

Date: 22 June 2026  
Our ref: 549286  
Your ref: EN020032



Department for Energy Security and Net Zero  
1 Victoria Street,  
London  
SW1H 0ET

Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

T 0300 060 3900

BY EMAIL ONLY

Dear Sir/Madam,

**Planning Act 2008 and The Infrastructure Planning (Examination Procedure) Rules 2010**

**Application by Morgan Offshore Wind Limited, Morecambe Offshore Wind Limited ("the Applicant") for an Order granting Development Consent for the proposed Morgan and Morecambe Offshore Wind Farm Transmission Assets ("Project")**

The following constitutes Natural England's formal statutory response to the Secretary of State's Request for Information (RFI) dated 20 May 2026. To inform this response Natural England have reviewed the following documents:

- J6 Outline Ecological Management Plan F07
- Alternative Ornithology Mitigation Note – Permanent F01
- Alternative Ornithology Mitigation Note – Temporary F01

**Update on Natural England's position following discussions with the Applicant on Functionally Linked Land (FLL)**

As set out in our Relevant Representations [RR-1601] and during the Examination, Natural England has raised concerns regarding the adequacy of the Applicant's onshore ornithology survey effort, the extent and quality of the supporting data, and the assessment approach used to conclude no Adverse Effect on Integrity (AEol) in relation to the temporary and permanent loss of supporting habitat for the Ribble and Alt Estuaries SPA and Ramsar site. As a route to resolution, Natural England advised the Applicant to apply the mitigation hierarchy in the first instance (avoid, reduce, mitigate, compensate), and to revise and update its assessments accordingly. However, these concerns were not fully addressed in the revised assessment, and the Applicant maintained its position that AEol could be ruled out. Alongside this, the Applicant identified land south of Newton with Scales (NwS) as a potential mitigation option for permanent habitat loss, should mitigation be required.

In this context, Natural England's advice during Examination focussed on the suitability and deliverability of the proposed NwS mitigation area, rather than on the Applicant's FLL assessment in isolation. This reflected the Applicant's position at that time that any risks associated with the loss of FLL could be addressed through the proposed offsite mitigation at NwS, which Natural England indicated could be acceptable towards the end of Examination, subject to the relevant details being secured.

However, concerns subsequently raised by other Interested Parties regarding the mitigation areas have introduced significant uncertainty as to whether mitigation at NwS can be delivered. In light of that uncertainty, Natural England considers it important that the Secretary of State (SoS) gives weight, in the first instance, to the Applicant's further information on habitat loss at the proposed substation/FLL, including their response to Questions 10-13. These welcome questions align with Natural England's concerns regarding survey effort and assessment in our Relevant Representations and subsequent Examination submissions.

Since the close of Examination, Natural England has continued to engage through ongoing discussions and has provided further technical advice to the Applicant. Following the extension to the decision deadline, the Applicant shared additional detail concerning the potential risk to SPA and Ramsar site features arising from FLL loss, together with their draft responses to Questions 10-13. On the basis of our review of that additional information, and provided that the Applicant's final responses to Questions 10-13 are materially the same as the drafts shared with Natural England, it is likely that Natural England would be able to conclude that the loss of FLL would not result in an AEoI.

Notwithstanding this provisional view, the Secretary of State has specifically invited comments on the Applicant's proposed measures at Crossens Outer and Banks Marsh. Natural England's responses to Questions 15–17 are therefore provided on that basis and without prejudice to its primary position on the Applicant's further information regarding FLL loss. In summary, Natural England does not consider the proposed measures at Crossens Outer and Banks Marsh to be suitable mitigation or compensation.

The RFI invited Natural England to comment on:

### **Onshore Ornithology and Bird Strike Risk to Aviation at Warton Aerodrome**

*9. Natural England's advice on temporary mitigation measures in [C1-016] (response to question 6) was subject to it reviewing the Applicants' updated Outline Ecological Management Plan ("OEMP") (Document Reference: J6/F07). Natural England is requested to review the OEMP and confirm its advice.*

Natural England has reviewed the Applicant's updated OEMP (J6/F07) and can confirm that the Applicant has included our advice on the temporary measures in Appendix H.1, we are therefore satisfied with the proposed alternative temporary mitigation scenarios presented.

However, the OEMP currently presents three scenarios, and one option will need to be selected and implemented post-consent. We reiterate our previous advice that from an ecological perspective Scenarios 2 or 3, which include seasonal restrictions and screening measures, would be the preferable options to mitigate temporary impacts to features of the Ribble and Alt Estuaries SPA and Ramsar site.

*15. Noting disagreement between Natural England [C1-016] and the Applicants [C1 029] on the additionality of the proposed alternative mitigation site at Crossens Outer and Banks Marsh, the Secretary of State invites Natural England to submit further information, such as the management plan for the National Nature Reserve, and any evidence that funding is secured to undertake such works in the absence of the Proposed Development, to support its position.*

Natural England maintains that the measures proposed by the Applicant do not constitute additional measures. Appendix 1 contains the previous management plan for Ribble Estuary National Nature Reserve (NNR) (2020-2025). The Plan is currently under review pending preparation of the next 5-year management plan; however, the existing Plan sets out the current and ongoing management framework for the site. The measures presented by the Applicant in '*Alternative Ornithology Mitigation Note – Permanent F01*', namely habitat enhancement through grazing control and reduction of recreational disturbance via fencing, are consistent with, and already embedded within, the existing management framework for the Ribble Estuary NNR. The Management Plan (2020–2025) demonstrates that such interventions form part of routine and ongoing site management to maintain favourable habitat condition for SPA and Ramsar site features.

In particular, the Plan outlines that active management of grazing regimes, including the use of fencing, stock control and adjustment of grazing pressure, is a core component of maintaining suitable habitat and sward structure for SPA and Ramsar site features. Minimising disturbance to feeding and roosting birds is also identified as a key management objective, with measures outlined to manage public access and reduce disturbance where necessary. As such, the measures proposed by the Applicant reflect established management practices rather than new or additional interventions. On this basis, Natural England considers that on balance the proposed measures at Crossens Outer/Banks Marsh cannot be considered as additional to standard site management. In respect of delivery and funding, the NNR team have previously secured funding to undertake targeted works including repairs to fencing along Marine Drive and habitat enhancement works (e.g. enhancement of a 25-hectare area for breeding birds) and plans to do so for such works in the next Management Plan period.

*16. The Applicants and Natural England are also requested to provide further information on the proposed delivery of the alternative mitigation site at Crossens Outer and Banks Marsh. This should clarify land ownership and responsibilities for securing and implementing long-term management, monitoring and adaptive management for the lifetime of the Proposed Development.*

In light of the references to “mitigation measures” at Crossens Outer and Banks Marsh in multiple questions, Natural England considers that the proposal would be more appropriately characterised as compensation rather than mitigation.

We have previously advised the Applicant through our Discretionary Advice Service (DAS) that this option does not represent like-for-like habitat, due to the area of permanent habitat loss constituting FLL, while Crossens Outer/Banks Marsh is located within the Ribble and Alt Estuaries SPA. As such, the proposed measures do not represent like-for-like replacement habitat. Therefore, the requirements of the Habitats Regulations relating to compensatory measures would apply, including the need to demonstrate that all reasonable avoidance and mitigation options have been exhausted and that no alternative solutions exist. The Applicant would need to demonstrate compliance with the relevant derogation tests before the measures could be considered. Further information can be found [here](#). However, regardless of whether the proposal constitutes mitigation or compensation, Natural England does not consider the measures to be appropriate. Further details are set out in our response to Question 17.

Therefore, Natural England continues to advise that if an AEoI cannot be ruled out, consideration of alternative areas is a necessary step to finding an appropriate location for delivering either mitigation or compensatory measures.

Notwithstanding the points raised above, we continue to advise that it would be the Applicant’s responsibility to clearly set out the mechanisms for securing the proposed delivery, long-term management, monitoring and adaptive management for the lifetime of the Proposed Development. Further information regarding deliverability is included in response to Question 17.

*17. The Secretary of State notes that Natural England considers the proposed measures at Crossens Outer and Banks Marsh will “likely enhance the environment within the NNR and contribute to positive management of the site. Implementing the measures to support management of the site could lead to positive environmental benefit” (Annex 1 of [C1-016]). Without prejudice to the Secretary of State’s conclusion on the matter, the Applicants and Natural England are requested to comment on the suitability of the proposed measures, to provide compensation for impacts to golden plover, should an AEoI on the Ribble and Alt Estuary SPA not be ruled out due to habitat loss at the proposed substation site.*

Natural England’s response to this question should be read in the context of our primary position set out above, namely that the Applicant’s further information in response to Questions 10–13 should be considered in the first instance. If, notwithstanding that further information, an AEoI cannot be ruled out, Natural England’s position remains that the land south of NwS remains the only viable

option for mitigation to address the permanent habitat loss which has been presented to us by the Applicant. Natural England does not currently consider that the proposals at Crossens Outer and Banks Marsh provide sufficient evidence to demonstrate that they would meet the requirements for compensatory measures under the Habitats Regulations, should a derogations case be submitted.

Under the Habitats Regulations, the competent authority must be satisfied that all three derogation tests are met. At present, Natural England considers that there is currently insufficient information to demonstrate that the proposed measures would meet the compensation requirements necessary to maintain the coherence of the National Site Network. In particular, we have significant concerns relating to the deliverability, governance and overall responsibility of the proposed measures. We have provided further information on each area of concern below.

#### *Additionality*

As set out in response to Question 15, Natural England has not been provided with sufficient evidence to demonstrate that the proposed measures are additional to existing or baseline site management. The measures described, including grazing management and access control, appear broadly consistent with existing management approaches at the Ribble Estuary NNR. As such, it is currently unclear whether these proposals would deliver ecological benefits over and above those already expected through ongoing site management.

#### *Ecological suitability*

Natural England considers that, while the proposed measures may deliver localised habitat improvement, they are relatively modest in scale and nature. The proposals primarily relate to refinement of grazing management and reduction of disturbance, rather than the creation or restoration of habitat providing clearly defined compensatory function equivalent to that being lost. Further evidence would be required to demonstrate that these measures would reliably offset the identified impacts to golden plover and the other waterbird features identified.

#### *Deliverability and governance*

Natural England does not currently have confidence in the proposed delivery mechanism. Although the OEMP (F07) suggests that the Applicant would take responsibility for implementation, the governance structure, delivery arrangements and allocation of responsibilities remain unclear.

At present, there is no confirmed delivery body with appropriate experience, capability and long-term accountability for delivering compensatory measures of this nature. Natural England does not consider it appropriate for its NNR team to act as the delivery body for developer-led compensation. Such an approach would introduce a clear conflict of interest, whereby Natural England would be responsible both for advising on the adequacy of a compensation scheme and for delivering it.

Initial discussions between the Applicant and NNR staff were undertaken on the basis that the proposals were being considered as biodiversity enhancement. The requirements and risks associated with compensatory measures under the Habitats Regulations are substantially higher, including long-term delivery, monitoring and adaptive management obligations. NNR teams are not structured, resourced or mandated to manage developer-funded compensation schemes of this nature, nor to undertake the associated contractual and governance responsibilities.

Accordingly, should compensatory measures be pursued, these would need to be delivered by a suitably qualified and independent organisation, with clearly defined roles, secured funding, and robust governance arrangements.

#### *Adaptive management and monitoring*

The proposals provide only high-level commitments to monitoring and adaptive management. Compensatory measures must include a clear framework for monitoring outcomes, defined success criteria, and secured mechanisms to implement adaptive management where required. This level of detail has not yet been demonstrated. Similar to our points above with regards to deliverability and governance, we have concerns that the current proposals imply Natural England will be responsible for adaptive management and monitoring for the lifetime of the Proposed Development and/or while the measures are in place. We reiterate that this is not appropriate for Natural England to be responsible for this.

#### *Timing of delivery*

There is currently limited detail on whether the proposed measures would be fully implemented, operational and delivering ecological function prior to impacts arising from the Proposed Development. This is a key requirement for compensatory measures, and further clarity would be required.

#### *Wider constraints (including aviation interests)*

There remains some uncertainty regarding the compatibility of the proposed measures with other constraints, including aviation safeguarding. Natural England has not seen evidence that the full proposals have been agreed with relevant aviation stakeholders. Given previous constraints in this location, confirmation from aviation stakeholders would be necessary to demonstrate that the measures are deliverable in practice.

For any queries relating to the content of this letter please contact me using the details provided below.

Yours faithfully,

[REDACTED]

[REDACTED] [\[REDACTED\]@naturalengland.org.uk](mailto:[REDACTED]@naturalengland.org.uk) / [REDACTED]@naturalengland.org.uk  
Cheshire to Lancashire Area Team

# **Appendix 1: Ribble Estuary NNR Management Plan**

**2020 - 2025**

## Site Description

### 1: Description

#### 1.1: Location

|                                 |                                                                                                                                   | Notes                              |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Location</b>                 | The Ribble Estuary NNR occupies land on both the south and north sides of the Ribble Estuary, covering almost 50% of the estuary. |                                    |
| <b>County</b>                   | Lancashire<br>Merseyside                                                                                                          | 3,898.38 ha<br>467.09 ha           |
| <b>District</b>                 | West Lancashire<br>Fylde<br>Sefton                                                                                                | 3,649.38 ha<br>249 ha<br>467.09 ha |
| <b>Local Planning Authority</b> | West Lancashire District Council<br>Fylde Borough Council<br>Sefton Metropolitan Borough Council<br>Lancashire County Council     |                                    |
| <b>National Grid Reference</b>  | SD 392 227                                                                                                                        | Natural England NNR office/base    |

#### 1.2: Land tenure

|                          | Area (ha)                  | Notes                                                                                                                                                                     |
|--------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Total Area of NNR</b> | 4,365.47                   |                                                                                                                                                                           |
| <b>Freehold</b>          | 2181.87<br>124.24<br>86.36 | Compts 1-6, 31 from H Herema and Emirate Ltd, 28/03/1979<br>Compt 7 from S Slinger and JH Slinger, 08/03/1985<br>Compts 8, 9, 23 from KM Slinger and T Wilson, 06/07/1990 |

|                                     | <b>Area<br/>(ha)</b> | <b>Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | 2392.47              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Leasehold</b>                    | 1724.0               | Compt 31 from Duchy of Lancaster, 29/09/02 to 28/09/23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>S 35 Agreement</b>               |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>S16 Agreement</b>                | nil                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Other Agreements</b>             | 249.0<br>139.74      | Compt11 with Lytham & district Wildfowlers, 17/02/94 NRA<br>Additional area agreed with Lytham & District Wildfowlers<br>due to be declared 2019 and included in NRA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                     |                      | <p>Legal rights of access:-</p> <p>Banks Marsh</p> <p>a. Old Hollows private road - access to Reserve Office (shared with owners of Old Hollows Farm).</p> <p>b. Charnleys Lane, Bank Pace, Georges Lane -right of access down private track for agricultural purposes.</p> <p>Hesketh Out-marshes/ 20 acres - right of access down Guide road via Ribble Bank Farm. Right of access across HOMwest agreed with RSPB. Lease of HOMeast and west including the 20 acres(8ha) to RSPB 2018.</p> <p>Beaconsall Out-marsh - right of access down Beaconsall Lane, Hesketh Bank and along Keepers Lane off Guide Road</p> <p>Warton Marsh - access on public roads</p>                                                                     |
| <b>Other rights, covenants, etc</b> |                      | <p>a. With GB Crook, Ribble Hall, relating to new embankments constructed over EN land in 1981; relates to rights, ownership, maintenance and access for maintenance.</p> <p>b. New terms currently being drafted with RSPB as new owners of Hesketh Bank Marsh.</p> <p>c. With EA for the construction/ maintenance of and access to a channel across the marsh from the pumping station outfall at Buildings Lane to Crab Gutter.</p> <p>d. With EA for a grant of easement for a water pipeline from Crossens pumping station to the outmarsh.</p> <p>e. With EA to install a water logger at Hundred End.</p> <p>f. Sporting Rights License granted to Southport and District Wildfowlers Association and Hesketh Wildfowlers</p> |
| <b>Notes</b>                        |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### 1.3: Site status

[illegible]

## 1.4: Physical features

### **Geology**

Triassic deposits underlie the whole area around the NNR. These consist of Keuper Marl to the west of the River Douglas and Bunter Sandstone to the east. There are no surface exposures. The overlying sediments are estuarine in origin, consisting of fine silts and riverine and marine sands.

### **Geomorphology**

The NNR and surrounding areas of Lancashire and Merseyside represent stages in estuarine development, with fringing sand dunes on the Fylde and Sefton coasts, fens (Martin Mere and Marton Mere), raised peat bogs (the Mosses of south west Lancashire and the Fylde) and saltmarsh. However, all of these features have been subject to land claiming activity and many are now under intensive agriculture or residential and industrial developments.

The NNR contains much of the remaining saltmarsh within the estuary, and approximately 50% of the total area of sand and mud flats. All of the saltmarsh areas are truncated at the landward edge by embankments constructed since 1895, while the training of the Ribble channel, also in the 1890s, has influenced their extent and distribution within the estuary.

The saltmarsh is currently an accreting system, with accreting material, consisting mainly of sandy sediments, derived from the southern part of Liverpool Bay. Material moves northwards from Formby Point and southwards from Rossall Point towards the estuary mouth. Within the outer third of the estuary the formation and distribution of channels, mudflats and sandbanks is extremely dynamic, but in the higher reaches the training of the main channels has constrained the accretion process. This has led to the development of one of the largest single areas of saltmarsh in England; Banks Marsh. There are currently only minimal erosion features present.

Since dredging of the river channel ceased in 1981 the outer limit of the trained navigation channel has been swamped by the extension of Salters Bank, and the training wall has breached in places. This may result in significant changes within the accretion system in future years.

### **Soils**

The whole site comprises intertidal sediments ranging from coarse marine sands to fine silts. Sandy sediments dominate unvegetated intertidal areas, with a gradation towards finer particle size with landward progression. The saltmarsh is comprised entirely of surface deposits of very fine silt, consolidated by colonising vegetation and compacted by the effect of grazing animals. Much of the saltmarsh sediments are enriched with organic remains.

### **Hydrology & Hydrochemistry**

The development of the site has been influenced by the presence of three main river channels, the River Ribble, the River Douglas and Crossens River (now canalised and pumped). The training of the Ribble and Douglas channels and the controlled nature of the Crossens Sluice outfall (Crossens Pool) have had a major effect on the hydrology of the site, especially on the drainage of Banks Marsh and Hesketh Marsh.

Drainage on these southern saltmarshes is from south to north with dendritic pattern drainage flowing into large channels (gutters) which empty into the River Ribble, River Douglas or into Crossens Pool. Where recent embankments have been constructed, especially on Hesketh Marsh and Hutton/ Longton Marsh, the drainage patterns have been significantly truncated. On Warton Marsh the main drainage flows from east to west along Wrea Brook, effectively isolating much of the outer part of the marsh from the upper marsh. The outer marsh has developed a drainage pattern, which flows southwards into the channel of the River Ribble.

Tidal inundation of the site occurs on a regular monthly cycle with the highest tides at spring and autumn equinox. The majority of monthly spring tides do not flood onto the marsh surface unless enhanced by climatic conditions. Only tides in excess of 9.6 m OD will flood out of the gutters, and total inundation is only to be expected with tides higher than 9.9 m OD. Total inundation occurs less than 20 times in a normal year.

Due to the current tidal domain on Banks Marsh, accretion patterns have resulted in the development of higher marsh levels in the mid-marsh zone with a relatively low upper-marsh. When tides do cover this upper area, the drainage is slow and this area is becoming progressively wetter. Opportunities exist to extend and improve the tidal lagoons that now occur in these wetter areas combined with improved access routes for cattle and site management.

## **Climate**

The NNR, situated on the west coast of the southern half of the Irish Sea, falls under the influence of the north Atlantic drift and prevailing westerly winds. This allows a relatively mild climate with an average rainfall of around 1000 mm, though with south-westerly winds a rain-shadow effect exists created by the Welsh Mountains. It is a very exposed site with frequent strong winds, mainly from the westerly quarter, which depress the mean summer temperature. Snow cover on the site is extremely rare and severe frosts are infrequent, occurring mainly under the influence of northerly or easterly winds.

## **References**

Gee M (2003) *Ribble Estuary National Nature Reserve management plan*. English Nature unpublished report.

Lytham and District Wildfowlers Association marsh Management Plan.2009.

### 1.5: Climate change

#### **Climate change**

- Evidence from the UK Climate Impacts Programme (UKCP09) shows that over

the coming century the area's climate is expected to become warmer and wetter in winter and hotter and drier in summer. Under the medium emissions scenario by 2080: mean winter temperatures will increase by 2.6 °C, mean summer temperatures will increase by 3.7 °C, winter precipitation will increase by 16 per cent, summer precipitation will decrease by 22 per cent and there will be an increased frequency of extreme events (floods/drought).

■ The predicted rising sea levels are likely result in an increased risk of flooding, high tides and tidal surges. While the existing flood defences would provide much protection, there is a risk that the extensive mudflats and saltmarshes would be lost. This would have a major impact on the internationally significant bird feeding grounds in these areas.

■ Smaller, fragmented patches of habitat are vulnerable to loss of biodiversity arising from changes in rainfall and temperature.

■ More intense and more frequent rainfall may lead to an increase in flooding and an increased risk of soil erosion or weakened soil structure due to flash flooding. There is also an associated greater likelihood of pollution of watercourses downstream, and a potential increased risk of landslides, during times of increased rainfall.

The above was taken from the Lancashire and Amounderness Plain National Character Area Profile.

#### Vulnerability Assessment

| Feature no. | Feature name                                 | Estuaries, Mud & Marsh        | Rainfall | Temperature | Extreme Events | In Combination | Reasoning                                                                                                                                                  | Confidence | Responses                                                      |
|-------------|----------------------------------------------|-------------------------------|----------|-------------|----------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------|
| 1           | Saltmarsh Breeding Birds Annex 1 species     | Assemblages - Coastal - Birds | M        | M           | H              | H              | Sea level rise and vegetation changes could have a detrimental effect on breeding birds through increased inundation rates, and less vegetation available. | M          | Ensure natural coastal processes opportunities for realignment |
| 2           | Saltmarsh Non-breeding Birds Annex 1 species | Assemblages - Coastal - Birds | M        | H           | H              | H              | Vegetation changes and loss of saltmarsh                                                                                                                   | M          | Ensure natural coastal processes opportunities for realignment |
| 3           | Lesser Black-backed Gull                     | Species - Coastal - Birds     | M        | H           | H              | H              | Sea level rise and vegetation changes could have a detrimental effect on                                                                                   | M          | Ensure natural coastal processes opportunities for realignment |

|   |                                                                  |                               |   |   |   |   |                                                                                                                                             |   |
|---|------------------------------------------------------------------|-------------------------------|---|---|---|---|---------------------------------------------------------------------------------------------------------------------------------------------|---|
|   |                                                                  |                               |   |   |   |   | breeding birds through increased inundation rates, and less vegetation available. Hot summers can cause outbreaks of disease in the colony. |   |
| 4 | Saltmarsh; Littoral Sediment Int. Pop. Migratory Birds           | Species - Coastal - Birds     | M | H | H | H | Loss of Saltmarsh, increased inundation and erosion leading to habitat loss.                                                                | M |
| 5 | Saltmarsh Seabird Assemblage of Int. Importance                  | Assemblages - Coastal - Birds | M | H | H | H | Loss of Saltmarsh extent due to coastal squeeze/sea level rise. Hot summers can promote disease in colonies.                                | M |
| 6 | Saltmarsh; Littoral Sediment Sig. Migratory Birds Waterfowl      | Assemblages - Coastal - Birds | M | H | H | H | Changes in vegetation and system dynamics could alter feeding opportunities.                                                                | M |
| 7 | Saltmarsh Nationally Important Breeding Bird Population          | Assemblages - Coastal - Birds | M | H | H | H | Sea level rise and loss of saltmarsh.                                                                                                       | M |
| 8 | Saltmarsh; Non-breeding birds- Migratory Species Curlew, Lapwing | Assemblages - Coastal - Birds | H | H | M | M | Late summer early autumn Curlew migrants could have reduced feeding opportunities in extreme drought conditions.                            | M |

Ensure natural coastal processes and opportunities for realignment

Ensure natural coastal processes and opportunities for realignment

Ensure natural coastal processes and opportunities for realignment

Ensure natural coastal processes and opportunities for realignment

Ensure natural coastal processes and opportunities for realignment

|    |                                                                         |                                           |   |   |   |   |                                                                                                                                                                                                                                                                                    |   |
|----|-------------------------------------------------------------------------|-------------------------------------------|---|---|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 9  | Saltmarsh;<br>Coastal Grazing<br>Marsh -<br>Breeding Bird<br>Assemblage | Assemblage<br>s -<br>Grassland -<br>Birds | H | H | M | M | As long as<br>the grazing<br>marsh<br>remains<br>enclosed<br>then should<br>be more<br>resilient.<br>However<br>hot<br>summers<br>and drought<br>conditions<br>could make<br>the habitat<br>less suitable<br>for breeding<br>waders.                                               | M |
| 10 | Littoral<br>Sediment -<br>Invertebrates                                 | Assemblage<br>s - Coastal -<br>Inverts    | L | L | L | L | Not sure of<br>the effect of<br>increased<br>dynamism<br>of coastal<br>processes<br>and temp.                                                                                                                                                                                      | M |
| 11 | Inter-tidal<br>Saltmarsh                                                | Habitat -<br>Estuaries,<br>Mud &<br>Marsh | M | H | H | H | Reduced<br>extent,<br>more<br>erosion,<br>increased<br>salinity, loss<br>of<br>vegetation,<br>changes in<br>vegetation.                                                                                                                                                            | M |
| 12 | Coastal Grazing<br>Marsh MG5                                            | Habitat -<br>Grassland                    | M | M | M | M | As long as<br>the grazing<br>marsh<br>remains<br>enclosed<br>then it<br>should be<br>more<br>resilient<br>than the<br>saltmarsh.<br>However<br>hot<br>summers<br>with<br>drought and<br>extended<br>periods of<br>flooding in<br>winter could<br>alter species<br>composition<br>. | M |

Ensure natural coastal processes  
opportunities for realignment

Ensure natural coastal processes  
opportunities for realignment

Ensure natural coastal processes  
opportunities for realignment

If hard defences are breached

|    |                                                                  |                               |   |   |   |   |                                                                                                                                                                                                                    |   |
|----|------------------------------------------------------------------|-------------------------------|---|---|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 13 | Saltmarsh Breeding Birds of Conservation Concern and BAP Species | Assemblages - Coastal - Birds | M | H | H | H | Changes in vegetation and food availability.                                                                                                                                                                       | M |
| 14 | Landscape and Historical Use                                     | Landscape                     | M | M | M | M | Landscape will change but will still be a dramatic place to visit. Historical features should still be apparent.                                                                                                   | M |
| 15 | Economic Use                                                     | Economic                      | M | H | H | H | Cattle grazing and Wilfowling could be adversely affected - loss of saltmarsh habitat due to extreme sea level rise, hot summers causing water supply problems to cattle and wildfowl overwintering further north. | M |
| 16 | Community Involvement                                            | Community                     | L | L | L | L | Shouldn't be affected                                                                                                                                                                                              | M |
| 17 | Education                                                        | Education                     | L | L | L | L | Shouldn't be affected                                                                                                                                                                                              | M |
| 18 | Research                                                         | Research                      | L | L | L | L | Shouldn't be affected                                                                                                                                                                                              | M |
| 19 | Demonstration                                                    | Education                     | L | L | L | L | Shouldn't be affected                                                                                                                                                                                              | M |
| 20 | Public Access                                                    | Access                        | L | L | H | M | Access could change due to extreme events.                                                                                                                                                                         | M |
| 21 | Office                                                           | Infrastructure                | M | L | H | H | Could possibly be flooded or damaged by extreme events.                                                                                                                                                            | M |

Ensure natural coastal processes and opportunities for realignment

Ensure natural coastal processes and opportunities for realignment

Adapt coastal path to coastal changes

Look at moving office in future

## 1.6: Biological features

## Flora

The flora of the saltmarsh is generally not particularly diverse, in part due to the traditional grazing regimes undertaken. The value of the individual plant species present is predominantly in the grazing provided to wildfowl and the habitat niches provided for breeding birds. Only small areas of the NNR are ungrazed but these have not yet matured sufficiently to develop a significantly more species-rich flora.

The 8 ha of unimproved grassland at Old Hollow supports a fairly herb-rich MG5 plant community which includes four species of orchid and their hybrids; common spotted orchid *Dactylorhiza fuchsii*, early marsh orchid *D. incarnata* northern marsh orchid *D. purpurella* and southern marsh orchid *D. praetermissa*.

## Fauna

### **i) Birds**

The primary nature conservation interest in the estuary is the populations of birds that utilise the range of habitats throughout the year. The site is of international importance for breeding and migratory populations of Annex 1 bird species as well as for internationally significant populations of many other bird species and the total number of migratory wildfowl using the estuary each winter. Consequently, the estuary is designated as a Special Protection Area under the EC Conservation of Wild Birds Directive and as a Ramsar site.

The Annex 1 breeding birds for which the site is designated to be of European importance (according to the 2001 review of SPA status) are common tern and ruff. In reality ruff has only bred with certainty twice in the last 30 years, though three additional Annex 1 birds species - avocet, Mediterranean gull and spoonbill - have bred or attempted to breed in the last few years, while another Annex 1 species, little egret, has become increasingly common and may breed in the future. The site is also internationally important for the number of breeding lesser black-backed gull present each year, and also for the total number of seabirds present during the breeding season which includes black-headed gull, lesser-black backed gull and common tern. Although in recent years black-headed gull and common tern have failed to breed.

Annex 1 species which over-winter on the Ribble Estuary are bar-tailed godwit, Bewick's swan, golden plover and whooper swan. The numbers of black-tailed godwit, dunlin, grey plover, knot, oystercatcher, pink footed-goose, pintail, redshank, sanderling, shelduck, teal and wigeon which over-winter on the Estuary and the passage populations of ringed plover and sanderling are also all of European significance. Over winter, the Ribble and Alt Estuaries regularly support over 300,000 individual waterfowl (5 year peak mean 1991/2 - 1995/6 of 301,448), including grey plover, whooper swan, golden plover, bar-tailed godwit, pink-footed goose, shelduck, wigeon, teal, Bewick's swan, oystercatcher, curlew, knot, sanderling, dunlin, black-tailed godwit, redshank, cormorant, common scoter, lapwing and pintail.

With the exception of the Wash, which is three times larger, the Ribble Estuary holds more wintering waterfowl than any other site in the UK. The management of this site therefore has

a significant effect on the ability of the East Atlantic Flyway to support and maintain present international population levels.

In addition to the internationally important populations, there are several bird species which occur or have occurred in the recent past in nationally significant numbers; black-headed gull, redshank and occasionally black-tailed godwit as breeding species and curlew and lapwing as passage/wintering species. In 2017 the number of black-headed gull breeding on the NNR had reduced to only a few pairs.

The NNR also supports a nationally important assemblage of breeding birds on its saltmarsh areas, with a BTO index of 15 (SSSI guideline threshold index for saltmarsh at the time of notification was 10). Other notable bird populations include the most southerly breeding population of eider in England as well as populations of herring gull, grey partridge, skylark and linnet which are all 'Red' species in the most recent list of Birds of Conservation Concern.

## **ii) Invertebrates**

The abundance and diversity of invertebrate fauna within the sand and mud flats provides a food resource which is essential for most of the visiting bird species. The most dominant invertebrate species over the whole estuary is Baltic tellin *Macoma balthica*, while the common cockle *Cerastoderma edule* is also abundant. Other abundant and widespread invertebrates in the estuary include the mud snail *Hydrobia ulvae*, bristle worms (Polychaetes; particularly *Pygospio elegans*, *Nephtys cirrosa*, *Scolecopsis squamata* and *Eteone* spp.) and amphipod crustaceans (*Bathyporeia* spp and *Corophium* spp.). The honeycomb worm *Sabellaria alveolata* also occurs locally.

## **Communities**

The main communities of conservation interest are:-

### **i) Intertidal flats**

The Ribble Estuary includes an extremely large area of sand and silt flats in natural condition which support the numbers and diversity of intertidal invertebrate prey essential for maintaining the bird populations. In 2005, the inshore areas of the Ribble were found to be dominated by the biotope LS.LSa.MuSa.BatCare (*Bathyporeia pilosa* and *Corophium arenarium* in littoral muddy sand). Offshore, with increasingly sandy sediment, the infaunal assemblage became dominated firstly by LS.LSa.MuSa.MacAre (*Macoma balthica* and *Arenicola marina* in littoral muddy sand) in the mid estuary, and by polychaetes at the seaward edge (LS.LSa.FiSa.Po - Polychaetes in littoral fine sand).

Other biotopes found during a 2007 survey are; LR.FLR.Eph.BLitX (Barnacles and *Littorina* spp on unstable eulittoral mixed substrata), LS.LBR.LMus.Myt.Mx (*Mytilus edulis* beds on littoral mixed substrata), LS.LMu.MEst.HedMac (*Hediste diversicolor* and *Macoma balthica* in littoral sandy mud), LS.LMu.MEst.HedMacScr (*Hediste diversicolor*, *Macoma balthica* and *Scrobicularia plana* in littoral sandy mud shores), LS.LSa.FiSa.Po.Ncir (*Nephtys cirrosa* dominated littoral fine sands), LS.LSa.MoSa.AmSco (Amphipods and *Scolecopsis* spp. in littoral medium-fine sand), LS.LSa.MoSa.AmSco.Eur (*Eurydice pulchra* in littoral mobile sand), LS.LSa.MoSa.BarSa (Barren littoral coarse sand), LS.LSa.MuSa.HedMacEte (*Hediste diversicolor*, *Macoma balthica* and *Eteone longa* in littoral muddy sand) and LS.LSa.MuSa.Lan (*Lanice conchilega* in littoral sand), as well as the priority BAP honeycomb

worm reef habitat LS.LBR.Sab.Salv (*Sabellaria alveolata* reefs on sand-abraded eulittoral rock) which was found adjacent to the training wall mixed with mussels and barnacles or *Littorina* species on cobbles or boulders at extreme low tide.

### **ii) Grazed Saltmarsh**

The Ribble Estuary supports one of the largest areas of grazed saltmarsh in Britain. The main vegetation community found within the NNR is SM13 *Puccinellia maritima* salt-marsh community, which covers extensive areas of grazed marsh on Banks Marsh, Hundred End Marsh, Hesketh Marsh, Beconsall Marsh and Warton Marsh. SM16 *Festuca rubra* salt-marsh occurs throughout this area in mosaic with SM13 salt-marsh as a more minor component, covering slightly higher ground, while SM28 *Elymus repens* salt-marsh community occurs locally on the strandline in Banks Marsh and also occurs more extensively within Warton Marsh, especially above the banks of Wrea Brook.

Along the seaward margins of Warton Marsh and the outermost parts of Banks Marsh are pioneer saltmarsh communities; principally SM6 *Spartina anglica* salt-marsh community but with an area of SM8 Annual *Salicornia* salt-marsh community off Banks Marsh.

### **iii) Ungrazed Saltmarsh**

This is a rare habitat in north-west England, but there is an extended area of immature, ungrazed saltmarsh at Crossens and Marshside, part of which is within the NNR boundary. Again, SM13 *Puccinellia maritima* salt-marsh dominates in the ungrazed land within the NNR, with pioneer SM6 *Spartina anglica* salt-marsh along the seaward edge.

### **iv) Coastal grazing marsh**

Old Hollow Meadows were primarily used as a holding area for grazing stock utilised on the saltmarsh up to about 20 years ago, but are now managed, as far as possible, as traditional hay meadow. The grass is allowed to grow tall in spring and early summer, followed by a mid-to-late summer cut and aftermath grazing in most years. The majority of the Meadows is covered by MG5 *Cynosurus cristatus* - *Centaurea nigra* grassland, though there are large areas of SM13 *Puccinellia maritima* and SM16 *Festuca rubra* saltmarsh with small patches of S21 *Scirpus maritimus* swamp along the north-western edge.

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## 1.7: Cultural features

### Landscape Character

The Ribble Estuary NNR offers an undeveloped estuarine landscape in a generally quiet and peaceful setting (other than occasional aircraft use associated with Warton Aerodrome). The flat-topped sea walls offer locally elevated views over an essentially flat landform.

The NNR lies within the Lancashire and Amounderness Plain, which is generally a flat or gently rolling landscape running from Morecambe Bay in the north to Liverpool in the south, bounded by the Bowland Fells to the east and bisected by the Ribble Estuary. Large parts of this area are characterised by medium-sized fields of lush dairy pasture to the north of the Ribble and an open, mainly arable landscape to the south. However, the character area also includes the saltmarshes and intertidal flats which occur around the sheltered waters of the Ribble and Wyre estuaries, extending to the low water mark. The *Open Coastal Marshes* are flat, expansive coastal areas formed on marine alluvium. They are separated from *Enclosed Coastal Marshes* and coastal farmland by man-made sea dykes and, in places, by boulder clays and limestone cliffs. The simplicity of the coastal landscape pattern is visually appealing; usually the fine sward marsh surface is closely grazed and is etched by a maze of creeks and channels which give texture to the flat, expansive landscape. There is a striking absence of settlement or man-made features and the sense of remoteness is a dramatic contrast to the surrounding man-made landscapes. The prolific bird life brings movement to the landscape and provides a changing scene.

The landscape of the NNR probably has more in common, overall, with the Liverpool Bay Natural Area, in which it also lies. The lateral extent of the Natural Area is closely related to the coastal process cells and sub-cells which have been defined for the coastline of England and Wales, where a coastal process cell (or sediment cell), is defined as a length of coastline which is relatively self-contained as far as the movement of sand or shingle is concerned. The main landscape features of the NNR - estuary, saltmarsh and coastal grazing marsh - are amongst the key habitats of this Natural Area.

Four estuaries open on to the Liverpool Bay Natural Area; the Dee, Mersey, Alt and Ribble. These are coastal plain estuaries which have large expanses of mud and sand flats, backed by saltmarshes and sand dunes. All the estuaries are macrotidal and most have a tidal range of between 6.5 and 8.9 metres. Estuaries throughout Liverpool Bay are extensive and cover around 38,352 ha, representing around 10% of the total resource in England.

The estuaries of the Liverpool Bay Natural Area support extensive areas of saltmarsh (4,269 ha), which represents a high percentage of the coastline and reflects the presence of large estuaries and wide intertidal areas throughout the Natural Area. A particularly important feature of the Liverpool Bay saltmarshes, compared with those of Britain as a whole, is the

high percentage of mid to upper marsh communities. In addition, a high proportion of the saltmarshes throughout Liverpool Bay are grazed. Many of the saltmarshes, such as the English side of the Dee and the Ribble, have increased in area during recent years through natural accretion.

Grazing marsh is a distinctive habitat type consisting of low-lying grassland drained by a series of ditches that may contain brackish or fresh water. Although land-claim of grazing marsh for agricultural purposes and, to a lesser extent, industrial use has occurred within the Natural Area, grazing marsh still occurs around some of the estuaries, most notably on the Mersey, Ribble and south side of the Dee Estuary.

#### Archaeological and Historical Features

The south shore of the Ribble has never been densely populated, in part due to the geography of the area which mostly comprised marshland until extensive drainage was undertaken in the late 17<sup>th</sup> and early 18<sup>th</sup> Century. As a consequence archaeological finds have been scarce in many parts of the area but those finds that have come to light have been invaluable in helping to further understand the people that inhabited the shores of the Ribble.

Some of the earliest artefacts of the area include flints from the Mesolithic period, many examples of which have been found in the Banks and Crossens area. These are mostly tools or flakes created from reworking edges of tools. Flint does not occur locally, except as scattered glacial deposits, so may have been a precious commodity. Other typical historical and archaeological components of the estuary show evidence of relic land uses and human intervention within the saltmarsh, including the boundaries of internal sub-divisions (sometimes comprising ditches or fences, but more usually taking the form of marker posts and stones), ruined sea walls and lines of stakes marking successive retreats of sea defences, landing jetties and abandoned and buried boats. More recent historical interest exists in the form of lost World War 2 aeroplanes which have been uncovered on the marsh and documented by local archaeological groups.

#### Land-Use History

The estuary has been fully utilised by man for a considerable period of time and for a wide variety of purposes. Land-use history has been documented by a number of sources including the following:-

- Barron J, *The history of the Ribble navigation*.
- Reprints of the original First Edition Ordnance Survey Map, published by David Charles.
- Various old maps of the area available from local sources.
- The Scarisbrick Estate records, now in County Archives (unfortunately some of the most relevant ones, e.g. cattle grazing, may have been destroyed).
- Members of the local community and local press sources.
- Environment Agency and Local Authorities who have conducted their own studies of the natural history of the area.
- Many naturalists; prominent among them being Wagstaffe and Lowe (both now deceased), E Hardy, PH Smith, WG Hale and H Sharrock. Much of the documented history is referenced or can be found at the NE Cheshire to Lancashire Team office.

Saltmarsh has been an important resource for grazing since the medieval period, if not earlier, but little has been written on historical management practices. Much saltmarsh, along with tracts of former mossland, was reclaimed by drainage, mostly between the mid 18<sup>th</sup> and mid 19<sup>th</sup> Century. The Ribble marshes in the mid 19<sup>th</sup> Century were considerably smaller than they are today and their present extent began to establish following management, formalisation and canalisation of the river channels. The Ribble is now confined in a narrow, man-made channel which has allowed the growth of saltmarsh and other estuarine habitats along either side.

In 1978 the Scarisbrick Estate, then owners of Banks Marsh, part of Crossens Marsh and a substantial area of intertidal flats, sold their holding to Messrs. Herema and Crook whose intention was to embank the saltmarsh and convert it to arable land. However, as a result of negotiations, the NCC acquired the land and this area became the Ribble Marshes NNR in 1979.

A major part of Hesketh Marsh was embanked in 1980/81. A Nature Reserve Agreement was agreed in 1981 over part of the remaining area of Hesketh Marsh and the freehold of this area was subsequently purchased in 1985. The remaining area of Hesketh Marsh and the whole of Beconsall Marsh on the west bank of the River Douglas, were purchased from the Slinger estate in 1990.

In 1989, a lease agreement was reached with the Duchy of Lancaster over the strip of sands (Banks Sands) between the original northern Reserve boundary and the river channel as a means of addressing a poaching problem in this area. The Duchy added their remaining land holding within the estuary, which comprises a large part of Foulnaze and Salters Bank. This extension, together with the areas on Hesketh Marsh and Beconsall Marsh, were included in the Reserve extension in December 1991.

In 1994, a Management Agreement was drawn up with the Hesketh family to prevent the further embanking of an area of Hutton Marsh. The areas of saltmarsh so protected, together with two areas of embanked grazing marsh, were included in the Reserve extension in February 1995. However, in May 2002, the Agreement was due for review and the possibility of a WES scheme was discussed but not taken up. Hutton Marsh is therefore currently no longer considered part of the NNR, although formal de-declaration has not yet occurred.

Also in 1994, Lytham and District Wildfowlers Association, with grant aid from English Nature, purchased a large part of Warton Marsh from Preston Borough Council. This area was declared part of the NNR in the 1995 Declaration.

The main element in the management of the habitats has been the continuation of the traditional land-use for grazing, in order to sustain the short-sward conditions.

In 1979, when NCC acquired Banks Marsh, cattle were reintroduced and the regime returned to summer grazing. Numbers, initially established at 650 head, increased to 1,000 head in 1986 in response to management requirements. They have since been stabilised at 800 head, with the exception of 2001 and 2002 when fewer cattle were available due to effects of national Foot and Mouth epidemic. More recently (2013 onwards) difficulties in sourcing cattle have returned the number of cattle grazing the marsh to approx 600 per year. Some

of these have been grazed at Hundred End and at Crossens separately from the main herd. Additionally, more than 100 cattle have had access onto the grazed part of Crossens Out-marsh from the adjacent land on the In-marsh. Small numbers of cattle have grazed the accessible areas of Warton Marsh. Large numbers of sheep, together with small numbers of cattle, have grazed Hesketh Marsh and Beconsall Marsh.

The effect of grazing is most marked on the areas of marsh adjacent to the access points with a gradual decrease in both poaching and the intensity of grazing pressure towards the extremities. An obvious line is observable on some parts of the marsh marking the extent of the grazing pressure.

NCC acquired the 120 ha remnant of Hesketh Marsh by Nature Reserve Agreement in 1981, but grazing ceased despite agreement with the landowner for its continuation. NCC purchased the area in 1985 and grazing with sheep recommenced, under licence, with the previous owner as licensee. Grazing is irregular due to the problems with covering summer tides. The whole of the remainder of Hesketh Marsh, together with Beconsall Marsh, was purchased in 1990. Subsequently Hesketh Marsh has been grazed mainly by sheep, with the western end, west of Salmon Gutter, grazed by cattle. Cattle, sheep and horses have grazed Beconsall marsh at different times.

In the period 2006 to 2016 RSPB purchased Hesketh in-marsh, realigning the western half in 2008, in partnership with EA to tidal inundation and reversion to saltmarsh habitat. The western half which includes 8 Ha of Natural England owned NNR is due to be realigned in summer 2017. This has created a new RSPB reserve with RSPB leasing the 8Ha of in marsh and 120 Ha of out marsh from NE to enable consistent management across Hesketh marsh. The aim is for RSPB Hesketh and RSPB Marshside to be declared NNR and become part of the wider NNR. A partnership between RSPB and NE has been set up to jointly manage the larger NNR and facilitate the sharing of staff, equipment and expertise across the two land holdings.

The now enclosed remnant of saltmarsh at Hundred End has been used for grazing a small number of cattle (ca 20) each year, separate from the main marsh grazing.

The wet meadows at Old Hollow have been used as fall-back grazing at the end of the grazing period, and management in previous years has been limited by this requirement. Successful attempts have been made to maintain and increase, the floral diversity of these fields. They are now designated for their MG5 plant communities. The twenty acres at Hesketh Marsh have been managed by the grazier since 1990 and have been agriculturally improved by the application of herbicide and fertiliser.

The maintenance of populations of wildfowl has involved the creation of a Sanctuary Area in the centre of the Banks Marsh and limitations on the shooting times and bag of the wildfowling licensees. Sanctuary areas are also maintained on Hutton Marsh and on Warton Marsh.

#### Socio-economic Use

All of the saltmarshes within the estuary have traditionally been used by wildfowlers. This tradition was acknowledged when the NNR was originally purchased in 1979, and this activity has been incorporated within the management of the NNR since that time. The area of

Warton Marsh is both owned and managed under a Nature Reserve Agreement by the Lytham and District Wildfowling Association with all the projects undertaken by the Association included in this management plan.

There are many commercial activities which take place on the estuary that potentially affect the NNR. These include shellfish, salmon and sea fish fisheries, port activities, transport, agriculture and mineral extraction. There are many recreational activities, in addition to wildfowling, that take place including sailing, fishing, bird watching, walking and sand yachting.

Most of the saltmarsh areas in the NNR are used for the grazing of stock. This is a traditional use of the land and has been the most important factor in the creation of the nature conservation interest of the site. The role of the saltmarshes in the local agricultural economy is a very important one, and a significant consideration in the management of the NNR.

### Education

In 2002, a partnership approach to public involvement and interpretation was developed with the RSPB and Sefton Council. This has involved displays on the Southport pier, bird watching events, activities aimed at children and walks along the foreshore. Unfortunately due to a reduction in staffing and funding it has no longer been possible to continue these activities apart from the occasional guided walk for schools and volunteer groups.

Off-site interpretation has been provided through offering presentations to any interested groups, training and supporting volunteers who have expressed an interest in presenting talks, contributing to visitor centres owned and managed by other conservation bodies and providing additional interpretative material through leaflets and the Natural England website.

The use of the NNR as an educational resource is not fully exploited and, given adequate support, a considerable improvement would be possible. However, there is no opportunity to increase the input into educational use of the NNR with present staff resources. Potential for greater public involvement, education and interpretation can be developed by furthering the existing partnership with the RSPB and also through the Ribble Coast and Wetlands Regional Park. The NNR could be used as a resource for applied learning within the national curriculum, vocational training for groups returning to work such as prisoners, and people overcoming mental health difficulties.

### Research Use

The amount of scientific research undertaken on the NNR has been small in comparison to that of many other estuarine sites, though significant work has been carried out (e.g. Bill Hale's work on redshank) and interest has increased in recent years in part due to issues relating to coastal realignment.

The establishment in 1969 of the 'Birds of Estuaries Enquiry' by the British Trust for Ornithology provided data to confirm the view that the estuary held internationally important populations of wildfowl and waders. Long-term recording of wader and wildfowl populations commenced in 1969, and records are held by the BTO and the Wildfowl Trust.

There have been a number of research projects carried out on the marshes. Between 1970 and 1978, studies were conducted on several aspects of the ornithological interest of the site, much of the input provided by the Biology Department of Liverpool Polytechnic under Professor W.G. Hale. Dr P.H. Smith and M.E. Greenhalgh carried out the principal documented work. The only long-term research by the Department is the Redshank Study which commenced in 1973 and had a 25 year term.

Since 1979, surveillance of wader and wildfowl populations, cattle grazing, wildfowling, breeding birds and *Spartina* surveys have been documented and reports are held on the NNR files. Other recent and on-going projects include Dave Souter's twite research, the lesser black-backed gull ringing programme and the grey goose monitoring programme. In the life of the present plan a PhD study into the effects of grazing (both domestic and avian) on breeding Redshank will be conducted on Banks marsh by D.Harmer. This is a continuation of some of Professor W.G. Hal's work and is in part carried out under his guidance. Surveys of the Large Gulls will also be carried out including the use of drones and electronic tagging to produce GPS data of gull movements in and around the estuary and further afield.

Recent coast-wide initiatives to coordinate research needs and opportunities are beginning to broaden the level of interest in the estuary. The presence of a number of Universities within the immediate area should facilitate an extension in the amount of research work attempted in future. In addition to the more obvious physical and biological research, there has been interest in utilising the site for mental health research in association with the NHS. The opportunities are many, given the size and nature of the site, and every effort should be made to encourage further use for research.

#### Demonstration

Opportunities for demonstration are limited by the nature of the site and access difficulties; both to the site and on the site. There are, however, a number of projects on the NNR which demonstrate good practice.

The excellent relationships with four wildfowling clubs demonstrates best practice and has resulted in some joint research, working together to minimise disturbance to birds. Many of the clubs participate in the monthly WeBS counts.

A long standing and successful grazing project including more than 25 graziers, demonstrates good agricultural practices for the saltmarsh. Proposals to introduce organic traditional-breed cattle, and the associated marketing opportunities for premium quality beef, should demonstrate optimum grazing practises in the future.

A pilot project with Mersey Care NHS Trust has given opportunities for volunteers to carry out practical work on a weekly basis as part of continuity of care for people with mental health issues, helping them to return to the community. This should serve to demonstrate possible opportunities at other reserves.

The partnership working between NE, EA and RSPB on the Hesketh Out Marsh re-alignment project has and will in the future demonstrate best practice in terms of habitat creation and landscape scale conservation.

The new model of joint management of the larger 'super' NNR in partnership with RSPB and Lytham and District Wildfowling Association will provide demonstration of best practice, resource maximisation and landscape scale conservation.

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## 1.8: Access & visitor facilities

### Visitor Appeal and Suitability for Access

The number of visitors to the NNR is currently limited. Survey suggests that most users of the Estuary are local people; with walking, running, dog-walking, bird-watching and wildfowling being the most popular activities. Most of the public use of the site is confined to the land bordering the estuary; mainly the embankments/ sea defence structures from Crossens pumping station to Georges Lane at Hundred End and around Hesketh Bank and Beconsall on the south side, and Lytham and St Annes sea fronts on the north side, which afford good vantage for an overview of the estuary and its wildlife, especially at times of high tide. Visitors have expressed a strong appreciation of the sense of '*isolation and low key infrastructure*'.

The opportunity to allow free access onto some saltmarsh areas from the public footpath network exists, but this has not been actively encouraged by Natural England (and its predecessor organisations) due to the hazardous nature of the tidal habitats as well as the risks of disturbance to feeding and roosting birds which this might cause. The most appropriate way to promote access at present appears to be by offering frequent guided walks across the NNR to small groups of people, whilst also working with partner organisations to promote the wildlife interest of the estuary as whole and directing general visitors to other facilities which are better able to cater for large numbers of visitors (e.g. RSPB Marshside and Martin Mere).

### Access Provision

Natural England will continue to support local Agencies and neighbours to develop the footpath network around the estuary where this is not likely to compromise the nature conservation interest of the NNR. The English coastal path will be established in 2017 along the landward boundary of the NNR and will improve public access between RSPB and NE reserves and public awareness of the available coastal walking routes in the area.

There are few controls over access onto the NNR and Natural England operates an open-access policy along public footpaths, but access onto the intertidal marsh is by agreement due to the potentially dangerous nature of the site. The primary focus of on-site interpretation is by guided walks, where numbers are limited to 20 per walk to ensure the best delivery of key themes. Many of the walks are geared to reaching as broad a range of people as possible, with walks specifically targeted to minority groups.

### **Visitor Facilities**

Facilities to support visitors on the NNR are few. There is limited parking available at the Old Hollows office site, but the access road is in a poor condition and there are no immediate plans to promote use of this facility other than for NNR work and organised visits. Interpretation boards are located at several access points around the NNR.

Improved access provision at Hundred End associated with the new RSPB reserve and habitat creation on the NNR will provide a new interpretation focus to welcome visitors and explain management works. Many improvements, including promotion of existing good green transport links, could be achieved with minimal cost.

Proposals are underway to promote the *Ribble Coast and Wetlands* as a Regional Park, with the Ribble Estuary at the heart of this area. The Regional Park would cover the coastline from Southport through Preston to Lytham and extend into west Lancashire to include Martin Mere. Regional Parks are identified in regional and sub regional strategies as vehicles for the delivery of environmental, social and economic benefits. The vision for the Ribble Park is that it should be an internationally recognised destination based on its environmental significance which will be conserved and enhanced. Interpretation for the NNR, within the context of the Park, should highlight the importance and unique nature of the estuary and the crucial links between related sites. A range of interpretative strategies are employed at neighbouring sites more suited for mass tourism, such as Martin Mere. A collaborative approach to interpretation in which best use is made of resources across organisations is being developed. The NNR approach is based on not competing in number terms with other organisations but rather offers a targeted approach which provides interpretation for a wide range of user groups including those currently under-represented in the area.

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### 1.9: Summary of site features

| <b>F<br/>e<br/>a<br/>t<br/>u<br/>r<br/>e<br/>N<br/>o<br/>.</b> | <b>BAP Broad<br/>Habitat<br/>Type<br/>or<br/>Geological<br/>Site Type</b> | <b>Specific Feature</b>                                                                                                                                                                | <b>Explanation of Feature/Ranking</b>                                                                                                                                                                                                          |
|----------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                              | Saltmarsh                                                                 | <b>Aggregations of breeding birds</b>                                                                                                                                                  | Breeding populations of Annex 1 bird species: common tern, ruff. Avocet and Mediterranean gull have also bred (or attempted to breed) in recent years.                                                                                         |
| 2                                                              | Saltmarsh;<br>Littoral<br>sediment                                        | <b>Aggregations of non-breeding birds - Annex 1 bird species</b>                                                                                                                       | Wintering populations of Annex 1 bird species: bar-tailed godwit, Bewick's swan, golden plover, whooper swan.                                                                                                                                  |
| 3                                                              | Saltmarsh                                                                 | <b>Aggregations of breeding birds</b>                                                                                                                                                  | Internationally significant breeding populations of bird species: lesser black-backed gull.                                                                                                                                                    |
| 4                                                              | Saltmarsh;<br>Littoral<br>sediment                                        | <b>Aggregations of non-breeding birds - migratory species</b>                                                                                                                          | Internationally significant populations of regularly occurring migratory bird species: ringed plover, sanderling, black-tailed godwit, dunlin, grey plover, knot, oystercatcher, pink-footed goose, pintail, redshank, shelduck, teal, wigeon. |
| 5                                                              | Saltmarsh                                                                 | <b>Aggregations of breeding birds</b>                                                                                                                                                  | A seabird assemblage of international importance (at least 20,000 seabirds): black-headed gull, lesser black-backed gull, common tern.                                                                                                         |
| 6                                                              | Saltmarsh;<br>Littoral<br>sediment                                        | <b>Aggregations of non-breeding birds - migratory species</b>                                                                                                                          | Internationally significant populations of regularly occurring migratory bird species (at least 20,000 waterfowl).                                                                                                                             |
| 7                                                              | Saltmarsh                                                                 | <b>Aggregations of breeding birds</b>                                                                                                                                                  | Nationally important breeding populations of four bird species: black-headed gull, common tern, redshank, ruff. Black tailed godwit occasionally breeds and spoonbill has bred in recent years, which are also nationally significant.         |
| 8                                                              | Saltmarsh;<br>Littoral<br>sediment                                        | <b>Aggregations of non-breeding birds - migratory species</b>                                                                                                                          | Nationally important populations of wintering waterfowl: curlew, lapwing                                                                                                                                                                       |
| 9                                                              | Saltmarsh;<br>coastal<br>grazing<br>marsh                                 | <b>Breeding bird assemblage</b>                                                                                                                                                        | Nationally important assemblage of breeding birds on saltmarsh.                                                                                                                                                                                |
| 10                                                             | Littoral<br>sediment                                                      | <b>Honeycomb worm <i>Sabellaria alveolata</i> reefs and biotopes supporting an abundance of tellin, cockles, marine worms, mudsnails, crustaceans and other invertebrate bird-prey</b> | Mudflats and sandflats not covered by seawater at low tide                                                                                                                                                                                     |

| <b>F<br/>e<br/>a<br/>t<br/>u<br/>r<br/>e<br/>N<br/>o<br/>.</b> | <b>BAP Broad<br/>Habitat<br/>Type<br/>or<br/>Geological<br/>Site Type</b> | <b>Specific Feature</b>                                                                                                                                                                                                                                            | <b>Explanation of Feature/Ranking</b>                                                                                                                                                                                                              |
|----------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11                                                             | Saltmarsh                                                                 | <b>Pioneer saltmarsh: SM6, SM8, SM12. Low-mid marsh communities: SM13a, SM14. Mid-upper marsh communities: SM13b,c,d, SM16 Driftline: SM28 Transitions: including mesotrophic grassland communities (e.g. MG 11) and swamp communities (e.g. S4, S5, S20, S21)</b> | Inter-tidal saltmarsh                                                                                                                                                                                                                              |
| 12                                                             | Coastal grazing marsh                                                     | <b>MG5 <i>Cynosurus cristatus</i>-<i>Centaurea nigra</i> grassland and transitional brackish habitats</b>                                                                                                                                                          | Reclaimed saltmarsh including species-rich neutral meadow with <i>Dactylorhiza fuchsii</i> , <i>D. incarnata</i> and <i>D. praetermissa</i> .                                                                                                      |
| 13                                                             | Saltmarsh                                                                 | <b>Breeding Birds of Conservation Concern and BAP species</b>                                                                                                                                                                                                      | In addition to the several bird species which are of European importance or occur in nationally important aggregations: herring gull, grey partridge, skylark, linnet (all BAP & Red List), eider (Amber List & most southerly English population) |

Table1.8.2 Landscape Features

| <b>F<br/>e<br/>a<br/>t<br/>u<br/>r<br/>e<br/>N<br/>o<br/>.</b> | <b>Specific Feature</b>                                                          | <b>Explanation of Feature/Ranking</b> |
|----------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------|
| 14                                                             | low-lying flat open coastal plain (including intertidal flats)                   |                                       |
| 15                                                             | saltmarsh                                                                        |                                       |
| 16                                                             | improved pasture for livestock grazing on reclaimed land (coastal grazing marsh) |                                       |
| 17                                                             | open with extensive views                                                        |                                       |

Table 1.8.3 Archaeological Features

| <b>F<br/>e</b> | <b>Specific Feature</b> | <b>Explanation of Feature/Ranking</b> |
|----------------|-------------------------|---------------------------------------|
|----------------|-------------------------|---------------------------------------|

|                                                          |                             |  |
|----------------------------------------------------------|-----------------------------|--|
| a<br>t<br>t<br>r<br>e<br>b<br>u<br>t<br>e<br>N<br>o<br>. |                             |  |
| 18                                                       | historical use of saltmarsh |  |

**Table 1.8.4 Socio-economic Use**

| Feature No. |                       | Very Important | Important | Insignificant |
|-------------|-----------------------|----------------|-----------|---------------|
| 19          | Economic Use          |                | ✓         |               |
| 20          | Community Involvement |                | ✓         |               |

**Table 1.8.5 Education, Research & Demonstration**

| Feature No. |               | Very Important | Important | Insignificant |
|-------------|---------------|----------------|-----------|---------------|
| 21          | Education     |                | ✓         |               |
| 22          | Research      | ✓              |           |               |
| 23          | Demonstration | ✓              |           |               |

**Table 1.8.6 Public Access**

| Feature No. |               | Very Important | Important | Insignificant |
|-------------|---------------|----------------|-----------|---------------|
| 24          | Public Access |                | ✓         |               |

**Table 1.8.7 Other Estate Assets**

*Site assets, not listed in preceding summary tables, which the management plan needs to address*

| Feature No. | Asset Description | Notes                               |
|-------------|-------------------|-------------------------------------|
| 25          | Office            | Office and work store for equipment |
| 26          | Licences          | Grazing of saltmarsh/ shooting      |
|             |                   |                                     |

## **2: Evaluation, Formulation of Vision and Site Objectives**

### **2.1: Site analysis**

## 2.1.1: Site Strengths

- The estuary is the most important single-river estuary in the UK for birdlife. It is second only to the Wash in numbers and diversity of migratory waders and wildfowl.
- A large proportion of the estuary is owned by Natural England and much of the remainder is subject to agreements which are favourable to the conservation interest.
- The site is large and remote with difficult terrain covered regularly by tides. This ensures minimal disturbance to the conservation interest.
- The current grazing management has successfully improved the range of habitats available for most wintering and passage bird species.
- The extensive saltmarsh of the estuary plays an extremely important role in the coastal flood-defence by absorbing most of the tidal wave action. This is extremely efficient and cost-effective compared with the hard engineering alternatives which would otherwise be required.
- The site generates a significant level of income on an annual basis (c. £45,000).

## 2.1.2: Site Weaknesses

- Natural transition at the upper end of succession is curtailed by flood defence works along most of the site boundary.
- While wintering bird populations have generally increased in response to management practises, many of the important breeding species have declined significantly in recent years which needs to be addressed
- The physical nature of the site imposes severe constraints on management. Inter-tidal flats are virtually unmanageable, saltmarsh grazing regimes are limited by problems of access and stock control, public use is restricted largely to non-tidal areas, monitoring is extremely difficult.
- Safety considerations influence the management of public use, including use for research, education and recreation, and the management of work carried out by contractors and NE staff.
- The scale of the site and the management required results in high running costs and expensive major projects.

- There is no longer a Ribble Estuary Senior Reserve Manager based at the Ribble Offices. A new staffing model is in place whereby NNR staff within the Cheshire to Lancashire Team will work across all the three NNRs in the team area. The original model was for two SRMs working with distinct responsibilities not based on geographical locations. However since 2011 the sites have been managed by one SRM covering all three NNRs. This problem is to be addressed in part by closer partnership working with RSPB and the Wildfowling Associations of the Estuary.

### 2.1.3: External Opportunities

- The Ribble is one of the major estuaries within the North West European flyway. It is thus strategically important as part of a complex of internationally important shorebird habitats in north-west England.
- Natural geomorphological processes occur within the estuary and the current stable accreting system is maintaining and, for saltmarsh, increasing the area of key habitats.
- The demand for public enjoyment and appreciation is high.
- The support from local land owners/ farmers has enabled NE to manage grazing regimes proactively.
- Pollution levels within the system are reported to be sufficiently low to have minimal impact.
- Proposals for the establishment of the Ribble Coast and Wetlands Regional Park should offer opportunities to enhance the nature conservation value of the estuary and its surrounding farmland and wetlands (including restoration of saltmarsh habitats on reclaimed fields), and also promote appreciation and understanding of this natural heritage to the general public.
- The recently formed partnership with RSPB to share resources and expertise across both land holdings also offers opportunities to enhance the nature conservation value of the estuary.

### 2.1.4: External Challenges

- Climate change is likely to effect the distribution of some bird populations while forecasts of rising sea level may have a detrimental effect on the extent of habitats present.

- The demand for recreational use is increasing. This may lead to an increase in disturbance.
- Potential risk of bird-strike with aircraft using the adjacent BAE Warton Site
- The management of the site is very vulnerable to significant changes in agri-industry.
- Potential future spread of foot and mouth or blue tongue diseases to cattle would impact on marsh management and could have long-term impact on stock availability if local graziers cease business. As could the spread of TB and other biosecurity restrictions on animal movements.
- Pollution levels are totally outside the control of NE.
- A major pollution threat exists in the development of oil and gas exploitation in Liverpool Bay. As the recent fracking proposals for the land to the south of banks marsh which is pump drained over the NNR.
- Potential spread of avian flu could severely hit bird numbers and affect promotion of access to the site.
- Various regeneration proposals have been discussed which could have a severe impact on the NNR including proposals for a barrage, a marina and a hovercraft service between Southport and Blackpool.

## 2.2: Site management policy

### **Breeding bird aggregations and assemblages, and aggregations of non-breeding birds**

When the Estuary was originally designated as a SSSI, and subsequently a Ramsar site and SPA, the principal interest identified was the considerable number of passage and wintering birds. Historically, then, the management of the site for breeding birds has been secondary to the management for wintering waterfowl. However, the 2001 review of the SPA has emphasised the importance which the site also has for internationally and nationally important breeding bird populations. It is therefore important that future management addresses the requirements of the notable breeding birds at least equally with the non-breeding populations. The soon to be enlarged size of the NNR through the declaration of RSPB's Marshside and Hesketh reserves and the new partnership approach to the management of the whole NNR will facilitate this shift in management.

The population levels of waterfowl on the site fluctuate significantly in response to both natural and human-influenced changes, which may occur within the estuary or elsewhere in the birds' range. Within the estuary there are three main factors that may influence population levels of birds:

**i) Disturbance to breeding, feeding and roosting areas** - Disturbance to birds can arise from leisure activities, including dog walking and use of leisure boats and jet skis on the river. Natural England will aim to ensure that disturbance by human activity to roosting sites on the edge of the saltmarsh areas will be minimised over all high tide periods throughout the year, so that these sites remain available to the birds when required, and to grazing marsh throughout the winter period so that at least 30% of grazing sites remain available to the birds when required. Elsewhere in the estuary, Natural England will seek to influence other agencies and managers of habitats to ensure that other roosting and feeding areas are given similar protection. Natural England will undertake a review of management operations (particularly grazing intensity) to safeguard breeding bird populations from disturbance.

**ii) Pollution levels** - There are two main groups of pollutants which may affect waterfowl in the estuary. The first group are those carried in the water column and become incorporated in the substrates, thus potentially affecting the invertebrates on which the waders feed. These include organic and inorganic toxins, radioactive residues and substances that affect the Biological Oxygen Demand (BOD) in water or sediments. The second group are those which are carried on the water surface and collect on the surface of the substrates, from where they may contaminate both waders and wildfowl directly. These are mainly organic and include petrochemical raw materials and products and industrial effluents containing fats and oils. The development of an offshore oil/ gas industry poses a significant threat to the site in this respect. As does the recent interest in the development of oil shale fracking on farmland adjacent to Banks marsh. Any spillage of oil, or similar substance, could potentially prevent use of large areas of the saltmarsh by nesting birds, and may affect birds when feeding or roosting by contamination of saltmarsh vegetation or in shallow water areas in the outer parts of the estuary. There are no short-term solutions should this potential be realised.

**iii) Saltmarsh condition** - Management on the NNR has generally been successful in maintaining the short-sward marsh required by grazing wildfowl and roosting waders, while also giving consideration to the maintenance of short sward turf interspersed with scattered tussocks of longer vegetation which is required by most of the NNR's notable breeding bird species. Suitable habitat is best produced by light to medium grazing pressure using cattle as grazing agents. Grazing by cattle is most intense over the first third of the marsh closest to the access points where the sward is now generally extremely short and unsuitable for most breeding birds. The areas of longer vegetation further from the embankment towards the river are generally occupied by the large gull colony. Sheep grazing has also been employed in areas where access for cattle is restricted, though cattle generally produce a better sward for wildlife and ideally would be used throughout. Banks Marsh, the western half of Hesketh Marsh and the northern sector of Warton Marsh appear to be the best areas for the sward mosaic favoured by nesting birds and the 'marsh' fence at Banks Marsh that runs parallel to the embankment has enabled more subtle manipulation of the grazing regime here which has begun to benefit breeding wader species as well as other birds including grey partridge and skylark. Further accretion of saltmarsh, combined with stable stock levels, should increase the area of marsh subject to light-to-medium grazing pressure which should therefore increase the optimum habitat for breeding birds over ensuing years. In the short-term, the existing management regime will continue with the aim of maintaining this type of habitat for successful breeding by waders, terns and gulls in conjunction with the extensive short-sward marsh favoured by wintering species, but this will be reviewed over the course of this management plan to see whether more can be done to favour breeding bird populations.

External factors, over which Natural England has no control, are many and varied. Climate change is already affecting bird numbers; for example, Bewick's swans are increasingly remaining in continental Europe, while new species are moving in such as little egret. Such changes in bird distribution may necessitate a further future reappraisal as to which species are important to the site. Changes in management elsewhere within a bird's range can also impact upon numbers at the Ribble Estuary. Fluctuation in numbers of pink-footed geese on the Ribble Estuary appears to be largely due to use of other feeding and roosting sites both locally and further afield, including Norfolk where the extension of sugar beet crops dramatically increased the number of pink-footed geese wintering in that area to feed on the beet tops, causing a subsequent reduction in numbers of geese remaining to over-winter on the Ribble. However, climate change also seems to have delayed the return of pink-footed geese to their breeding grounds in Iceland and Greenland, and the birds that are visiting the Ribble are generally grazing later in the season, after the wigeon have left and the grass is beginning to grow again. Clearly, such factors are beyond the scope of management within the NNR and such changes in distribution are not necessarily a negative factor when the population is considered in a national or international context.

While numbers of passage and wintering birds have undoubtedly increased overall in response to the NNR management regime, there is a question mark over how appropriate this has been for some of the breeding species. Over the years, it has generally been considered by Natural England (and its predecessors) that populations of breeding birds have been maintained by the long-term stable management of the site and that the recent decline in numbers of some species appeared to be due to natural environmental factors over which NE has no control, rather than due to any site management practices (or lack of). In particular, high spring tides have caused problems in recent years and this could become a greater issue if predictions of rising sea levels caused by global warming are correct. However, because of the increased emphasis of the site's breeding birds, the decline in certain species (e.g. black-headed gull, common tern and redshank) requires further investigation; in terms of identifying locations of favoured breeding grounds, determining whether adjustments to the management regime could better serve the breeding populations, and to consider whether other factors may be impacting upon these populations such as disturbance, egg-collection or high levels of natural predation (e.g. by foxes; although it should be noted that a degree of natural predation should be tolerated as part of the natural ecosystem provided notable features are not seriously threatened).

The colony of large gulls has had the estimated numbers revised upwards in the past five years with the distribution of the colony increasing in a westerly direction with fewer birds nesting to the east of banks marsh. The latter area has brought the gulls into conflict with BAE due to the possible risk of bird strike by aircraft. Work with stakeholders is ongoing in attempt to resolve this issue. Annual monitoring has been carried out over the past three years with the number of pairs of LBB and herring gull now known to be in the range of 7 -10 000 breeding pairs per annum. Further surveys it is hoped will be carried out using remote sensing (drone) techniques as the present survey methodology is very labour intensive. It is not known the effects this colony has on other breeding species although it is of note that no breeding terns or black-headed gulls were recorded on banks marsh during the 2016 breeding seabird survey. A small (circa 300 pairs) colony of black-headed gulls are now established on the neighbouring RSPB Marshside reserve.

Monitoring of the in-Estuary factors likely to affect the waterfowl will be through liaison with key partners on the estuary and by routine patrol.

Monitoring of the population levels of waterfowl present throughout the year has been carried out by volunteers since 1970 through the auspices of national surveys (Birds of Estuaries Enquiry 1969/70 - 1992/93; Wetland Bird Survey 1993/94 onwards). This monitoring is of key importance in determining the health of waterfowl populations on the site and provide an indication of the suitability of ongoing management.

### **Littoral sediment**

The intertidal habitats within the estuary form a significant part of the total habitat resource in northwest England. The large invertebrate community together with the range of feeding and roosting opportunities which are supported has resulted in the estuary, in turn, supporting a very large and internationally important population of migrant wildfowl.

The extent and range of the sub-habitats of the intertidal flats govern its biotic productivity, and are the main factors in its ability to support large numbers of migrant waders. The distribution of the sub-habitats is the main factor in its ability to provide suitable roost sites for both waders and wildfowl.

The natural processes occurring within the estuary are accretive and result in gradual progression seawards of both edges of this zone. Negative changes in sea level may have been a contributory factor in this process, and any reversal may affect the extent of this habitat within the system in the future. Potential threats to the favourable condition of the habitat, therefore, are from rises in sea level as well as the risks of increasing pollutant input and increasing levels of human disturbance. The key to successful management is the maintenance of the present total area and areas of sub-habitat types, the maintenance of a low level of pollution and the maintenance of a low level of disturbance.

The nature and geographical position of this feature limit the opportunities for active management and the main aim for Natural England will be to allow the natural and uninterrupted development of the natural physical coastal dynamics. Management effort will, therefore, be of an indirect nature, influencing the actions of others to ensure the favourable condition is maintained by avoidance of damaging activities. The agencies/bodies involved are the Environment Agency (water quality), Defra (water quality and pollution affecting agricultural and fishery use), the local Sea Fisheries Committee (viability of shellfish beds) and the developing Ribble Coast and Wetland Regional Park (the human use of the estuary).

There is now no single agency with responsibility for the maintenance of navigable channels in the estuary and therefore no artificial control over sedimentation patterns. The major factor likely to affect sedimentation patterns and distribution is the winning of sand from the two main sand Banks in the estuary; the Horse Bank on the southern side and the Salters Bank on the northern side, though sand winning from Horse Bank has now stopped and is under review at Salters Bank. Natural England's role will be to monitor the status of this feature and report problems or changes arising to the appropriate body as part of this review.

### **Saltmarsh**

The historical management of saltmarsh in the Ribble Estuary by grazing with sheep and/or cattle has created a range of sward conditions, which are a consequence of grazing pressure and stock type. The resulting habitat range from heavily sheep-grazed to lightly cattle-grazed saltmarsh, though the majority of the grazed saltmarsh in the estuary is covered by a *Puccinellia maritima* dominated short-sward turf. This short sward has provided ideal conditions for large populations of herbivorous wildfowl, while areas of saltmarsh with some structure in summer attract large populations of breeding birds and areas with some remnant structure in winter provide shelter for passerines and raptors and feeding opportunities for seed-dependent wildfowl. The past management of the whole site has therefore produced a balance of habitat types that provide support for the wide range of avian populations. The broad thrust of future management should follow the same pattern, though some adjustment to the grazing regime may be required in places following a review of the requirements and causes of decline of certain notable breeding birds.

The continuing accretion of saltmarsh should further enhance the diversity of the sward. Areas of accreting marsh are typically too problematic to graze regularly as they are generally further from access points for stock, may be inaccessible to stock due to the topography, and are only grazed when grass is in short supply due to climatic factors. However, the irregular grazing which they have received has allowed the development of a more rank structure and diverse composition which has created an alternative habitat to the short-sward grazed marsh, with opportunities for populations of different species to increase. Future management should seek to diversify the range of habitats present on the grazed saltmarsh areas of the site where opportunities arise and where this does not conflict with the maintenance of favourable condition of saltmarsh habitat on the whole site.

The grazing regimes on Crossens, Banks and Hesketh Marshes currently provide a good balance of conditions and should therefore broadly continue to be managed in the same way over the period of this plan, with adjustments as necessary to benefit breeding bird populations. There is concern over the extremely short sward conditions on the area of Banks marsh outside the marsh fence closest to the access points for the cattle. The factors causing this are not fully understood but the lower stocking rates of recent years (caused by lack of cattle availability), the expansion of the gull colony (cattle are reluctant to enter the colony) and heavy winter grazing by wildfowl on the reduced area of available short sward are factors that need to be taken into account during a review of the grazing for the estuary. To increase the suitability of the marsh for breeding waders the grazing regime with livestock may have to be adjusted during the life of this plan. On Banks Marsh the further accretion of green marsh will result in a reduction in grazing pressure, allowing the development of more rank habitats. Unless this results in an imbalance between short-sward and tussocky habitats the process will be allowed to develop. If an imbalance results then a change to more directed grazing management by compartment will need to be undertaken. Warton Marsh grazing is determined within the Environmental Stewardship Agreement, which runs for 10 years, and the management plan for this area is now part of the overall NNR management plan with separate projects for Lytham and district Wildfowling Association. NE will seek to ensure that management will maintain the area of short-sward habitat on this marsh and increase the area of tussocky habitat.

In addition to the grazed marsh, there is an extending area of immature, ungrazed saltmarsh at Crossens/ Marshside, part of which is within the NNR boundary. There are very few areas of ungrazed marsh within the Estuary, so this area will be maintained in an ungrazed

condition by ensuring that stock is excluded at all times in order to enhance the diversity of the Ribble's saltmarsh habitats. This diversity has also provided opportunities for research, where studies have been carried out to compare invertebrate life and other factors between grazed and ungrazed marsh. No management other than the exclusion of stock will be carried out and the marsh will be left to develop naturally. Efforts will be made to ensure that the area currently outside the NNR is similarly managed and an approach to the adjacent landowners will be made to attempt to bring this area within the influence of this management plan.

The narrow strip of marsh at Beconsall Marsh has presented difficulties for grazing in the past and has limited value for birds due to disturbance levels from the footpath which runs the length of this marsh. There is a need to review and significantly alter the grazing regime here to promote wildlife benefits.

### **Coastal grazing marsh**

The 9.14 ha of unimproved grassland at Old Hollow, supporting a species-rich sward including three species of orchid (common spotted orchid *Dactylorhiza fuchsii*, early marsh orchid *D. incarnata* and southern marsh orchid *D. praetermissa*), is rare in a regional context. This habitat is a relic of the original use of reclaimed saltmarsh as grazing marsh and is extremely scarce within the estuary. Virtually all reclaimed land elsewhere in the estuary has, for many decades, been converted to arable. The land at Old Hollow is probably the most botanically diverse area of freshwater wet grassland in the whole of the estuary.

Since 1988, a crop of hay has been taken off this area in July and grazing has occurred subsequently in September. This appears to have increased the distribution of orchid species. Future management should broadly follow these traditional hay-meadow practices, though with some variation to further enhance the wildlife value of the site.

It is proposed that the majority of the meadow will be mown annually between late July and early August, with cuts of sub-sections staggered through this period so that the whole meadow is not cut at once, while margins of the meadow will be cut in late summer/ early autumn to allow development of seeds. In reality the Meadow has usually been cut in late September when weather conditions allow as this is a more practical method. Meadows are often poor in invertebrate numbers and diversity because of the severe impact of a single cut over the whole site, so staggering the cuts through the summer may help maintain numbers of invertebrate prey for breeding birds, while leaving some areas to set seed late in the summer will benefit seed-eating farmland birds. Aftermath grazing will commence in late November until early March using a flock of approximately 40 sheep. By the time the sheep are removed, ideally there should be a short sward with some tussocky and wet areas prior to regrowth of the meadow sward which should attract breeding bird species including lapwing. Moles are a problem as they create large mounds of soil which damages the mowing equipment and introduce soil into the hay which makes it unsuitable for fodder. It is with reluctance that it is proposed that the mole population is controlled. A monitoring project will be established to determine NVC communities present, to be repeated on not more than a ten-year interval.

Controlling water levels by reinstatement of a sluice will seek to increase wetted margins of the meadow and establish reedbed as a transitional feature, while planting and maintaining

a hedgerow around the dry margins of the meadows will further diversify the available habitats for breeding birds.

On reclaimed marsh at Hundred End a lagoon has recently been created to link in with the RSPB's habitat creation work at Hesketh Out Marsh and should enhance interest features in this area for visitors using the public footpath. As part of the mitigation works for the Hesketh Out Marsh east (HOMeast) realignment project (a partnership project between RSPB, NE and EA) in 2015 the bank adjacent to the lagoon was re-profiled to make it suitable for nesting sand martins. This was necessary as unfortunately the existing sand martin colony on HOMeast will be unusable by 2018 due to tidal inundation.

### **Protected Species.**

Survey work will be carried out by an appropriately qualified specialist for the presence of protected species on the site to ensure any practical projects do not cause disturbance or harm to them or their habitat.

It is possible that water vole are using the site so survey work would have to be carried out prior to doing any ditch or drain clearance work in Old Hollows meadow or elsewhere on the estuary. It is possible that bats species are using the work base buildings and bird hide – therefore surveys for bats should be carried out prior to doing any building or maintenance work. Surveys on the marsh should locate the presence of any schedule 1 bird species nesting on the site to avoid disturbance by quadbike/tractor/staff during site management operations during the nesting season.

### **Education and Research**

A concerted effort needs to be made to direct interest towards study and research that will enable better management of the site. Key areas are species presence and distribution, especially of saltmarsh and brackish-water invertebrates, population levels and fluctuations, particularly of waterfowl and breeding birds, and topographical trends, particularly related to the extent and distribution of saltmarsh and intertidal flats.

Use of the site for study and research which has no direct input to site management will also be encouraged except where it has the potential to damage the nature conservation interest or makes unrealistic demands on staff resources.

Safety considerations in the intertidal areas limit the potential of the NNR for open access educational use, but use of the NNR for this purpose will be encouraged whenever it is safe to do so. Lectures, talks and displays will be provided to support educational needs as far as resources allow.

### **Recreation and Access**

Facilities for birdwatching on the estuary have always been limited by the lack of parking facilities and access allied with the lack of suitable vantage points. In particular, it has been difficult for Natural England to offer such facilities because all of the land owned or managed is tidal or has no public access leading to it. In recent years, this has been addressed at an

estuary-wide level by the establishment of an RSPB-run centre at Fairhaven Lake, Lytham, and the creation of a reserve at Marshside by Sefton MBC which is also managed by the RSPB. Further developments are planned in the very near future with the proposed establishment of RSPB-managed transitional habitats and bird-watching facilities at Hesketh Out Marsh.

The opportunity to allow free access onto the saltmarsh areas from the public footpath network exists but this cannot be actively encouraged due to the inherent risks to the public on tidal saltmarsh. Natural England will continue to support local agencies and neighbours to develop the footpath network around the estuary where this is not likely to cause any damage to the nature conservation interest of the NNR. In particular, the Ribble Coast and Wetland Regional Park initiative seeks to enhance nature conservation and access as part of promoting the environmental, social and economic development of the region, and the establishment of the Coastal Path is likely to increase numbers of people using the estuary footpaths. Development of the NNR at Hundred End, in partnership with neighbours including the RSPB and linking into the Hesketh Out Marsh development, could serve to improve access facilities and open up at least part of the NNR to larger numbers of visitors.

Wildfowling has been seen as a traditional use of saltmarsh and intertidal areas within the estuary, and this was acknowledged in the declaration of the NNR in 1979. Nationally, Natural England's current policy is to '*recognise sustainable harvesting of quarry wildfowl through controlled wildfowling as a legitimate use of a wildlife resource*'. It is an activity which has been considered difficult to control without the co-operation of the participants and a great deal of effort has been put into establishing acceptable wildfowling regimes on the NNR, managed by the Wildfowling Associations. This has worked to the benefit of both the wildfowlers and the wildfowl since wildfowling opportunities have been maintained and often improved while populations of both wildfowl quarry species and other migratory waterfowl in the estuary have increased significantly since the reserve was established. In addition the participating Wildfowl Associations and individual Association Members contribute greatly to ongoing policing and scientific monitoring on the site. Lytham and District Wildfowlers Association own Warton marsh which comprises virtually the whole of the saltmarsh lying on the northern side of the Estuary falling within the Ribble Estuary SSSI, extending from Naze Point Freckleton in the east to the mouth of the former Pilot Channel in the west. The latest extension of the NNR included the dedication by them within the NNR under an extension of their original Nature Reserve Agreement of the westward part of that area of saltmarsh. The wildfowling management on the Estuary is now accepted as an example of 'best practice'. When time limited wildfowling licenses and consents are renewed, the then applicable best practice will be followed, aided by Natural England's then current Guidance.

## References

Gee M (2003) *Ribble Estuary National Nature Reserve management plan*. English Nature unpublished report.

English Nature (2006) *The Ribble Estuary NNR interpretation plan*. English Nature unpublished report.

## 2.3: 50 Year Vision

All of the Ribble's intertidal area and all of the land reclaimed from the estuary during the 20<sup>th</sup> Century is now under conservation management. The greatly extended Ribble Estuary National Nature Reserve contains the full range of coastal habitat-types from intertidal mudflats and saltmarsh, through coastal grassland to swamp and sand dune and is complemented by wildlife-friendly farming on neighbouring arable land. This mosaic makes up the heart of the Ribble Coast & Wetlands Regional Park.

The coastal grassland, saltmarsh and intertidal areas are all in 'favourable condition' and maintain exceptional numbers of wintering waterfowl, forming an Internationally important sanctuary. Numbers of breeding waders have increased and their productivity drives the colonization of newly developed wetlands throughout the wider area. There is an established population of black-tailed godwits (*L.l. limosa*); sustainable populations of natterjack toads and water voles; brown hare and oystercatcher numbers remain high; a colony of Arctic terns is established at Hesketh Out Marsh; ringed plovers are nesting at Marshside; spoonbills have established a regular nesting presence on the estuary; snipe have returned as a regular breeding species and there has been a sustained recovery of the breeding populations of redshank on the saltmarshes and lapwings on the coastal grassland, coupled with recoveries in lapwing numbers on neighbouring arable land. New wetland breeding bird species and other biodiversity gains have been delivered through the expansion of saltmarsh, reed swamp, coastal grassland and vegetated pools along the floodplain inland. This has led to colonization by crane, bittern and spotted crane and the establishment of sustainable breeding populations of curlew, ruff, marsh harrier and yellow wagtail. The reserves have been extended to encompass contiguous land including additional saltmarsh and some coastal grassland and swamp areas where breeding bird populations now rival those of Marshside in significance. New nature reserves have been established across the wider 'supporting landscape' that increase the proportion of the rarer, coastal grassland habitat and including significant re-wetted peat areas. These reserves are managed by various members of the Ribble partnership which comprises The Wildfowling Associations, WWT, RSPB, NE, BAeS and local landowners and farmers.

The Ribble saltmarshes are a model of extensive grazing where free-ranging native-breed cattle have created a mosaic of grassland types which supports thriving breeding populations of redshanks, gulls and terns and wintering pink-footed goose and wigeon. Best practice wildfowling is integral to the management of the NNR, combined with the grazing management, this is an influential demonstration tool with national impact illustrating how good quality food can be produced on nature reserves whilst sustaining an abundance of natural life.

Some high flood banks and other less accessible areas have developed rough swards promoting successful breeding by marsh harriers, short-eared owls and wildfowl, increased numbers of scarce passerine species and high numbers of wintering raptors and owls.

Projects begun during this Management Plan-period have borne abundant fruit. Partnership working with United Utilities and the Environment Agency has improved both bathing water quality and the water supply to transitional habitats. The improvements in water supply and distribution is enabling 'dynamic management' to take place.

Hesketh Out Marsh has become a nationally recognised example of coastal restoration with restored saltmarsh and coastal grassland habitats rich in wetland diversity. This success has been emulated at other sites identified in the Environment Agency's Shoreline Management Plans and the Ribble NNR partnership continues to implement positive flood-risk management around the estuary. The reserve provides a case study for educational groups who continue to monitor the development of the restored saltmarsh and its ecology. Politicians, students and practitioners are drawn to the site to study the outcome of a successful project that has tackled issues of climate change adaptation, coastal defence and biodiversity conservation. The well managed mosaic of wetland areas has developed into a place where the varied bird spectacle and increasing biodiversity attracts over 20,000 enthusiast visitors every year. This has raised the profile of the whole Ribble Coast & Wetlands area attracting increasing numbers of the local community to become involved in nature conservation activities. The landholding has been designated as part of the Ribble Estuary Site of Special Scientific Interest and Special Protection Area and lies at the heart of the greatly extended Ribble Estuary National Nature Reserve, the largest jointly-managed National Nature Reserve in the UK.

For many people, the Internationally renowned Ribble Estuary NNR is synonymous with Natural England, Wildfowling Associations, RSPB and partnership working. The contribution Lytham & District Wildfowling and the other partners on the estuary have made to the development and success of the NNR and Regional Park is recognized at the national and international level through conferences, demonstration events and 'best practice' publications. Visitor Centres at Marshside, Hesketh Bank/Tarleton and Lytham St. Annes' provide a high quality visitor experience and an entertaining insight into the history, land management and ecology of the area. Visitors learn about and understand the management and importance of the NNR and the Regional Park. Family-friendly facilities and events have led to a great increase in local membership and a high level of local support for the aims of the Ribble Partnership. Income for the sustainable management of the reserves comes from a levy on the growing number of local tourist facilities as well as from landfill tax and the increasing popularity of the partnership's own quality catering and retail operations. Management of the Regional Park is shared between national and local government and other NGO's with local partners providing expertise and staffing. At Marshside, the restored Old Sand Works site now hosts a Visitor Centre with 360 degree panoramic views of freshwater and intertidal habitats where new audiences gain an insight into the estuary's magic. The site provides a gateway to Sefton's Natural Coast with its diverse habitats of sand dune, dune heath, pinewoods and developing intertidal areas. The Tarleton/Hesketh Bank Centre is a community facility where the emphasis is on meeting and reconciling both the material and the spiritual needs of human society from the wealth of the estuary. At Lytham, a new, purpose-built Estuary Centre harnesses the power of winds and tides and sits proudly alongside the Old Windmill as a second symbol of sustainability for the future. Dazzling flocks of knot and godwits swoop across its observatory windows and on clear days the twinkle of the Marshside Centre's solar panels can be seen in the distance. The Ribble Partnership is known as much for its contribution to the health of the local rural economy through both tourism and land management, as it is for its unrivalled ability to give nature a home; a cause that is understood and supported by the majority of the local population.



## **Feature List**

Feature: 1 - Saltmarsh -breeding birds Annex 1 species

Feature: 2 - Saltmarsh - non breeding birds Annex 1 Species

Feature: 3 - Lesser black-backed gull.

Feature: 4 - Saltmarsh; Littoral sediment Internationally significant populations of regularly occurring migratory bird species

Feature: 5 - Saltmarsh - a seabird assemblage of international importance

Feature: 6 - Saltmarsh; Littoral sediment Internationally significant migratory birds Waterfowl

Feature: 7 - Saltmarsh-nationally important breeding bird populations

Feature: 8 - Saltmarsh; non-breeding birds - migratory species Curlew, Lapwing

Feature: 9 - Littoral sediment invertebrates

Feature: 10 - Inter-tidal saltmarsh

Feature: 11 - Coastal grazing marsh MG5

Feature: 12 - Saltmarsh Breeding Birds of Conservation Concern and BAP species

Feature: 13 - Landscape and historical features

Feature: 14 - Economic Use

Feature: 15 - Community Involvement

Feature: 16 - Education

Feature: 17 - Research

Feature: 18 - Demonstration

Feature: 19 - Public Access

Feature: 20 - Estate Assets

## **Feature: 1 - Saltmarsh -breeding birds Annex 1 species**

### **Feature description**

The Annex 1 breeding birds for which the site is designated to be of European importance (according to the 2001 review of SPA status) are common tern and ruff. In reality ruff has only bred with certainty twice in the last 30 years, though three additional Annex 1 birds species - avocet, Mediterranean gull and spoonbill - have bred or attempted to breed in the last few years, while another Annex 1 species, little egret, has become increasingly common and is known to breed on the islands in marine lake in Southport adjacent to the SPA..

In the 2016 survey of Banks marsh for breeding seabirds no common tern were recorded nesting on the NNR however there were at least 15 pairs of Avocet nesting or attempting to nest on the area of saltmarsh in front of boundary bank wood to the west of the NNR site office at Old Hollows. A solitary spoonbill was recorded on the northern edge of the large gull colony adjacent to the river Ribble in May 2016.

### **Objective description**

**Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

### **Feature 1 Aggregations of Annex 1 species of breeding birds**

*Attribute:* total population

*Target:* Where the limits of natural fluctuations are not known, maintain the population above 75% of that at designation - a loss of 25% or more unacceptable.

Actively contribute to the restoration of 182 pairs of common tern (for the whole Alt to Ribble estuary SPA), 1 pair of ruff, monitor for successful breeding pairs of Avocet and other Annex 1 species (Spoonbill, Med. gull)

*Attribute:* habitat extent

*Target:* Maintain the area of saltmarsh used by the feature within acceptable limits (estimated 1496.4 ha saltmarsh in units 2, 3 and 4). No loss of habitat on the NNR other than natural erosion caused by natural physical dynamics of the coastal system.

*Attribute:* habitat condition

*Target:* Maintain an optimal mix of short(<5cm), medium (10-30 cm) and long (20-60cm) vegetation throughout the nesting area.

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. A review of the grazing regimes will be carried out during the life of this plan. In winter most areas will be

*Puccinellia maritima* dominated short-sward turf to favour feeding and roosting by the large populations of herbivorous wildfowl, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

|                  |                       |
|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate Change</b> |
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**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

|                  |                                               |
|------------------|-----------------------------------------------|
| <b>Factor: 2</b> | <b>Large Gull Colony LBB and Herring Gull</b> |
|------------------|-----------------------------------------------|

**Projects**

*RA13/6 - MONITOR BREEDING GULLS, TERNS AND OTHER NOTABLE SPECIES*

|                  |                    |
|------------------|--------------------|
| <b>Factor: 3</b> | <b>Disturbance</b> |
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**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

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|------------------|------------------------------|
| <b>Factor: 4</b> | <b>Site size and terrain</b> |
|------------------|------------------------------|

**Projects**

|                     |                         |
|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Saltmarsh Extent</b> |
|---------------------|-------------------------|

## Projects

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

|                     |                         |
|---------------------|-------------------------|
| <b>Attribute: 2</b> | <b>Total Population</b> |
|---------------------|-------------------------|

## Projects

*RA13/4 - Other notable species*

|                     |                           |
|---------------------|---------------------------|
| <b>Attribute: 3</b> | <b>Habitat Condition.</b> |
|---------------------|---------------------------|

## Projects

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

## Feature: 2 - Saltmarsh - non breeding birds Annex 1 Species

### **Feature description**

Wintering populations of Annex 1 bird species: bar-tailed godwit, Bewick's swan, golden plover, whooper swan.

### **Objective description**

**Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations**

*Attribute:* Total population

*Target:* Maintain population within acceptable limits (in this context population can be that of an individual species or the total population of an assemblage): Based on the known natural fluctuations of the population in the site, maintain the population at or above the minimum for the site. Where the limits of natural fluctuations are not known, maintain the population above 50% of that at designation - loss of 50% or more is unacceptable.

- Baseline figures for the Ribble & Alt SPA (as per the latest conservation advice package) are: 20,086 bar-tailed godwit, 276 Bewick's swan, 3,598 golden plover, 182 whooper swan.

*[Note these figures are for the whole SPA or SSSI, so only a proportion will be supported within the NNR]*

*Attribute:* Diversity

*Target:* Maintain assemblage diversity: No loss of the 4 Annex 1 species designated at national and international levels, though declines due to events beyond the boundary of the NNR/ SPA will not cause the site to fail.

*Attribute:* Disturbance in feeding and roosting areas

*Target:* No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline, subject to natural change.

*Attribute:* Absence of obstructions to view lines

*Target:* No increase in obstructions to existing bird view lines.

**Maintain the extent of intertidal flats within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations**

*Attribute:* Diversity

*Target:* Maintain assemblage diversity: No loss of the 4 Annex 1 species designated at national and international levels, though declines due to events beyond the boundary of the NNR/ SPA will not cause the site to fail.

*Attribute:* Disturbance in feeding and roosting areas

*Target:* No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline, subject to natural change.

*Attribute:* Absence of obstructions to view lines

*Target:* No increase in obstructions to existing bird view lines.

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

Annual monitoring of the estuary's waterfowl population will continue through WeBS counts and wildfowl bag-return analysis. A programme of low-tide wader counts every 5 years will be reinstated.

Monitoring of the littoral sediment invertebrate communities will be carried out periodically, as required under the conservation standard monitoring programme, to evaluate the health of the estuary and ensure the availability of invertebrate prey for the bird populations. Special attention will be given to monitoring the honeycomb worm reef which is a priority BAP habitat.

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| <b>Factor: 1</b> | <b>Climate change</b> |
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### **Projects**

AI00/1 - INTEGRATED SITE ASSESSMENTS

|                  |                    |
|------------------|--------------------|
| <b>Factor: 2</b> | <b>Disturbance</b> |
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**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

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|------------------|----------------------------|
| <b>Factor: 3</b> | <b>Habitat suitability</b> |
|------------------|----------------------------|

**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

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|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Total Population</b> |
|---------------------|-------------------------|

**Projects**

*RA14/1 - MONTHLY WEBS COUNTS*

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| <b>Attribute: 2</b> | <b>Diversity</b> |
|---------------------|------------------|

**Projects**

*RA14/1 - MONTHLY WEBS COUNTS*

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|---------------------|--------------------------------------------------|
| <b>Attribute: 3</b> | <b>Disturbance to feeding and roosting areas</b> |
|---------------------|--------------------------------------------------|

**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

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|---------------------|--------------------------|
| <b>Attribute: 4</b> | <b>Food availability</b> |
|---------------------|--------------------------|

**Projects**

### **Feature: 3 - Lesser black-backed gull.**

#### **Feature description**

Aggregations of breeding birds Internationally significant breeding populations of bird species: Lesser black -backed gull.

The Lesser black-backed gull colony is a designated feature of the SPA and is situated along most of the length of Banks Marsh towards the main channel of the Ribble (unit 2 of the SSSI).

The Large Gull colony has built up in numbers from the early 1970s onwards and in the 2016 survey (J.D. Fletcher, internal NE report) large gulls numbered 7802 pairs with roughly 10-16% Herring gull and the rest Lesser Black-back which gives a total of 6554-7022 pairs of LB-b and 780-1248 pairs of Herring gull..

#### **Objective description**

**Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

Aggregations of breeding birds

*Attribute:* total population

*Target:* Where the limits of natural fluctuations are not known, maintain the population above 75% of that at designation - a loss of 25% or more unacceptable.

Baseline figures for Ribble & Alt Estuaries SPA (as per the new conservation advice package) for LBB gull are 8,097 pairs.

*Attribute:* habitat extent

*Target:* Maintain the area of saltmarsh used by the feature within acceptable limits (estimated 1496.4 ha saltmarsh in units 2, 3 and 4). No loss of habitat on the NNR other than natural erosion caused by natural physical dynamics of the coastal system.

*Attribute:* habitat condition

*Target:* Maintain an optimal mix of short(<5cm), medium (10-30 cm) and long (20-60cm) vegetation throughout the nesting area.

#### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The

'marsh' fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

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|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate Change</b> |
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**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

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|------------------|--------------------|
| <b>Factor: 2</b> | <b>Disturbance</b> |
|------------------|--------------------|

**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

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|------------------|-------------------|
| <b>Factor: 3</b> | <b>Air Safety</b> |
|------------------|-------------------|

**Projects**

*ML30/2 - Neighbours – re impact of gull numbers.*

|                  |                  |
|------------------|------------------|
| <b>Factor: 4</b> | <b>Predation</b> |
|------------------|------------------|

**Projects**

*RA13/6 - MONITOR BREEDING GULLS, TERNS AND OTHER NOTABLE SPECIES*

*MS40/2 - 'MEGA FENCE' PREDATOR FENCE*

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|------------------|--------------------------|
| <b>Factor: 5</b> | <b>Food availability</b> |
|------------------|--------------------------|

**Projects**

|                     |                         |
|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Total Population</b> |
|---------------------|-------------------------|

**Projects**

*RA13/6 - MONITOR BREEDING GULLS, TERNS AND OTHER NOTABLE SPECIES*

*RA15/3 - Impact of large gulls on other species*

*ML30/2 - Neighbours – re impact of gull numbers.*

|                     |                       |
|---------------------|-----------------------|
| <b>Attribute: 2</b> | <b>Habitat extent</b> |
|---------------------|-----------------------|

**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

## **Feature: 4 - Saltmarsh; Littoral sediment Internationally significant populations of regularly occurring migratory bird species**

### **Feature description**

Internationally significant populations of regularly occurring migratory bird species: ringed plover, sanderling, black-tailed godwit, dunlin, grey plover, knot, oystercatcher, pink-footed goose, pintail, redshank, shelduck, teal, wigeon.

The passage and overwintering populations of the above species fluctuate seasonally across the salt marshes of the reserve. They are one of the highlights of a visit to the Ribble.

### **Objective description**

1. Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.

2. Maintain the extent of intertidal flats within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

The littoral sediments will essentially be left to the effects of natural coastal processes with no formal intervention management. However, Natural England will seek to influence other bodies to ensure that any risks to the littoral sediments, and its associated bird and invertebrate life, will be avoided, including any proposed changes to the physical dynamics of the estuary and discharge of pollutants.

|                  |                       |
|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate Change</b> |
|------------------|-----------------------|

**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

|                  |                    |
|------------------|--------------------|
| <b>Factor: 2</b> | <b>Disturbance</b> |
|------------------|--------------------|

**Projects**

*RH90/1 - GAME BAGS*

*ME10/2 - Boundary markers*

*ML20/2 - Wildfowling Associations - to monitor controlled wildfowling*

*AS60/1 - LIMIT WILDFOWLING SOUTHPORT AND DISTRICT WILDFOWLERS*

*AS60/2 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION PROMOTE AND CONTROL WILDFOWLING*

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|------------------|------------------|
| <b>Factor: 3</b> | <b>Pollution</b> |
|------------------|------------------|

**Projects**

|                  |                          |
|------------------|--------------------------|
| <b>Factor: 4</b> | <b>Saltmarsh Habitat</b> |
|------------------|--------------------------|

**Projects**

*AR60/1 - Grazing reports*

|                     |                         |
|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Total population</b> |
|---------------------|-------------------------|

**Projects**

*RA14/1 - MONTHLY WEBS COUNTS*

*AS60/1 - LIMIT WILDFOWLING SOUTHPORT AND DISTRICT WILDFOWLERS*

*AS60/2 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION PROMOTE AND CONTROL WILDFOWLING*

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|---------------------|--------------------------|
| <b>Attribute: 2</b> | <b>Species Diversity</b> |
|---------------------|--------------------------|

**Projects**

|                     |                    |
|---------------------|--------------------|
| <b>Attribute: 3</b> | <b>Disturbance</b> |
|---------------------|--------------------|

**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

|                     |                   |
|---------------------|-------------------|
| <b>Attribute: 5</b> | <b>Vegetation</b> |
|---------------------|-------------------|

**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

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|---------------------|--------------------------|
| <b>Attribute: 6</b> | <b>Food availability</b> |
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**Projects**

## **Feature: 5 - Saltmarsh - a seabird assemblage of international importance**

### **Feature description**

A seabird assemblage of international importance (at least 20,000 seabirds): black-headed gull, lesser black-backed gull, common tern.

A colony of black-headed gulls was present on banks marsh (unit 2 of the SSSI) until relatively recently with records of approx 10 000 pairs recorded. Locals recall egg collecting for the London restaurant market from the colony as recently as the 1950s (eggs were sent by train down to London). Common and Arctic Terns were also found nesting within the black-headed gull colony.

In 1998 Dave Fletcher recorded 8108 pairs of Black-headed Gulls, 4818 pairs Large Gulls (LBB and Herring) and 137 pairs of Common Tern.

In his 2016 report Dave Fletcher records No Black-headed gulls with 7802 pairs of large gulls recorded. No pairs of common terns were recorded though two were noted flying overhead.

In 2017 several Arctic terns and Black headed gulls have been recorded breeding on Banks marsh.

### **Objective description**

**Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

Aggregations of breeding birds

*Attribute:* habitat extent

*Target:* Maintain the area of saltmarsh used by the feature within acceptable limits (estimated 1496.4 ha saltmarsh in units 2, 3 and 4). No loss of habitat on the NNR other than natural erosion caused by natural physical dynamics of the coastal system.

*Attribute:* habitat condition

*Target:* Maintain an optimal mix of short(<5cm), medium (10-30 cm) and long (20-60cm) vegetation throughout the nesting area.

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be

*Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

In regards to a target for saltmarsh vegetation characteristics, these are from the conservation advice package:

- For LBBG: Maintain the extent and distribution of predominantly medium to tall (i.e. 20-60 cm) grassland swards.
- For common tern: Maintain the mix or heights of vegetation types within and immediately adjacent to nesting areas.
- For black-headed gull: Maintain vegetation heights (generally 10-30 cm) in areas used for nesting.

This can be summarised as maintain an optimal mix of short (<5cm), medium (10-30cm) and long (20-60cm) vegetation throughout the nesting area.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

|                  |                       |
|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate Change</b> |
|------------------|-----------------------|

**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

|                  |                    |
|------------------|--------------------|
| <b>Factor: 2</b> | <b>Disturbance</b> |
|------------------|--------------------|

**Projects**

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

|                  |                   |
|------------------|-------------------|
| <b>Factor: 3</b> | <b>Air Safety</b> |
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## Projects

*ML30/2 - Neighbours – re impact of gull numbers.*

|                  |                  |
|------------------|------------------|
| <b>Factor: 4</b> | <b>Predation</b> |
|------------------|------------------|

## Projects

|                     |                         |
|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Total Population</b> |
|---------------------|-------------------------|

## Projects

*RA13/1 - BREEDING GULLS AND TERNS AND OTHER NOTABLE SPECIES*

*RA15/5 - LARGE GULL RINGING*

|                     |                       |
|---------------------|-----------------------|
| <b>Attribute: 2</b> | <b>Habitat Extent</b> |
|---------------------|-----------------------|

## Projects

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|------------------------------------------------------------------------------------------------------------|
| <b>Feature: 6 - Saltmarsh; Littoral sediment Internationally significant migratory birds<br/>Waterfowl</b> |
|------------------------------------------------------------------------------------------------------------|

**Feature description**

Internationally significant populations of regularly occurring migratory bird species (at least 20,000 waterfowl).

**Objective description**

Maintain the extent of the saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.

**Maintain the extent of intertidal flats within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

**Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

The intertidal flats will essentially be left to the effects of natural coastal processes with no formal intervention management. However, Natural England will seek to influence other bodies to ensure any risks to the littoral sediments, and its associated bird and invertebrate life, will be avoided, including any proposed changes to the physical dynamics of the estuary and discharge of pollutants.

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|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate change</b> |
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**Projects**

*AI00/1 - INTEGRATED SITE ASSESSMENTS*

|                  |                    |
|------------------|--------------------|
| <b>Factor: 2</b> | <b>Disturbance</b> |
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**Projects**

*AS60/1 - LIMIT WILDFOWLING SOUTHPORT AND DISTRICT WILDFOWLERS*

*AS60/2 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION PROMOTE AND CONTROL WILDFOWLING*

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|------------------|-----------------------------------|
| <b>Factor: 3</b> | <b>Grazing/habitat management</b> |
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**Projects**

*AR60/1 - Grazing reports*

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|---------------------|-------------------------|
| <b>Attribute: 1</b> | <b>Total population</b> |
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**Projects**

*RA14/1 - MONTHLY WEBS COUNTS*

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|---------------------|--------------------------|
| <b>Attribute: 2</b> | <b>Species Diversity</b> |
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**Projects**

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|---------------------|-------------------------------------------------|
| <b>Attribute: 3</b> | <b>Vegetation Height and bare ground extent</b> |
|---------------------|-------------------------------------------------|

**Projects**

*AR60/1 - Grazing reports*

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|---------------------|--------------------------|
| <b>Attribute: 4</b> | <b>Food availability</b> |
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**Projects**

## **Feature: 7 - Saltmarsh-nationally important breeding bird populations**

### **Feature description**

Nationally important breeding populations of four bird species: black-headed gull, common tern, redshank, ruff. Black tailed godwit occasionally breeds and spoonbill has bred in recent years, which are also nationally significant.

In reality black-headed gulls no longer nest on the Banks marsh and it is suspected neither do common tern. Redshank numbers have declined since the 1980s and there are no recent records of black-tailed godwit. Spoonbills are sighted regularly but there is no evidence of them breeding. Any management of the site should aim to encourage these species within the SPA.

Extensive research on the Redshank population was carried out by Prof. Bill Hale on Banks marsh in the 1980s and he is currently advising on a PhD study into breeding success in relation to habitat condition and the grazing regime on the marsh. The results of this study by D. Harmer will inform future management - as will other recent surveys of habitat condition and breeding birds in general.

### **Objective description**

**Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance

levels from the footpath which runs the length of this marsh.

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| <b>Factor: 2</b> | <b>Climate Change</b> |
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**Projects**

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| <b>Factor: 3</b> | <b>Predation</b> |
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**Projects**

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| <b>Factor: 4</b> | <b>Site size and terrain</b> |
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**Projects**

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| <b>Factor: 5</b> | <b>Saltmarsh Habitat</b> |
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**Projects**

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| <b>Factor: 6</b> | <b>Disturbance</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Total Population</b> |
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**Projects**

*RA15/4 - Breeding redshank*

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|---------------------|-----------------------|
| <b>Attribute: 2</b> | <b>Habitat Extent</b> |
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**Projects**

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| <b>Attribute: 3</b> | <b>Habitat Condition</b> |
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**Projects**

## **Feature: 8 - Saltmarsh; non-breeding birds - migratory species Curlew, Lapwing**

### **Feature description**

Nationally important populations of wintering waterfowl: curlew, lapwing

### **Objective description**

1. Maintain the extent of saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.

2. Maintain the extent of intertidal flats within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The recently erected fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

## **Factor: 1      Climate Change**

### **Projects**

## **Factor: 2      Disturbance**

### **Projects**

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| <b>Factor: 3</b> | <b>Habitat</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Total Population</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Disturbance</b> |
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**Projects**

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| <b>Attribute: 4</b> | <b>Food availability</b> |
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**Projects**

## **Feature: 9 - Littoral sediment invertebrates**

### **Feature description**

Mudflats and sandflats not covered by seawater at low tide. Honeycomb worm Sabellaria alveolata reefs and biotopes supporting an abundance of tellin, cockles, marine worms, mudsnails, crustaceans and other invertebrate bird-prey. The extensive mud and sand flats of the estuary provide feeding opportunities for many of the breeding, overwintering and passage birds present on the estuary through the year.

### **Objective description**

**Maintain the extent of the intertidal flats within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

### **Rationale**

The littoral sediments will essentially be left to the effects of natural coastal processes with no formal intervention management. However, Natural England will seek to influence other bodies to ensure that any risks to the littoral sediments, and its associated bird and invertebrate life, will be avoided, including any proposed changes to the physical dynamics of the estuary and discharge of pollutants.

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| <b>Factor: 1</b> | <b>Cockle Fishery/collection of shellfish</b> |
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**Projects**

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| <b>Factor: 2</b> | <b>Pollution</b> |
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**Projects**

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| <b>Factor: 3</b> | <b>Topography</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Extent</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Distribution and composition of biotopes</b> |
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**Projects**

*RA83/1 - Intertidal invertebrate communities*

*ML40/6 - SEA FISHERIES- LIASE WITH IFCA.*

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|---------------------|---------------------------|
| <b>Attribute: 3</b> | <b>Sediment Character</b> |
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**Projects**

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|---------------------|-------------------|
| <b>Attribute: 4</b> | <b>Topography</b> |
|---------------------|-------------------|

**Projects**

## Feature: 10 - Inter-tidal saltmarsh

### **Feature description**

A varied representation of inter-tidal saltmarsh communities should be maintained across the marsh units of the reserve.

Pioneer saltmarsh: SM6, SM8, SM12. Low-mid marsh communities: SM13a, SM14. Mid-upper marsh communities: SM13b,c,d, SM16 Driftline: SM28 Transitions: including mesotrophic grassland communities (e.g. MG 11) and swamp communities (e.g. S4, S5, S20, S21)

The structure of the saltmarsh sward should be managed to achieve maximum benefit to the breeding, passage and overwintering bird interest.

### **Objective description**

**1. Maintain the extent of the saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

### **Rationale**

The historical management of saltmarsh in the Ribble Estuary by grazing with sheep and/or cattle has created a range of sward conditions, which are a consequence of grazing pressure and stock type. The resulting habitat range from heavily sheep-grazed to lightly cattle-grazed saltmarsh, though the majority of the grazed saltmarsh in the estuary is covered by a *Puccinellia maritima* dominated short-sward turf. This short sward has provided ideal conditions for large populations of herbivorous wildfowl, while areas of saltmarsh with some structure in summer attract large populations of breeding birds and areas with some remnant structure in winter provide shelter for passerines and raptors and feeding opportunities for seed-dependent wildfowl. The past management of the whole site has therefore produced a balance of habitat types that provide support for the wide range of avian populations. The broad thrust of future management should follow the same pattern, though some adjustment to the grazing regime may be required in places following a review of the requirements and causes of decline of certain notable breeding birds.

Future management should seek to diversify the range of habitats present on the grazed saltmarsh areas of the site where opportunities arise and where this does not conflict with the maintenance of favourable condition of saltmarsh habitat on the whole site.

### **References:**

- Gee M (2003) *Ribble Estuary National Nature Reserve management plan*. English Nature unpublished report.
- Graeme Skelcher (2010) *Ribble Estuary National Nature Reserve management plan*. Natural England unpublished report.

|                  |                       |
|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate change</b> |
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**Projects**

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|------------------|-----------------------|
| <b>Factor: 2</b> | <b>Flood defences</b> |
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**Projects**

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| <b>Factor: 3</b> | <b>Geomorphological processes</b> |
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**Projects**

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| <b>Factor: 4</b> | <b>Pollution</b> |
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**Projects**

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| <b>Factor: 5</b> | <b>Physical</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Extent</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Zonation</b> |
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**Projects**

*RF04/1 - Saltmarsh sward condition*

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| <b>Attribute: 3</b> | <b>Physical Structure</b> |
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## Projects

*MH93/1 - Allow natural coastal dynamics*

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|---------------------|----------------------------|
| <b>Attribute: 4</b> | <b>Negative indicators</b> |
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## Projects

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| <b>Attribute: 5</b> | <b>Vegetation Composition</b> |
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## Projects

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|----------------------|----------------------------------------|
| <b>Management: 1</b> | <b>Maintain access infrastructure.</b> |
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## Projects

*ME40/1 - Access tracks and bridges*

*ME40/2 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION MAINTAIN GUTTER CROSSINGS AND ACCESS*

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|----------------------|-----------------------------------|
| <b>Management: 2</b> | <b>General Habitat Management</b> |
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## Projects

*MH++/1 - GENERAL HABITAT MANAGEMENT*

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|----------------------|----------------|
| <b>Management: 3</b> | <b>Grazing</b> |
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## Projects

*MH75/1 - MAINTAIN THE GRAZING EXCLOSURE AT MARSHIDE*

*ME0/2 - REPAIR EA SEA WALL*

*ME01/1 - LYTHAM AND DISTRICT WILDFOWLERS MAINTAIN FENCES IN STOCKPROOF CONDITION*

*ME02/1 - LYTHAM AND DISTRICT WILDFOWLERS CONSTRUCT/MAINTAIN CATTLE RAMP/HANDLING FACILITY*

*ME10/1 - MAINTAIN FENCES IN A STOCK PROOF CONDITION*

*ME30/1 - Cattle handling facilities*

*ME30/2 - Maintain water supply*

*MG00/1 - Employ stockman*

*MG00/2 - Respond to cattle emergencies*

*MG00/3 - Provide fallback grazing*

*MG00/4 - LIVESTOCK HUSBANDRY*

*MG00/5 - LYTHAM AND DISTRICT WILDFOWLERS GRAZE WARTON MARSH C100 CATTLE*

*MH74/1 - GRAZE BANKS MARSH WITH C 800 CATTLE*

*MH74/2 - GRAZE CROSSENS MARSH WITH C 100 COWS*

*AR60/1 - Grazing reports*

#### **Management: 4 Mowing**

##### **Projects**

*MH7/1 - LYTHAM WILDFOWLERS SELECTIVE MOWING OF SALTMARSH*

*MH73/1 - TRIAL MOWING BANKS MARSH*

#### **Management: 5 Predator Control**

##### **Projects**

*MS++/1 - LYTHAM AND DISTRICT WILDFOWLING ASSOCIATION PREDATOR CONTROL*

#### **Management: 6 Maintain Flashes**

##### **Projects**

*MH77/1 - LYTHAM AND DISTRICT WILDFOWLERS FLASH MANAGEMENT*

*MH77/2 - LYTHAM AND DISTRICT WILDFOWLERS - MAINTAIN SLUICE GATE*

## **Feature: 11 - Coastal grazing marsh MG5**

### **Feature description**

MG5 *Cynosurus cristatus*-*Centaurea nigra* grassland and transitional brackish habitats. Reclaimed saltmarsh including species-rich neutral meadow with *Dactylorhiza fuchsii*, *D. incarnata* and *D. praetermissa*. Approx. eight hectares of meadows behind the sea defence bank at the site office comprise unit 7 of the SSSI. These meadows have become increasingly rich botanically through a positive regime of late summer mowing followed by winter grazing by sheep. The occasional hedgerow has been planted to provide further diversity and protection from the adjacent arable agriculture.

There is a strip of botanically uninteresting grassland between the road and the sea defence at hundred end gutter which is grazed each summer with approx 10 - 20 cows. At the north end there is a lagoon which was constructed by the Environment Agency. This is fenced from the cattle and an attempt to create a sand martin nesting cliff has been made in the west side of the lagoon.

### **Objective description**

**Maintain the extent of coastal grazing marsh within the estuary in favourable condition.**

### **Rationale**

The reclaimed marsh at Old Hollow Meadows will be managed broadly by traditional meadow management methods, with cuts in mid and late summer followed by aftermath grazing from late November until early March, primarily to maximise the floristic interest of the meadows which includes the three orchid species. Creation of a short sward with some tussocky and wet areas in the early spring should additionally be attractive to certain breeding spebird species including lapwing. Meadows are often poor in invertebrate numbers and diversity because of the severe impact of a single cut over the whole site, so staggering the cuts through the summer may help maintain numbers of invertebrate prey for birds, while leaving some areas to set seed late in the summer will benefit seed-eating birds.

Controlling water levels by reinstatement of a sluice will seek to increase wetted margins of the meadow and establish reedbed as a transitional feature.

Providing hedgerow around the dry margins of the meadows will further diversify the available habitats for breeding birds.

There is a strip of land at Hundred End which is species poor and has been traditionally grazed with cattle in the summer. A lagoon has been created at the northern end which compliments RSPB's habitat work at HOMwest.

Hundred end will continue to be grazed each summer with cattle or sheep, the lagoon is fenced so that grazing stock maybe excluded. Small cliffs have been created on the western banks to provide habitat for sand martins.

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| <b>Factor: 1</b> | <b>Grazier Availability</b> |
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**Projects**

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| <b>Factor: 2</b> | <b>Hay making.</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Extent</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Sward Structure</b> |
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**Projects**

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| <b>Attribute: 3</b> | <b>Sward composition</b> |
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**Projects**

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| <b>Attribute: 4</b> | <b>Sward composition - negative indicators</b> |
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**Projects**

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| <b>Attribute: 5</b> | <b>Indicators of local distinctiveness</b> |
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**Projects**

*RF03/1 - BOTANICAL MONITORING OF OLD HOLLOW MEADOW*

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| <b>Attribute: 6</b> | <b>Breeding Birds on Old Hollows Meadow</b> |
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**Projects**

**Management: 1 Mowing**

**Projects**

*MH12/1 - Mowing*

**Management: 2 Sheep grazing**

**Projects**

*MH10/1 - Grazing sheep*

**Management: 3 Control Water levels**

**Projects**

*ME20/2 - REINSTATE SLUICE NEXT TO CATTLE YARD*

*MH19/1 - Regulate water levels*

*MH77/3 - OLD HOLLOW SHALLOW WATER FEATURES*

**Management: 4 Cattle grazing**

**Projects**

*MH10/2 - Grazing cows Hundred End*

*MH76/2 - Fence lagoon*

## **Feature: 12 - Saltmarsh Breeding Birds of Conservation Concern and BAP species**

### **Feature description**

In addition to the several bird species which are of European importance or occur in nationally important aggregations: herring gull, grey partridge, skylark, linnet(all BAP and Red list), and eider (Amber List and most southerly English population).

Herring gull nest within the large gull colony on Banks marsh and represent approx 20% of the population of large gulls nesting on the site. Eider ducks also nest within the large gull colony, usually adjacent to gutters which they utilise to access the river with their young to avoid the attention of the large gulls. Sky lark can be observed across the site. Grey partridge is observed occasionally on the embankments as are linnet.

### **Objective description**

**Maintain the extent of the saltmarsh within the estuary in favourable condition, with particular respect to the internationally and nationally important bird populations.**

### **Rationale**

A variety of grazing regimes will be employed over different parts of the site and at different times of the year to achieve the different requirements of the notable bird species. In winter most areas will be *Puccinellia maritima* dominated short-sward turf to favour feeding by the large populations of herbivorous wildfowl and roosting, though some areas with more structure will provide shelter for passerines. In spring and summer, a mosaic of short sward turf interspersed with scattered tussocks of longer vegetation is required for breeding birds. The fencing on Banks Marsh is helping to control grazing pressure to benefit breeding birds and experimental temporary fencing will be employed as appropriate elsewhere on the NNR to exclude grazing from principal bird-breeding areas. Further management options to benefit breeding birds will be investigated and implemented where appropriate. Future employment of traditional-breed cattle will be investigated; both to improve the saltmarsh sward quality and to provide a herd which is better suited to the difficult saltmarsh conditions than the currently used dairy herds. The reduced grazing levels of recent years due to the lack of cattle availability should favour breeding birds through providing larger areas of ungrazed or lightly grazed saltmarsh.

Stock will continue to be excluded from the area of ungrazed saltmarsh at Crossens/ Marshside. The grazing regime along the narrow strip of marsh at Beconsall Marsh will be reviewed, given the past difficulties encountered with grazing and its limited value for birds due to disturbance levels from the footpath which runs the length of this marsh.

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| <b>Factor: 1</b> | <b>Climate change</b> |
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### **Projects**

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| <b>Factor: 2</b> | <b>Saltmarsh Habitat</b> |
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**Projects**

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| <b>Factor: 3</b> | <b>Disturbance</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Total population</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Extent of supporting habitat</b> |
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**Projects**

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| <b>Attribute: 3</b> | <b>Vegetation Characterisitics.</b> |
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**Projects**

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|---------------------|--------------------------|
| <b>Attribute: 4</b> | <b>Food availability</b> |
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**Projects**

## Feature: 13 - Landscape and historical features

### Feature description

#### Landscape feature

JCA 033: Lancashire and Amounderness Plain

#### **Landscape Character**

The Ribble Estuary NNR offers an undeveloped estuarine landscape in a generally quiet and peaceful setting (other than occasional aircraft use associated with Warton Aerodrome). The flat-topped sea walls offer locally elevated views over an essentially flat landform.

The NNR lies within the Lancashire and Amounderness Plain, which is generally a flat or gently rolling landscape running from Morecambe Bay in the north to Liverpool in the south, bounded by the Bowland Fells to the east and bisected by the Ribble Estuary. Large parts of this area are characterised by medium-sized fields of lush dairy pasture to the north of the Ribble and an open, mainly arable landscape to the south. However, the character area also includes the saltmarshes and intertidal flats which occur around the sheltered waters of the Ribble and Wyre estuaries, extending to the low water mark. The *Open Coastal Marshes* are flat, expansive coastal areas formed on marine alluvium. They are separated from *Enclosed Coastal Marshes* and coastal farmland by man-made sea dykes and, in places, by boulder clays and limestone cliffs. The simplicity of the coastal landscape pattern is visually appealing; usually the fine sward marsh surface is closely grazed and is etched by a maze of creeks and channels which give texture to the flat, expansive landscape. There is a striking absence of settlement or man-made features and the sense of remoteness is a dramatic contrast to the surrounding man-made landscapes. The prolific bird life brings movement to the landscape and provides a changing scene.

The landscape of the NNR probably has more in common, overall, with the Liverpool Bay Natural Area, in which it also lies. The lateral extent of the Natural Area is closely related to the coastal process cells and sub-cells which have been defined for the coastline of England and Wales, where a coastal process cell (or sediment cell), is defined as a length of coastline which is relatively self-contained as far as the movement of sand or shingle is concerned. The main landscape features of the NNR - estuary, saltmarsh and coastal grazing marsh - are amongst the key habitats of this Natural Area.

Four estuaries open on to the Liverpool Bay Natural Area; the Dee, Mersey, Alt and Ribble. These are coastal plain estuaries which have large expanses of mud and sand flats, backed by saltmarshes and sand dunes. All the estuaries are macrotidal and most have a tidal range of between 6.5 and 8.9 metres. Estuaries throughout Liverpool Bay are extensive and cover around 38,352 ha, representing around 10% of the total resource in England.

The estuaries of the Liverpool Bay Natural Area support extensive areas of saltmarsh (4,269 ha), which represents a high percentage of the coastline and reflects the presence of large estuaries and wide intertidal areas throughout the Natural Area. A particularly important feature of the Liverpool Bay saltmarshes, compared with those of Britain as a whole, is the high percentage of mid to upper marsh communities. In addition, a high proportion of the saltmarshes throughout Liverpool Bay are grazed. Many of the saltmarshes, such as the English side of the Dee and the Ribble, have increased in area during recent years through natural accretion.

### **Objective description**

**Encourage use of the NNR for recreational activities, where these do not damage the nature conservation interest, and support partner organisations in promoting access to the wider estuary and enhancing the nature conservation value of the estuary**

### **Rationale**

Public access and appreciation of the NNR will be developed through guided walks, lectures to interested groups, provision of interpretation and providing information on an *ad hoc* basis as required. Work will also be undertaken with neighbours and partner organisations to further develop access facilities to the estuary as a whole and enhance its wildlife value, particularly along the uppermost part of the marsh and in projects to restore or create transitional habitats in existing reclaimed marsh. Specific projects include the establishment of the Ribble Coast and Wetland Regional Park and the RSPB habitat creation development at Hesketh Out Marsh.

Estate fabric required for public access and bird recording will be maintained in a safe and functional condition.

Controlled wildfowling will continue to be permitted with consideration for public safety and impact upon bird populations. A review of the various impacts of wildfowling on the NNR will need to be carried out prior to the renewal of time limited licences and consents.

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|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate Change</b> |
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### **Projects**

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|------------------|------------------------|
| <b>Factor: 2</b> | <b>Land Use Change</b> |
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### **Projects**

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|---------------------|---------------------------------------|
| <b>Attribute: 1</b> | <b>Saltmarsh extent and condition</b> |
|---------------------|---------------------------------------|

**Projects**

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|---------------------|-----------------------------|
| <b>Attribute: 2</b> | <b>Managed re-alignment</b> |
|---------------------|-----------------------------|

**Projects**

## Feature: 14 - Economic Use

### **Feature description**

The Reserve has been traditionally used for summer grazing with cattle and this has maintained the suitable habitat for over wintering wildfowl and the 'tussocky' vegetation required for nesting by some species (e.g. Redshank). The cattle are sourced from local farmers with some years seeing approx 600-800 cattle put on Crossens, Banks and Hesketh Marshes. The income from this combined with basic payment receipts is significant. Managing the cattle requires the employment of a summer cattle warden on the reserve.

Wildfowling is a traditional activity on the NNR on Banks, Crossens and Hesketh. The shooting licence fees contribute significantly to the NNR income, with some management required by the Senior Reserve Manager to negotiate licences, record bag returns, warden the shooting activities and meet with the club committee from time to time.

### **Objective description**

Maximise income from the reserve where this is compatible with the enjoyment and enhancement of the nature conservation interest of the site.

### **Rationale**

**Encourage use of the NNR for recreational activities, where these do not damage the nature conservation interest, and support partner organisations in promoting access to the wider estuary and enhancing the nature conservation value of the estuary.**

**Maintain the NNR property/ estate in a satisfactory condition and ensure all legal and statutory obligations are honoured.**

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|------------------|-----------------------|
| <b>Factor: 1</b> | <b>Climate change</b> |
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**Projects**

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|------------------|------------------------|
| <b>Factor: 2</b> | <b>Animal diseases</b> |
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**Projects**

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|------------------|----------------------------|
| <b>Factor: 3</b> | <b>Cattle Availability</b> |
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**Projects**

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| <b>Factor: 4</b> | <b>Income</b> |
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**Projects**

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| <b>Attribute: 1</b> | <b>Licences</b> |
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**Projects**

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| <b>Attribute: 2</b> | <b>Income generation</b> |
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**Projects**

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| <b>Management: 2</b> | <b>Weed Control</b> |
|----------------------|---------------------|

**Projects**

*MH19/2 - Invasive weeds*

## Feature: 15 - Community Involvement

### **Feature description**

Community involvement on the reserve is restricted to volunteering (this is mainly in the form of WeBS counters), Wildfowling (the clubs provide 10 wardens to assist with control of shooting activities) and casual visits to the NNR by local walkers and birdwatchers.

The local farming community utilise the marsh for cattle grazing in the summer months.

The new partnership between RSPB and Natural England should facilitate more community engagement activities in the future.

### **Objective description**

Encourage the use of the NNR for recreational activities, where these do not damage the nature conservation interest, and support partner organisations in promoting access to the wider estuary and enhancing the nature conservation value of the estuary.

### **Rationale**

Public access and appreciation of the NNR will be developed through guided walks, lectures to interested groups, provision of interpretation and providing information on an *ad hoc* basis as required. Work will also be undertaken with neighbours and partner organisations to further develop access facilities to the estuary as a whole and enhance its wildlife value, particularly along the uppermost part of the marsh and in projects to restore or create transitional habitats in existing reclaimed marsh. Specific projects include the establishment of the Ribble Coast and Wetland Regional Park and the RSPB habitat creation development at Hesketh Out Marsh.

Estate fabric required for public access and bird recording will be maintained in a safe and functional condition.

Controlled wildfowling will continue to be permitted with consideration for public safety and impact upon bird populations. A review of the various impacts of wildfowling on the NNR will need to be carried out prior to the renewal of time limited licences and consents.

### **Factor: 1      Volunteering**

#### **Projects**

### **Factor: 2      Wild fowling**

#### **Projects**

**Attribute: 1      Landowners and Stakeholders**

**Projects**

*ML00/1 - LIAISE, OWNERS/ OCCUPIERS/WILDFOWLERS*

**Management: 1      Manage Volunteers**

**Projects**

*AT50/1 - VOLUNTEER WARDENS*

**Management: 2      Manage Website and Social Media**

**Projects**

*MI/1 - UPDATE WEBSITE INFORMATION*

**Management: 3      NNR Events**

**Projects**

*MI60/1 - NNR EVENTS*

## Feature: 16 - Education

### **Feature description**

Educational activities are restricted to the occasional school visit and guided walk. As the partnership with RSPB develops there should be scope for increased educational and interpretative activities and to forge stronger links with local schools, colleges and universities.

**Factor: 1      Staff**

### **Projects**

**Attribute: 1      Publications**

### **Projects**

*MI50/2 - RESERVE PUBLICATIONS*

**Management: 1      Publications**

### **Projects**

*MI50/2 - RESERVE PUBLICATIONS*

**Management: 2      Signs and Interpretation**

### **Projects**

*MI10/1 - LYTHAM AND DISTRICT WILDFOWLERS ON SITE INFORMATION*

## Feature: 17 - Research

### **Feature description**

Several Research and monitoring projects will continue to be supported on the NNR; of note a PhD studying breeding Redshank, the radio tagging of large gulls by the BTO and the monthly WeBS counts. Every five years a full 'active nest' count of the large gull colony will be undertaken, Orchid counts on Old Hollows meadows and surveys of the saltmarsh vegetation as part of the condition assessment process.

### **Objective description**

**Encourage the development of the site for education, study and research projects, particularly where these contribute to the understanding of the site and its associated habitats and species.**

### **Rationale**

Research and monitoring that underpins the effective and improved management of the NNR's habitats and species will be encouraged, supported and in some cases undertaken by the NNR staff and colleagues from within Natural England and partner organisations where staff resources allow. Other research will be encouraged as opportunities arise where such activities are not damaging to the key features of the site.

### **Factor: 1      Universities and other external bodies.**

#### **Projects**

### **Attribute: 1      WeBS**

#### **Projects**

*RA14/1 - MONTHLY WEBS COUNTS*

*RA14/2 - WEBS 5 YEARLY LOW TIDE COUNTS*

*RA14/4 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION WEBS COUNT*

### **Attribute: 2      Species Lists**

#### **Projects**

*RA06/1 - Mammal species list*

*RA13/4 - Other notable species*

*RA16/1 - Birds species list*

|                     |                     |
|---------------------|---------------------|
| <b>Attribute: 3</b> | <b>Collect Data</b> |
|---------------------|---------------------|

**Projects**

*RA14/3 - Grey goose and other wildfowl*

*RA15/1 - Causes of breeding bird decline*

*RA82/1 - Invertebrates, survey*

*RH30/2 - Maintain research project*

*RH34/1 - VISITOR NUMBERS*

*RV00/1 - Site bibliography*

*MS40/1 - LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION MALLARD NEST TUBES*

|                      |                            |
|----------------------|----------------------------|
| <b>Management: 1</b> | <b>WeBS Infrastructure</b> |
|----------------------|----------------------------|

**Projects**

*ME30/3 - MAINTAIN LOOKOUT AND PLATFORMS FOR WEBS*

## **Feature: 18 - Demonstration**

### **Feature description**

Demonstration activities are relatively limited though the reserve has the potential to show case best practice in terms of research, grazing management, managed realignment, partnership working and the management of wild fowling.

### **Objective description**

**Encourage the development of the site for education, study and research projects, particularly where these contribute to the understanding of the site and its associated habitats and species. Develop best practice in partnership working for the delivery of nature conservation on the reserve and the wider estuary**

### **Rationale**

Best practise in terms of partnership working to deliver nature conservation at a landscape scale will be developed and put into effect. Part of this will be to integrate the present management plan with RSPB's to promote closer working and sharing of resources.

Use of the site for education and research by educational establishments and individuals will be encouraged as opportunities arise where such activities are not damaging to the key features of the site. Lecture, talks and displays will be provided to public groups and educational establishments as requested, where staff resources allow.

## **Factor: 1      Partnership working**

### **Projects**

## **Attribute: 1      Partnership working**

### **Projects**

*MH79/1 - Warton Marsh*

*MI00/1 - UPDATE WEBSITE INFORMATION*

*MI60/1 - NNR EVENTS*

*ML40/1 - DEVELOP PARTNERSHIP WITH THE ENVIRONMENT AGENCY*

*AP10/1 - Ribble Estuary Strategy*

*AP20/1 - MANAGEMENT PLAN STATUS*

*AS10/2 - DEVELOPMENT OF PARTNERSHIP WITH RSPB*

|                     |                                         |
|---------------------|-----------------------------------------|
| <b>Attribute: 2</b> | <b>Best Practice Habitat Management</b> |
|---------------------|-----------------------------------------|

**Projects**

*MH74/3 - REVIEW AND ALTER THE GRAZING REGIME ON BECCONSALL MARSH TO BENEFIT WILDLIFE*

## Feature: 19 - Public Access

### Feature description

Due to the tidal nature of the reserve and the inherent dangers this creates the marsh public access is restricted to the footpath along the sea defence. However developments at RSPB Hesketh Outmarsh and Marshside provide ideal opportunities for the public to experience the Estuary.

### Objective description

**Restrict public access to the network of public footpaths and bridleways that run adjacent to the NNR. Due to H&S and wildlife disturbance factors it is not appropriate for members of the public to be allowed access onto the saltmarsh. Many of the paths afford good views over the reserve from the bordering sea defences. When and where opportunities arise information boards, leaflets and guided walks should be provided to the public to interpret the wildlife interest of the estuary to as wide an audience as possible.**

### Factor: 1      H&S

#### Projects

*AI30/1 - SAFETY AUDITS AND INSPECTIONS*

### Factor: 2      Bird Interest

#### Projects

### Attribute: 1      Public relations

#### Projects

*MI/1 - UPDATE WEBSITE INFORMATION*

*MI50/1 - NNR SIGNS*

### Management: 1      Access features

#### Projects

*ME20/3 - GATES SIGNS AND STILES*

*MP00/2 - LYTHAM AND DISTRICT WILDFOWLERS PATROL TO PROTECT SPECIES AND ESTATE*

## Feature: 20 - Estate Assets

### **Feature description**

There is a fully equipped work base at Old Hollows, near Banks village which has kitchen, office, workshop, shower, toilet and vehicle/equipment storage. There are also extensive cattle handling facilities adjacent to the work base with access out over the flood embankment to Banks marsh.

On the Environment Agency's flood embankment there is a small bird hide for the use of staff and volunteers. The reserve is bounded by extensive stock fencing with associated gates and stiles to accommodate public access. A network of bridges and crossings are placed at key access points.

All these assets require regular checking (at least every six months) and their condition recorded in order to produce a schedule of repair and maintenance. Repair, maintenance and replacement work should be carried out in a timely fashion to ensure Health and Safety obligations are met and the assets are kept in good serviceable condition.

The reserve base also provides garaging for the reserve ATV, trailers, tractor(s), pick up and various other pieces of equipment. These all require regular checking, servicing and repair to ensure they meet health and safety regulations and are kept in a usable condition.

### **Objective description**

Maintain the NNR property/ estate in a satisfactory condition and ensure all legal, H&S and statutory obligations are honoured

A full health and safety inspection of Old Hollows work base should be carried out once a year by : the Natural England H&S team, a team leader or a colleague from another NNR to ensure all H&S standards are being adhered to.

### **Factor: 1      Staffing**

#### **Projects**

### **Factor: 2      Buildings maintenance**

#### **Projects**

### **Attribute: 1      Fabric Condition**

#### **Projects**

*ME20/1 - DEVELOP WORK BASE*

*AI20/1 - Reserve buildings*

*AI30/1 - SAFETY AUDITS AND INSPECTIONS*

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|---------------------|------------------------------------------|
| <b>Attribute: 2</b> | <b>Compliance with legal obligations</b> |
|---------------------|------------------------------------------|

**Projects**

*ML60/1 - Emergency services*

*MM10/1 - Maintain machinery*

*AI30/1 - SAFETY AUDITS AND INSPECTIONS*

*AI30/2 - HEALTH AND SAFETY DOCUMENTATION*

|                      |                              |
|----------------------|------------------------------|
| <b>Management: 1</b> | <b>Buildings maintenance</b> |
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**Projects**

*ME10/3 - CLEANING OF OLD HOLLOWS*

*ME11/1 - NEW CATTLE SHED*

*ME20/1 - DEVELOP WORK BASE*

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|----------------------|----------------------------|
| <b>Management: 2</b> | <b>General Estate Work</b> |
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**Projects**

*MM/1 - REPLACE THE RIBBLE TRACTOR*

*AE/1 - CONTRIBUTION TO SALARY OF SHARED POST WITH RSPB*

*ME0/1 - GENERAL ESTATE MANAGEMENT*

*MM++/1 - OFF-ROAD VEHICLES, MACHINERY AND EQUIPMENT - REPLACE THE ATV EVERY 5 YEARS*

*MP00/1 - PROTECT SITE/SPECIES BY PATROL*

## Project Register

### **AE/1      CONTRIBUTION TO SALARY OF SHARED POST WITH RSPB**

As an essential part of the Ribble NNR partnership we have a shared post with RSPB - this contributes to 0.4 FTE of the post-holders salary.

The partnership post is responsible for day to day maintenance and wardening tasks, survey and monitoring, health and safety and supporting the seasonal stockman in managing the cattle on the marsh.

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### **AI00/1      INTEGRATED SITE ASSESSMENTS**

Undertake assessment of biological/geological site unit condition in accordance with organisation standards and timetables. Record dates when assessments were undertaken only - unit condition data is currently held on ENSIS/CMSi.

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### **AI20/1      Reserve buildings**

This project covers checking and replacing as required; fire extinguishers, smoke alarms and other safety equipment in the reserve buildings. It also covers quarterly spring cleaning to keep on top of dust and dirt from the marsh in the workshop, garage, office and kitchen area. There are also running repairs to the shower block etc. The project is in place to ensure all buildings, operations, facilities and equipment conform to HASAWA regulations and RIDDOR requirements. The project also entails the regular maintenance of the fabric of the buildings and their environs. This will include clearing rubbish, grass and hedge cutting, gutter and drain clearing and the removal of vegetation around the skirt of the work base. It can also include interior and exterior paintwork, maintenance of the electric shutter system for windows and doors and running repairs to the kitchen area. It will also include remedial actions as a result of the annual health and safety audit.

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### **AI30/1      SAFETY AUDITS AND INSPECTIONS**

Undertake programme of safety audits and inspections listed below, in accordance with regional and corporate standards. Project report should state where completed inspection data is held.

Audits and Inspections:

Site safety inspection – Undertake and record asset inspections in April and October each year with actions required if found to be defective. E.g. stiles, gates, bridges.

Electrical installations - arrange for inspection of reserve base electrical installations every 3 years

Machinery inspections - undertake visual inspection of all machinery at quarterly intervals or after period of no use. All machinery to be checked by qualified engineer at least annually

Tree inspections - undertake tree inspections annually in April and record in addition carry out ad hoc inspections and record after high winds and storm events.

Arrange for PAT testing of all portable electrical equipment annually.  
Carry out Health and Safety and Fire Safety audit annually using an external person e.g. Team Leader, H&S Team, Site staff from other NNR groups. Record short comings/failings and list actions required to rectify them and a time scale e.g. prioritise based on risk level.

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**AI30/2      HEALTH AND SAFETY DOCUMENTATION**

Prepare/revise all health and safety documentation (including safety statements, guidance for visitors and permit holders, risk assessments and records of safety inspections) in accordance with regional and organisational timetables. Project report should confirm that revisions have been undertaken or identify shortfalls.

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**AP10/1      Ribble Estuary Strategy**

Liaise with local bodies with influence over human activities in drawing up the Ribble Estuary Strategy

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**AP20/1      MANAGEMENT PLAN STATUS**

Review the management plan every five years and report on the status of the plan annually.

Record status of management plan in Project Outcome statement as follows:

Current - if plan is live

Under review - if plan is live but subject to 5 year review

Out of date - if plan has not been reviewed for more than 5 years.

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**AR60/1      Grazing reports**

Prepare annual grazing report to review the grazing regime in all compartments with respect to disturbance to and sward quality for breeding birds and implement a revised grazing regime where appropriate.

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**AS10/2      DEVELOPMENT OF PARTNERSHIP WITH RSPB**

Work with RSPB to develop joint management arrangements across both land holdings and the declaration of RSPB land as NNR. This project will facilitate closer working with other stakeholder organisations to develop landscape scale conservation across the estuary based on Lawton principals.

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**AS60/1      LIMIT WILDFOWLING SOUTHPORT AND DISTRICT WILDFOWLERS**

The Southport and District Wildfowling Association carry out their activities under a five year licence. The terms of the licence need to be negotiated and agreed with the committee and Natural England's land agent during the final year of the licence (2020). The wildfowling season is from 1st September to 20th February each year.

Natural England staff will carry out spot checks through the shooting season to check that the terms of the wild fowling licence and the SDWA rules are being adhered too. Random checks to be carried out approx once per month on: Membership cards, cartridges, bags (number and species shot), timing. All findings will be recorded and passed on to the committee. The NNR staff also need to meet, when appropriate, with the committee and the Associations wardens to discuss any issues and maintain a good working relationship.

The Association is responsible for the health and safety of its members and is required to hold and regularly update a risk assessment covering all aspects of their wild fowling activities on the marsh.

The Association is responsible for supplying Natural England with the bag return card data at the end of each season.

The sanctuary area and limits to the shooting areas on Banks marsh and at Crossens are marked by white topped posts. A map is supplied to each member by the committee highlighting the permitted shooting areas and access points along with a book of rules for shooting times etc. The association employs 12 wardens to carry out bag checks on the membership every evening on a 2 week rota system. No shooting is permitted on Sundays.

Shooting times and the full rule book of the Association (constitution and shooting rules 1.09.2017) is held in the Senior Reserve Managers office, Ainsdale Sand Dunes NNR. A copy of the licence is held on TRIM record number D2015/00399918 title Ribble-SDWA-Sporting licence 2015-2020.

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**AS60/2      LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION PROMOTE AND CONTROL WILDFOWLING**

Lytham and District Wildfowlers Association manage the wildfowling activities on Warton marsh. The objective of the Association is 'to promote and foster the sport of wildfowling for the benefit of the members and guests of LDWA and protect its activities for future generations by good management and use of the LDWA property/estate where these do not damage the nature conservation interest. Also to support partner organisations in enhancing the nature conservation value of the estuary'.

This project covers the management of responsible Wildfowling by the LDWA which is the keystone to ensuring the promotion, improvement and protection of the sport for future generations.

The main activities involved in this project are:

- 1) Liaise with Natural England Senior Reserve Manager and SSSI Responsible Officer on marsh management projects, management planning, monitoring and other issues.
- 2) Ensure the sanctuary area in the central portion of the marsh is maintained and review its effectiveness at regular intervals and adjust as necessary, and maintain or renew marker posts designating the boundaries of the sanctuary area.
- 3) Control the taking of legitimate quarry species (see LDWA Rule book V3(1) stored on TRIM F100/004/007/002/026/002/0001: Conservation - NNRs - Site Management - Local delivery - Lancashire - Ribble Estuary - Permit records - LDWA Rule Book)
- 4) Maintain the H&S of members, guests and the public via risk assessment policy and Rule Book.
- 5) Ensure bag returns are recorded and the data shared with Natural England annually by the 30th April.
- 6) The use of approx. 6 small rowing boats to cross the main gutter during shooting visits. These boats are kept on the north shore of the main channel when not in use.
- 7) Some winter feeding of wildfowl using barley.
- 8) In most years the release in early August of approx. 300 Mallard on 'Ross's' flash and associated feeding with barley.

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**AT50/1 VOLUNTEER WARDENS**

Provide assistance, training and supervision as necessary to volunteer wardens, including stock management, estate work and wildlife survey volunteers especially the WeBS counters.

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**ME0/1 GENERAL ESTATE MANAGEMENT**

General estate management projects

Use for small and miscellaneous projects which do not merit individual project status or for contingency budget. This include minor repairs to fencing, estate furniture, cattle troughs, buildings and cutting back paths or clearing drains etc.

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**ME0/2 REPAIR EA SEA WALL**

The Environment Agency own the flood embankment to the south of Banks marsh. It is leased as fall-back grazing for the cattle on Banks during high tide events. During wet weather or due to large cattle numbers the vegetation which protects the bank from erosion by the sea can become damaged leading to bare soil and holes appearing in the bank. When EA asset inspectors report damage it

needs to be repaired as soon as possible using soil and turf to maintain the integrity of the flood defence.

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**ME01/1      LYTHAM AND DISTRICT WILDFOWLERS MAINTAIN FENCES IN STOCKPROOF CONDITION**

Lytham and District Wildfowlers will work with their grazier and adjoining land owners to maintain all fences in a stock proof condition. The stock fences run along the landward edges of the marsh and are essential infrastructure required for the cattle grazing project.

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**ME02/1      LYTHAM AND DISTRICT WILDFOWLERS CONSTRUCT/MAINTAIN CATTLE RAMP/HANDLING FACILITY**

A new cattle pen and ramp were constructed in early 2-17 to facilitate the grazing of Warton marsh by the Association. The ramp is used not only for access to the marsh but doubles as a handling facility. Within the life of this plan the Association may create alterations to the handling facilities and carry out routine maintenance. The cattle pen also contains the mains supplied drinking trough for the cattle and will require regular maintenance.

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**ME10/1      MAINTAIN FENCES IN A STOCK PROOF CONDITION**

Maintain fences in a stock-proof condition. This project covers the periodic checking and repair of all stock fences on the reserve including the marsh fence parallel to the embankment on Banks marsh, the fencing at Crossens marsh, Hundred end, Beconsall and the Meadows at Old Hollows. Repair work may have to be carried out at short notice if cattle have damaged the fence and necessitates accessing the marsh by tractor, tracked vehicle or quad bike. Care should be taken in the nesting season especially when repairing the marsh fence as redshank could be nesting nearby. Repairs to or replacement of the marsh fence are best carried out in either August, September or late March.

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**ME10/2      Boundary markers**

Maintain boundary markers to mark limits of wildfowling and sanctuary area on Banks marsh and Crossens marsh. The boundary markers should be inspected once a year and replaced/repainted as required. The Southport and District Wildfowlers are happy to paint the markers on a regular basis as they are useful reference markers when walking onto and off the marsh in the dark. The boundary markers on Crossens mark out the edge of Natural England's ownership where it meets RSPB managed marsh adjacent to the Marshside reserve they also maintain a safe shooting distance from the coast road. The eastern edge of the shooting on Crossens is marked by the cattle fence. No shooting is allowed beyond the extent of the 'green marsh' on the shoreline this is to prevent disturbance to the pink footed goose roosts out on the sands.

The western boundary of the sanctuary on Banks marsh is situated directly out from Georges

lane with the marker posts following the line of an old filled in creek out to the 'Crab' gutter. On the eastern boundary it runs out from the Bonny barn lane access point in a straight line to meet one of the main gutters.

Contractors with a tracked or tractor mounted post driver are used when the marsh is dry to replace the posts. The posts usually last at least 5 years or more in the marsh environment and are standard 7 ' strainer posts. Any replacement work should be carried out in late August prior to the start of the shooting season in September.

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#### **ME10/3      CLEANING OF OLD HOLLOWES**

Due to Covid19 there is now an expectation that regular professional cleaning of the building occurs in addition to cleaning activities carried out by site staff. It is proposed that due to the low level of use the building will be thoroughly cleaned in line with C19 guidance (regularly touched surfaces sanitised etc.) once per month.

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#### **ME11/1      NEW CATTLE SHED**

Replace existing building to cover entire hard standing to prevent nutrient run off.  
Contract in place with Cheetham Hill Construction Ltd through EA Framework

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#### **ME20/1      DEVELOP WORK BASE**

The office and garage space have the potential to be developed further into extended storage for the tractor and other equipment and to provide living accommodation for up two interns or trainee placements in the form of a small flat. This arrangement would greatly benefit the partnership with RSPB as providing accommodation would make internships on the NNR far more attractive. The trainees would work across the larger NNR in support of the NE and RSPB wardens.

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#### **ME20/2      REINSTATE SLUICE NEXT TO CATTLE YARD**

There is a control mechanism between the sump at the end of the cattle pens at Old Hollows and the ditch system running along the seaward side of the meadows. This control mechanism prevents contaminated water from the sump (created when the cattle yard is in use) from entering the ditch system. This control requires maintaining and if necessary replacing. Once the cattle yard has been used and cleared of dung the control can be opened to allow surface water to run off into the ditch system. The sump will also have to be emptied by a contractor to remove the dung before the sluice is opened to the ditch system. A reed bed has been created in the ditch system to filter out any remnant nitrogen from the sump.

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#### **ME20/3      GATES SIGNS AND STILES**

Maintain gates, signs and stiles. All gates signs and stiles should be inspected at least every six months and the inspection recorded on the asset inspection. Any defects should be rectified as soon as possible, especially the defect is potentially dangerous to staff and the public.

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#### **ME30/1      Cattle handling facilities**

Maintain cattle handling facilities. Adjacent to the work base at Old Hollows is a large cattle handling facility including various holding pens and a cattle crush. It is essential that it is inspected and maintained regularly with regard to structural integrity, health and safety, animal welfare and the nitrogen vulnerable zone regulations.

The 'sump' at the end of the yard requires emptying prior to the annual round up of the cattle in order to allow the collection of waste from the yard. There is a need to review this arrangement with regard to the NVZ as there is the possibility of waste leaking into the ditch system of the meadows if the sump is allowed to over flow.

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#### **ME30/2      Maintain water supply**

Maintain water supply for grazing stock

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#### **ME30/3      MAINTAIN LOOKOUT AND PLATFORMS FOR WEBS**

Maintain lookout and platforms for use by bird recorders in a safe and functional condition. The bird hide/lookout on the embankment at Old Hollows requires regular maintenance including: replacing roofing felt as required, painting with preservative and maintenance to windows, doors and access walkways. Fencing is also required to prevent damage from cattle during high tides and round up operations.

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#### **ME40/1      Access tracks and bridges**

This project covers the maintenance and construction/replacement of access tracks, including bridges, to allow access to all parts of the marsh which require grazing and to facilitate the safe movement of staff, volunteers, contractors and researchers for management and monitoring purposes. Key bridges and other crossing structures (pipes and gabions etc) have been installed across creeks and ditches. These allow cattle to move freely and safely around the grazing areas and aid the safe movement of quad bikes during round up operations . Bridges and crossings often become damaged during high tide and storm surge events and require regular maintenance and sometimes replacement. Due to the dynamic nature of the marsh new crossing points are sometimes required.

The access route heading north across the lagoons from the Old Hollows office requires frequent attention (yearly) and some upgrading work. This route is essential for H&S access,

cattle movement and is used by several of the WeBS counters on a monthly basis. The main work entails using clean stone or recycled brick/concrete to build up the track on top of Terram matting and the inclusion of plastic pipes at key low points to allow the movement of water between the lagoons on high tides. The work is carried out in dry conditions in the summer months (Jun- Sept).

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| <b>ME40/2</b> | <b>LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION MAINTAIN GUTTER CROSSINGS AND ACCESS</b> |
|---------------|-----------------------------------------------------------------------------------------|

Lytham and District Wildfowlers Association need to undertake repairs from time to time to nine existing gutter crossings.

Repairs are also required from time to time to the main access track on Warton Marsh. This is to improve access for BAe Systems emergency vehicles, to allow access for BAeS to maintain the runway approach lights situated on the marsh, cattle access, general access and H&S considerations. The main track is also mowed along its full length to mark out the route as a safety feature. The mowing and repair work is carried out each year in September over a period of approximately 1 week.

#### Gutter Crossings;

The gutter crossings consist of 3m length pipe from 0.3 to 1.0M diameter twin wall reinforced plastic. They are laid in the gutter in a way that ensures the flow of water is not impeded. The pipe is covered in recycled concrete or rubble then topped with crushed brick. Care is taken to ensure the material used is clean and free of waste especially plastic. The rubble and brick is built up to make the crossing slightly higher than the surrounding land. Mud is not used in the crossings. If the crossings start to erode away they will have concrete added to the crushed material to consolidate it. Care being taken to not contaminate the ditch or gutter system.

Any additional gutter crossings the Association wish to install to improve access by cattle to presently ungrazed areas of the marsh will require agreement and consent from the SSSI responsible officer.

The access track can become severely rutted and poached which then prevents the cattle accessing the wider saltmarsh. The cows also spread to the edge of the track making it wider and damaging the marsh surface further. Repairs to the track will be made as required using rubble and crushed brick in the same manner as the crossings above. Care will be taken to keep the track to its original width. Crossings for the access track will be constructed in the same way as the crossings above.

There is the occasional need to repair or re-instate drainage gutters and channels when blocked or damaged in order to maintain the flow of receding tides and to prevent detrimental erosion and pooling. However any drainage work will require prior agreement from the SSSI responsible officer to ensure natural patterns of accretion, erosion and natural coastal processes are allowed to occur unhindered as far as is practicable.

The access works are carried out using a tracked excavator and dumper. All equipment and vehicles are stored off the marsh and when moving on the marsh keep to existing tracks where available therefore avoiding minimising damage. Any damage that does occur is repaired to return it to its original state.

Oil spill kits are used on the marsh for vehicles and plant. Oil and fuel is not stored on the marsh apart from within vehicle fuel tanks. No refuelling of vehicles will occur on the marsh and empty tanks and pumps are available to remove oil and fuel in the event of a leak.

The timing for this project is September to mid October.

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**MG00/1      Employ stockman**

Employ stockman to supervise cattle. Banks marsh is grazed with up to 800 cows from May till October each year. The stockman or cattle warden is on a permanent seasonal contract from April to the end of November. There is some SRM time required to organise start and finish dates and PPA, PDP etc. and day to day line management. The cattle warden works flexible hours through out the week including weekends with one full day off in the week. The warden has generally taken all his/her holiday time in November after the cattle have left the marsh.

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**MG00/2      Respond to cattle emergencies**

Respond to emergencies with cattle as appropriate

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**MG00/3      Provide fallback grazing**

Provide fallback grazing at the Bank (and at Old Hollow only if required)

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**MG00/4      LIVESTOCK HUSBANDRY**

The welfare of the cattle on the marsh is the main responsibility of the seasonal cattle warden who is supported in his duties by all other staff and volunteers. The tidal nature of the reserve requires the use of refuge areas for the livestock during high tide events - this is usually in the period from July to October. The gates in the marsh fence need to be opened prior to high tides and the cattle allowed onto the flood defence bank. To avoid damage to the embankment the cattle then need returning to the main marsh and the fence closed up again.

The cattle warden also ensures there is a good water supply to the cattle via the various drinking troughs out on the marsh and in the pens.

A supply of animal medicines is kept at the office and the warden is responsible for administering them under the guidance of the vet.

Periodically cattle become trapped in creeks on the marsh and need to be pulled out using the reserve tractor. The warden patrols the marsh daily on the ATV to check the main gutters and spot any problems with the livestock.

The cattle warden is required to maintain good communications with the owners of the

livestock throughout the grazing period.

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**MG00/5      LYTHAM AND DISTRICT WILDFOWLERS GRAZE WARTON MARSH C100 CATTLE**

Lytham and District Wildfowlers Association graze Warton marsh with c. 120 cattle from April/May till September/October each year to maintain the present mixture of short sward and tussocky habitat on the marsh. The only piped water supply for the cattle is situated at the handling pen, however there are several streams and pools containing fresh water that aid in encouraging the cattle to roam across the marsh.

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**MH++/1      GENERAL HABITAT MANAGEMENT**

This project is to allow the recording and reporting of miscellaneous pieces of work that do not merit a discrete project and also for contingency budget bids.

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**MH10/1      Grazing sheep**

Controlled grazing of meadow and the grassland at hundred end by approximately 60 primitive-breed sheep from late November until first week in March.

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**MH10/2      Grazing cows Hundred End**

Controlled grazing of Hundred End by approximately 20 cows from April to November

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**MH12/1      Mowing**

Mow the majority of the meadow annually between late July and October for hay or silage each year. The meadow should not be cut before the end of July and preferably not till late August to allow plants to set seed and to maintain habitat for breeding birds and invertebrates through the spring/summer.

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**MH19/1      Regulate water levels**

Regulate water levels of meadows to increase wetted margins of the meadow and establish reedbed as a transitional feature

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**MH19/2      Invasive weeds**

Control invasive weeds where appropriate

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#### **MH7/1 LYTHAM WILDFOWLERS SELECTIVE MOWING OF SALTMARSH**

The Association will carry out selective mowing of areas of Warton marsh to supplement the summer grazing with cattle. This work will ensure the condition of the sward is suitable for the overwintering wildfowl in particular Widgeon. The areas selected will vary from year to year and will be agreed with the SSSI responsible officer. The sites will be chosen based on the knowledge and experience of the Associations marsh manager. Mowing will take place after the bird breeding season in August with a tractor and swipe or flail mower. The Association will meet the financial costs of this work. The mowing operation will be completed each year by mid October.

Some of the mowing will be in areas not accessed by the cattle in rank vegetation adjacent to flashes.

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#### **MH73/1 TRIAL MOWING BANKS MARSH**

This project is a new proposal with the intention of benefiting the over wintering wildfowl, in particular Widgeon, in order to compensate for the lack of grazing by cows further out on the marsh. .

The mowing will create several 1Ha patches to provide new feeding opportunities around the marsh to redistribute the flocks. The mowing will be carried out in late August early September using a flail and tractor when conditions allow. The aim of the experiment is to see if the concentrations of Widgeon that tend to collect on near to the landward embankment on the short grazed turf can be provided with more dispersed grazing opportunities and choices which in turn will distribute the wildfowling activity over a wider area and make it less concentrated and the birds harder for the wildfowlers to find. In addition some of the mowed areas will be situated within the sanctuary area in the centre of the marsh providing increased availability of 'safe' feeding and roosting sites.

The need for this trial has arisen as it has become increasingly difficult to source the required numbers of cows to graze the saltmarsh to the level where it is able to fully benefit the overwintering wildfowl.

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#### **MH74/1 GRAZE BANKS MARSH WITH C 800 CATTLE**

Graze Banks Marsh with c 800 cattle from April/May to September/October to maintain present mixture of short-sward and tussocky habitats. Banks Marsh is grazed with between 400-800 cows each summer depending on the availability of cattle. The cattle grazing is licensed to approx 12 different farmers from the local area. The cattle are managed by Natural England's cattle warden. The project includes all the admin associated with the grazing :- licensing, invoicing, animal movement reporting, welfare and animal health regulations. It also encompasses the distribution of marsh ear tags to each farmer to identify ownership prior to coming on the marsh and also visiting and assessing the condition of stock to ensure they are able to cope with the marsh conditions.

A new water supply is required in 2021 in provide water in the centre of the site and repairs to existing water troughs. The aim of this project is spread the grazing pressure of the cattle further across the marsh and to prevent damage to the marsh surface in the region of the cattle handling pens. This is a remedy identified by the 2020 condition assessment which put unit 2 into unfavourable condition.

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**MH74/2 GRAZE CROSSENS MARSH WITH C 100 COWS**

Summer grazing of Crossens marsh with c 100 cows May till October. This grazing is let to one farmer each year under licence. There has to be close liaison with RSPB as to numbers of cattle and timing of grazing as the refuge grazing from high tides is via tunnels under the coast road onto the RSPB owned in-marsh. Prior to the arrival of the cattle, all fencing adjacent to the coast road and out across the marsh to the sluice has to be checked and repaired. Once the grazing is in place the maintenance of the fencing is the grazier's responsibility for the duration of the grazing period.

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**MH74/3 REVIEW AND ALTER THE GRAZING REGIME ON BECCONSALL MARSH TO BENEFIT WILDLIFE**

The grazing regime on Becconsall is at present left almost entirely to the grazier to decide which can result in very short even sward with some poaching. Longer more 'tussocky' vegetation would be preferred and this will be achieved by working closely with the grazier and Natural England land agent.

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**MH75/1 MAINTAIN THE GRAZING EXCLOSURE AT MARSHIDE**

The ungrazed saltmarsh at Marshide adjacent to the RSPB reserve will be maintained to allow the development of saltmarsh communities. This area has become valuable for scientific research projects involved in comparisons between grazed and ungrazed saltmarsh. CEH (Centre for Ecology and Hydrology) based in Bangor have carried out the most recent studies.

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**MH76/2 Fence lagoon**

Maintain the fence and gates around the lagoon to prevent trampling and grazing of marginal lagoon vegetation to promote habitat suitable for water voles.

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**MH77/1 LYTHAM AND DISTRICT WILDFOWLERS FLASH MANAGEMENT**

Each September the Association will utilise a tracked digger to repair the earth bunds on the flashes situated across Warton marsh. This project is to ensure the flashes retain water rather than draining into the creek system which in turn will ensure they remain attractive to wildfowl and waders.

The work will coincide with the September digger work to maintain the main access track and crossings. The tracked digger will be used to ensure minimal damage occurs to the marsh surface and spill kits will be provided for use in an emergency. The work will take approx 1 week.

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**MH77/2 LYTHAM AND DISTRICT WILDFOWLERS - MAINTAIN SLUICE GATE**

This project consists of periodically reinstating an existing sluice to retain water in coastal

lagoons at approx grid ref. SD 388268. The normal practice is to block the creek with mud but this project will include placing a 12 inch plastic pipe with a flap into the creek and covering with mud using a 14 tonne excavator.

The time of year when this is carried out is between 23rd September and 21st October each year, as required and weather conditions and tides permit. The time taken to carry out the operation will be approx 4 hours which will limit any disturbance to the bird interest especially if the operation is carried out during neap tides.

The excavator will travel out onto the marsh along an existing track (created by Time Team to recover a WWII bomber) and will not therefore cause damage to the marsh surface. The tidal lagoons will be of benefit to the waders and wildfowl using the reserve and offer varied shooting opportunities to the Association members. There is a full method statement in place for the use of the excavator on the marsh and risk assessments. A spill kit will be available in case of fuel or lubricant leaks from the machinery.

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| <b>MH77/3</b> | <b>OLD HOLLOWS SHALLOW WATER FEATURES</b> |
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| <b>MH79/1</b> | <b>Warton Marsh</b> |
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Advise upon the management plan and monitor grazing and other management works at Warton Marsh carried out by the Lytham and District Wildfowlers

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| <b>MH93/1</b> | <b>Allow natural coastal dynamics</b> |
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No intervention to natural physical coastal dynamics (other than caused by existing and long-standing channels and flood-defence)

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| <b>MI/1</b> | <b>UPDATE WEBSITE INFORMATION</b> |
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| <b>MI00/1</b> | <b>UPDATE WEBSITE INFORMATION</b> |
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Update NNR web page information in accordance with organisational programme. Accuracy of website data should be checked annually.

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| <b>MI10/1</b> | <b>LYTHAM AND DISTRICT WILDFOWLERS ON SITE INFORMATION</b> |
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**MI50/1      NNR SIGNS**

Erect and maintain entrance headboards, interpretation panels and waymark signs. Record when signs were installed/replaced and any significant maintenance.

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**MI50/2      RESERVE PUBLICATIONS**

Where appropriate, provide reserve leaflets/information booklet. Record publication type, publication date and print run. Revise/reprint as appropriate.

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**MI60/1      NNR EVENTS**

Undertake programme of public events to provide a range of access opportunities and learning opportunities for reserve visitors. Record date of event, audience type and number of participants in text report. At end of quarter record number of events so far in Data tab.

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**ML00/1      LIAISE, OWNERS/ OCCUPIERS/WILDFOWLERS**

Liaise with owners and occupiers and Wildfowling organisations to manage disturbance to feeding and roosting sites and to monitor controlled wildfowling.

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**ML20/2      Wildfowling Associations - to monitor controlled wildfowling**

Liaise with Wildfowling Associations to monitor controlled wildfowling. This project as includes the renewal of 5 yearly licence agreements for Southport and District Wildfowling Association that shoot areas of Crossens and Banks marsh. The project should also take into account research into the overall impact of wildfowling in the estuary/SPA as a whole when renewing licence agreements.

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**ML30/2      Neighbours – re impact of gull numbers.**

Liaise with BAE Systems and other neighbours with regard to any possible impact of gull numbers and behaviour on other interests (e.g. air safety)

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**ML40/1      DEVELOP PARTNERSHIP WITH THE ENVIRONMENT AGENCY**

Work with EA as a key partner on the estuary to ensure the optimum management of key assets and issues. e.g.:-  
Flood defence embankments, climate change adaptation, management of key channels and

gutters, diffuse  
pollution key habitats and species and public engagement.

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**ML40/6      SEA FISHERIES- LIASE WITH IFCA.**

Liaise with Sea Fisheries re issues affecting the estuary

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**ML60/1      Emergency services**

Liaise with Emergency Services re issues affecting the estuary

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**MM/1      REPLACE THE RIBBLE TRACTOR**

The Ribble Tractor based at Old Hollows needs replacing with a large 4 wheel drive tractor preferably in 2021 as it is starting to show its age causing high maintenance costs and has to operate in extreme conditions on the marsh rescuing cows from gutters etc.

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**MM++/1      OFF-ROAD VEHICLES, MACHINERY AND EQUIPMENT - REPLACE THE ATV EVERY 5 YEARS**

Due to salt water damage the ATV requires replacing at least every 5 years or sooner depending on the rate of deterioration.

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**MM10/1      Maintain machinery**

Maintain all machinery and ensure that it is serviced regularly in line with HSE guidance and manufacturers instructions. The reserve has a 4x4 which is used by the cattle warden in the summer and by the SRM in the winter. There are also two tractors and various trailers and pressure washers/compressors etc.

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**MP00/1      PROTECT SITE/SPECIES BY PATROL**

Patrol site to protect breeding and overwintering bird species and site infrastructure.

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**MP00/2      LYTHAM AND DISTRICT WILDFOWLERS PATROL TO PROTECT SPECIES AND ESTATE**

LDWA carry out regular patrols on their marsh to protect the site and species from disturbance and illegal activities. The marsh is not a safe place for the public to access due to its tidal nature, creeks, deep water and mud. The protection of the site therefore provides a health and safety benefit to the public whilst informing them of the nature conservation interest of the site.

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**MS++/1 LYTHAM AND DISTRICT WILDFOWLING ASSOCIATION PREDATOR CONTROL****MS30 LYTHAM AND DISTRICT WILDFOWLERS PREDATOR CONTROL**

LWDA carry out predator control on Warton marsh. Control of foxes and feral cats is by shooting at night via rifle and thermal imaging equipment. This management is carried out by the marsh manager throughout the year.

Also carried out year round is trapping of mink, stoats, weasels and rats, using Mark IV Fenn traps.

During March to May Larsen traps are used to control magpies and carrion crows. When sufficient data becomes available to enable this, a comparison will be made to identify any correlation between this management and breeding bird success on Warton marsh when compared with similar areas of marsh on the estuary that do not benefit from predator control. The soon to be published survey of breeding birds on the estuary may assist in making this comparison.

As part of this project a record of the location and number by species of predators culled should be kept to inform future research.

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**MS40/1 LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION MALLARD NEST TUBES**

This projects consists of the temporary installation of up to 7 duck nesting tubes on the sanctuary area of Warton Marsh by Lytham and District Wildfowlers.

The tubes are approx 3ft long and 1ft diameter made of wire mesh and straw attached to a piece of flat timber. The assembly is then attached to a wooden or metal post driven into the ground so that the tube sits approx 3 to 4 ft above the expected high water level.

the installation will begin in March 2018 and continue till August 2022. The programme will be reviewed after the removal of the tubes.

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**MS40/2 'MEGA FENCE' PREDATOR FENCE**

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**RA06/1 Mammal species list**

Encourage recording of mammal species on the NNR

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**RA13/1 BREEDING GULLS AND TERNS AND OTHER NOTABLE SPECIES**

Monitor breeding large gull population by nest counts - full count every 5 years to include monitoring residual tern population and black-headed gull breeding population. There has

been a full count of all active nests for 3 years 2014-2016 for the entire Banks marsh colony. This has produced a decent baseline figure for the colony therefore repeat surveys can now be reduced to once every five years commencing in 2021. The survey is carried out by staff and volunteers over a period of approx 5 days. The colony is divided into sectors and by using GPS the entire colony is 'walked' with all occupied or active nests being counted. Natural England's ornithologists should be consulted prior to the survey to check on current protocols for colony counts in terms of avoiding long periods (over half an hour) of disturbance etc. Any Eider nests discovered are recorded and the eggs covered to prevent the predation by the gulls.

There is scope within this project to facilitate other studies of the gull population carried out by third parties: BTO gull tagging and PhD productivity projects. There is also scope to experiment with the use of drones to count and photograph the colony to reduce the amount of staff time required to complete the exercise. These are to be supported by the shared warden post with RSPB and possibly volunteers.

Monitor breeding tern population and distribution annually if possible - full survey every 5 years.

Monitor breeding population of black-headed gulls annually if possible - full survey every 5 years.

Monitor breeding population of other notable species on the marsh including black-tailed godwit, avocet and spoonbill collate annual records.

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| <b>RA13/4</b> | <b>Other notable species</b> |
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Monitor breeding population of other notable species on the marsh including black-tailed godwit, avocet and spoonbill

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| <b>RA13/5</b> | <b>Breeding birds on Old Hollow Meadow</b> |
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Monitor populations of breeding birds in Old Hollow Meadow

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| <b>RA13/6</b> | <b>MONITOR BREEDING GULLS, TERNS AND OTHER NOTABLE SPECIES</b> |
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Monitor breeding population of large gulls, full census of the colony once every 5 years. This survey is carried out by staff and volunteers once every five years and entails counting every 'active' nest in the colony. A report is produced with the sector totals for each species LBB, Herring Gull. The survey is carried out in mid to late May on a sector by sector basis over approx 5 days. Care is taken to minimise disturbance with observers ensuring gulls are not away from their nests for more than 30 mins due to the movement of the surveyors. UAVs may also be used in this project to photograph the nests and this was trialled in 2017. Any Eider nests that are discovered in the colony have the eggs covered over with nest material to prevent gulls seeing them and eating the eggs whilst the ducks are away.

Monitor breeding tern population and distribution annually if possible - full survey every 5 years.

Monitor breeding population of black-headed gulls annually if possible - full survey every 5 years.

Monitor breeding population of other notable species on the marsh including black-tailed godwit, avocet and spoonbill collate annual records.

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**RA14/1      MONTHLY WEBS COUNTS**

Monitor waterfowl and wader numbers through WeBS counts

This project includes support for the local WeBS co-ordinator from the Senior Reserve Manager and liason with volunteers, RSPB and the Wild fowling clubs who all help with the count across the Estuary.

The Estuary is divided into a number of sectors which are all assigned 1-2 volunteer counters. Certain areas have considerable H&S risks associated with them and the need for a strict H&S policy is paramount including a buddy system, familiarity with the terrain, tides and weather and the use of mobile phones. On Banks marsh counters all gather after the count to compare notes over a cup of tea. This ensures all counters are checked back in safe and can compare notes and prevent duplicate records being presented. All records are submitted either by individuals directly on line or are collated and submitted by the co-ordinator to the BTO.

The count occurs on a Sunday over the high tide once a month with the dates planned a year in advance. Every 6 years a low tide count is carried out.

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**RA14/2      WEBS 5 YEARLY LOW TIDE COUNTS**

Reinstate 5 yearly WeBS low tide counts

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**RA14/3      Grey goose and other wildfowl**

Undertake grey goose counts and monitor wildfowl with respect to disturbance to feeding and roosting areas

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**RA14/4      LYTHAM AND DISTRICT WILDFOWLERS ASSOCIATION WEBS COUNT**

The monthly WeBS (Wetland Bird Survey) count is carried out by volunteers from the Association on Warton marsh and the data reported through the BTO co-ordinator online. The dates of the count are scheduled to coincide with high tides on a Sunday and are timed to match (local conditions allowing) the nation wide count. The Association is responsible for the H&S of the counters and for selecting suitable access routes to and from count areas.

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**RA15/1 Causes of breeding bird decline**

Investigate causes of breeding bird decline including suitability of grazing regime, disturbance, egg collection, natural predation and other natural factors

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**RA15/3 Impact of large gulls on other species**

Investigate impact of large gulls on other species, especially Terns and Redshank. During the life of this plan a PhD study into Redshank breeding activity on Banks marsh will be undertaken. This may well shed light on the influence the gull colony has on other species on the marsh both directly and indirectly.

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**RA15/4 Breeding redshank**

Monitor population of breeding redshank

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**RA15/5 LARGE GULL RINGING**

This project also includes marking lesser black-backed gull and herring gull chicks with a BTO ring and a uniquely marked colour ring. A small team (working in pairs) including at least one licensed ringer, will visit the lesser black-backed gull colony on suitable days (calm and dry conditions) during late June and early July each year. The aim is to mark a sample of around 200 birds each year. Chicks will be caught by hand before they have fledged. Birds will be identified as herring or lesser black-backed gull by examining the primary feathers. Birds too young to be identified with certainty will not be ringed. Those that can be identified will have an individually coded colour ring on the left leg (allowing identification in the field without the requirement to catch the bird again) and a BTO metal ring will be attached to the right leg. The birds will be weighed and released. Details of all ringed birds will be submitted to the BTO and a report will be provided to Natural England.

All reasonable steps will be taken prior to every visit to ensure that any disturbance which would likely to adversely affect the breeding success of any other birds but particularly Schedule 1 birds (typically hen harrier, merlin, peregrine) will be avoided. Ringers will always consult NE site staff prior to any visits or series of visits to ensure that risk of disturbance is minimised either when accessing the site or when carrying out the ringing work.

**Timing of proposed operations:**

Late June and mid July each year between June 2019 and July 2024

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**RA16/1 Birds species list**

List all bird species recorded on the NNR

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**RA82/1      Invertebrates, survey**

Encourage surveys of invertebrates including butterfly monitoring

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**RA83/1      Intertidal invertebrate communities**

Monitor intertidal invertebrate communities including honeycomb worm reef

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**RF03/1      BOTANICAL MONITORING OF OLD HOLLOW MEADOW**

Monitor the diversity of NVC communities in Old Hollow Meadow, Annual Orchid count and update species list.

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**RF04/1      Saltmarsh sward condition**

Estimate saltmarsh sward condition including extent of Spartina and re-instate monitoring if it is perceived to be a problem. The collection of Salicornia for commercial purposes should also be monitored and recorded.

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**RH30/2      Maintain research project**

Maintain a research project register

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**RH34/1      VISITOR NUMBERS**

Record annual numbers of visitors to the NNR and state how this figure has been calculated (e.g. guesstimate, visitor counter, visitor survey). At end of year record number of visitors in Data tab.

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**RH90/1      GAME BAGS**

Record shooting activity of native game and quarry species on reserve, including intended quarry species, species shot and bag numbers. The report should also show that reserve staff have considered the effect of shooting on the species' populations, i.e. no detrimental effect. This report will cover all game bags of all the wildfowling Associations operating on the estuary if possible.

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**RV00/1      Site bibliography**

Collate a site bibliography

