

**MARINE HABITATS ACTION PLAN
SUMMARY**

This Action Plan will be implemented in association with the North East Action Plans for **Coastal Sand Dunes and Shingles, Coastal Cliff and Heath** and **Estuarine and Intertidal** and concerns the habitats below Mean Low Water Springs¹ out to the 12 nm² limit. Actions, where appropriate may be included out to 200 nm, although the main focus will initially be in the inshore.

1.0 CURRENT STATUS

The current knowledge of the distribution and status of habitats and species in the north east is sparse; the Marine Nature Conservation Review surveys covered little of the area, except along the Moray coast. Voluntary schemes such as the Marine Conservation Society's Seasearch have been surveying the coastline with the participation of recreational divers. In the three years since the project began, divers have collected 3500 species records, although significant gaps in the areas covered do remain.

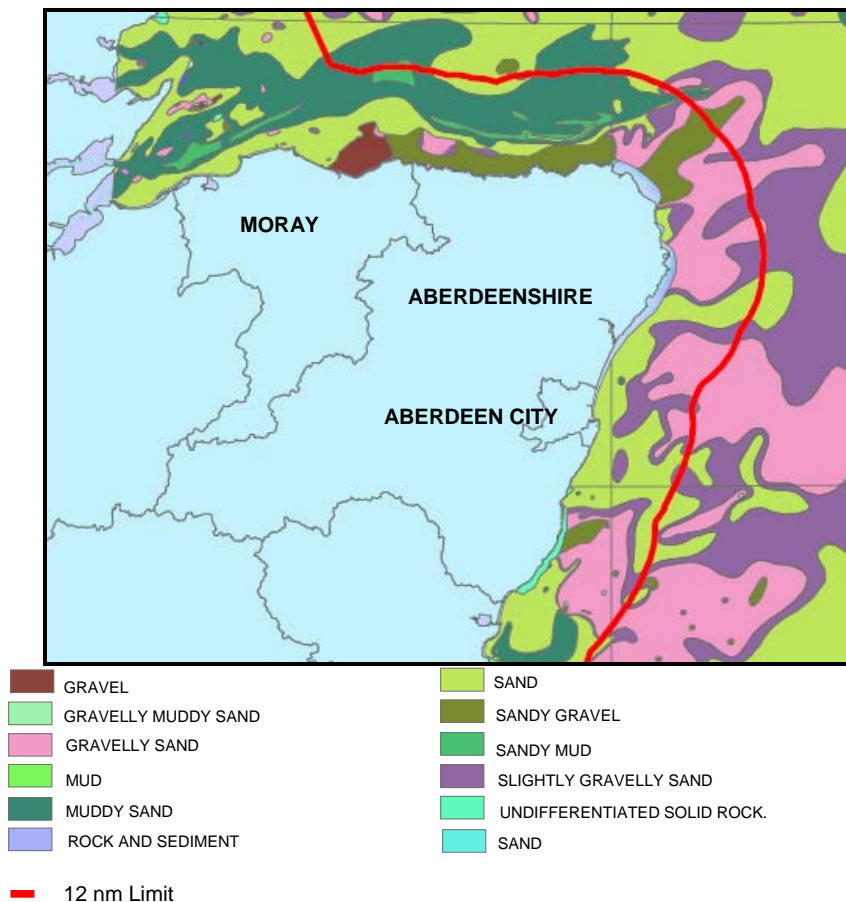


Figure 1 Distribution of Sediments in the North East

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¹ The lowest level to which the spring tide retreats

² Nautical mile

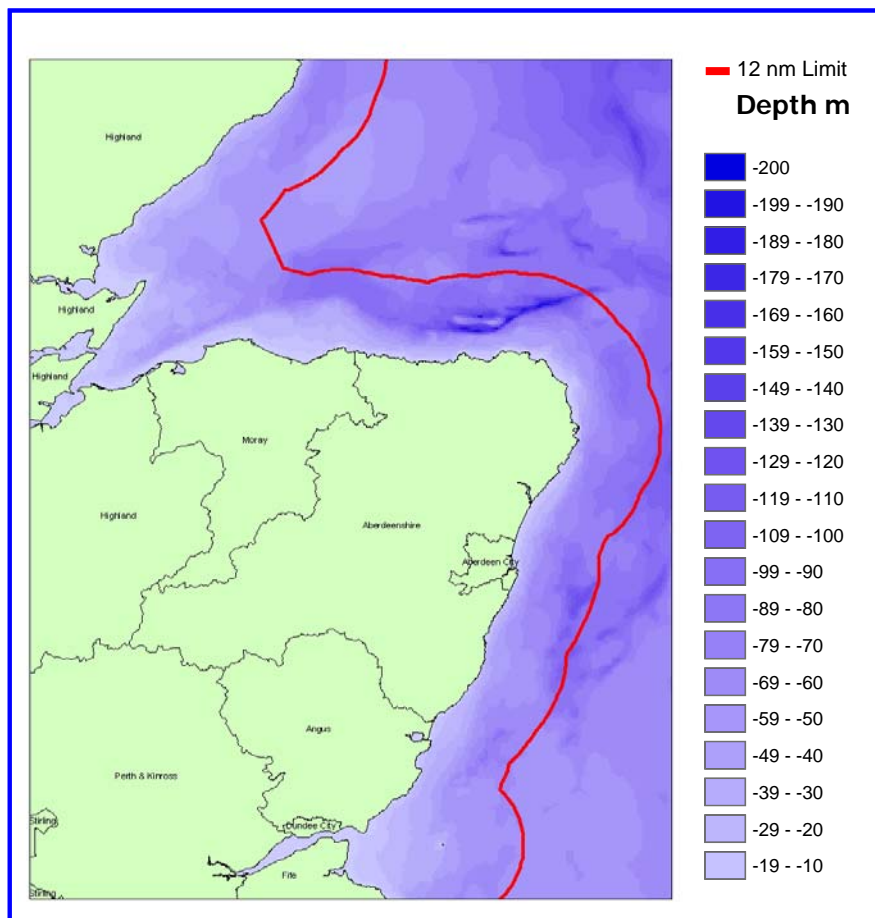


Figure 2 Bathymetry in the North East

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1.1 Open Sea Water

The open sea water surrounding the Aberdeen, Aberdeenshire and Moray coasts consists of the Moray Firth and the Northern North Sea and includes both the water column and seabed out to the 12 nm territorial limit. There has been a warming trend since the 1970s in the Northern North Sea, resulting in changes in the species makeup. Examples include the gradual change in the species of Calanoids³ recorded (a major food source for planktivorous⁴ fish and mammals) and warm-water fish becoming more common. Climate change therefore needs to be considered as a major influence on the status of the marine life in the seas around the north east coast. The changes in water temperature and increased storminess will extend to the sea floor where benthic⁵ species and habitats may be affected. Fisheries in the area have also had a considerable impact on the North Sea ecosystem.

³ A group of crustaceans which live as zooplankton, suspended in the water column

⁴ Organisms which are suspended in the water column and cannot swim against currents. They rely on water movements for distribution and transport

⁵ The sea bed and organisms associated with it

1.2 Mud Habitats in Deep Water

Mud habitats in deep water (circalittoral muds⁶) occur below 20-30 m in many areas off the north east coast. The relatively stable conditions associated with this habitat often leads to the establishment of communities of burrowing megafaunal⁷ species such as Norway lobster (*Nephrops norvegicus*), which is subject to a high level of fishing pressure. Co-habiting species such as sea pens (*Pennatula phosphorea*) are vulnerable to trawling damage although the *Nephrops* stocks itself appears to be resilient to fishing pressure. The extent of this habitat is moderately documented; however the habitat quality with regard to burrowing megafauna and epifauna⁸ has decreased (Jones, *et al.* 2000). This in part, is due to the impact of trawling and potentially to climate change.

1.3 Sublittoral⁹ Sand and Gravels / Inshore Sublittoral Sediment

The inshore area lies within 6 nm of the coastal baseline. The seabed around north east Scotland is dominated by extensive areas of soft sediment. These may be flat featureless plains or worked into forms such as ripples, waves, furrows, and banks. The activities of infauna¹⁰ and epifauna create smaller-scale features such as burrows, mounds, and tracks. The communities found on, and in, these areas are determined largely by the sediment type and its mobility. In general, coarse clean sediments tend to occur off of exposed coasts, and muddy sediments off sheltered coasts.

Fisheries have the main impact on the habitats in this area with other offshore industries also having a major, but more localised impact.

1.4 Inshore Sublittoral Rock

Sublittoral rock habitats occur immediately adjacent to the shore, fringing islands, headlands, open coast and rocky inlets. Further offshore, rocky sublittoral habitats may be present as submerged reefs, pinnacles and ledges, and are often surrounded by areas of soft sediment. In the north east, cliffs and rocky outcrops invariably extend to below low water before becoming covered with sediment. There are a number of rocky reefs further offshore in southern Aberdeenshire. There is little information on the status of rocky habitats in the north east.

⁶ Mud habitats in deep water

⁷ Large animal life

⁸ Organisms which live over the bottom substrate

⁹ Lying between the low tide line and the edge of the continental shelf to a depth of approximately 200 meters

¹⁰ Organisms which live within the bottom substrate

2.0 ECOLOGICAL DATA

2.1 Open Sea Water

This habitat is not listed in the UKBAP, but is considered locally important due to the populations of cetaceans in the area and a number of commercially important fish species. Most notable is the population of bottlenose dolphins (*Tursiops truncatus*) in the Moray Firth and Aberdeen and Aberdeenshire coasts, which is small and isolated and therefore vulnerable, but currently not in decline. Other cetacean species regularly or seasonally occur, including harbour porpoise (*Phocoena phocoena*), minke whale (*Balaenoptera acutorostrata*) and white beaked dolphin (*Lagenorhynchus albirostris*). The North Sea has an important fisheries industry and this has a significant effect on the marine environment; modifying the number, size and reproductive potential of many fish species. Those which are present and under threat include Atlantic salmon (*Salmo salar*), common skate (*Dipturus batis*) and Atlantic cod (*Gadus morhua*). The water column of the North Sea also contains high densities of planktonic organisms such as calanoid copepods and phytoplankton, which are vital components of the North Sea ecosystem.

2.2 Mud Habitats in Deep Water

Although this habitat is uncommon within the 12 nm limit (Fig. 1); wide expanses do exist beyond this, most notably in the Fladden fishing grounds. The stable conditions associated with this habitat often leads to the establishment of communities of burrowing megafaunal species such as Norway lobster (*Nephrops norvegicus*), angular crab (*Goneplax rhomboids*) and a burrowing mud shrimp (*Callinassa subterranean*) which produce a complex habitat of burrows and mounds. Erect species such as the sea pens *Virgularia mirabilis* and *Funiculina quadrangularis* provide additional structure in this otherwise low relief habitat.

2.3 Sublittoral Sand and Gravels/Inshore Sublittoral Sediment

Sublittoral sands and gravels are relatively common around the north east coast (Fig. 1) but are important due to the high number of species the habitat supports, such as polychaete worms, molluscs, sea anemones, crustaceans and sand eels, as well as being a nursery area for commercial fish species. As key food items for cetaceans, birds and carnivorous fish these species form an important role in the food web. The species present depends on the grade of the sediment; where more sand and mud is incorporated there tends to be more burrowing polychaetes and bivalves. Examples of this habitat in lower salinity or highly exposed areas tend to be more impoverished and inhabited by small numbers of specialist species.

2.4 Inshore Sublittoral Rock

Inshore sublittoral rock is possibly the most familiar marine habitat to the general public as it is common around the fringes of the coast in shallow water, although there are also a few reefs further out from the coast in the area. Inshore sublittoral rock supports very diverse communities; including anemones, sponges, bryozoans and ascidians, with crevices and overhangs providing shelter for crustaceans, fish and algae's. The algal community is often dominated by brown macroalgae's¹¹ due to the light levels through the water column. This habitat provides shelter and food for a variety of species and can be

¹¹ Large algal species such as seaweeds

characterized by distinct patterns of zonation¹² due a number of effects including the tide, exposure levels, and light attenuation and how individuals are able to adapt to these effects. Increased exposure to waves and tides reduces the number of species present; therefore much of the exposed Aberdeenshire coast has reduced species diversity. The Northern Aberdeenshire and Moray coastlines are more sheltered and therefore have a higher diversity. Specialist species that thrive in exposed wave-swept conditions such as the olive green wart anemone (*Phellia gausapata*) are common in the numerous caves and gullies along the coast.

2.5 Action Plan Species

To produce a list of species that this Action Plan should concentrate the targets and actions upon, a set of criteria was used and assessed using expert knowledge or published data and information. The criteria include;

- 1) The species is on the UKBAP list and occurs in the north east;
- 2) The species is important to the north east;
- 3) There is a specific threat to the species from activities and events that occur in the north east.

The listing of these species, their distribution, habitat and threats can be found in Table 1.

¹² Distinctive bands of organisms related to variations in the physical environment

Table 1: At Risk Species Dependent on Marine Habitats

Species	Distribution/Status	Habitats	Threats
<i>Phocoena phocoena</i> , Harbour porpoise Annex II, EU Habitats and Species Directive	A relatively abundant species locally and nationally, with key habitats within the BAP area.	Coastal and offshore waters	Pollution, bycatch, dredging, construction, development, underwater noise, interspecies conflict, marine renewable energy development, litter, boat disturbance
<i>Tursiops truncatus</i> , Bottlenose dolphin Annex II	Locally common, although small and isolated population. Mostly coastal with expansion from inner Moray Firth to east coast over the last 15 years. Latest population estimate 130 individuals.	Coastal and estuary	Pollution, bycatch, dredging, construction, underwater noise aquaculture, prey depletion, marine renewable energy development, recreational and targeted boat activity, litter
<i>Grampus griseus</i> , Risso's dolphin Annex IV	An occasional visitor that is perhaps increasing in the north east of Scotland	Coastal through to shelf edge	Largely unknown but likely to include prey depletion
<i>Lagenorhynchus acutus</i> , Atlantic white-sided dolphin Annex IV	A deep water species that is occasionally encountered in the region	Coastal waters to deep water	Largely unknown
<i>Lagenorhynchus albirostris</i> , White-beaked dolphin Annex IV	A common visitor in the summer months, with a seasonal movement in and off shore. Elsewhere seen further off shore and as a visitor to the Inner Moray Firth	Open water and areas of deep coastal water during the summer	Climate change, marine renewable energy development and perhaps competition for food.
<i>Balaenoptera acutorostrata</i> , Minke whale Annex IV	A common visitor that is most often seen during the summer months	Coastal waters to the shelf edge	Bycatch, entanglement, development, marine renewable energy development, pollution, underwater noise

Species	Distribution/Status	Habitats	Threats
<i>Balaenoptera physalus</i> , Fin whale Annex IV	An occasional visitor that is being seen increasingly, especially in the Inner Moray Firth	Deep water to shelf edge, but migratory	Net entanglement, development, marine renewable energy development, pollution, underwater noise
<i>Megaptera novaeangliae</i> Humpback whale Annex IV	An occasional visitor that is being seen increasingly, especially in the Outer Moray Firth	Coastal through to shelf edge	Entanglement in fishing gear, industry, historically commercial whaling
<i>Delphinus delphus</i> Common dolphin Annex IV	Seen annually in the Outer Moray Firth. May increase in the area due to the warming of North Sea waters.	Coastal through to deep water	Fishing bycatch, prey depletion
<i>Cetorhinus maximus</i> Basking shark	Regular seasonal visitor, mainly in the Moray Firth	Coastal waters	Fishing, bycatch, prey depletion, climate change, litter
<i>Phoca vitulina</i> , Common seal Annex II	Locally common especially within the Moray Firth	Coastal, offshore waters and estuary. Hauls out on beaches, sandbanks and rocks	Fisheries interactions, prey depletion, marine renewable energy development, pollution, phocine distemper virus, recreational disturbance, underwater noise
<i>Halichoerus grypus</i> , Grey seal Annex II	Locally common especially within the Moray Firth	Coastal, offshore waters and estuary. Hauls out on beaches, sandbanks and rocks	Fisheries interactions, prey depletion, marine renewable energy development, pollution, phocine distemper virus, recreational disturbance, underwater noise
<i>Petromyzon marinus</i> , Sea lamprey	Anadromous ¹³ . Spawning and juvenile stages occur in fresh water (River Spey). Adults live at sea for up to 3 years	Coastal waters	Habitat degradation and pollution
<i>Salmo salar</i> ,	Anadromous. Locally common but absent	Spawn in shallow,	Habitat degradation and pollution

¹³ Refers to a fish that breeds in freshwater but spends most of its adult life in the marine environment

Species	Distribution/Status	Habitats	Threats
Atlantic salmon	from much of England	gravelly areas in unpolluted rivers	
<i>Salmo trutta</i> Sea trout	Anadromous. On new UKBAP list	Spawn in shallow, gravelly areas in unpolluted rivers	Habitat degradation and pollution
<i>Galeorhinus galeus</i> , Tope	Found off all Scottish coasts	From shallow inshore waters to the Continental Slope (c. 800 m)	Target fisheries, bycatch and habitat degradation
<i>Raja batiss</i> , Common skate	All round Scotland-actual distribution unknown. Red list endangered status	Sandy and gravelly sea bed up to 50 m	Fishing pressure, by-catch
<i>Atrina fragilis</i> , Fan mussel	Recorded on Aberdeenshire coast; east of Peterhead and off Aberdeen, also off Duncansby Head in Northern Moray Firth	Embedded in lower intertidal and sub-tidal muds, sandy muds and gravels from low water to depths of 400 m.	Fishing, particularly using trawls and dredges, sea bed works, heavy metal contaminants and changes in water temperature.
<i>Modiolus modiolus</i> Horse mussel	Inner Moray Firth, Cromarty and Dornoch Firth. Protected under the Habitats Directive and included as a Habitat Action Plan under the UK BAP	Can form beds on steep rocky surfaces and mixed or muddy sediments in a variety of tidal regimes for MLWS to 280 m	Fishing, particularly using trawls and dredges, sea bed works, heavy metal contaminants
<i>Funiculina quadrangularis</i> , Tall sea pen	Mainly in West Coast sea lochs, however it may be present in areas like the southern Fladden fishing ground	Sheltered muddy areas in deep water (20-200 m)	Fishing and disturbance
<i>Lithodes maia</i> Northern stone crab	Recently recorded near Cullen by Seasearch. Abundant in waters of 40 m + in the Moray Firth	Found on open coasts and offshore on mud or shingle from 10-600 m.	Fishing and climate change
<i>Palurinus elephas</i> Spiny lobster	Recently recorded on the Moray Coast by Seasearch. These are some of the only records on the east coast of the UK.	Lives subtidally on rocky, exposed coasts in the circalittoral zone.	Fishing (potting), SCUBA divers
<i>Melanitta nigra</i> , Common scoter	Flocks of migrant birds are present from late summer in the Moray Firth and	Winter visitors often seen as large rafts offshore or	Oil spills, reduced fish stocks, shellfishing, recreation,

Species	Distribution/Status	Habitats	Threats
	Aberdeenshire Coast, especially by Don Mouth. RSPB red listed species of high conservation status and as a UKLBAP species of conservation concern.	flying along the coast.	aggregate dredging and marine renewable energy development, particularly wind farms.
<i>Melanitta fusca</i> , Velvet scoter	A winter visitor to the east coast of Scotland. RSPB amber listed and a species of European conservation concern.	Off the east coast in small groups, loosely associated with flocks of Common scoter.	Oil pollution, reduced fishstocks, shell fisheries, recreation, aggregate dredging and windfarms.
<i>Morus bassanus</i> Gannet	Summer visitors to the few breeding colonies in the UK including the mainland colony at Troup Head. RSPB amber listed. Medium conservation status in the UK.	Cliffs, mostly on islands and exceptionally the coast for breeding, during the summer. Pelagic for the rest of the year.	Diminishing fish stocks perhaps in part due to rising sea temperatures.
<i>Alca torda</i> Razor bill	Summer visitor to breeding colonies/cliffs, particularly in the north of Scotland. RSPB amber listed. Medium conservation concern in the UK.	Coastal cliffs, otherwise pelagic.	Pollution, oil spills, fishing nets, declining fish stocks.
<i>Cephus grille</i> Black guillemot	Found in small numbers around rocky coasts. RSPB amber listed and a species of European conservation concern.	Rocky coasts otherwise, pelagic.	Pollution, oil spills, fishing nets, declining fish stocks.
<i>Uria aalge</i> Guillemot	Widespread breeder on suitable cliffs of Scotland. RSPB amber listed. Medium conservation concern in the UK.	Coastal cliffs, otherwise, pelagic.	Pollution, oil spills, fishing nets, declining fish stocks – food shortage, especially sand eels.
<i>Fratercula arctica</i> Puffin	Found in only a few locations in UK, including east coast of Scotland. RSPB amber listed and a species of European conservation concern.	Breeding colonies in turf on coastal cliffs, islands and stacks, otherwise, pelagic.	Pollution, oil spills, fishing nets, declining fish stocks, particularly sand eels.
<i>Gavia stellata</i> , Red throated diver	Visitor to the east coast of Scotland, outside the breeding season. RSPB amber listed species and a species of European conservation concern.	Winters in shallow coastal waters, especially off sandy shorelines.	Pollution, fishing nets, windfarms.

Annex 1

Species	Distribution/Status	Habitats	Threats
<i>Gavia immer</i> , Great northern diver Annex 1	Winter visitor to the UK outside breeding season. RSPB amber listed species. Medium conservation concern in the UK.	Winters in coastal waters and estuaries.	Pollution, fishing nets, windfarms.
<i>Gavia arctica</i> , Black-throated diver Annex 1	Winter visitors to north-east Scotland including Moray Firth. RSPB amber listed species and a species of European conservation concern.	Winters in coastal waters.	Pollution, oil spills, fishing nets, windfarms
<i>Phalacrocorax carbo</i> Cormorant	A resident in the UK and seen around all coasts. RSPB amber listed species. Medium conservation concern in the UK.	Breed on rocky headlands and islands. Winters around the coast and on coastal lagoons and estuaries.	Oil spills, pollution, declining fish stocks, conflict with angling and fisheries.
<i>Phalacrocorax aristotellis</i> Shag	Found at a small number of sites including north-east of Scotland. RSPB amber listed and of medium conservation concern in the UK.	Winters and breeds in loose colonies on rocky coastal cliffs and islands.	Oil spills, pollution, declining fish stocks.
<i>Somateria mollissima</i> Eider	A resident in Scotland, with one of the largest colonies breeding on the Ythan Estuary. RSPB amber listed. Medium conservation concern in the UK, and a UKLBAP species of conservation concern.	Breed on estuaries, rocky islands and coasts. Winters around rocky shores and in estuaries.	Pollution, declining food stocks, conflicts with mussel farming, persecution.
<i>Pandion haliaetus</i> , Osprey Annex 1	A rare summer visitor, the main stronghold is in Scotland including the north-east. RSPB amber listed species and a species of European conservation concern.	Nests in trees especially conifers near lakes, rivers and seacoasts.	Persecution, nest interference and destruction, habitat loss, angling conflict.
<i>Sterna hirundo</i> , Common tern Annex 1	A summer visitor, to Scottish coasts including the Ythan estuary. RSPB green listed and a UKLBAP species of conservation concern.	Breed along coasts with shingle beaches on rocky island, marshes, estuaries and river shingles.	Declining fish stocks, nest predation, coastal development, and recreation.
<i>Sterna paradisaea</i>	A summer visitor, this species will travel	Largely coastal, breeding	Nest predation, coastal



Species	Distribution/Status	Habitats	Threats
Arctic tern Annex 1	some 20,000 miles from the Antarctic to breed in Scotland, including the Ythan estuary. RSPB amber listed and a UKLBAP species of conservation concern.	on coastal islands and shingle banks.	development, recreation. Declining fishstocks including sand eels has led to massive breeding failure in recent years.
<i>Sterna albifrons</i> , Little tern Annex 1	A summer visitor, the largest colonies in Scotland are found along the south and east coasts including the Ythan estuary. RSPB amber listed, a species of European conservation concern and a UKLBAP species of conservation concern.	Strictly coastal, breeding on sandy shingle or beach.	Declining fishstocks, nest predation, coastal development, recreation.
<i>Sterna sandvicensis</i> , Sandwich tern Annex 1	A summer visitor, this species is found in colonies around the UK the Ythan estuary and Strathbeg. RSPB amber listed, a species of European conservation concern and a UKLBAP species of conservation concern.	Breed on sandy seacoasts and islands.	Declining fishstocks, nest predation, coastal development, recreation.
<i>Sterna dougallii</i> , Roseate tern <i>Annex 1</i>	Individuals occasionally seen in the Sandwich tern colony on the Ythan, but no evidence of breeding	Breed on sandy seacoasts and islands.	Lost as a Scottish breeding species, cause unknown, but was always very scarce.
<i>Fulmaris glacialis</i> , Fulmar	Mostly found along Scottish coastlines including Aberdeenshire and Moray. RSPB amber listed. Medium conservation concern in the UK.	Breed on sea cliffs and rocky islands, otherwise, pelagic.	Pollution, Marine litter, declining fish stocks, fishing nets.
<i>Rissa tridactyla</i> , Kittiwake	A summer visitor to Scotland particularly the east. RSPB amber listed. Medium conservation concern in the UK.	Strictly coastal gull. Breed on coastal cliffs, otherwise, pelagic.	Declining fish stocks especially sandeels, marine litter, fishing nets.
<i>Larus argentatus</i> , Herring gull	A resident in the UK found throughout Scotland. RSPB amber listed. Medium conservation concern in the UK.	Sea coasts, lakes and rivers. Breed on coastal cliffs, sand dunes and buildings.	Declining fish stocks, oil spills.

Species	Distribution/Status	Habitats	Threats
<i>Clangula hyemalis</i> , Long-tailed duck	A winter visitor to the Moray Firth. RSPB amber listed. Medium conservation concern in the UK.	Winters in bays, estuaries and coasts.	Oil spills, fishing nets, declining fish stocks.
<i>Tadorna tadorna</i> , Shelduck	Resident in the UK found in most coastal waters. RSPB amber listed. Medium conservation concern in the UK.	Mostly coastal and estuarine areas.	Nest destruction due to predators, e.g. mink.
<i>Stercorarius parasiticus</i> Arctic skua	Northern Scotland (breeding) and around coasts (passage)	Pelagic, returning to land only to breed	

3.0 CURRENT FACTORS AFFECTING THE HABITAT

3.1 Habitat loss from anthropogenic developments

Anthropogenic¹⁴ developments can range from the construction of a new jetty or pier to a large scale development such as an offshore wind farm. Each development, and their cumulative effects, will have an impact on the surrounding marine environment. Impact should be kept to a minimum with appropriate management, including site selection and mitigation measures. Habitat loss in this context could include the area occupied by the new development as well as the area surrounding it which has been disturbed and modified.

In high energy habitats such as exposed coasts the species present are tolerant to a certain amount of disturbance; they tend to be fast growing and have a high reproductive rate and strategies to help protect against or evade disturbance and can therefore repopulate a disturbed area more quickly. Habitats which are more stable, such as deep mud habitats, are populated by slow growing, long lived sessile organisms and thus are more sensitive to habitat loss. Recovery to the original mature community will be slow and in the early stages dominated by mobile scavengers such as crabs and starfish.

3.2 Pollution

Marine pollution can be defined as substances introduced by humans into the maritime environment which is likely to result in hazards to human health, hindrance of marine activities or harm to living resources and marine ecosystems. Marine pollution has a number of categories including; degradable wastes, fertilizers, dissipating wastes such as heat from the cooling waters of coastal power stations, conservative wastes and solid wastes including litter. The source of these inputs can be through direct inputs, river inputs, shipping, offshore inputs, and atmospheric inputs. These inputs result in changes to the environment which may vary in both spatial and temporal scales and are often detrimental to marine habitats and species with a variety of impacts.

3.2.1 Marine Litter

Marine Litter can be categorised by type, for example plastic, sanitary and polystyrene or via source (direct littering via beach users, fishing, sewage and shipping). Litter can affect the habitats (and thus the species dependent on them) detailed in this plan in a number of ways. The species, either partially or fully reliant on the marine environment can be impacted upon via entanglement and ingestion. However, the effect of litter on marine habitats is less well documented. It is thought to include mechanical abrasion of the substrate, principally mud habitats in deep water and sublittoral sands and gravels. Other effects which determine the species each of the habitat types can support include reduced oxygen (through increased BODs¹⁵ and CODs¹⁶), reduced light, prevention of marine snow¹⁷ reaching the sea floor and the smothering of habitat.

¹⁴ Pertaining to humans

¹⁵ Biochemical oxygen demand

¹⁶ Chemical oxygen demand. BOD and COD are measures of the amount of dissolved oxygen in the water required to degrade the wastes

¹⁷ Detritus, mainly organic, which falls from the upper layers of the water column to the sea bed and forms an important part of the food chain.

3.3 Disturbance and Habitat Modification

Disturbance results in a number of factors that can affect the species present; direct disturbance, for example, from recreational boat use or seismic surveying, or indirect disturbance by the modification of the community present due to the selective removal of key species and the physical modification of the habitat. Community modification can be clearly seen in the present concerns over the cod stocks, where selective removal of a top predator has changed the structure of the North Sea fish community. Physical modifications caused either by dredging and removal of substratum or by the effect of certain trawls, will either remove all the species present leaving an altered substrate that will be initially re-colonised by opportunistic species or change the substrate to an extent that the original community is no longer viable.

3.4 Climate Change and Sea Level Rise

Climate change may have a major influence on the ecology and distribution of marine species. Temperature is a vital factor; controlling physiological processes at all levels from the individual to the ecosystem level (FSBI, 2007). Sea temperatures are predicted to rise by between 1 and 2.5°C in the next 50 years (Clark *et al*, 2003). Conversely, a rise in temperature may result in increased global production of fisheries (FSBI, 2007) but the response of individual species is dependent on their ability to adapt to the changes and to the shifting communities with which they depend on. Some species may exhibit a shift in distribution or a shift in the species boundary, as has been reported in many fishes in the North Sea, such as the angler fish (*Lophius piscatorius*), whiting (*Merlangius merlangus*), bib (*Trisopterus luscus*) and Atlantic cod (*Gadus morhua*). Some may be less able to cope physiologically with higher temperatures and experience local declines. Warmer sea temperatures may result in a change in the timing and abundance of plankton, such as the copepod *Calanus finmarchicus*, and consequently in a lack of food availability for larval fish and result in lower recruitment, as has been reported in Atlantic Cod (*Gadus morhua*). Heightened carbon dioxide concentrations may reduce ocean pH and experimental evidence suggests that this can reduce the ability of certain corals and plankton species to maintain their external calcium carbonate skeletons. Rising temperatures may also increase the establishment of invasive species and pathogens, especially pertinent to aquaculturalists and fishery managers. Long-term monitoring programmes will play a key role in revealing and controlling changing species distributions, while laboratory studies may be able to estimate thermal optima and tolerances (FSBI, 2007). Such data will be vital for modelling and simulation studies to predict larger scale, ecosystem response. The marine LBAP is in an ideal position to support such research and alert the key players to potential detrimental changes.

3.5 Introduced species

A species is considered introduced when it is transported to an area outside its native range. Introduced species have existed for millennia however with the increase in international trade; concern has risen over the past few decades. There is also increasing concern that warm-water species that currently cannot survive in Scottish waters may be able to do so in the future, as sea temperatures increase (such as the Pacific oyster *Crassostrea gigas*).

Species are most commonly introduced either accidentally or intentionally as part of mariculture, fouling on ships, and on ballast. Ballast water¹⁸ in particular has been identified as an issue. However, the UK has now signed up to agreements to improve ballast water exchange practices to reduce numbers of new alien species arriving. Best practice guidelines also exist for movement of shellfish for mariculture purposes, to reduce the likelihood of non-native introductions by this means.

Some species can have a detrimental effect on the environment to which they are introduced. These species are often termed invasive. They can have a negative effect either through competition for resources such as food or light or more directly through predation.

No invasive species have been identified as important in NE Scotland. However species such as wire weed *Sargassum muticum* have been spreading around the west coast of the British Isles (England, Northern Ireland and now Scottish west coast) found elsewhere in the UK and can have a serious effect on local biodiversity.

There is a record of the introduced species, *Codium fragile*, a green alga in the northeast as well as the invasive red alga (*Heterosiphonia japonica*) which was found in the Moray Firth in 2004. This species has spread rapidly throughout Europe and outcompetes native seaweeds. The extent of *H. japonica* in the Moray Firth, and its impact on local biodiversity, is not known. Other potential invasive species include the slipper limpet (*Crepidula fornicata*), Chinese mitten crab (*Eriocheir sinensis*) and Japanese skeleton shrimp (*Caprella mutica*). All of these species are already found in other parts of the UK and could be transferred, either naturally or by man, to the NE.

Removal or control of non-native species in the marine environment is difficult, if not impossible, once they are established. Therefore control measures must focus on preventing the introduction of potentially invasive species. [For further information see the Links page.](#)

4.0 CURRENT ACTION

4.1 Designations

There is a plethora of information pertaining to the management and protection of the marine environment. The majority of which has stemmed from European Directives and has been transposed into UK and Scots law, resulting in a multi-layered approach. For details of the main legislation covering the marine habitats in this plan see [Appendix 1](#).

4.2 Territorial Rights

Within the inshore area, the UK has exclusive rights and legal authority to introduce protective measures unilaterally for fish/shellfish stocks. Beyond six nautical miles EU fisheries regulations are enforced, which require negotiation with other member states. Local authorities now have regulatory responsibilities for aquaculture out to 12 nm.

¹⁸ Water which is carried on unladen vessels to provide stability. It is taken aboard in port along with many small marine organisms and transported to the ships destination where cargo is loaded and the ballast water pumped out. A number of these 'alien' species may then establish populations in their new surrounding waters

The only official designation of the coastal area below the extreme low water mark in the area covered by this plan is the Moray Firth Special Area for Conservation (SAC) for bottlenose dolphins and sandbanks. There are other habitats, such as 'Large shallow inlets and bays', 'Submerged or partly submerged sea caves', 'Reefs' and 'Sandbanks which are slightly covered by sea water all the time' within the NE Marine LBAP area, that could be classified under the EC Habitats Directive, but are currently not included in the list of SACs.

4.3 Integrated Coastal Zone Management (ICZM) and Marine Spatial Planning (MSP)

ICZM is a process to bring together those involved in the development, management and use of the coast to achieve sustainable development at a local level. In 2000, proposals were made for a European Parliament and Council Recommendation for the implementation of ICZM in Europe where promotion would be through the use of community instruments and programmes. The Recommendation noted the steps which Member States should take to develop national strategies for ICZM. The Scottish Coastal Forum (SCF) was set up at a national level in 1996 to deal with coastal issues in Scotland and to communicate with Government in terms of ICZM. Part of the SCF's role is to encourage the formation of Local Coastal Partnerships and to further progress ICZM in Scotland. In the North East of Scotland the bodies charged with this are The Moray Firth Partnership and the East Grampian Coastal partnership. A Marine and Coastal Strategy for Scotland, *Seas the Opportunity: A strategy for the Long Term Sustainability of Scotland's Coasts and Seas* was then developed in 2005.

The principles of good ICZM have been set out and include;

A broad overall perspective (thematic and geographic)

A long-term perspective

Adaptive management

Local specificity

Working with natural processes

Involving all the parties concerned

Use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management. These principles of ICZM will be embedded throughout the relevant proposals in the forthcoming Marine Bill.

In Scotland the work of the Advisory Group on Marine and Coastal Strategy has fed into the discussion of a Scottish Marine Bill. Included in the findings is the possibility of Local Coastal Partnerships becoming a delivery body for Marine Spatial Planning at the local level. It also sees Marine Spatial Planning as a tool of ICZM not as a replacement.

Marine Spatial Planning will take most of the principals of ICZM and add a spatial component. This will include producing use/conflict maps that will be of benefit to all those with and interest in coastal waters including developers who will be given an indication of areas that are suitable for specific projects.

The Scottish Government is currently researching the scope and content of a Scottish Marine Bill and the formation of a Scottish Marine Management Organisation.

5.0 BENEFITS OF MAINTAINING A HEALTHY MARINE ENVIRONMENT

The marine and coastal environment plays an essential role in all of our lives and as such, its health is important to everyone who lives in, works in or visits the north east. A healthy marine and coastal environment is not only fundamental for maintaining ecosystems but it is also central to and essential for, numerous everyday activities and functions both consumptive and non-consumptive including;

- Creating employment opportunities
- Climate control
- Helping to provide the basics of life
- Low input food production
- Pharmaceuticals
- Leisure, recreation and tourism
- Source of photosynthesis and consequently oxygen
- Transportation of goods and people
- Aggregate supply
- Sources of energy
- Carbon storage
- Research and education resource
- A natural sea defence
- Sustaining biodiversity
- Preserves examples of our history and heritage
- Waste disposal for example sewage, cooling waters and run off

6.0 ACTION PLAN OBJECTIVES AND TARGETS

The principal objective of this plan is to maintain, and enhance the quality, extent and status of the marine habitats in the North East through appropriate habitat management, data collection, promotion, education, liaison and legislation.

Objective 1 (Data Collection): Establish the current status of the main habitats and species found in the Northeast below mean low water springs.

Target 1.1: Identify and collate data on habitats and species in the Northeast.

Target 1.2: Identify any gaps in current data and develop actions to help fill them.

Target 1.3: Identify and encourage volunteer organisations that could collect data on Northeast species and habitats to submit data to recognised forums e.g. NESBReC, Marine recorder and NBN Gateway.

Target 1.4: Identify possible threats and impacts to the Northeast marine environment and ensure these are addressed in management schemes

Objective 2 (Habitat Management): Ensure that species and habitats in the Northeast are sufficiently protected and not subject to deterioration.

Target 2.1: Identify suitable areas for protection, such as marine SACs, marine or coastal parks, no-take areas.

Target 2.2: Ensure that local developments fully investigate and take sufficient measures to eliminate or mitigate harmful impacts e.g. Aberdeen offshore windfarm.

Target 2.3: Support local inshore fisheries in sustainable fishing practices

Target 2.4: Reduce marine pollution and litter in the north east

Target 2.5: Develop and implement a system of Marine Spatial Management or Planning

Objective 3 (Awareness and Training): To raise awareness of marine issues and the importance of the marine environment.

Target 3.1: Raise profile of Seasearch, Sea Watch Foundation and NORCET in the northeast

Target 3.2: Raise awareness of the impacts of marine litter

Target 3.4: Ensure that local marine operators and leisure craft do not adversely affect marine wildlife.

Target 3.5: Improve awareness of commercial and recreational fishermen of local and national conservation schemes and the Moray Firth Partnership Fisheries Action Group and Inshore fisheries groups.

Objective 4 (Communication): To improve communication and liaison between the community and industry and LBAP partner bodies.

Target 4.1: Ensure links between the community and industry, LBAP partner bodies and EGCP work effectively

Target 4.2: Support the formation of a NE Inshore Fisheries Management Group

Target 4.3: Create links with the Moray Firth Partnership Fisheries Action Group

Objective 5 (Research and Monitoring): To investigate habitat/species relationships, and anthropogenic effects on them in the Northeast, e.g. pollution, climate change.

Target 5.1: Encourage further research and monitoring of the species and habitats in the Northeast including birds and marine mammals.

Target 5.2: Encourage research into the links between the status of habitats and species and anthropogenic impacts

The actions to achieve the above objectives and targets are detailed in Table 2.

Operational Objective	Target	Outline Prescription	Lead Partner	Partners	Cost	Fund Source	By Year
Data Collection; Establish the status of the main habitats and species found in the NE below MLWS	1.1	Meet with NESBReC to discuss the best options for the collation of data on marine habitats and species in the Northeast	LBAP	NESBREC FRS, MCS SEA- SEARCH, NBN, WDCS			2008
	1.1	Identify data sources (including FRS, SEPA and SNH) and collate data on marine habitats and species in the Northeast	NESBReC	FRS MCS SEA- SEARCH, NBN, WDCS			2009
	1.1	Produce a NE habitat map using information from MESH, UKSeaMap and other mapping projects (EGCP, NBN, OSPAR)	NESBREC	FRS SNH Seasearch		EGCP Community Grant	2010
	1.2	Identify data gaps to guide future actions and projects	FRS	Seasearch NESBREC SNH		FRS	Ongoing
	1.3	Encourage the participation by divers in Seasearch by promoting this scheme at marine orientated events and clubs.	EGCP/LBAP	MCS, EGCP			2009
	1.3	Identify popular dive sites and confirm the level of data for each. Produce a list of target sites in need of surveying	EGCP	Seasearch			2008
	1.3	Encourage volunteers to submit species data through monitoring and recording schemes (e.g. Sea Watch Foundation, Seasearch, NORCET, MarLIN sealife recording, Porcupine, NESBReC) by promoting these schemes at marine orientated events and clubs.	EGCP/LBAP				
	1.3	Encourage volunteers to submit marine mammal sightings data through schemes such as Sea Watch Foundation and NORCET by promoting the schemes on tour boats, ferries and marinas.	EGCP	DSP			

Operational Objective	Target	Outline Prescription	Lead Partner	Partners	Cost	Fund Source	By Year
Habitat Management; Ensure species and habitats in NE are sufficiently protected and not subject to deterioration	2.1	Identify threats and impacts to the NE marine environment and ensure these are addressed in management schemes	EGCP				
	2.1	Identify areas suitable for protection schemes for example marine SACs, marine/coastal parks and no-take areas	SNH	FRS EGCP			
	2.2	Ensure local developments are appropriately sited and sufficient measures are taken to eliminate or mitigate harmful impacts					
	2.3	Encourage the involvement of commercial inshore fishermen in conservation schemes through raising awareness and involvement in Moray Firth Partnership Fisheries Action Group and Inshore fisheries groups. Attend meetings of fisheries groups	EGCP/MFP				
	2.3	Encourage the involvement recreational fishermen in conservation schemes through raising awareness and involvement in local schemes. It is also important to quantify catches.	EGCP, Angling Clubs SSACN				
	2.3	Introduce a data collection scheme for recreational fishermen for types and numbers of species caught					
	2.3	Lobby for improvement of fishing practices locally. Raise awareness/best practice code	SSACN				
	2.4	Collate information on pollution and litter projects in progress, e.g. Blue Flag scheme, Blue Green, Fishing for Litter.	EGCP				
	2.4	Encourage local authorities to ban balloon releases	MCS	EGCP WDGS			
	2.4	Reduce pollution and litter in the north east	EGCP MCS				
	2.5	Develop and implement a system of Marine					

Operational Objective	Target	Outline Prescription	Lead Partner	Partners	Cost	Fund Source	By Year
		Spatial management/ Planning					
Awareness and Training; Raise the public's awareness of marine issues and the importance of the marine environment.	3.1	Raise profile of marine initiatives and organisations in the northeast by giving presentations, offering funding support and hosting events, with the aim of improving the data held on habitats and species in the region.	MCS	EGCP			
	3.1	Draft Interpretation Plan identifying key messages stakeholders and target audiences.		LBAP			
	3.1	Review existing interpretive provision and identify gaps.		LBAP SNH			
	3.2	Support Beachwatch and Adopt-a-beach events to combat marine litter and raise awareness	EGCP	WDCS MCS			
	3.2	Produce literature and leaflets on specific issues each year. Link this with the Macduff Marine Aquarium, ranger services, Maritime Museum, etc to raise awareness of sublittoral species and habitats in the NE	EGCP	LBAP MCS Sea Watch Foundation WDCS			
	3.2	Organise or facilitate at least one event per year to publicise particular issue.	LBAP				
	3.3	Promote best practice in the marine environment eg the "Scottish Marine Wildlife Watching Code" and DSP	DSP WDCS	EGCP WiSe MFP			
	3.3	Increase awareness of the presence of marine mammals in the NE by press release to local paper detailing where dolphins/seals etc can be seen from land + Identification guide.	LBAP	EGCP			
	3.3/3.4	Create projects that can engage industry in either away days or team building events.		EGCP			
	3.4	Identify local fishing groups and promote best fishing practices and environmental awareness	FRS	EGCP			

Operational Objective	Target	Outline Prescription	Lead Partner	Partners	Cost	Fund Source	By Year
Communication and Liaison; To improve links between the community and industry and LBAP partner bodies	4.1	Encourage agencies to take part in community events and meetings e.g. open doors day.	FRS SEPA LA	WDCS			
	4.1	Create a database of 20 potential projects suitable for team building events/corporate responsibility and promote these to local industry	EGCP		staff time		2008
	4.1	Highlight positive environmental work carried out by local maritime industries to communities through the EGCP and LBAP websites	EGCP/LBAP		staff time		Ongoing
	4.1	Ensure links between the community, industry and LBAP partner bodies work effectively by developing an active network involving all relevant partners. Include a 6 monthly newsletter update to share ideas and projects and with annual feedback to Marine LBAP working group	LBAP				
	4.1	Liaise with EGCP in developing a Marine Spatial Plan for the area between Fraserburgh and St. Cyrus out to 6.5nm/12km	EGCP				
	4.1	Encourage agencies to increase access to information in line with the Environmental Information Regulations	FRS				
	4.1	Create projects that can engage industry in either away days or team building events.	EGCP				
	4.2/4.3	Create links with Moray Firth Partnership Fisheries Action Group and provide partners with 6 monthly updates and more where required	EGCP/MFP				

Operational Objective	Target	Outline Prescription	Lead Partner	Partners	Cost	Fund Source	By Year
Research, Monitoring and Effective Management; Investigate habitat/species relationships and anthropogenic effects on them in the Northeast	5.1	Propose at least two appropriate research projects (e.g. honours projects, postgraduate theses), through discussions with research institutions and universities.	FRS SNH SEPA WDCS	Aberdeen University Macduff Aquarium?			
	5.1	Ensure routine monitoring and research survey results to be made available to NesBrec and NBN	FRS SEPA SNH				
	5.1	Encourage study of the species and habitats in the Northeast including monitoring potential impacts					
	5.1	Encourage volunteers to submit biological data through schemes such as Sea Watch Foundation, Seaserch and NORCET	EGCP				
	5.2	Ensure available data is more freely available	EGCP				
	5.2	Identify the inshore fisheries in the NE and their potential impacts on biodiversity. Possible link with MAFCONS project in FRS					
	5.2	Link with the Moray Firth Partnership Fisheries Action Group to extend their remit to the Aberdeenshire east coast	EGCP				
Monitoring		Review action plan and its progress every 3-5 years					

Table 3: Potential Threats to Species Matrix

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries Conflict	Entanglement from fishing nets	Recreation	Prey depletion/ Competition for food	Climate change	Disease	Habitat degradation/ disturbance	Nest Disturbance and/or persecution	Largely Unknown
<i>Phocoena phocoena</i> , Harbour porpoise																			
<i>Tursiops truncatus</i> , Bottlenose dolphin																			
<i>Grampus griseus</i> , Risso's dolphin																			
<i>Lagenorhynchus acutus</i> , Atlantic white-sided dolphin																			
<i>Lagenorhynchus albirostris</i> , White-beaked dolphin																			
<i>Balaenoptera acutorostrata</i> , Minke whale																			
<i>Balaenoptera physalus</i> , Fin whale																			
<i>Megaptera novaeangliae</i> , Humpback whale																			
<i>Delphinus delphus</i> , Common dolphin																			
<i>Cetorhinus maximus</i> , Basking shark																			
<i>Phoca vitulina</i> , Common seal																			
<i>Halichoerus grypus</i> , Grey seal																			

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries Conflict	Entanglement from fishing nets	Recreation	Prey depletion/ Competition for food	Climate change	Disease	Habitat degradation/ disturbance	Nest Disturbance and/or persecution	Largely Unknown
<i>Petromyzon marinus</i> , Sea lamprey																			
<i>Salmo salar</i> , Atlantic salmon																			
<i>Salmo trutta</i> Sea trout																			
<i>Galeorhinus galeus</i> Tope																			
<i>Raja batis</i> , Common skate																			
<i>Atrina fragilis</i> , Fan mussel																			
<i>Modiolus modiolus</i> , Horse mussel																			
<i>Funiculina quadrangularis</i> , Tall sea pen																			
<i>Lithodes maia</i> Northern stone crab																			
<i>Palurinus elephas</i> Spiny lobster																			
<i>Melanitta nigra</i> , Common scoter																			
<i>Melanitta fusca</i> , Velvet scoter																			
<i>Morus bassanus</i> , Gannet																			

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries Conflict	Entanglement from fishing nets	Recreation	Prey depletion/ Competition for food	Climate change	Disease	Habitat degradation/ disturbance	Nest Disturbance and/or persecution	Largely Unknown
<i>Alca torda</i> , Razor bill																			
<i>Cephus grille</i> , Black guillemot																			
<i>Uria aalge</i> , Guillemot																			
<i>Fratercula arctica</i> , Puffin																			
<i>Gavia stellata</i> , Red throated diver																			
<i>Gavia immer</i> , Great northern diver																			
<i>Gavia arctica</i> , Black throated diver																			
<i>Phalacrocorax carbo</i> , Cormorant																			
<i>Phalacrocorax aristotellus</i> , Shag																			
<i>Somateria mollissima</i> , Eider																			
<i>Pandion haliaetus</i> , Osprey																			
<i>Sterna hirundo</i> , Common tern																			
<i>Sterna paradisaea</i> , Arctic tern																			

	Largely Unknown	Nest Disturbance and/or persecution	Habitat degradation/disturbance	Disease	Climate change	Prey depletion/Competition for food	Recreation	Entanglement from fishing nets	Fisheries Conflict	Aquaculture	Interspecies conflict	Marine litter	Marine Renewables	Underwater noise	Construction and development	Dredging	Bycatch	Oil spills	Pollution
<i>Sterna albifrons</i> , Little tern		■				■	■								■				
<i>Sterna sandvicensis</i> , Sandwich tern		■				■	■								■				
<i>Sterna dougallii</i> , Roseate tern	■																		
<i>Fulmaris glacialis</i> , Fulmar						■		■				■						■	
<i>Rissa tridactyla</i> , Kittiwake						■		■				■							
<i>Larus argentatus</i> , Herring gull						■											■		
<i>Clangula hyemalis</i> , Long-tailed duck						■		■									■		
<i>Tadorna tadorna</i> , Shelduck		■																	
<i>Stercorarius parasiticus</i> , Arctic skua						■					■								

7.0 REFERENCES

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8.0 GLOSSARY

Anadromous A fish which breeds in freshwater but spends the majority of its adult life in the marine environment

Bathymetry The study of the ocean depths

Benthic The sea bed and the organisms associated with it

Bivalve Organisms with two-part shells

Calanoids A group of crustaceans which live as zooplankton, suspended in the water column

Circalittoral Muds Mud habitats in deep water

Coastal Baseline Forms the inshore boundary from which the territorial limit is measured. Normally, a baseline follows the low-water mark, but when the coastline is highly indented straight baselines may be used, for example across estuaries

Epifauna Organisms which live over the bottom substrate

Extreme Low Water Springs The lowest point to which the tide drops on a spring tide

Infauna Organisms which live within the bottom substrate

Littoral The intertidal zone between high and low water marks that is periodically exposed to the air

Megafaunal Large animal life

NM Nautical mile

Phytoplankton Microscopic planktonic plants

Planktivorous/Planktonic Organisms which are suspended in the water column and cannot swim against currents. They rely on water movements for distribution and transport

Polychaete A class of segmented worms, generally marine

Sessile Organisms which are permanently attached to a substrate

Sub-littoral Lying between the low tide line and the edge of the continental shelf with a depth of up to 200 meters

Territorial Limit The area of coastal waters extending from the coastal baseline to the 12 nm limit.

APPENDIX 1 Designations and Legislation Effecting the Marine Environment

Designation	Relevance to the Northeast Marine LBAP
1982 UN Law of the Sea Convention	Provides a framework for the regulation of the oceans and sets out the responsibilities of coastal nations for marine habitats and species.
MARPOL Convention	Concerned with pollution from shipping and includes provisions for identifying Particularly Sensitive Sea Areas and Special Areas.
OSPAR Oslo Paris Convention	Aims to prevent pollution of the marine environment of the north-east Atlantic from land-based sources, and from dumping from ships and aircraft.
Annex V to the OSPAR Convention on Protection of the Marine Environment of the North East Atlantic	Identifies important deep water or offshore habitats and species for protection
London (Dumping) Convention	Concerned with the protection of the marine environment from pollution from ships, aircraft and man-made structures and resulting from normal operations (i.e. not from deliberate dumping).
EC Habitats Directive (Directive 92/43/EC)	Provides protection for marine habitats to 200 nm, including within the 12 nautical mile limit of territorial waters e.g. Moray Firth SAC for Bottlenose Dolphins and sandbanks. The Directive has been transposed into UK law by the Conservation (Natural Habitats, &c.) Regulations 1994
EC Birds Directive (Directive 79/409/EC)	Provides protection and management for wild birds in Europe. The Directive gives member states power to designate Special Protection Areas to protect vulnerable species
Water Framework Directive (Directive 2000/60/EC)	Designed to protect and restore the structure and function of aquatic ecosystems. Assessment will be principally by the ecological status of the water bodies. The enabling Act for this legislation is the Water Environment and Water Services (Scotland) Act 2003
1981 Wildlife and Countryside Act	Seals, cetaceans and a number of invertebrate species are given various levels of protection
Nature Conservation (Scotland) Act 2004	The Act strengthens protection for Sites of Special Scientific Interest (SSSIs), with maximum fines for intentional or reckless damage and sets out a duty for SNH to prepare a Marine Wildlife Watching
Food & Environment Protection Act, part II, 1985	Issues licences for the control of dumping at sea.
Department of Trade and Industry (DTI)	Issues licences for the exploration for, and exploitation of, hydrocarbon resources in the UK waters. New industrial activity in offshore waters which is likely to have significant effects on the environment will

Designation	Relevance to the Northeast Marine LBAP
	require an environmental statement.
The Urban Waste Water Treatment Directive (91/271/EEC)	Aims to reduce the pollution and subsequent adverse effects of coastal waters from sewage discharges
EU Common Fisheries Policy	Management of the fish stocks in the UK waters and other EU coastal states
Inshore Fisheries Management	Conservation measures aimed at protecting stocks
UN agreement on Straddling Stocks	Aimed at achieving the holistic management of migratory stocks
International Whaling Commission	Has banned the commercial exploitation of whales.
Marine Bill	Aims to provide comprehensive protection for habitats and species. Scotland may be covered by a UK wide Bill in addition to a Scottish Marine Bill.
EU Marine Strategy directive	Aims for a more holistic approach to the management of the marine environment in Europe
Conservation of Seals (Scotland) Order 2007	Extends the current closed season to the whole year between Stonehaven and Dunbar for Common Seals.

APPENDIX 2

Organisations Operating in Marine areas

Marine Conservation Society (MCS) is the UK charity dedicated to the protection of the marine environment and its wildlife. MCS has worked for over 20 years to highlight threats to both marine wildlife and the wider marine environment. Campaigns and projects focus on pollution prevention including *Beachwatch* and the *Good Beach Guide*; species protection including *Basking Shark Watch* and *Adopt-a-Turtle*; sustainable fisheries with the recent publication of the *Good Fish Guide*; and coral reef protection. Many MCS projects involve divers and the general public in volunteer surveys and educational initiatives to protect our seas and marine life. Local divers have carried out underwater clean ups in some years. Many local divers have expressed an interest in Seasearch, and there have been local training days by the Marine Conservation Society on Seasearch and underwater identification skills.

www.mcsuk.org

Seasearch is a volunteer underwater survey project for recreational divers in the UK to record observations of marine habitats and the life they support. The information gathered is used to increase our knowledge of the marine environment and contribute towards its conservation. Divers can participate in three different levels of recording depending on their knowledge and experience. Seasearch courses are being developed to provide training in marine habitat and species identification and survey methods. Seasearch is co-ordinated nationally by a Steering Group led by the Marine Conservation Society. The Seasearch website contains more information about the programme, including dates of courses and events: www.seasearch.org.uk. Seasearch data is available on request and is stored on the database Marine Recorder and individual species information is available through the NBN Gateway. The sites which have been surveyed can be viewed through Google Earth [Seasearch 2007 Google Earth file](#)

The Scottish Association of Marine Science (SAMS) is a Scottish charity committed to promoting, delivering and supporting high-quality independent research and education in marine science. As the owner and operator of the Dunstaffnage Marine Laboratory - three miles North of Oban - SAMS is an internationally renowned marine research establishment. SAMS focuses much of its research activities on multidisciplinary research questions from Scottish coastal waters to the Arctic Ocean. www.sams.ac.uk/

Sea Watch Foundation is a national charity, dedicated to the conservation and protection of whales, dolphins & porpoises in British & Irish waters. Sea Watch, through its continuous programme of research and monitoring, mostly by volunteers provides invaluable information on changes to the status and distribution of cetacean populations and the condition of their habitats. This is used to raise awareness of any issues and prompt environmental change to help conserve & protect these mysterious creatures. It works tirelessly with environmental and government bodies to provide information, data and evidence leading to the better protection and conservation of cetacean populations in British and Irish waters. www.Sea_Watch_Foundationfoundation.org.uk/

Whale and Dolphin Conservation Society (WDCS)

WDCS, the Whale and Dolphin Conservation Society, is the global charity dedicated to the protection of cetaceans (whales, dolphins and porpoises) and their environment. Our work covers a range of political campaigning and lobbying, active conservation projects and world-class science, research and education initiatives.

www.wdcs.org/

The **Maritime and Coastguard Agency (MCA)** is the competent UK authority responsible for responding to pollution from shipping and offshore installations. The MCA is regularly called upon to respond to a wide range of maritime incidents and has developed a comprehensive response procedure to deal with any emergency at sea that causes pollution, or threatens to cause pollution. The “National Contingency Plan for Marine Pollution from Shipping and Offshore Installations” (NCP) was published in January 2000 and sets out revised command and control procedures for incident response following Lord Donaldson’s Review of Salvage and Intervention and their Command and Control.

The Coastguard Agency’s Marine Pollution Control Unit (MPCU) provides a command and control structure for decision making and response following a shipping incident that causes, or threatens to cause, pollution in UK waters. The MPCU was restructured in 1998 to become the Counter Pollution and Response (CPR) Branch of the MCA.

MCA’s CPR is now based on a regional response with central operational, technical and scientific support. A Counter Pollution & Salvage Officer (CPSO) is based in each region, supported by scientists, a mariner, a cost recovery specialist and logistics support specialists in the MCA’s headquarters in Southampton www.mcga.gov.uk/

The Crown Estate owns the majority of the sea bed and approximately 50% of the foreshore in Scotland. Leases or licences are granted for works and activities in these areas predominately to local authorities, ports and harbours, conservation bodies and statutory bodies such as Scottish Natural Heritage. Approximately 570 kilometres (21%) of seabed are leased specifically for conservation purposes, where no development is permitted, and it is intended to extend this in consultation with SNH. A great deal more of the coastline is under protective ownership by way of leases to local authorities.

To optimise the responsible use of marine resources, the Crown Estate participates in relevant research projects such as a joint study with DEFRA to look into the cumulative impact of dredging on the seabed, and research through the Marine Life Information Network (MarLIN) and the Marine Climate Change programme.

As a landowner, the Crown Estate seeks to maintain the highest standards by ensuring the correct management of these important areas and that, where development is proposed, this is carried out in the most responsible manner with the necessary consents. www.thecrownestate.co.uk/marine

The Moray Firth Partnership was launched in August 1996. It is a voluntary organisation made up of partners from industry, local authorities, conservation bodies, recreational users, and local residents, all with an interest in the future well-

being of the Moray Firth. The Partnership focuses on the coast and sea from Duncansby Head in Caithness to Fraserburgh in Aberdeenshire. Its aim is to help people find ways of working together to safeguard the Moray Firth's natural, economic and social resources, now and for future generations. Of particular interest to this LBAP is the Fisheries Action Group. www.morayfirth-partnership.org/

East Grampian Coastal Partnership Established in 2005 EGCP aims to aid in the delivery of Intergrated Coastal Zone Management between Kinnaird Head Fraserburgh and the mouth of the River North Esk. Ongoing work has included the Making the Most of the Coast theme and an investigation into the role of Marine Spatial Planning. www.egcp.org.uk

Fisheries Research Services (FRS) performs regulatory and statutory functions as required by SEERAD (Environment Directorate?) and other government customers as well as advising on the sustainable use of living aquatic resources and protection of the aquatic environment. FRS run monitoring programs on the state of living aquatic resources and the aquatic environment. www.marlab.ac.uk

Scottish Government

Inshore fisheries in Scotland are regulated principally through the Inshore Fishing (Scotland) Act 1984 which provides for Ministers to regulate fishing for sea fish in inshore waters, by way of prohibiting combinations of the following: all fishing for sea fish; fishing for a specified description of sea fish; fishing by a specified method; fishing from a specified description of fishing boat; fishing from or by means of any vehicle, or any vehicle of a specific description; and fishing by means of a specified description of equipment.

Ministers may also specify the period during which prohibitions apply, and any exceptions to any prohibition. A number of Orders have been made under this Act since 1984, introducing local and national measures for a range of fishery management purposes.

Inshore Fisheries Groups (IFGS) have been proposed for the whole of Scotland, to whom will be delegated responsibility for fisheries management. A IFG for the Moray Firth, would provide a mechanism for fisheries management to interact with other coastal initiatives. www.scotland.gov.uk/

Scottish Environment Protection Agency (SEPA) is the public body charged with protecting Scotland's environment by regulating discharges to air, land and controlled waters (lochs, rivers, groundwater, estuaries and coastal waters to three miles out to sea). SEPA aims to provide an efficient and integrated environment protection system for Scotland that will improve the environment and contribute to the Scottish Executive's goal of sustainable development. SEPA performs regulatory, statutory and advisory functions. It monitors coastal waters in relation to statutory requirements, impact assessment and general water quality. Data are used to provide annual classifications of controlled waters.

SEPA is also the lead body for implementation of the Water Framework Directive in Scotland. www.sepa.org.uk

Scottish Natural Heritage, the statutory body for SSSIs and European designations, manages the reserves at Forvie and St. Cyrus, and leases part of the

foreshore from the Crown Estate at Ythan Estuary. SNH is also responsible for the management and monitoring of the Moray Firth SAC.

Under the Nature Conservation (Scotland) Act 2004 SNH have the responsibility of developing a code of conduct to protect marine species from the adverse effects of marine recreational users. www.snh.gov.uk

The WiSe (**W**ildlife **S**afE) scheme has already trained and accredited over 150 individuals working aboard registered passenger and charter vessels for marine wildlife watching in England and Wales, and will soon be moving on to Northern Ireland. The scheme has been backed by environmental organisations in England and Wales including The Wildlife Trusts, Marine Conservation Society, Whale and Dolphin Conservation Society and RSPB, and has been co – funded by WWF UK. www.wisescheme.org/

Cetacean Research & Rescue Unit (CRRU) Formed in 1997, the Cetacean Research & Rescue Unit (CRRU) is a small, non-profit research organisation based in NE Scotland. Located in the beautiful heritage fishing village of Gardenstown (right), near Banff, on the southern coastline of the outer Moray Firth, the group is dedicated to the conservation and protection of whales, dolphins and porpoises in Scottish waters through scientific investigation, environmental education, and the provision of professional, veterinary assistance to sick, stranded and injured individuals. For a recent list of selected publications by the CRRU, go to: <http://www.crru.org.uk/research/publications.htm>

Friends of Moray Firth Dolphins

Formed in 1991, The Friends of the Moray Firth Dolphins have grown from a small number of individuals who set up the group to provide opportunities for watching and learning more about the dolphins into today's still-growing membership of around 250. Seven years on the group now have their own research boat, 'Delphis', and a keen committee whose enthusiasm for dolphins has seen them evolve into the most organised voluntary group of cetacean watchers in the Moray Firth.

We gather data from our membership around the Firth, which is then passed on to Aberdeen University; Sea Watch, WDCS, the marine connection, and the CRRU cetacean research and rescue unit. Other organisations such as the Whale and Dolphin Conservation Society and International Dolphin Watch also utilise the data www.loupers.co.uk/

Maritime Rescue Institute (MRI) is a Scottish Charity based in Stonehaven. MRI are providers of training programmes and advisory services on all forms of waterborne emergency response to organisations and governments around the world. MRI also provide 24 hour waterborne search and rescue response for the Kincardineshire coast and up to 50 nautical miles offshore. www.maritime-rescue-institute.org/

Keep Scotland Beautiful have been operating for 40 years to improve the quality of Scotland's environment. They operate and help co-ordinate a number of coastal campaigns including Seaside Awards, Blue Flag and Clean Coast Scotland. www.KeepScotlandBeautiful.org/

Royal Society for the Protection of Birds

The RSPB is the largest conservation organisation in Europe with over 1 million members. In the north east of Scotland they have 3 coastal reserves including the seabird colonies at Troup head and Fowlsheugh and the Loch of Strathbeg. RSPB is involved in campaigning work including calls for a Scottish marine bill. www.rspb.org.uk

Scottish Wildlife Trust is a conservation organisation who works towards protecting Scotland's wildlife and natural environment contribute to legislation and guidelines on crucial issues through knowledge and on-going conservation work as well as a number of campaigns including a marine Act for Scotland, Marine Protected Areas and raising awareness of Scotland's marine biodiversity. www.swt.org.uk/

Scottish Sea Angling Conservation Network was established to lead a unified, coordinated and comprehensive approach to international, national and local conservation issues which may affect recreational sea angling in Scotland. They work with other conservation groups and the Marine Directorate to gather information and develop programmes to further the understanding of the marine environment and the species of fish of interest to sea anglers. SSACN seeks to ensure that recreational sea anglers can effectively enjoy their sport within fisheries managed for the benefit of all and not just for a select few. www.ssacn.org/

Aberdeen Harbour is a world class port annually handling around 5 million tonnes of cargo, valued at approximately £1.5 billion, for a wide range of industries. It has statutory powers over the marine areas out to 2 nm from the facility which includes a SAC for Salmon and Otter. In October 2003, Aberdeen Harbour Board became the first port in Scotland, and only the fourth in Europe, to receive the ECOPORTS Port Environmental Review System (PERS) certificate. www.aberdeen-harbour.co.uk

Peterhead Port Authority came into being on the 1st January 2006 with the merger of Peterhead Bay Authority and Peterhead Harbour Trustees. The new organisation is responsible for the management, operation and development of the Port of Peterhead. The port comprises two areas - Peterhead Bay Harbour and the Harbours of Peterhead. www.peterheadport.co.uk

Fraserburgh Harbour is one of the major fish landing ports in Europe and has harbour trust rights to agree and enforce bylaws within its designated area. www.fraserburgh-harbour.co.uk

The **Sea Mammal Research Unit** carries out research on marine mammals with the aim being to carry out fundamental research into the biology of upper trophic level predators in the oceans and advise Government in the UK about the management of seal populations. <http://smub.st-and.ac.uk/>

The **Dolphin Space Programme** is an accreditation scheme for wildlife tour boat operators. The aim of the DSP is to encourage people who go out to observe dolphins and other marine wildlife to "watch how they watch" and to respect the animal's need for space. www.dolphinspace.org/

International Whaling Commission is an intergovernmental body providing guidance in cetacean-watching matters (through the whalewatching sub-committee of the IWC Scientific Committee). The report of the 2007 meeting of the WW subcommittee can be found at <http://www.iwcoffice.org/documents/sci.com/SCRepFiles2007/Annex%20M%20Final.pdf>

Two points maybe worth noting from this year's report:

1. The launch of the LaWE project initiative proposal, a research programme to understand how boat interaction disturbances on individuals can interact with the life history strategies of the animals and the ecological conditions of their home range to lead to population-level consequences (p.12)
2. A summary of recent studies looking at issues of compliance with voluntary guidelines (p.16); the sub-committee emphasising the need to better understand where voluntary guidelines can work and where they cannot.