

**Ribble Estuary NNR  
Management Plan  
FINAL DRAFT**

**February 2010**



**Authorship**

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## **Previous Management Plans**

### **Last Revision 2003**

Compiled by Mike Gee, Ribble Estuary NNR Site Manager

### **This Revision 2010**

Prepared by Graeme Skelcher, Ecological Consultant  
with comments on draft by:-

Dominic Harmer, Ribble Estuary NNR Site Manager, 2008

Alice Kimpton, Senior Reserves Manager, Wirrel to Wyre team, 2010

Responses to consultation document received 2009-2010

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## 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 Merseyside	3,898.38 ha 467.09 ha
<b>District</b>	West Lancashire Fylde Sefton	3,649.38 ha 249 ha 467.09 ha
<b>Local Planning Authority</b>	West Lancashire District Council Fylde Borough Council Sefton Metropolitan Borough Council Lancashire County Council	
<b>National Grid Reference</b>	SD 392 227	NNR office/base

## 1.2 Land Tenure

	<b>Area (ha)</b>	<b>Notes</b>
<b>Total Area of NNR</b>	4,365.47	
<b>Freehold</b>	2181.87 124.24 86.36 2392.47	Compts 1-6, 31 from H Herema and Emirate Ltd, 28/03/1979 Compt 7 from S Slinger and JH Slinger, 08/03/1985 Compts 8, 9, 23 from KM Slinger and T Wilson, 06/07/1990
<b>Leasehold</b>	1724.0	Compt 31 from Duchy of Lancaster, 29/09/02 to 28/09/16
<b>S 35 Agreement</b>	249.0	Compt 11 with Lytham & District Wildfowlers, 17/02/94
<b>S16 Agreement</b>	nil	
<b>Other Agreements</b>		<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. A new access to the western section of Hesketh Out Marsh is currently being negotiated.</p> <p>Beconsall Out-marsh - right of access down Beconsall 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

### *Legal designations affecting the site*

Designation	Area (ha)	Date	Notes
<b>SAC</b>	N/A	<b>Designation:</b>	
<b>SPA</b>	12,412.31	<b>Designation: 31 August 1982</b> (Designation: 28 November 1985) <b>Designation: 16 February 1995</b> <b>Extension: 28 November 2002</b>	Ribble Estuary SPA (Alt Estuary SPA) Ribble & Alt Estuaries SPA Extension at the southern end of the Sefton Coast SSSI
<b>Ramsar</b>	13,464.1	(Designation: 28 November 1985) <b>Designation: 16 February 1995</b> <b>Extension: 28 November 2002</b>	(Alt Estuary Ramsar site) Ribble & Alt Estuaries Ramsar site Extension at the southern end of the Sefton Coast SSSI
<b>NNR</b>	4,365.47	<b>Declaration(s): 1981, 1991 and 1995.</b>	
<b>SSSI</b>	9,233.2	<b>Notification (1981 Act): 1984</b>	Ribble Estuary SSSI
<b>GCR</b>	N/A		
<b>Other designations (site):</b>	N/A		
<b>Wider designations:</b>		Ribble Coast and Wetlands Regional Park	The Ribble Coast and Wetlands covers the coastline from Southport through Preston to Lytham and extends 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, and the Ribble Estuary is recognised as one of the potential regional park projects for the North West of England.

## 1.4 Physical Features

*The physical aspects of the reserve which form part of the site's importance or which have a bearing on its management*

### **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 no known 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.

### **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.

## 1.5 Biological Features

*The plants and animals which form part of the reserve's importance and which contribute to national and local biodiversity*

### 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 community which includes three species of orchid; common spotted orchid *Dactylorhiza fuchsii*, early marsh orchid *D. incarnata* 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.

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 in nationally significant numbers; black-headed gull, redshank and occasionally black-tailed godwit as breeding species and curlew and lapwing as passage/wintering species.

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*, *Scolelepis 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 *Scolelepis* 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 10 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.

## References

- Allen JH & Boyes SJ (2008) *Condition assessment of the Ribble Estuary SSSI: Littoral sediments*. Unpublished report for English Nature.
- Boyes SJ & Cutts ND (2008) *Condition assessment of the Ribble Estuary SSSI: Aggregations of non-breeding birds*. Unpublished report for English Nature.
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- Skelcher G (1999) *NVC survey of Old Hollow Meadows, Ribble Estuary NNR*. Unpublished report for English Nature.
- The Environment Partnership (2003) *Ribble and Alt estuaries NVC survey 2002*. Unpublished report for English Nature.

## 1.6 Cultural Features

*Landscape importance, historical and archaeological features of the NNR and its use for purposes other than nature conservation*

<b>Joint Character Area:</b>	JCA 033: Lancashire and Amounderness Plain
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### **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 Becconsall 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 Becconsall 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. 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 Becconsall 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.

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 Becconsall 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 Becconsall marsh at different times.

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. Attempts have been made to maintain, or increase, the floral diversity of these fields. 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 Section 35 Agreement by the Lytham and District Wildfowlers Association.

There are many commercial activities which take place on the estuary that potentially affect the NNR. These include shellfish, salmon and seafish 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. Results have been good to date and the project will be developed further.

In recent years, the main focus for on-site interpretation has been through guided walks provided to small groups of people, led by staff, volunteers or sometimes by guest leaders and story-tellers. 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.

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.

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.

**References**

Defra (2005) *Environmental Stewardship guidance notes*. Defra.

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

George N (1997) *Liverpool Bay natural area: a nature conservation profile*. English Nature, Wigan.

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## 1.7 Access Features

*Accessibility and visitor appeal, public transport routes, access routes and visitor facilities*

Natural England Access Classification	Spotlight	Non-Spotlight		
		Gold	Silver	Bronze
			✓	
NE Access Plan Category	Open	Managed	Restricted	Excluded
		✓		

### 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 and Martin Mere via the Ribble Coast and Wetland Regional Park initiative).

### 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.

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.

### **References**

- English Nature (2006) *The Ribble Estuary NNR interpretation plan*. English Nature unpublished report.
- Gee M (2003) *Ribble Estuary National Nature Reserve management plan*. English Nature unpublished report.
- Woolerton Dodwell Associates (2005) *Feasibility study to develop visitor experience and biodiversity opportunities to the Ribble Estuary National Nature Reserve and surrounding areas of Banks, Becconsall and Hesketh Banks*. unpublished report for English Nature.

## 1.8 Summary of Site Features

Tables summarising the site's features of importance

**Table 1.8.1 Geological and Biological Features**

Feature No.	BAP Broad Habitat Type or Geological Site Type	Specific Feature	Explanation of Feature/Ranking	Legal Site Designations						Other Designations						
				SAC	SPA	Ramsar	Other	SSSI	GCR	European species	National BAP	Nationally rare	Nationally scarce	Protected species	Character Area	Other
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; Littoral 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; Littoral 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; Littoral 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.					✓			✓			✓		

Feature No.	BAP Broad Habitat Type or Geological Site Type	Specific Feature	Explanation of Feature/Ranking	Legal Site Designations						Other Designations						
				SAC	SPA	Ramsar	Other	SSSI	GCR	European species	National BAP	Nationally rare	Nationally scarce	Protected species	Character Area	Other
8	Saltmarsh; Littoral sediment	<b>Aggregations of non-breeding birds - migratory species</b>	Nationally important populations of wintering waterfowl: curlew, lapwing					✓								
9	Saltmarsh; coastal grazing marsh	<b>Breeding bird assemblage</b>	Nationally important assemblage of breeding birds on saltmarsh.					✓								
10	Littoral 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					✓		✓						
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-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> .					✓		✓						

Feature No.	BAP Broad Habitat Type or Geological Site Type	Specific Feature	Explanation of Feature/Ranking	Legal Site Designations						Other Designations						
				SAC	SPA	Ramsar	Other	SSSI	GCR	European species	National BAP	Nationally rare	Nationally scarce	Protected species	Character Area	Other
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)								✓					✓



**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