



Humber Management Scheme

Fact sheet: Breeding birds



Industry and nature in harmony in one of Europe's great estuaries

Introduction

The Humber Estuary supports internationally important numbers of breeding bittern, marsh harrier, avocet and little tern.

Within Britain, bitterns are mainly restricted to *Phragmites australis* reedbed and mixed fen habitat. This habit is demonstrated on the Humber, with successful breeding (both recent and historic) in and immediately adjacent to the SPA restricted to reedbed sites including Blacktoft Sands, Far Ings, Faxfleet and Barrow Haven. In addition, suitable reedbed sites within commuting distance of the Estuary have been and are used by breeding birds. No formal annual monitoring of bittern numbers is undertaken for the Humber, but it is believed that in 2013 only a single pair bred on the Estuary.

Marsh harriers require open freshwater wetlands with dense, tall vegetation (particularly reedbeds) for nesting. They favour brackish or freshwater equally and occur on marshes, ponds, lakes, lagoons and riverbanks. In some locations, they have adapted to drier habitats and breed in hedges and fields, with the use of arable farmland increasing in England. Hunting habitats are more varied and, around the Humber, will include a wide range of both estuarine and terrestrial areas. Marsh harrier numbers on the Humber have increased notably in the last 20 years, as they have nationally, but numbers are still well below historic highs. No formal annual monitoring of marsh harrier numbers is undertaken for the Humber, but it is believed that in 2013 approximately 40 pairs bred around the Estuary.

The preferred breeding habitat for avocets is shallow, brackish coastal lagoons with bare or sparsely vegetated islands. The restricted availability of larger areas of this habitat around the Humber limits the current breeding distribution of this species, with the majority of the breeding population concentrated on Read's Island but with smaller numbers found at a number of other sites around the Estuary (including Blacktoft Sands, Far Ings and Kilnsea Wetlands). In 2013, approximately 80 pairs at Read's Island fledged 100 young, with the Estuary breeding population estimated as 250 pairs.

Little terns typically use shallow scrapes for nesting in loose colonies, with all British nests found in coastal locations. Little tern breeding habitat normally consists of bare sand, shingle or beach areas with high shell contents. These areas are usually very close to tidal limits with colonies always near to saline, brackish and/or fresh water that the birds can use for foraging. Vegetation cover has been found to be a key factor in determining breeding likelihood, with some vegetation cover required as shelter for chicks. Historically, little terns on the Humber have bred at Tetney Marshes, the Spurn peninsula and Easington and Beacon Lagoons, with occasional attempts at other sites on the Outer South bank of the Estuary. Presently, successful breeding is largely restricted to Beacon Lagoons, with 40 young produced from 44 nests in 2013.

Current status and location in the Humber EMS

This management plan covers the four breeding bird qualifying features of the Humber Estuary SPA:

- A021 *Botaurus stellaris* Great bittern
- A081 *Circus aeruginosus* Eurasian marsh harrier
- A132 *Recurvirostra avosetta* Pied avocet
- A195 *Sterna albifrons* Little tern

The Humber Estuary SPA has not been assessed. However, the Humber SSSI bird assessment provides an favourable condition.

Targets

The overarching Conservation Objective for the Humber Estuary SPA is to avoid the deterioration of the habitats of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive. More specifically, subject to natural change, to maintain or restore:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The populations of the qualifying features;
- The distribution of the qualifying features within the site.

This management plan outlines the attributes and associated targets necessary to meet the above objectives for each of the four breeding qualifying features of the SPA. More detail will be provided on this through Natural England's review of Marine Protected Area Conservation Advice.

Feature	Attribute	Target
Bittern	Extent of habitat	1. No decrease in area, from an established baseline, of suitable quality reedbed
	Distribution of habitat	2. Successful breeding bitterns in all sites that have historically supported breeding ¹ (Blacktoft Sands, Far Ings, Faxfleet, Winteringham, Barrow Haven, Hoe Hill)
	Water levels	3. No decrease, from an established baseline, in area of reedbeds operating as dynamic systems throughout the year, with high levels of control over water levels (i.e. presence of water control structures) ²
	Reedbed structure and age	4. No decrease in area of reedbed, from an established baseline, with suitable reed age and structure (stands of 1-2 years old in a varied mosaic of 1-15 years old)
	Habitat mosaic	5. No decrease in area, from an established baseline, of flooded reedbed margin habitat ³
	Fish prey populations	6. No decrease in populations, from an established baseline, of rudd, sticklebacks and eel ²
	Predation	7. Absence of mink <i>Neovison vison</i>
	Disturbance	8. No significant reduction in bird numbers and productivity, or displacement of birds, attributable to human disturbance
	Population	9. Productivity of ≥ 1.3 chicks per pair ³
	Population	10. At least 12 booming males ¹ and 6 successful nests (see Target 1)

¹ Gilbert, G., Brown, A. & Wotton, S. (2010). Current dynamics and predicted vulnerability to sea-level rise of a threatened Bittern *Botaurus stellaris* population. *Ibis* 152: 580–589

² Gilbert, G. & Smith, K.W. (2012). *Bird-habitat relationships in reed-swamps and fens*. In: *Birds and Habitat: Relationships in Changing Landscapes*, ed. Robert J. Fuller. Cambridge University Press, Cambridge.

³ Gilbert, G., Tyler, G.A., Dunn, C.J., Ratcliffe, N. & Smith, K.W. (2007). The influence of habitat management on the breeding success of the Bittern *Botaurus stellaris* in Britain. *Ibis* 149: 53–66.

Marsh Harrier	Extent of habitat	11. No decrease in area, from an established baseline, of suitable quality breeding habitats
	Reedbed structure	12. All reedbeds supporting marsh harrier to have appropriate management regime in place (periodic inundation, rotational cutting)
	Feeding habitat	13. Increase area of arable habitat with suitable conditions for marsh harrier foraging
	Disturbance	14. No significant reduction in bird numbers and productivity, or displacement of birds, attributable to human disturbance
	Population	15. No decrease in population from an established baseline (40 pairs proposed based on current knowledge)
Avocet	Extent of habitat	16. No decrease in area, from an established baseline of suitable quality breeding habitats
	Distribution of habitat	17. Number of successful breeding sites increased from 2014 baseline to at least 10 ^{4,5}
	Food	18. Breeding lagoons to have summer invertebrate biomass densities of 5-12 g/m ² and food densities (Chorophium and Chironomids) of ≥2g/m ² in May ^{6, 7}
	Disturbance	19. No significant reduction in bird numbers and productivity, or displacement of birds, attributable to human disturbance
	Population	20. Ensure productivity of ≥1.1 chicks per pair ⁸
	Population	21. No decrease in population from an established baseline (300 pairs proposed ⁹)

⁴ Van De Pol, M., Ens, B. J., Heg, D., Brouwer, L., Krol, J., Maier, M., Exo, K.-M., Oosterbeek, K., Lok, T., Eising, C. M. and Koffijberg, K. (2010), Do changes in the frequency, magnitude and timing of extreme climatic events threaten the population viability of coastal birds?. *Journal of Applied Ecology*, 47: 720–730

⁵ Hill, D., 1988. Population dynamics of the avocet (*Recurvirostra avosetta*) breeding in Britain. *Journal of Animal Ecology* 57: 669-683

⁶ Symes, N.C. and Robertson, P.A. (eds). 2004. A Practical Guide to the Management of Saline Lagoons. The RSPB. Sandy

⁷ Rehfish, M.M. 1989. *A Study of the Benthic Community, with Particular Reference to the Chironomidae of Shallow, Brackish Lagoons Created for Management at Blacktoft Sands*. Thesis for Doctor of Philosophy Degree, University of Hull.

⁸ H. Hötter & A. Segebade (2000) Effects of predation and weather on the breeding success of Avocets *Recurvirostra avosetta*, *Bird Study*, 47:1

⁹ RSPB Read's Island monitoring data

Little tern	Extent of habitat	22. No decrease in area, from an established baseline, of suitable quality breeding habitat
	Distribution of habitat	23. Establish at least 4 successful breeding colonies ¹⁰ , additional to Easington Lagoons
	Vegetation cover	24. Vegetation cover at Easington colony stays between 10% and 30% ¹¹
	Prey availability	25. Good quality populations of sandeels and juvenile herrings are available within 1km of all colonies ^{11,12}
	Disturbance	26. No significant reduction in bird numbers and productivity, or displacement of birds, attributable to human disturbance
	Population	27. Productivity of ≥ 1.2 chicks per pair ¹³
	Population	28. Increase population to at least 120 successful pairs (peak single colony count for Humber post-1970) ¹⁴
	Population	29. All Estuary colonies have fully funded protection schemes in place annually including, as minimum, predator management measures and electric fencing

¹⁰ Batty, L., 2012. *Humber Little Tern Colonies: Ecology, status and future options*. Report for Humber FFRM Strategy. Halcrow, Peterborough.

¹¹ Ratcliffe, N., Schmitt, S., Mayo, A. & Drewitt, A. (2005) *Colony Habitat Selection by Little Terns in East Anglia*. RSPB Research Report No. 13. RSPB, Sandy.

Fasola, M. and Canova, L. (1996) Conservation of gull and tern colony sites in north-eastern Italy, an internationally important bird area. *Colonial Waterbirds* 19: 59-67

¹² Perrow, M.R., Tomlinson, M.L., Lines, P., Benham, K., Howe, R. & Skeate, E.R. (2003) Is Food Supply Behind Little Tern *Sterna albifrons* Colony Location? The Case of the Largest Colony in the UK at The North Denes/Winterton Spa in Norfolk. In Allcorn, R.I. (Ed.) (2003) *Proceedings of a Symposium on Little Terns Sterna albifrons*. RSPB Research Report no. 8. Sandy, UK: RSPB.

¹³ 2013 breeding season productivity at Easington Lagoons (highest recorded). M Pilsworth, *pers. comm*

¹⁴ RSPB Tetney Breeding Bird data.

Threats, management and gaps in management

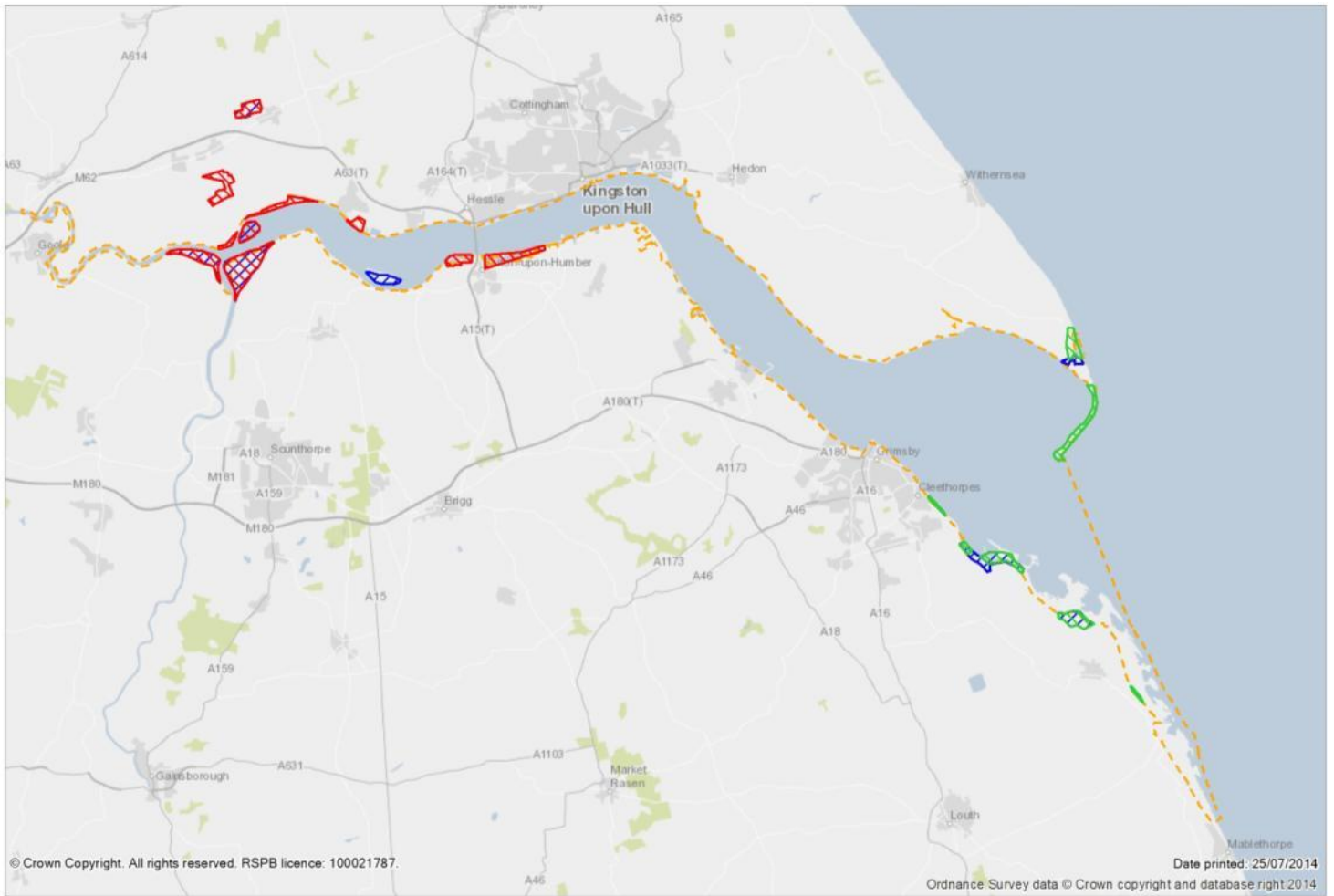
Threat	Features	Management	Gaps in management	Action
Loss of habitat to development or land use change	Bittern Marsh harrier Avocet Little tern	Habitats Regulations Assessment	Strategic plan: habitat improvement and creation opportunity map	3
Decline in food source limiting breeding success	Bittern Marsh harrier Avocet Little tern	Active habitat management and monitoring within nature reserves	Some key sites not under conservation management	10
			Standard little tern food provisioning monitoring for all colonies	22
Disturbance: Recreation and public access	Bittern Marsh harrier Avocet Little tern	Recreational Disturbance study	The research report will recommend management which will need to be put into place.	5
Severe weather events / flooding causing direct mortality	Bittern Marsh harrier		Long-term strategy to increase population and reduce vulnerability	10

	Avocet Little tern			
	Avocet Little tern		Network of dynamic breeding habitats allowing annual movements of breeding locations	10
Sea level rise resulting in loss of breeding habitat.	Bittern Avocet Little tern	Humber Flood Risk Management Strategy and CHaMP LIFE+ little tern project		
	Avocet Little tern		Network of dynamic breeding habitats allowing annual movements of breeding locations	10
Small population size and limited range leading to high vulnerability	Bittern Avocet Little tern	Targeted management and habitat creation with nature reserves	Long-term strategy to increase population and reduce vulnerability at landscape scale	10
Water quality: Point source pollution - direct impacts and impacts on prey species	Bittern Marsh harrier Avocet	Humber Clean oil response plan and Environment Agency Pollution Prevention		

	Little tern	Guidelines		
Succession of reedbeds, resulting in the loss of wet, early successional habitat	Bittern Marsh harrier	Appropriate habitat management on key sites under conservation NGO management	Long-term strategy for creation of new habitats to replace those lost to succession	10
Non-native species invading reedbeds	Bittern Marsh harrier	Wildlife and Countryside Act and associated prevention guidelines	Understanding of non-natives present and impacts.	12
Loss of suitable water levels due to climatic and weather changes	Bittern Avocet	Water level management infrastructure on nature reserves	Climate change adaptation plan for Estuary that includes specific consideration of features' habitat requirements	13
Water quality: diffuse pollution - direct and indirect impacts on prey species	Bittern Avocet	Water Framework Directive		
Mortality, disturbance and displacement from inappropriately sited wind farms	Marsh harrier Little tern	Habitats Regulations Assessments		
Predation - particularly foxes, gulls, corvids, kestrels and mink	Bittern Avocet	Wardening and nest protection schemes including predator management and electric	Long term, sufficient funding to ensure wardening and nest protection schemes occur annually and with	10

	Little tern	fencing	sufficient resources	
			Creation of defensive habitats	10
Loss of habitat due to encroaching vegetation	Avocet Little tern	Active management of existing breeding colony locations	Long-term strategy to increase population and reduce vulnerability	10
Excessive water abstraction leading to insufficient water in reedbed catchments	Bittern	Environment Agency Catchment Abstraction Management Plans (CAMs)		
Direct mortality of birds nesting in arable habitats	Marsh harrier	Species protection schemes	Advisory work with relevant landowners/managers	24
Breeding failure from wind blown sand	Little tern	Active management of existing breeding colony location	Active management of potential breeding colony locations. Long-term strategy to increase population and reduce vulnerability	

Opportunities



Orange = Humber Estuary SPA Red = Bittern / Marsh harrier opportunities Blue = Avocet opportunities Green = Little tern opportunities



About the Humber Nature Partnership

The Humber Nature Partnership aims to deliver the sustainable management of the Humber Estuary and its surroundings, providing an environment in which new and existing businesses can grow alongside the enhancement of the estuary's wildlife riches.

Our work includes:

- Delivering the Humber Management Scheme
- Providing ecological services
- Supporting economic growth
- Engagement and communication
- Ensuring high quality evidence and data exists



We have delivered projects with industry such as wetland habitat creation and woodland management work. We have also delivered range of research and data gathering projects such as ornithological surveys in the South Humber Gateway area to extensive work to understand the impact of recreation on Humber protected birds. We also deliver a range of education and awareness raising projects such as producing codes of conducts and signage. We aim to work in partnership on the delivery of projects and are always open to hearing new project ideas.

We offer the following skills and expertise:

- Partnership working
- Expertise in ecology and planning
- On site wildlife management
- Managing contracts
- Awareness raising and engagement
- Event organising
- Negotiation and conflict resolution

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