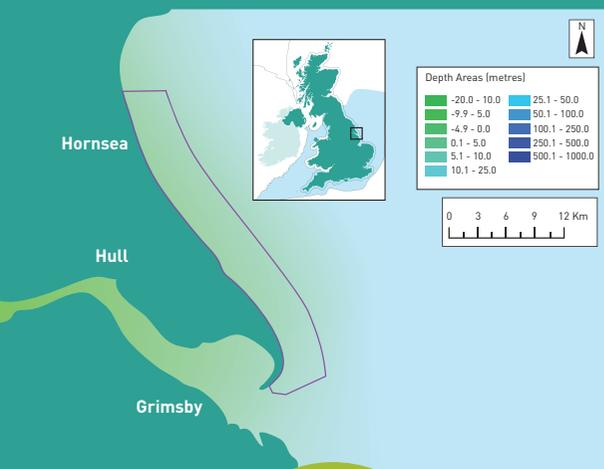


HOLDERNESS INSHORE RECOMMENDED MCZ



THE SITE

This rMCZ runs from the mouth of the Humber estuary about 50km north to Skipsea. Extending 3 nm offshore, it reaches about 15 m in depth and includes the subtidal part of the extraordinary geological feature, Spurn Head. This dynamic spit is unusual in that few similar features maintain comparable size and length in a setting with such a large tidal range. The cliffs and seabed are subject to rapid erosion with the consequent release of vast quantities of mainly muddy sediment (about 1 million m³ /year from the cliffs and 2 million m³ /year from the seabed). The sediment is carried south by wave driven currents, much of it ending up in the Humber Estuary where it forms large mudflats. 'The Binks' is a moraine ridge formed of glacial deposits which traps sediment, reducing erosion on Spurn Head itself. Underneath much of the sediment is chalk bedrock, small amounts of which are exposed north of Hornsea. Both the sediment and chalk seabed habitats support a diverse and dense coverage of animals and plants. The rMCZ is the site of a nationally important lobster and crab fishery which would be able to continue at current levels following designation. The site also includes an IFCA designated Prohibited Trawl Area.

BENEFITS TO PEOPLE

People draw many benefits from the environment which cannot readily be monetised. Many studies have tried to measure these benefits, whether non-use values of an area or the ecosystem services that a site provides. Where figures have been estimated, these are given; where not available, a qualitative description of the value is given.

NON-USE AND BEQUEST VALUE

People value places, habitats and species and want to protect them now and for future generations even if they never use the site themselves. Although this value cannot be directly measured, it can be estimated in different ways. One study gives a best estimate for Holderness Inshore of £652,000/yr, using information from divers and anglers. A method has been designed to extrapolate this to the wider public, which results in a best estimate of £3,702,000/yr.

HEALTH AND WELLBEING VALUES

The study using information from divers and anglers also ranked UK marine sites according to specific benefits related to health and wellbeing. For Holderness Inshore, if the MCZ were to be designated, scores for all these values are positive (→3). Compared to other sites across the UK, Holderness Inshore is in the upper third (dark green) of site rankings for providing memorable experiences and having an impact on life, for health and spiritual benefits and for giving a sense of belonging. The site is in the middle third of UK sites (medium green) when it comes to peoples' sense that it contributes to education, enjoyment and inspiration (engagement with nature) and provides social benefits.

Impact on life	4.47
Health	4.20
Spiritual value	4.06
Sense of belonging	3.94
Engagement with nature	4.12
Social benefit	4.06

RECREATION

The area is popular for shore angling and is used by at least 13 charter boats; there is also some diving at the site. The shingle spit at Spurn Head and accessible beaches along the Holderness coastline are popular for wildlife watching. Spurn Head is one of the most important birdwatching destinations in the UK in the migration season. The value of these activities may increase if designation of the rMCZ results in improvements in the health of the wildlife, making these activities more enjoyable. Local tourism and leisure industries would benefit if the MCZ results in healthy marine wildlife which attracts more anglers, divers, bird watchers and other visitors.

RESEARCH AND EDUCATION

Research within designated sites will increase our understanding of marine ecosystems and how they are useful to us. Regular monitoring of the MCZ will increase our understanding of how the marine environment changes as a result of human activities and management. The MCZ would play a role in education (e.g. television programmes, articles in magazines and newspapers, and educational resources developed for use in schools).

REGULATION OF POLLUTION (NUTRIENT CYCLING)

Subtidal sediments are known to act as pollution sinks. Protection of this feature may result in improvement in its condition and thus its capacity to process waste.

GAS AND CLIMATE REGULATION

Marine sediments play an important role in the global cycling of elements such as carbon and nitrogen. Protection of these features may result in a net increase in the rate of carbon sequestration.

NATURAL HAZARD PROTECTION

The sediments in the site contribute to providing protection from flooding and storms, which is critically important given that this is one of the fastest-eroding coastlines in Europe.

ENVIRONMENTAL RESILIENCE

Rising sea temperatures and sea levels, greater storm frequency, increasing numbers of severe storm surges, and changes in the timing of plankton production, composition and distribution, all of which are a result of climate change, will damage ecosystems. Protected sites with healthy diverse ecosystems will be more resilient to such threats, in the same way as healthy humans tend to be more resistant to stress and disease.

The Marine Socio Economics Project (MSEP www.mseproject.net) have developed a 'Infographic Impact Assessment' (IIA) for the Marine Conservation Zone (MCZ) process. The MSEP partners (New Economics Foundation, Marine Conservation Society, RSPB, the Wildlife Trusts and WWF) have used costs and benefits of protecting sites from the Defra consultation documents and relevant studies, and presented these in a visual way to make the trade-offs clearer than a simple Cost-Benefit Analysis (CBA) could achieve on the summary page of an Impact Assessment (IA). June 2015.

BENEFITS
£2,124-£12,059
km²/year

AREA
307
km²

COST
£10
km²/year

FEATURES PROPOSED FOR PROTECTION



7 Broad scale habitats:

Intertidal sand and muddy sand

Subtidal coarse sediments
(covers over 90% of the site)

Subtidal sand
(second major seabed habitat,
covering c. 5% of site)

Subtidal mud
Subtidal mixed sediments
Moderate energy circalittoral rock
High energy circalittoral rock



1 Geological feature:

Spurn head subtidal spit

ESTIMATED BENEFITS AND COSTS PER YEAR

BENEFITS
GENERAL
£3,702,000
(Range £1,820,000-£5,622,000)

COSTS
£3,000

BENEFITS
DIVERS & ANGLERS
£652,000
(Range £446,000 - £838,000)

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CONTEXT

Although not often visible, the seas around our coast are home to some of the best marine wildlife in Europe, with a wide diversity of underwater landscapes habitats and species. The marine environment is also essential to our social, economic and environmental well-being providing many goods and services including food, building materials, recreation, transport, oil, gas, renewable energy, potential carbon capture and pollution control.

However, at present our seas and their wildlife are being damaged by many human activities. The Marine and Coastal Access Act requires that a network of MPAs, including examples of all features of UK waters, is created to help improve the health of the marine environment. A network of well managed MPAs will allow damaged marine ecosystems to recover, and protect those that are healthy, more effectively than would individual, unrelated protected sites. Holderness Inshore MCZ would form part of the network and thus help to fulfil this obligation.

IMPORTANCE OF THIS rMCZ WITHIN THE MPA NETWORK

This site would fill several gaps in the MPA network. The coarse sediment habitat supports a high abundance of commercial shellfish species such as lobster and crabs as well as fish such as dab and wrasse. Subtidal circalittoral rocks provide habitat for animal communities including cup coral, sea-fans, anemones, and sponges and mobile animals such as starfish, brittlestars, and sea urchins. The IFCA designated Prohibited Trawl Area within the rMCZ may already have undergone an element of recovery and include some natural and/or non-damaged habitat.

The adjacent Humber Estuary is an important fish nursery area (Net Gain reported that the rMCZ has spawning areas for Sandeel, Lemon and Dover Sole and nursery areas for Plaice). The rMCZ may also be a migratory path way, particularly for young cod (considerable numbers of codling are found in the area).

The seaward side and northern part of the rMCZ are important for foraging and/or breeding seabirds, including little terns, black-legged kittiwakes, common guillemots, razor bills and Atlantic puffins. The area is also used by many resident, wintering and passage migrant birds such as little terns, European shag and great cormorant, northern fulmar and northern gannet. The rMCZ is on a major migration route and some birds stop here if bad weather blows them inshore, particularly birds going to the Humber Estuary SPA such as little tern, brent goose, golden plover, knot, dunlin, curlew and redshank. Harbour porpoises and minke whales are often seen passing through this area.

Spurn Head is protected as a SSSI geological feature down to the mean low-water mark, and designation as an MCZ will protect the offshore element of this unique feature.

COSTS TO BUSINESS PER YEAR



PORTS AND HARBOURS

Two dredging spoil disposal sites (Bull Sand Fort and Humber 1) lie in the Humber Estuary within 5km of the rMCZ. Navigation channels, that are maintained by dredging and that provide access to Immingham Oil Terminal, lie close to the site. If the site is designated, licence applications for dredging and use of the disposal site will require assessment of the impact on the protected features; the best estimate cost for this is £3,000/yr.

PUBLIC SECTOR INVESTMENT PER YEAR



NATIONAL DEFENCE

The Ministry of Defence uses the site for training activities, as a rifle range, and for ordnance demolition. These activities are expected to be able to continue. The best estimate of costs (associated with additional planning to avoid damage to features) for all sites in tranche 2 which are used by the MOD is £2,000/yr and so the specific cost for this site will be extremely small.

MANAGEMENT

No management of current commercial activities is anticipated (all proposed protected features are in favourable condition, and there are no requirements to manage current fisheries and recreation), so there are no immediate management costs for this site.

ECOLOGICAL SURVEYS

Natural England will monitor the condition of the MCZ features in order to report on success of protection. Cost estimates for ecological surveys vary according to the number of features in a site. Defra provides a best estimate cost of £1,171,000 for all 23 rMCZs, and so the average cost/site is estimated at £50,913/yr.

SECTORS UNLIKELY TO BE AFFECTED

COMMERCIAL FISHING

All gear types currently used.

RECREATION

Recreational boating, snorkelling and SCUBA diving, and existing wildfowling leases.

ANGLING

CABLES

Two active export power cables and seven active gas pipelines cross the site.

SHIPPING

Transit of vessels.

ARCHAEOLOGY

No current activity but archaeological artifacts occur in the site and so there is potential interest.

FLOOD AND COASTAL EROSION RISK MANAGEMENT

There are a number of schemes that are linked to this area but it is not thought that there will be any costs associated with designation of an MCZ.