186823790	11.6.25	1
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5235623713	11.6.25	1
Dingy Skipper	<i>Erynnis tages</i>	2	NZ5235223864	11.6.25	1
Dingy Skipper	<i>Erynnis tages</i>	4	NZ5230124503	14.5.25	25
Dingy Skipper	<i>Erynnis tages</i>	4	NZ5230124503	22.5.25	12
Dingy Skipper	<i>Erynnis tages</i>	4	NZ5230424246	16.7.25	1
Garden Grass-moth	<i>Chrysoteuchia culmella</i>	2	NZ5185623794	11.6.25	10
Grayling	<i>Hipparchia semele</i>	1	NZ5311723956	3.7.25	3

Vernacular name	Scientific name	Area	Grid reference	Date	Frequency
Grayling	<i>Hipparchia semele</i>	1	NZ5309224045	3.7.25	3
Grayling	<i>Hipparchia semele</i>	1	NZ5319924028	3.7.25	3
Grayling	<i>Hipparchia semele</i>	1	NZ5323023972	3.7.25	1
Grayling	<i>Hipparchia semele</i>	1	NZ5292924002	3.7.25	1
Grayling	<i>Hipparchia semele</i>	1	NZ5266723681	3.7.25	4
Grayling	<i>Hipparchia semele</i>	1	NZ5288123776	3.7.25	3
Grayling	<i>Hipparchia semele</i>	1	NZ5300023772	3.7.25	2
Grayling	<i>Hipparchia semele</i>	1	NZ5270723786	16.7.25	3
Grayling	<i>Hipparchia semele</i>	1	NZ5283823832	16.7.25	9
Grayling	<i>Hipparchia semele</i>	1	NZ5320523831	16.7.25	3
Grayling	<i>Hipparchia semele</i>	1	NZ5319923703	16.7.25	4
Grayling	<i>Hipparchia semele</i>	1	NZ5331223813	16.7.25	2
Grayling	<i>Hipparchia semele</i>	1	NZ5331823710	16.7.25	1
Grayling	<i>Hipparchia semele</i>	1	NZ5279524038	16.7.25	10
Grayling	<i>Hipparchia semele</i>	1	NZ5282623942	16.7.25	5
Grayling	<i>Hipparchia semele</i>	1	NZ5292924002	16.7.25	12
Grayling	<i>Hipparchia semele</i>	1	NZ5297223952	16.7.25	12
Grayling	<i>Hipparchia semele</i>	1	NZ5305124015	16.7.25	4
Grayling	<i>Hipparchia semele</i>	1	NZ5306123940	16.7.25	9
Grayling	<i>Hipparchia semele</i>	1	NZ5319924028	16.7.25	10
Grayling	<i>Hipparchia semele</i>	1	NZ5320223930	16.7.25	2
Grayling	<i>Hipparchia semele</i>	1	NZ5315323907	16.7.25	1
Grayling	<i>Hipparchia semele</i>	1	NZ5284223904	16.7.25	5
Grayling	<i>Hipparchia semele</i>	1	NZ5296823907	16.7.25	9
Grayling	<i>Hipparchia semele</i>	2	NZ5226723669	19.6.24	4
Grayling	<i>Hipparchia semele</i>	2	NZ5236123714	3.7.25	2
Grayling	<i>Hipparchia semele</i>	2	NZ5229623685	3.7.25	2
Grayling	<i>Hipparchia semele</i>	2	NZ5198224013	3.7.25	3
Grayling	<i>Hipparchia semele</i>	2	NZ5215524093	3.7.25	1
Grayling	<i>Hipparchia semele</i>	2	NZ5227024094	3.7.25	3
Grayling	<i>Hipparchia semele</i>	2	NZ5226324094	3.7.25	10
Grayling	<i>Hipparchia semele</i>	2	NZ5179923806	16.7.25	1
Grayling	<i>Hipparchia semele</i>	2	NZ5191623940	16.7.25	2
Grayling	<i>Hipparchia semele</i>	2	NZ5226723669	16.7.25	1
Grayling	<i>Hipparchia semele</i>	2	NZ5249823863	16.7.25	2
Grayling	<i>Hipparchia semele</i>	2	NZ5258623850	16.7.25	5
Grayling	<i>Hipparchia semele</i>	4	NZ5230124503	16.7.25	2
Grayling	<i>Hipparchia semele</i>	4	NZ5230424246	16.7.25	1
Grayling	<i>Hipparchia semele</i>	4	NZ5262024542	16.7.25	2
Green-veined White	<i>Pieris napi</i>	2	NZ5234123900	3.7.25	1
Large Skipper	<i>Ochlodes venatus</i>	2	NZ5235823666	23.5.25	1
Large Skipper	<i>Ochlodes venatus</i>	2	NZ5229623686	11.6.25	1
Large Skipper	<i>Ochlodes venatus</i>	2	NZ5238124094	11.6.25	1
Large Skipper	<i>Ochlodes venatus</i>	2	NZ5227024094	11.6.25	1
Large White	<i>Pieris brassicae</i>	1	NZ5311723956	3.7.25	12
Latticed Heath	<i>Chiasmia clathrata</i>	2	NZ5188823650	16.7.25	1
Lesser treble-bar	<i>Aplocera efformata</i>	1	NZ5312824010	14.5.25	4
Lesser treble-bar	<i>Aplocera efformata</i>	2	NZ5255923818	14.5.25	1
Meadow Brown	<i>Maniola jurtina</i>	1	NZ5311723956	3.7.25	1
Meadow Brown	<i>Maniola jurtina</i>	1	NZ5292924002	3.7.25	1
Meadow Brown	<i>Maniola jurtina</i>	1	NZ5275623871	16.7.25	1
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5179923806	16.7.25	6
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5191623940	16.7.25	2
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5203424056	16.7.25	1
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5188823650	16.7.25	8
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5226723669	16.7.25	6
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5236623738	16.7.25	9
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5249823863	16.7.25	2
Meadow Brown	<i>Maniola jurtina</i>	2	NZ5258623850	16.7.25	2
Meadow Brown	<i>Maniola jurtina</i>	3	NZ5259524369	16.7.25	2
Meadow Brown	<i>Maniola jurtina</i>	3	NZ5275224557	16.7.25	12
Meadow Brown	<i>Maniola jurtina</i>	4	NZ5230124503	16.7.25	20
Meadow Brown	<i>Maniola jurtina</i>	4	NZ5238724390	16.7.25	8

Vernacular name	Scientific name	Area	Grid reference	Date	Frequency
Mother Shipton	<i>Euclidia mi</i>	2	NZ5255923818	14.5.25	1
Mother Shipton	<i>Euclidia mi</i>	2	NZ5215524093	11.6.25	1
Narrow-bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	2	NZ5229623686	11.6.25	1
Narrow-bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	2	NZ5234923922	11.6.25	1
Narrow-bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	2	NZ5185623794	11.6.25	1
Narrow-bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	2	NZ5226723669	16.7.25	7
Narrow-bordered Five-spot Burnet	<i>Zygaena lonicerae</i>	4	NZ5230124503	16.7.25	4
Pale Straw Pearl	<i>Udea lutealis</i>	2	NZ5188823650	16.7.25	2
Peacock	<i>Inachis io</i>	1	NZ5292924002	16.7.25	6
Peacock	<i>Inachis io</i>	2	NZ5210823641	23.5.25	1
Red Admiral	<i>Vanessa atalanta</i>	1	NZ5311723956	3.7.25	2
Red Admiral	<i>Vanessa atalanta</i>	1	NZ5292924002	3.7.25	1
Red Admiral	<i>Vanessa atalanta</i>	2	NZ5227723669	23.5.25	1
Ringlet	<i>Aphantopus hyperantus</i>	2	NZ5234123900	3.7.25	8
Six-spot Burnet	<i>Zygaena filipendulae</i>	1	NZ5263723729	11.6.25	3
Six-spot Burnet	<i>Zygaena filipendulae</i>	2	NZ5238124094	11.6.25	1
Six-spot Burnet	<i>Zygaena filipendulae</i>	2	NZ5203424056	16.7.25	1
Six-spot Burnet	<i>Zygaena filipendulae</i>	3	NZ5275224557	16.7.25	8
Six-spot Burnet	<i>Zygaena filipendulae</i>	4	NZ5238724390	16.7.25	4
Small Blue	<i>Cupido minimus</i>	1	NZ52912434	18.6.25	1
Small Blue	<i>Cupido minimus</i>	2	NZ5227024094	11.6.25	1
Small Blue	<i>Cupido minimus</i>	4	NZ5230124503	14.5.25	6
Small Blue	<i>Cupido minimus</i>	4	NZ5230124503	22.5.25	8
Small Heath	<i>Coenonympha pamphilus</i>	1	NZ5311723956	3.7.25	1
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5229623686	11.6.25	1
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5203424056	16.7.25	4
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5188823650	16.7.25	2
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5226723669	16.7.25	4
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5236623738	16.7.25	2
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5249823863	16.7.25	6
Small Heath	<i>Coenonympha pamphilus</i>	2	NZ5258623850	16.7.25	1
Small Heath	<i>Coenonympha pamphilus</i>	3	NZ5259524369	16.7.25	2
Small Heath	<i>Coenonympha pamphilus</i>	3	NZ5275224557	16.7.25	10
Small Heath	<i>Coenonympha pamphilus</i>	4	NZ5230124503	22.5.25	2
Small Heath	<i>Coenonympha pamphilus</i>	4	NZ5230124503	16.7.25	10
Small Skipper	<i>Thymelicus sylvestris</i>	2	NZ5234123900	3.7.25	8
Small Skipper	<i>Thymelicus sylvestris</i>	2	NZ5226723669	3.7.25	10
Small Tortoiseshell	<i>Aglais urticae</i>	1	NZ5263723729	11.6.25	1
Small Tortoiseshell	<i>Aglais urticae</i>	1	NZ5292924002	3.7.25	1
Small Tortoiseshell	<i>Aglais urticae</i>	2	NZ5198224013	11.6.25	1
Small White	<i>Pieris rapae</i>	1	NZ5279524038	16.7.25	1
Small White	<i>Pieris rapae</i>	2	NZ5226723669	16.7.25	1
Small White	<i>Pieris rapae</i>	2	NZ5249823863	16.7.25	5
Small White	<i>Pieris rapae</i>	2	NZ5258623850	16.7.25	1
Small White	<i>Pieris rapae</i>	4	NZ5262024542	16.7.25	2
Speckled Wood	<i>Pararge aegeria</i>	2	NZ5233723736	11.6.25	1
Straw grass-moth	<i>Agriphila straminella</i>	2	NZ5179923806	16.7.25	1
Wall Brown	<i>Lasiommata megera</i>	1	NZ5266323726	23.5.25	1
Wall Brown	<i>Lasiommata megera</i>	1	NZ5270723786	16.7.25	1
Wall Brown	<i>Lasiommata megera</i>	2	NZ5236624093	23.5.25	1
Wall Brown	<i>Lasiommata megera</i>	4	NZ5230124503	14.5.25	3
Wall Brown	<i>Lasiommata megera</i>	4	NZ5230124503	22.5.25	1
Yellow Shell	<i>Campptogramma bilineata</i>	2	NZ5234923922	11.6.25	1
Yellow Shell	<i>Campptogramma bilineata</i>	2	NZ5215524093	11.6.25	1

