

HUMBER MANAGEMENT SCHEME

Science & Education

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There is a long history of research activity on the Humber Estuary, and current scientific and educational activities undertaken involve survey and sampling for monitoring and research. Groups undertaking key areas of work on the estuary are, Associated British Ports, the Environment Agency, the Institute of Estuarine and Coastal Studies, English Nature, and many other universities, research institutes and other organisations listed herein.

It is important to note however, that due to the sheer number of groups and their wide geographical spread, it is impossible to undertake a complete review of all the scientific and educational work undertaken on the estuary.

The scientific and educational work on the estuary is undertaken or organised by the following groups:

Scientific Activities

Alkborough bird survey - One-off survey to collect baseline data for Alkborough, based on Common Bird Census methodology, mapping territories of passerines through repeat site visits.

Associated British Ports - ABP's Hydrographic Department carry out monitoring at dredging and deposit sites: fortnightly in Sunk Dredge Channel, annually at their docks, dock entrances and other miscellaneous channels.

ABP MER Consultants Ltd

ABP Marine Environmental Research Ltd is a specialist research and consultancy company focusing on assessment of the marine environment. The company has undertaken a wide range of studies on the Humber Estuary including environmental impact assessments, appropriate assessments and a wide range of research studies for clients such as ABP, other port companies, the Environment Agency and other developers. Specific studies have been undertaken in relation to the estuary's geomorphology and physical processes. A number of estuary-wide ecological models have been developed for waders, estuary habitats and benthos. A variety of monitoring work is being carried out on behalf of ABP at a number of locations on the estuary in relation to existing and proposed developments, these include monitoring of physical processes, benthos, saltmarsh and birds.

Associated Petroleum Terminals - Monitoring of treated ballast waters before discharging at Immingham Oil terminal and South Killingholme. Monitoring of dredging at South Killingholme jetty (ABP).

British Association for Shooting and Conservation - Collates and analyses data from Crown Estate wildfowling returns as per JTG procedure. Summaries are provided to English Nature local teams for the Humber Estuary annually.

Botanical Society of the British Isles - Recorders for the BSBI monitor plant populations on the estuary and data are held by the BSBI. Work involves monitoring, local conservation work and, where possible, examination of proposals likely to damage plant communities, in particular the scarce and rare species.

British Trust for Ornithology (BTO) - Collate data from WeBS counts on the estuary.

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British Geological Survey - Currently undertaking seismic surveys at the Binks. Also survey Spurn Point along with the Yorkshire Geological Society and Hull Geological Society.

British Waterways - Hydrographic surveying of riverbed, as required by pilots or others (Shipping & Navigation Annex I).

Centre for Ecology and Hydrology - Contribute to LOIS (Land Ocean Interaction Study) through micro-organic contaminant surveys, BIOTA (Biological Influences On the intertidal Areas) study. Also undertake shorebird modelling and Coast Bird Diversity Project.

Centre for Environment, Fisheries and Aquaculture Science - Undertake annual young fish surveys, JoNuS (Joint Nutrient Study) and National Marine Monitoring Programme (NMMP).

The Deep - Marine aquarium in Hull has a research facility, which supports studies being conducted by The University of Hull into flow processes and the dynamics of sediment movement.

Defra - Undertake a range of studies on the estuary, including assessment of fish stocks, pollutant concentrations in fish tissues, JoNuS.

East Riding Archaeological Society - Undertake monitoring of the foreshore at Melton/North Ferriby and Easington and occasional excavation.

East Yorkshire Ornithological Group - no information available

Eastern Sea Fisheries Joint Committee (ESFJC) - General monitoring of fishing activities such as boarding and inspecting vessels, inspection of catches, gathering landing statistics. Also monitoring of bivalve mollusc populations where commercial stocks exist.

English Heritage - Have responsibility for all marine and sub-tidal archaeology in England.

English Nature - English Nature's conservation officers undertake condition monitoring of SSSIs. This is designed to assess the condition of the features on the site. Each interest feature is monitored within a three-year period and the whole site over a six-year period. The time of year depends on the feature, but is generally the spring or summer months. Compliance monitoring is also carried out to ensure that consents and management agreements are undertaken as agreed. English Nature has also recently contracted a National Vegetation Classification survey of the Humber. This is one of a number of surveys undertaken by contractors for English Nature on the SSSIs of the Humber Estuary. They have also commissioned the Humber Bibliography, which provides details of over 3000 documents written on the Humber Estuary and its surroundings. It can be viewed online at www.humber-bib.hull.ac.uk.

Environment Agency - Undertake a wide range of monitoring work to fulfil statutory obligations (e.g. under EU Directives), non-statutory requirements (e.g. monitoring consent compliance, undertaking environmental assessments) and ministerial obligations (e.g. under OSPAR). Monitoring includes water quality, bacteriology (at designated bathing waters), biological sampling and hydrometric parameters. Also some bioaccumulation monitoring of metals in seaweeds and ragworms. Undertake bathymetric, topographical and aerial surveys to provide data on coastal and geomorphology processes. Monitoring occurs at regular points throughout the estuary and tidal rivers, and around the coast. The inputs from inland catchments and effluent discharges are also monitored. The Agency also undertake detailed hydrological, geotechnic, ecological and archaeological investigations for the appraisal and design of flood defence schemes. It also develops and uses a series of mathematical models of the hydraulics, geomorphology and water quality of the system.

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Hull Biodiversity Partnership - This group was established in 2000 with the intention of producing and implementing a Local Biodiversity Action Plan (LBAP) for the city of Kingston upon Hull. The BAP was completed and published in 2002 and the group now meets regularly to monitor the progress made towards attaining the targets it identified. In 2003 a Biodiversity Implementation Officer was appointed.

Hull Geological Society - The Quaternary Research Association carries out occasional studies at North Ferriby moraine and foreshore, and South Ferriby moraine and foreshore.

Hull Natural History Society - The Society was formed in 1880 and meets regularly with field meetings throughout the year and a programme of indoor meetings in the winter. The Society also produces a Newsletter.

Humber Chemical Focus - Facilitate and chair the Environmental Managers Forum for industry on the Humber Bank, which includes all aspects of the river.

Humber Power - Humber Power have contracted IECS to undertake two fish impingement studies.

Humber Sea Terminals - Quarterly depth surveys are undertaken in relation to dredging of berths at North Killingholme. Also, surveys have been undertaken since 1995 of the intertidal area to the north and south of North Killingholme harbour, in particular bird counts.

Hull Valley Wildlife Group - Work principally within the area of the Hull Valley, East Yorkshire, for the promotion, awareness and appreciation of the region's natural history. Also educate the general public in the natural history of the area and aim to secure the preservation and protection and improvement of the Hull Valley's natural history.

Humber Wetlands Survey - Carried out between 1994 and 2000, this survey investigated the archaeological and palaeoenvironmental record of the Humber Estuary. Based at the University of Hull, the archive is still housed at the Wetland Archaeology and Environments Research Centre, and the staff members continue research on certain areas of the foreshore and surrounding landscapes.

Institute of Estuarine and Coastal Studies - The Institute of Estuarine and Coastal Studies (IECS) is a multi-disciplinary research and consultancy organisation set up to utilise the facilities and expertise in coastal science and management within the University of Hull. It covers a wide range of specialisms within the coastal environment ranging from the biological and physical environments (topography, vegetation, ornithology, benthic and pelagic fauna) to coastal planning, environmental quality, marine law and environmental impact assessment. The main expertise lies in applied marine science and management, particularly looking at actual and potential anthropogenic changes in estuarine and coastal areas. They also undertake pure research, and supervise and house research projects of undergraduates and taught and research postgraduates.

Joint Nature Conservation Committee (JNCC) - Surveys are commissioned for national initiatives such as surveys of littoral and sub-littoral habitats for the Marine Nature Conservation Review, the national saltmarsh survey by the NCC, and seabird surveys for national reports on seabird numbers and breeding success.

Lincolnshire Naturalists' Union - Founded in 1893. Undertake investigations into the flora, fauna and physical features of the county and hold large amounts of data. Have several meetings a year, sometimes on the Humber Estuary.

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Lincolnshire Wildlife Trust - The Trust is a voluntary charitable organisation, which cares for Lincolnshire's wildlife and countryside. It is one of the oldest wildlife trusts, having been founded in 1948. In 2002, the coastal team undertook work from Donna Nook to Grainthorpe Fitties, looking at sites for managed retreat and re-creation of saltmarsh habitats. The Trust manages a number of nature reserves on the Humber and carries out management and access work, and scientific projects on these sites. Species recording is also undertaken, as well as experimental habitat management, habitat creation and restoration projects. Annual ground counts of grey seal pups are also undertaken at Donna Nook.

Millennium Chemicals - Have site visits from schools and the community, which includes talks about industry and the river.

Ministry of Defence - On site monitoring is undertaken annually at Donna Nook in liaison with the Lincolnshire Wildlife Trust, English Nature and Bird Ringing Groups

National Trust - no information available

Natural Environment Research Council - Fund the LOIS project – Safeguarding our Coast. Also have catalogue of Humber aerial photographs.

North Eastern Sea Fisheries Committee (NESJC) - Cockle bed site inspections and enforcement work - surveys typically take place during Autumn (Sept/Oct) and Spring (Apr/May). The cockle beds at Cleethorpes and Horseshoe Point are monitored. Coastal patrols are also undertaken to detect illegal netting. Also boarding and inspecting vessels, inspection of catches, gathering landing statistics.

RSPB - Undertake large amount of research and monitoring. This includes surveys of the RSPB Nature Reserves at Blacktoft Sands, Read's Island and Tetney Marshes, for example breeding bird surveys, monthly WeBS counts and collection of non-avian records. Also on-going monitoring occurs across all 3 reserves to include water level and salinity readings within the saline lagoons at Blacktoft, Humberston Fitties (Tetney) and Read's Island. Large amount of other monitoring work, which includes annual benthic invertebrate surveys at Blacktoft and occasionally on Read's Island, monitoring of reedbeds, eel runs and other biological data.

Sea Mammal Research Unit - Undertake aerial counts of the common seal population. They also conduct a variety of research, including sea mammal behaviour, distribution and abundance, and population dynamics.

Sites and Monuments Record offices (Humber, North Lincolnshire and North-East Lincolnshire) - These centres hold all of the archaeology records, the Humber Estuary has numerous archaeological sites of not only national but also of international importance.

South Holderness Countryside Society - Manage Beacon Lagoons Nature Reserve for its saline lagoon, saltmarsh, mobile dune and haline grassland habitats. Management is strictly as a Nature Reserve with free public access. The site is involved in active scientific research with studies involving breeding little tern, bird ringing and the natural progression of coastal plant and insect communities. Specialist naturalists within the Society are involved in Humber wader counts and maintaining bird, plant, beetle, bug, mollusc, moss and lichen records for this locality, and in actively promoting the conservation of habitat.

Spurn Bird Observatory - Study bird migration and undertake ringing and daily logging of birds.

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Spurn Heritage Trust/Fortress Study Group - Undertake detailed survey and recording of defensive features along the estuary, especially in the Spurn area.

Universities - Several universities including Leeds, Hull, Plymouth, St Andrews and Southampton undertake a variety of projects, educational field trips and scientific research on the estuary. Also, involved in research projects such as LOIS, run by the UK's Natural Environment Research Council, which concentrated on the east coast and included the Humber Estuary and its catchment.

Wetland Archaeology and Environments Research Centre - Continuing occasional monitoring work on the Humber as a follow up to the Humber Wetlands Survey (see above). Undertakes rescue excavations of vulnerable archaeological remains uncovered on the foreshore.

Wetland Bird Surveys (WeBS) - This is a national initiative to survey non-breeding wildfowl, and is a partnership between the British Trust for Ornithology, Wildfowl and Wetlands Trust, RSPB and Joint Nature Conservation Committee. It consists of high tide bird counts of waders and wildfowl and involves monthly visits to WeBS sectors to count roosting and feeding birds. The counts are organised on the Humber by two co-ordinators – one on the north bank (Nick Cutts) and two on the south bank (Ian Shepherd and Keith Parker), who send out count forms and return the results to the WeBS partnership. The Humber has 27 WeBS sectors, which have been divided based on suitable access points or landmarks. The WeBS counts have been running since 1960 for wildfowl and 1976 for waders.

In addition to the WeBS core counts, there are also WeBS low tide counts. Some estuaries are covered by these every year, whilst others (including the Humber) are only counted approximately every 5 years.

Yorkshire Naturalists' Union - The main aims of the Union are to study the wildlife of Yorkshire, record and present the results of these studies and to use the information for wildlife conservation. Every year, the Union organises field meetings in different parts of Yorkshire, together with additional field meetings to places that are of particular interest to their members.

Yorkshire Water and Anglian Water - Anglian Water carry out microbial studies on Cleethorpes beach in relation to bathing water quality. No other information received.

Yorkshire Wildlife Trust - The Yorkshire Wildlife Trust has worked since 1946 to conserve and promote the diversity of Yorkshire wildlife and habitats. They own and manage two nature reserves on the Humber Estuary - Spurn Point and Welwick.

Educational Activities

British Association for Shooting and Conservation - In cooperation with local clubs and syndicates promote shooting-related Codes of Practice at local roadshows and countryside fairs.

Bishop Burton College - HNC, HND and BSc (Hons) courses in Countryside Management visit the Humber for field trips, sampling and training in the use of various survey methodologies. Spurn is also used for field research in ornithology.

Cleethorpes Discovery Centre - Organise school visits, guided walks and provide work placements for GNVQ students. Also organise environmental events, exhibitions and workshops.

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Department of Geography, University of Hull - Organise fieldtrips to various locations on the Humber foreshore and use examples in the classroom. Main areas covered include Spurn, the confluence of the River Hull and the Humber Estuary, confluence of the River Trent and the Humber Estuary and Blacktoft. The Estuary is also used as a study site by other universities. Students from Hull and those from further a field also undertake personal projects on the Humber.

The Deep - Marine aquarium at Hull undertakes environmental education work with school groups covering topics such as environmental processes and the sustainable use of resources.

Hessle Country Park - Undertake environmental education, such as guided walks and activities for families and children.

HINCA (Humber Industry and Nature Conservation Association) - Undertake environmental education.

Hull Geological Society - Undertake adult education with the University of Hull's Adult and Continuing Education Department at North and South Ferriby.

Humber Wildfowl Refuge - The wildfowl refuge has produced educational materials, including an information pack on the estuary and its birds.

Institute of Estuarine and Coastal Studies - This group undertake various research projects, which includes monitoring and sampling at various locations along the Humber Estuary, mainly on the north bank. Several PhD students have studied the area. MSc students visit various locations on the estuary.

Lincolnshire Wildlife Trust - The Trust has an education base at Far Ings nature reserve and utilises a number of sites on the estuary for education purposes in both a formal and informal context, with school groups and members of the public involved in activities such as pond dipping. They also manage the seal colony at Donna Nook with the agreement of the Ministry of Defence. Volunteer wardens protect the seals from human disturbance and provide information for visitors.

Low tide events - School children were involved in exploring the Hessle foreshore including digging up worms and conducting simple experiments.

Primary and Secondary education, plus universities - There are frequent field trips undertaken throughout the site, particularly between Cleethorpes and Humberston Fitties during the summer months. Also work done on erosion of the Holderness coast.

RSPB - Involved in education work with school children around the estuary and on their reserves. Also involved in a 'community and education audit' on the north bank. Education work includes a specific two-year "Estuary Experience" project to raise awareness about the estuary's birds and wildlife in communities affected by managed re-alignment proposals. The SITA Environment Trust under the Wildlife Guardians programme funds this project.

South Holderness Countryside Society - As a registered charity with a remit to educate, the South Holderness Countryside Society holds guided walks and talks with a natural history theme. The Society is also involved with local schools accompanying trips to the coast to assist in identification and interpretation. Also, gives slide shows and talks to schools and local groups.

Waters Edge Country Park - Undertake environmental education, such as guided walks and activities for families and children.

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Yorkshire Wildlife Trust - Have a warden on Spurn Point, providing information for visitors and school children, also have a visitor centre at the Blue Bell in Kilnsea.

Management

Scientific activities - Many organisations undertake monitoring and surveying in order to carry out their duties, for example under the Habitats Regulations or EU Directives.

Educational activities - No regulations applied.

Current management objectives

Scientific studies are undertaken to gain further understanding of habitats and species. Other scientific work may be to ensure compliance with legislation.

Current management for nature conservation

Many of these activities will be carried out with an awareness of the environment in which they are taking place and will provide data to support nature conservation. However, there may also be trips or surveys undertaken that may cause damage to the habitat through large numbers of people visiting the site or through taking large and/or frequent samples.

Further Information

No site specific information such as codes of conduct provided for scientific and/or educational work on the estuary is available. The Humber Bibliography website (www.humber-bib.hull.ac.uk) holds a database of published and grey literature on the physical and biological environment of the estuary and surrounding coast.

Factors arising from the activity

The activities identified under Section 1.1 could affect the European marine site through loss or damage of the habitat. Large groups may also cause noise and visual disturbance to birds and seals. Large groups visiting sites could cause damage to areas such as saltmarshes, and collecting of samples could cause losses to habitats in localised areas.

Activity	Location	Present /historic levels of activity	Existing management Responsible Organisation	Relevant authority Bold = Lead	Possible effect on features	Significant Effects)
H1/ Aerial surveys	Throughout site	Low	EH EA NERC	EA	Non-physical disturbance: Disturbance to birds and seals.	NO
H2/ Archaeological surveys	North Ferriby moraine and foreshore South Ferriby moraine and foreshore	Low	EH SMR's	EN	Physical damage: Damage to habitats from trampling, equipment, digging. Non-physical disturbance: Disturbance to birds and seals.	NO NO
H3/ Bird and mammal surveys	Throughout site	Med	LNU LWT RSPB SHCS SMRU WeBS YNU YWT	EN	Non-physical disturbance: Low levels of disturbance.	NO
H4/ Fish/ shellfish surveys	Throughout site	Med	CEFAS, Defra ESFJC, NESFC, IECS EA	ESFJC NESFC EA	Physical loss: - Removal of sediment/species from areas sampled. Non-physical disturbance: - Disturbance to birds and seals.	NO NO

Activity	Location	Present /historic levels of activity	Existing management Responsible Organisation	Relevant authority Bold = Lead	Possible effect on features	Significant Effects)
H5/ Monitoring of fishing activity	Throughout site	Med	ESFJC NESFC	ESFJC NESFC	Non-physical disturbance: - Disturbance to birds and seals.	NO
H6/ Geological surveys	The Binks Spurn	Low	British Geological Survey Hull Geological Society	EN	Physical damage: - Abrasion to habitats from equipment? Non-physical disturbance: - Disturbance to birds and seals.	NO NO
H7/ Geomorphological surveys			ABP EA IECS	EA	Physical damage: - Abrasion to habitats from equipment? Non-physical disturbance: - Disturbance to birds and seals.	NO NO
	Throughout site	Med				
H8/ Habitat condition assessment	Throughout site	Med	BSBI EN LWT RSPB SHCS YWT	EN	Non-physical disturbance: - Disturbance to birds and seals.	NO
H9/ Hydrographic surveys (Annex I)	Throughout site	Med?	BW	BW	Physical damage: - Abrasion to habitats from equipment? Non-physical disturbance: - Disturbance to birds and seals.	NO NO

Activity	Location	Present /historic levels of activity	Existing management Responsible Organisation	Relevant authority Bold = Lead	Possible effect on features	Significant Effects)
H10/ Sampling of intertidal and subtidal sediments by grab, coring, trawling etc	Throughout site	Low	ABP CEFAS CEH EA HST IECS JNCC	ABP EA HST	Physical loss: - Removal of sediment/species from areas sampled. Physical damage: - Abrasion to habitats from trampling, heavy equipment. Non-physical disturbance: - Disturbance to birds and seals.	NO NO NO
H11/ Invertebrate surveys/ studies	Throughout site	Med	EA EN LNU LWT RSPB, SHCS, YNU YWT	EA	Physical loss: Removal of sediment/species from areas sampled. Non-physical disturbance: Disturbance to birds and seals.	NO NO
H12/ Monitoring of pollutant concentrations			Defra EA IECS	EA	Physical loss: - Removal of sediment/species from areas sampled. Non-physical disturbance: - Disturbance to birds and seals.	NO NO
	Throughout site	Med				
H13/ Seismic surveys	Throughout site	Low	British Geological Survey	LA EN	Physical damage:- Abrasion to habitats from equipment? Non-physical disturbance: - Disturbance to birds and seals.	NO NO

Activity	Location	Present /historic levels of activity	Existing management Responsible Organisation	Relevant authority Bold = Lead	Possible effect on features	Significant Effects)
H14/ Vegetation surveys	Throughout site	Med	*	EN	Non-physical disturbance: - Disturbance to birds and seals.	NO
*BSBI, EN, IECS, JNCC, LNU, LWT, YNU, YWT						
H15/ Water sampling	Throughout site	Med	AW EA YW APT EA YW AW	AW EA, YW, APT AW EA YW	Non-physical disturbance: - Disturbance to birds and seals.	NO
H16/ Fields trips universities/schools*	Throughout site, particularly Spurn Head, and Far Ings, Blacktoft Sands etc	Med	Academic institutions		Physical loss: - Large scale collecting of samples from frequently visited areas will result in some physical loss of the habitat or species. Physical Damage: - Large numbers of students visiting areas may result in damage to habitats such as saltmarsh through trampling.	NO If infrequent NO
* May have an impact if undertaken frequently in important feeding, roosting or breeding areas, or on sensitive habitats.					Non-physical disturbance: - Disturbance to birds and seals.	NO

Activity	Location	Present /historic levels of activity	Existing management Responsible Organisation	Relevant authority Bold = Lead	Possible effect on features	Significant Effects)
H17/ Guided walks and activities*	Throughout site, particularly on reserves	Med	Hessle Country Park LNU LWT RSPB SHCS YNU YWT		<p>Physical Damage: Large numbers of visitors may result in damage to habitats such as saltmarsh through trampling.</p> <p>Non-physical disturbance: Disturbance to birds and seals.</p>	<p>NO If infrequent</p> <p>NO</p>
* May have an impact if undertaken frequently in important feeding, roosting or breeding areas, or on sensitive habitats						

Management actions

Activity	Factor	Proposed management actions	Timetable	Implementation Bold = Lead RA
H1/ Aerial surveys	F3	<p>Surveillance (Maintain watching brief) by the organisations involved to ensure that there is no disturbance to the habitats or species of the EMS.</p> <p>Erection of notices on site, explaining the nature conservation importance of the site.</p> <p>Assessment of new activities if they are likely to cause significant effect.</p> <p>Production of an English Nature's Humber Estuary leaflet, detailing the nature conservation importance of the site</p>	Ongoing	ABP EA EN via HMS ESFJC IDBLA NESFJC
H2/ Archaeological surveys	F3			
H3/ Bird and mammal surveys	F3			
H4/ Fish/ shellfish surveys	F3			
H5 Monitoring of fishing activity	F3			
H6/ Geological surveys	F3			
H7/ Geomorphological surveys	F3			
H8/ Habitat condition assessment	F3			
H9/ Hydrographic surveys (Annex I)	F3			
H10/ Sampling of intertidal and subtidal sediments by grab, coring, trawling etc.	F3			
H11/ Invertebrate surveys/studies	F3			
H12/ Monitoring of pollutant concentrations	F3			
H13/ Seismic surveys	F3			
H14/ Vegetation surveys	F3			

Activity	Factor	Proposed management actions	Timetable	Implementation Bold = Lead RA
H15/ Water sampling	F3	Surveillance (Maintain watching brief) by the organisations involved to ensure that there is no disturbance to the habitats or species of the EMS.	Ongoing	EA* EN* LA* *Joint responsibility
H16/ Fields trips universities/ Schools	F3	Develop codes of conduct and establish mechanisms for self regulation by educational facilities.	2004	EN via HMS LA
H17/ Guided walks and activities		Erection of notices on site, explaining the nature conservation importance of the site. Production of an English Nature Humber Estuary leaflet, detailing the nature conservation importance of the site		