

## MARINE HABITATS ACTION PLAN SUMMARY

North East Scotland Local Biodiversity Action Plan (LBAP) is a locally driven process to conserve important species and habitats for the benefit of us and future generations. LBAP is a partnership of local authorities; individuals and groups from environmental, forestry and farming backgrounds; land and education agencies; businesses and many individuals involved in biodiversity in the area.

In recent years we have been facing an increased loss in biodiversity. Following the 1992 Rio Earth Summit, the UK Biodiversity Action Plan was published in 1994. At the local level this is implemented through the LBAP.

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 Springs<sup>1</sup> out to the 12 nm<sup>2</sup> territorial limit. Actions may be included out to 200 nm, although the focus will be in the inshore. The area covered by this plan includes Aberdeen City, Aberdeenshire and Moray. The plan is being implemented in collaboration with the Highlands LBAP who is producing a similar plan.

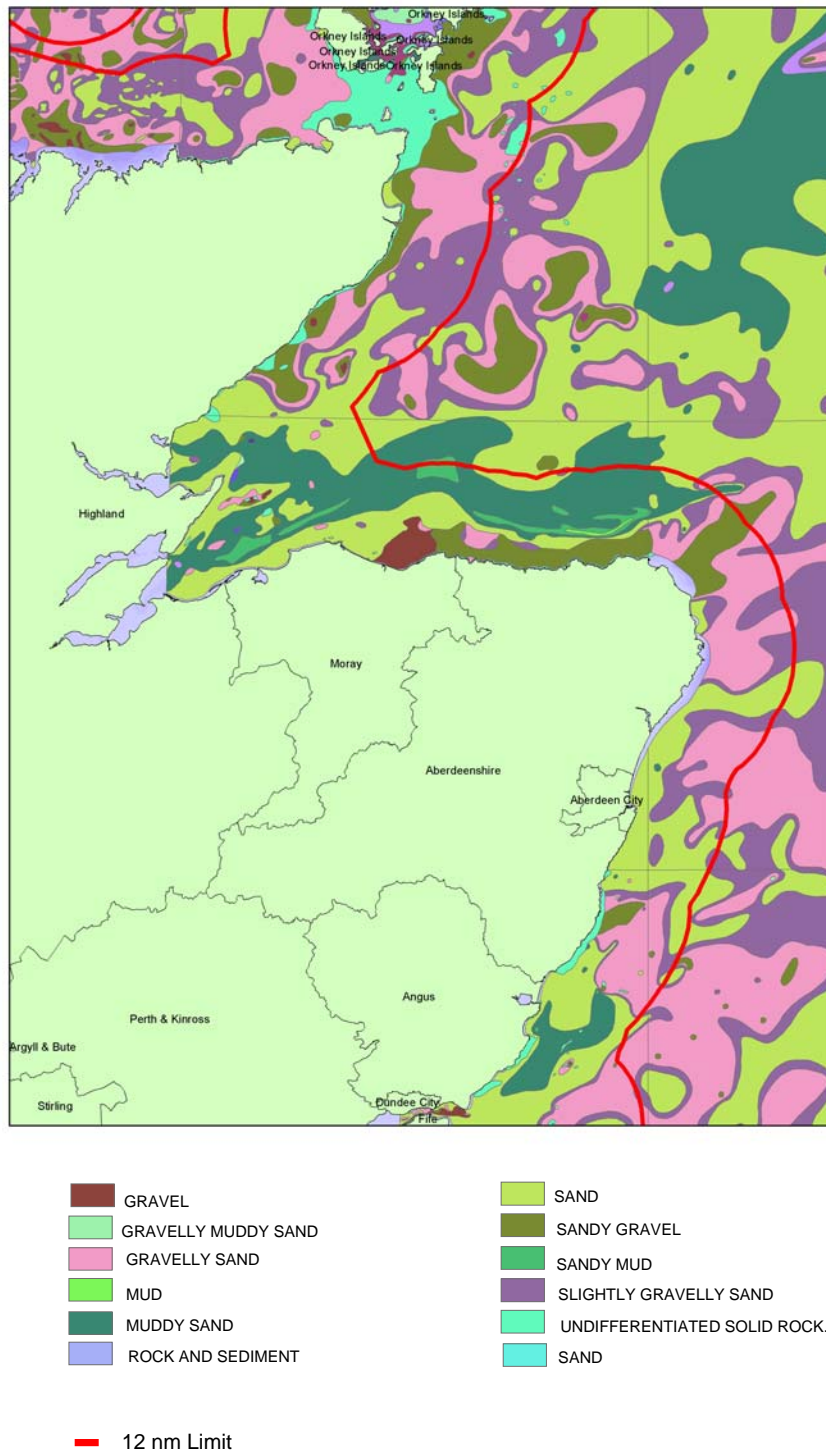
### 1.0 CURRENT STATUS

The current knowledge of the distribution and status of habitats and species in the north east is limited; 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. Large scale habitat information, for example bathymetry and sediment distribution is available and is shown in figures 1.1 and 1.2.

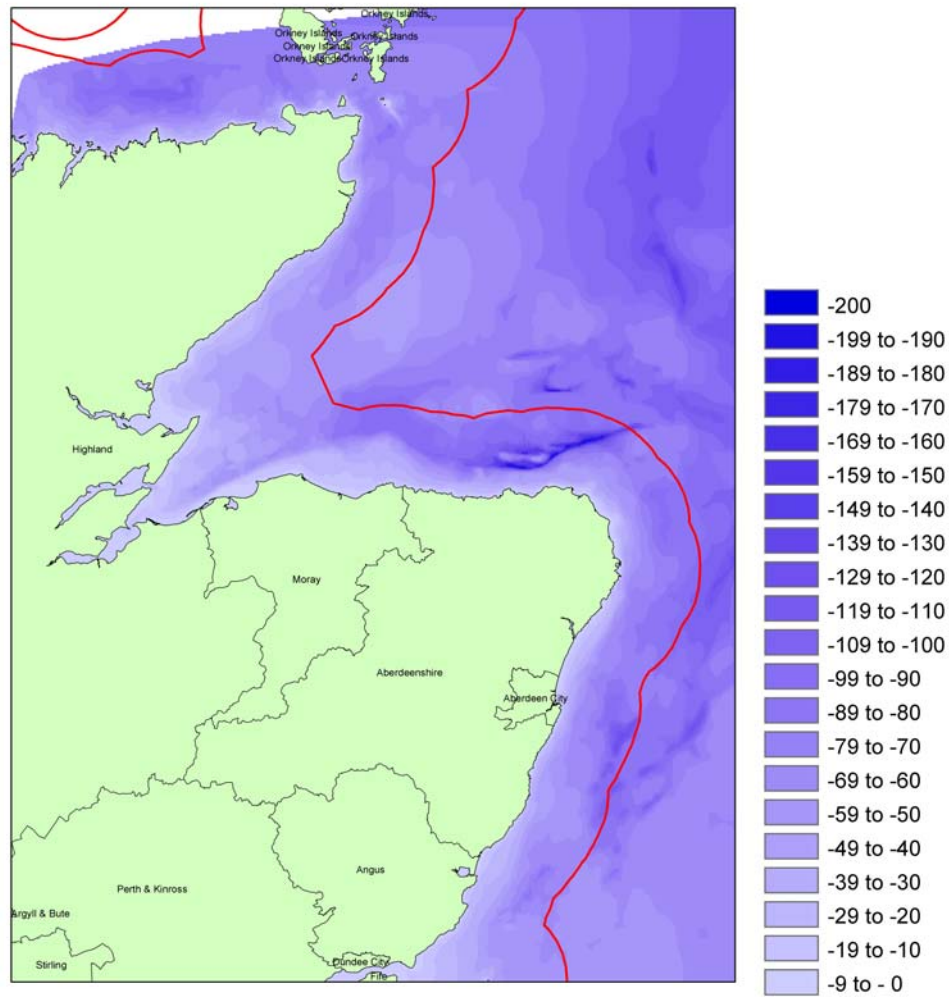
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<sup>1</sup> The lowest level to which the spring tide retreats

<sup>2</sup> Nautical mile



**Figure 1.1** Distribution of Sediments in the North East  
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**Figure 1.2 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 Calanoids<sup>3</sup> recorded (a major food source for planktivorous<sup>4</sup> 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. The changes in water temperature and increased storminess will extend to the sea floor where benthic<sup>5</sup> species and habitats may be affected. Fisheries in the area have also had a considerable impact on the North Sea ecosystem.

<sup>3</sup> A group of crustaceans which live as zooplankton, suspended in the water column

<sup>4</sup> Those which feed on plankton (organisms which are suspended in the water column and cannot swim against currents and rely on water movements for distribution and transport)

<sup>5</sup> The sea bed and organisms associated with it

## 1.2 Mud Habitats in Deep Water

Mud habitats in deep water (circalittoral muds<sup>6</sup>) occur below 20-30 m in many areas off the north east coast. The relatively stable conditions associated with this habitat often lead to the establishment of communities of burrowing megafaunal<sup>7</sup> 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* stock 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 epifauna<sup>8</sup> has decreased (Jones, *et al.* 2000). This is in part due to the impact of trawling and potentially to climate change.

## 1.3 Sublittoral<sup>9</sup> 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 infauna<sup>10</sup> 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 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 limited information on the status of rocky habitats in the north east.

## 1.5 Wrecks

There are numerous wrecks in the area covered by this plan which act as artificial reefs in areas which are often otherwise featureless. A number of the wrecks in shallow water are popular dive sites, which often leads to anchor and diver damage to what can be a very fragile structure. Many of the wrecks in the area are in good condition as they are unaffected by fishing gear and as a result of weak tidal currents. Wrecks can be protected as a Scheduled Monument but to date no site in this area has been designated. Information on their location and status is limited as many have yet to be mapped.

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<sup>6</sup> Mud habitats in deep water

<sup>7</sup> Large animal life

<sup>8</sup> Organisms which live over the bottom substrate

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

<sup>10</sup> 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 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 *Pennatula phosphorea*, *Virgularia mirabilis* and *Funiculina quadrangularis* provide additional structure in this otherwise low relief habitat.

Notable sites include:

1) a large area of muddy sand in the deeper water 6 to 10 km off the North Coast of Moray and Aberdeenshire (figure 1.1), between Lossiemouth and Fraserburgh, which contains the burrowing Megafauna habitat described above.

### 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 higher numbers of 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.

Notable sites include:

1) the entrance to Cromarty Firth, which is a very deep narrow channel with rocky margins that opens out into a basin of shelly sand, clinker/stone and Horse mussel

(*Modiolus modiolus*) beds. These beds support a range of epifauna (particularly dead man's fingers (*Alcyonidium digitatum*), plumose anemone (*Metridium senile*) and hydroids) as well as edible sea urchin (*Echinus esculentus*) and the smaller green sea urchin (*Psammechinus miliaris*). The common brittlestar (*Ophiothrix fragilis*) was also found and the *M. modiolus* beds sometimes merge into brittlestar beds. The bivalves *Nucula nucleus* and, to a lesser extent, *Abra alba* are also abundant in this area.

2) off of the Aberdeen coast there are large expanses of sandy mud mixed with slightly shelly/gravelly sand and sandy mud that is characterised by the bivalves *Thyasira* spp., *Nuculoma tenuis*, *Fabulina fibula*, *Abra alba* and *Nucula nitidosa*. Other important taxa include polychaetes like sandmason worm (*Lanice conchilega*), *Goniada maculata*, *Nephtys* spp., *Chaetozone setosa* and the bristle worm *Spiophanes bombyx*. The brittlestars *Ophiura albida* and *Amphiura filiformis*, *Echinocardium cordatum* (heart urchin); and the star fish *Asterias rubens* may also be present as well as the anemones *Halcampa chrysanthellum* and *Edwardsia* sp. and the sea pen *Virgularia mirabilis*.

The notable sites for each of the habitat types can be seen in figure 2.1.

#### 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<sup>11</sup> due to the light levels through the water column. This habitat provides shelter and food for a variety of species and can be characterized by distinct patterns of zonation<sup>12</sup> due a number of effects including the tide, exposure levels, and light attenuation and the ability of individuals 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 which 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.

Notable sites of this habitat include:

1) Crawton (56°54.6 N, 2°11.7 W to 56°55.9 N, 2°11.76, surveyed Aug 2006)

The coast around Crawton exhibits a steep meandering cliff line broken by sandy bays. The pudding stone cliffs descend steeply into bedrock walls with caverns and sandy channels in the gullies. Beneath the cliffs, the steep slopes (to 20 m) are composed of cobbles and pebbles with large craters, deep fissures and crevices. These walls possess a clear zonation of species, with a deep bed of barnacles in the top 10 metres, progressing into animal turf dominated by the soft coral dead men's fingers (*Alcyonium digitatum*), and sponges and bryozoans near the base of the wall.

<sup>11</sup> Large algal species such as seaweeds

<sup>12</sup> Distinctive bands of organisms related to variations in the physical environment

Here the seabed flattens out into sand and is inhabited by fish such as juvenile gadoids and monk fish (*Lophius piscatorius*, a BAP species). The bays are characterised by an area of rocky reef and sandy gullies leading up to a vertical cliff face of 8 to 10 metres. The sandy seabed is frequented by species such as flatfish, the curled octopus (*Eledone cirrhosa*) and cuttlefish.

2) Trouphead (57°41.2N, 2°16.1W to 57°41.0 N, 2°19.12W, surveyed Jul 2005)

Beneath the towering cliffs of Trouphead are vertical walls and a maze of gullies and caves. These are blanketed in a wealth of animal fauna, with species such as dead men's fingers, anemones (*Metridium senile*) and hydroids. These habitats support a rich diversity of fish, mollusc and crustacean life. Notable are the abundance of juvenile gadoids that frequent the area in the spring and summer such as cod (*Gadus morhua*, a BAP species), poor cod (*Trisopterus minutus*) and saithe (*Pollachius virens*). The small island is used by a colony of grey seals (*Halichoerus grypus*) which likely predate upon the wealth of fish nearby.

3) Capel Rock (57°42.00 N, 2°48.76 W, surveyed Jul 2005, Sep 2005)

The pinnacle of Capel Rock, offshore from Cullen, rises from a boulder strewn seabed at 20 metres up to 10 metres below sea level and supports a vast array of life. The upper surface is shrouded in kelp forests, which are inhabited by sessile and mobile species. Below the kelp is a dense covering of soft corals leading to a sloping stony reef. Many large fish frequent this area and inhabit the fissures and crevices in the rock. Examples include the ballan (*Labrus bergylta*) and cuckoo wrasse (*Labrus mixtus*), ling (*Molva molva*, a BAP species), conger eels (*Conger conger*) and wolf fish (*Anarhichas lupus*) to name but a few.

4) Reefs offshore from Brora (south west corner: 57°59.9 N, 3°47.9W to north east corner: 58°05.6N, 3°38.3W, surveyed Sep 2006)

This is a large area of both biological and geological interest, consisting of isolated mushroom-like reefs (also known as 'mermaids tables') composed of old red sandstone with mixed cobbled grounds, boulders and low-lying reef in between. The reefs themselves support rich communities of soft-coral (*Al. digitatum*) and sea mosses (e.g. *Flustra foliacea*), whilst the cobble ground in between supports a wide range of invertebrates species, such as common lobster (*Homarus gammarus*). Wrasses, for example, the rock cook (*Centrolabrus exoletus*) and the cuckoo wrasse (*Labrus bimiculatus*) were found to frequent these reefs in surprising abundance. The full extent of the mermaid's tables is yet to be confirmed but similar such features are also present offshore from Helmsdale to the north of Brora and offshore from Rockfield to the south.

5) Duncansby Head (57°36.5N, 3°02.0W to 58°38.9 N, 3°02.01W, surveyed May 2005)

The cliffs at Duncansby Head are characterised by stacks, arches and steep-sided inlets locally known as geos. Underwater the geos give way to huge sheltered but lightless caverns which, because of the extreme tidal movement and wave action support a unique community of sponges, seasquirts and bryozoans. The long finger-like bryozoan (*Alcyonidium diaphanum*) projects from a colourful wall blanketed by

the red seasquirt (*Dendrodoa grossularia*) and lacy white sponge (*Clathrina coriacea*). The remains of seabirds' eggs and bones litter the pebble floors of these caverns. Towards the bright seaward walls are a spectacular array of the small flower-like hydroid *Tubularia indivisa*, while in the most exposed areas are an abundance of jewel anemones (*Corynactis viridis*), sponges such as the elephant's ear sponge (*Pachymatisma johnstonia*) and crustaceans such as the spiny lobster (*Palinurus elephas*, a BAP species).

## 2.5 Wrecks

The many wrecks throughout the region are rich habitats for marine life and form so called artificial reefs. Being largely undisturbed by trawling, they become important refuges for many marine species, although it is debatable whether they simply attract animals or whether they contribute in themselves to recruitment. The wrecks become colonised by animal communities and include species of soft coral, anemones, hydroids and sponges. The structure in itself is often surrounded by shoals of juvenile fish and the cracks or overhangs inhabited by larger fish such as conger eels (*Conger conger*) or cod (*Gadus morhua*, a BAP species). A number of wrecks have been surveyed in the Moray Firth, all of which are worthy of notification. Given more data of other wrecks, however, the selection included in this plan might be refined.

Notable sites include:

1) RMS Remuera (57°46.9 N, 1°52.8 W, surveyed Sep 2006)

The RMS Remuera lies at a depth of 60 m north of Rattray Head on a level, coarse sand seabed. The wreck lies on its side with wreckage scattered around the seabed. The wreck itself was covered in tall animal turf composed of extensive clumps of the coral worm (*Salmacina dysteri*) and dead men's fingers (*Alcyonium digitatum*). On and within the coral worm is a myriad of other species, such as pea crabs, scale worms and a hippolyte shrimp. Ling (*Molva molva*, a BAP species), bib (*Trisopterus luscus*), poor cod (*Trisopterus minutus*) and cuckoo wrasse (*Labrus mixtus*) are found hidden under the clumps as are crustaceans such as the impressive northern stone crab (*Lithodes maja*) and lobsters (*Homarus gammarus*). The wreck can be surrounded by huge shoals of fish including, juvenile gadoids, Clupeids (herring family) and Pollack (*Pollachius pollachius*).

2) MFV Fylla (57°45.43 N, 3°10.02 W, surveyed Oct 2007)

The wreck of the MFV Fylla, north east of Lossiemouth, lies on a flat sandy seabed at a depth of 25m. The external walls of the wreck are colonised by animal fauna, composed of the soft coral dead men's fingers, plumose anemone (*Metridium senile*) and the bryozoan hornwrack (*Flustra foliacea*). Fish such as bib (*Trisopterus luscus*) and adult cod can be found lurking under the bows, while the wreck itself is completely surrounded by juvenile poor cod in the summer months. The surrounding seabed is composed of a mixture of sand, cobbles and shells and is inhabited by species such as burrowing anemones (*Cerianthus lloydii*) and hermit crabs (*Pagarus bernhardus*).

3) MFV Unity (57°45.30 N, 3°13.33 W, surveyed Jul 2008 & Aug 2005)

The wreck of the Unity lies on a level sand seabed at 25 metres. It is formed of steel plates forming horizontal and vertical surfaces and enclosed spaces. The two open holds on the superstructure surrounded by railings enclose a mass of juvenile poor cod and occasional cod. The railings themselves support an animal turf composed of the plumose anemone and byozoans (hornwrack and *Securiflustra securifrons*), while the side of the wreck is covered in dead men's fingers, the seasquirt (*Ciona intestinalis*) and various sponges. The seabed on the starboard side is notable for a bed of brittlestars.

4) MFV Pheron (57°43.16 N, 3°13.83 W, surveyed Jun 2007)

The wreck of the Pheron is located north west of Buckie on a seabed at 12 metres. The sides of the wreck are covered in a hydroid and ascidian animal turf and exhibited species such as the light bulb seasquirt (*Clavelina lepadiformis*) and the star ascidian (*Botryllus schlosseri*) and various crustaceans. The top surfaces are sheathed in a taller animal turf composed of dead men's fingers and plumose anemone and surrounded by an abundance of fish such as saithe (*Pollachius virens*) and wrasses. Pollack patrol the edge of the wreck. The cobble and pebble seabed is inhabited by species such as the long-spined sea scorpion (*Taurulus bubalis*) and dahlia anemones (*Urticina felina*).

## 2.6 Action Plan Species

In order to produce a list of species which 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.

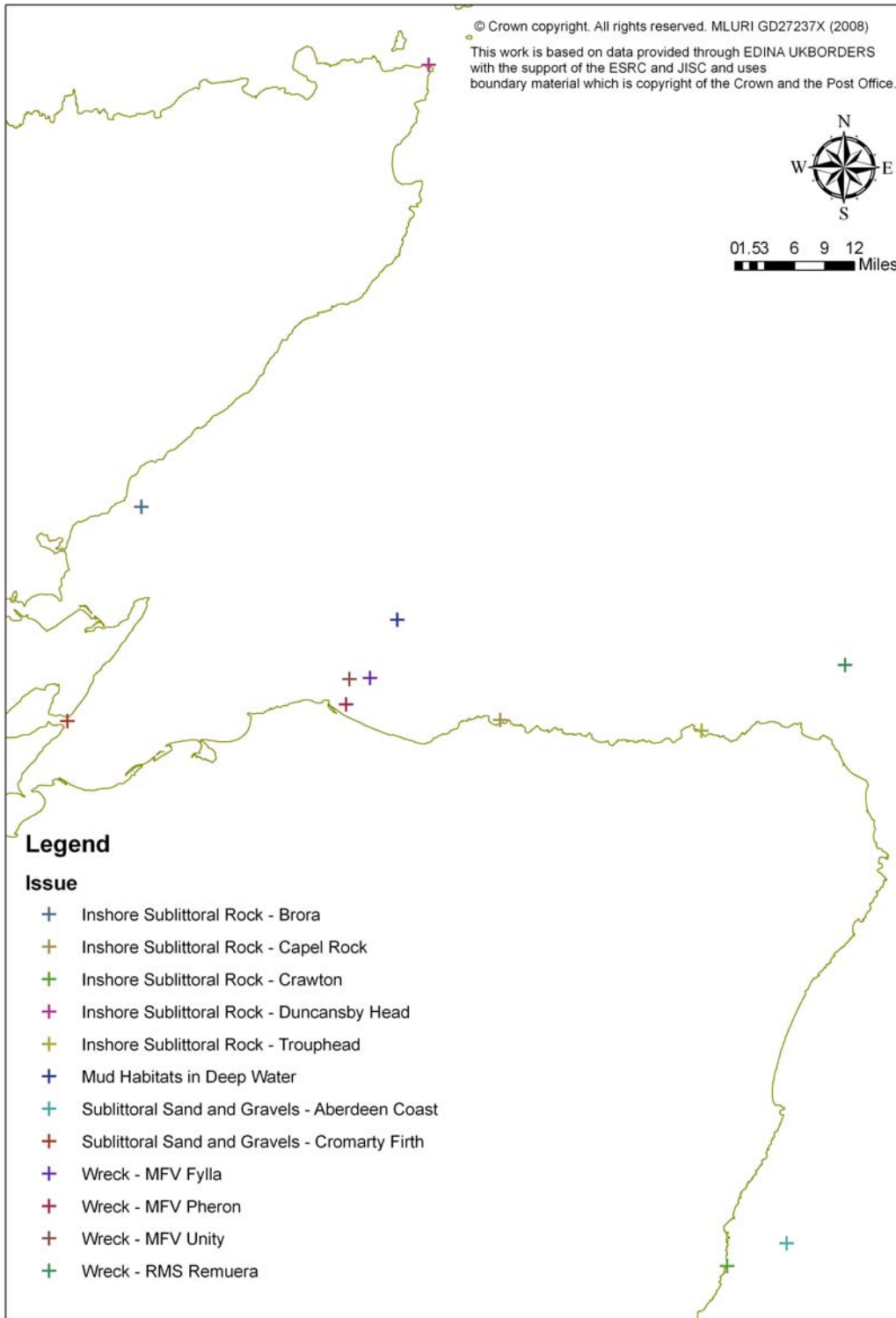


Figure 2.1 Notable sites for the individual habitat types

**Table 1:** At Risk Species Dependent on Marine Habitats

<b>Species</b>	<b>Distribution/Status</b>	<b>Habitats</b>	<b>Threats</b>
<i>Phocoena phocoena</i> , Harbour porpoise	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	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	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	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	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	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
<i>Balaenoptera physalus</i> , Fin whale	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,

Species	Distribution/Status	Habitats	Threats
			underwater noise
<i>Megaptera novaeangliae</i> Humpback whale	An occasional visitor that is being seen increasingly	Coastal through to shelf edge	Entanglement in fishing gear, industry, historically commercial whaling
<i>Delphinus delphus</i> Common dolphin	Seen annually in the Outer Moray Firth. May increase in the area due to the warming of North Sea waters.	Deep waters, occasionally coastal	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	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	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	Rare. Found in the River Spey, Don, Conon, Ness and historically in the River North Esk	Anadromous <sup>13</sup> . Spawning and juvenile stages occur in fresh water. Adults live at sea for up to 3 years	Habitat degradation and pollution
<i>Salmo salar</i> , Atlantic salmon	Locally common but absent from much of England	Anadromous. Spawn in shallow, gravelly areas in unpolluted rivers	Habitat degradation and pollution

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

Species	Distribution/Status	Habitats	Threats
<i>Salmo trutta</i> Sea trout	UK Priority species. Locally common	Anadromous. Spawn in shallow, gravelly areas in unpolluted rivers	Habitat degradation and pollution
<i>Ammodytes marinus</i> Lesser sandeel	Widespread distribution but numbers have fallen dramatically in recent years	Schooling species found both inshore and offshore	Fishing pressure
<i>Gadus morhua</i> Atlantic cod	Widespread distribution but numbers have fallen dramatically in recent years	Sandy seabed to depths of 600 m	Fishing pressure
<i>Clupea harengus</i> Atlantic herring	Recorded on the northern Aberdeenshire coast and in the Moray Firth	Pelagic. Surface waters down to c. 200 m	Fishing pressure
<i>Hippoglossus hippoglossus</i> Atlantic halibut	Historically found around the UK, current distribution unknown but recorded on the northern Aberdeenshire coast	Demersal. Sand, gravel or clay substrates	Historically as a commercial fish due to being the largest flatfish in the world. Slow growth rates and late sexual maturity make it vulnerable to fishing pressure
<i>Merlangius merlangus</i> Whiting	UK Priority species. Widespread in the North Sea	Demersal but may move into midwater in pursuit of prey. Depths of 10-200m	Fishing pressure
<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 batis</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	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

Species	Distribution/Status	Habitats	Threats
<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>Palinurus 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 Aberdeenshire Coast, especially by Don Mouth and Blackdog. RSPB red listed species of high conservation status and as a UKLBAP species of conservation concern	Winter visitors often seen as large rafts offshore or flying along the coast	Oil spills, reduced fish stocks, shellfishing, recreation, aggregate dredging and marine renewable energy development, particularly wind farms during the construction phase
<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 especially during the construction phase
<i>Morus bassanus</i> Gannet	Summer visitors to the few breeding colonies in the UK including the mainland colony at Troup Head. RSPB	Cliffs, mostly on islands and exceptionally the coast for breeding,	Diminishing fish stocks perhaps in part due to rising sea temperatures

Species	Distribution/Status	Habitats	Threats
	amber listed. Medium conservation status in the UK	during the summer. Pelagic for the rest of the year	
<i>Alca torda</i> Razorbill	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 particularly sandeels, sprats and herring
<i>Cephus grylle</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 sandeel stocks a particular problem for chick rearing
<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, oil pollution, fishing nets, windfarms
<i>Gavia immer</i> , Great northern diver	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
<i>Gavia arctica</i> , Black-throated diver	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>	A resident in the UK and seen around	Breed on rocky	Oil spills, pollution, declining

Species	Distribution/Status	Habitats	Threats
Cormorant	all coasts. RSPB amber listed species. Medium conservation concern in the UK	headlands and islands. Winters around the coast and on coastal lagoons and estuaries	fish stocks, conflict with angling and fisheries and subsequent culling, windfarms
<i>Phalacrocorax aristotellus</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, persecution, egg predation by Herring and Black-backed gulls, disturbance by watersports, lack of mussel bed management leads to silting of beds and changing age profile
<i>Pandion haliaetus</i> , Osprey	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 near lakes, rivers and seacoasts and feeds in coastal waters	Persecution, nest interference and destruction, habitat loss, angling conflict
<i>Haliaeetus albicilla</i> White-tailed eagle	A rare visitor, a small number of sightings in 2007	Feed in coastal waters	Persecution and egg theft
<i>Sterna hirundo</i> , Common tern	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. Feeds in coastal waters	Declining fish stocks, nest predation, coastal development, and recreation
<i>Sterna paradisaea</i> Arctic tern	A summer visitor, this species will travel some 20,000 miles from the Antarctic to breed in Scotland, including the	Largely coastal, breeding on coastal islands and shingle banks	Nest predation by foxes, mink and hedgehogs, coastal development, recreation.

Species	Distribution/Status	Habitats	Threats
	Ythan estuary and St Fergus. RSPB amber listed and a UKLBAP species of conservation concern		Declining fishstocks including sand eels has led to massive breeding failure in recent years
<i>Sterna albifrons</i> , Little tern	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	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	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, long-lining, decline in fish discards and offal
<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 and the Aberdeenshire coast. 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	Chick predation by Great Skuas, declining sandeel stocks

### 3.0 CURRENT FACTORS AFFECTING THE HABITAT

#### 3.1 Habitat Loss from Anthropogenic Developments

Anthropogenic<sup>14</sup> 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 disturbance. For example, repeated trawling may result in deep mud habitats dominated by seapens to be transformed to communities dominated by a single species, such as *Nephrops*. Recovery to the original mature community, if possible, 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 can be separated into 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, which is then subject to bio-accumulation. 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 BODs<sup>15</sup> and CODs<sup>16</sup>), reduced light, prevention of marine snow<sup>17</sup> reaching the sea floor and the smothering of habitat.

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<sup>14</sup> Pertaining to humans

<sup>15</sup> Biochemical oxygen demand

### 3.3 Disturbance and Habitat Modification

Disturbance can include 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 of 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*). Others may be less able to cope physiologically with higher temperatures and experience local declines. Warmer sea temperatures can result in a change in the timing and abundance of plankton, such as the copepod *Calanus finmarchicus*, and consequently in 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 stakeholders to potential detrimental changes, through monitoring species sensitive to climate change.

### 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

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

<sup>17</sup> 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.

international trade; concern has risen over the past few decades. There is also increasing concern that warm-water species that currently cannot survive or reproduce 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 water<sup>18</sup> in particular has been identified as a key transporter. As a result, the UK has signed up to agreements to improve ballast water exchange practices to reduce numbers of 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. 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 human activities, 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.](#)

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<sup>18</sup> 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

## **4.0 CURRENT ACTION**

### **4.1 Legislation and 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](#).

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. At the time of writing there are also plans to extend a number of Special Protection Areas into the marine environment.

### **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.

### **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 an interest in coastal waters including developers who will be given an indication of areas that are suitable for specific projects. The Scottish Government has recently produced a draft Scottish Marine Bill, which is currently out to consultation.

## **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 habitat management; data collection; habitat management; awareness and training; communication; and research and monitoring.

**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

**Target 1.2:** Identify data gaps and develop actions to help fill them

**Target 1.3:** Identify and encourage volunteer organisations to collect data on species and habitats and submit to recognised forums

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

**Target 2.1:** Identify areas for protection, such as marine SACs, marine parks and no-take areas

**Target 2.2:** Ensure that local developments fully investigate and take sufficient measures to eliminate or mitigate harmful impacts

**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:** Raise awareness of marine issues and the importance of the marine environment.

**Target 3.1:** Raise profile of the work of marine initiatives in the northeast

**Target 3.2:** Raise awareness of the impacts of marine litter

**Target 3.3:** Ensure local marine operators and leisure craft do not adversely affect marine wildlife

**Target 3.4:** 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:** Improve communication and liaison between the community and industry and LBAP partner bodies.

**Target 4.1:** Ensure effective links between the community and industry, LBAP partner bodies and EGCP

**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:** Investigate habitat/species relationships, and anthropogenic effects on them in the Northeast, e.g. pollution, climate change

**Target 5.1:** Encourage research and monitoring of species and habitats

**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. Where this plan links with the National Marine Biodiversity Implementation Plan (2008-2010), this will be highlighted in the appropriate column.

**Table 2:** Marine HAP Actions

Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
<b>Data Collection;</b> Establish the status of the main habitats and species found in the NE below MLWS	1.1		Make agreement with NESBReC to set up data collation system for marine habitats and species in the Northeast	LBAP	NESBREC FRS, MCS SEA-SEARCH, NBN, WDGS, SWF, MarLIN, CRRU, SAC, Ocean Lab	Staff time	2009
	1.1		Identify data sources and create database on marine habitats and species in the Northeast	NESBReC	FRS, MCS, SEA-SEARCH, NBN, WDGS, SNH, SEPA, MarLIN, SAC, SWF, Ocean Lab, RSPB, CRRU		2011
	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	NESBReC	Seasearch SNH, FRS	FRS	Ongoing
	1.3		Encourage the participation by divers in Seasearch by distributing Seasearch promotional materials at public events and to local dive clubs	EGCP/MFP/ LBAP	MCS, EGCP	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/MFP	Seasearch	EGCP	2009

Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
	1.3	Objective 2 Target 2.1 Action 2.1d	Encourage participation of volunteers in monitoring and recording schemes (e.g. Sea Watch Foundation, Seasearch, MarLIN, NESBReC) by promoting these schemes at public events and clubs and via media release (minimum 1/year)	EGCP/MFP/ LBAP	SWF, Seasearch, NORCET, MarLIN NESBReC, Green Blue	Staff time and limited funding required for publications	Ongoing
	1.3	Objective 2 Target 2.1 Action 2.1d	Distribute information on schemes such as Sea Watch Foundation and NORCET on tour boats, ferries and marinas	EGCP	DSP, EGCP/MFP CRRU WDCS Aberdeen University	Staff time	Ongoing
<b>Habitat Management;</b> Ensure species and habitats in NE are sufficiently protected and not subject to deterioration	2.1	Objective 2 Target 2.1 Action 2.1a	Produce a research report identifying threats and impacts to the NE marine environment and ensure these are addressed in management schemes	EGCP/MFP	SEPA Planners FRS	FRS staff member researching anthropogenic impacts	2010
	2.1	Objective 1 Target 1.1	Identify four areas suitable for protection schemes for example marine MPA's, SACs, marine/coastal parks, voluntary marine reserves and no-take areas	SNH	FRS EGCP/MFP		2010
	2.2		Ensure planning officers refer marine habitats database when considering planning applications to ensure sufficient measures are taken to eliminate or mitigate harmful impacts	Planning department	FRS EGCP/MFP Crown Estate		Ongoing
	2.3	Objective 2 Target 2.1	Make presentations/distribute information at meetings of fisheries	EGCP/MFP	Scottish Fisherman's		2009



Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
		Action 2.1d	groups to encourage the involvement of commercial inshore fishermen in conservation and reporting schemes.		Federation		
	2.3	Objective 2 Target 2.1 Action 2.1d	Distribute promotional materials to angling clubs and tackle shops to encourage involvement in conservation and reporting schemes.	EGCP/MFP, Angling Clubs SSACN	FRS Pitlochry Deeside Fisheries Trust	Staff time	2010
	2.3	Objective 2 Target 2.1 Action 2.1d	Introduce a data collection scheme for recreational fishermen for species, size and condition of catch.	EGCP/MFP	Angling clubs SSACN	Staff time	2010
	2.3		Lobby for improvement of fishing practices locally using a minimum of 2 press releases/year in fishing publications	SSACN	SNH, LBAP		2009
	2.4		Create a database of current pollution and litter projects in progress, e.g. Blue Flag scheme, Blue Green, Fishing for Litter and examples of best practice from elsewhere	EGCP/MFP	MCS	Staff time	2009
	2.4		Send a letter to decision makers, lobbying for local authorities to ban balloon releases	MCS	EGCP/MFP WDCS	Staff time	2009
	2.4		Initiate a project to reduce pollution and litter in the north east	EGCP/MFP	SEPA, MCS, KSB	Staff time	2009
	2.5		Initiate a project to develop and implement a system of Marine Spatial management/ Planning	EGCP/MFP	MI, Local planners		2010
<b>Awareness and Training;</b> Raise the public's and	3.1	Objective 2 Target 2.1	Offer funding support through the EGCP community grant scheme to coastal related projects with the aim	EGCP		Staff time	Ongoing



Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
coastal and marine industries' awareness of marine issues and the importance of the marine environment.			of improving the data held on habitats and species in the region				
	3.1	Objective 2 Target 2.1	Draft Interpretation Plan identifying key messages stakeholders and target audiences	LBAP			
	3.1		Create a database of existing interpretive provision and identify gaps	Ranger services	LBAP SNH	Staff time	2009
	3.1		Increase awareness of sustainable fish stocks by promoting the good fish guide to all events	EGCP/MFP	MCS	MCS production of the Good Fish Guide	Ongoing
	3.1	Objective 1 Target 1.2	Identify 5 species of concern and develop species reporting postcard cards, 1 annually	EGCP/MFP	FRS MCS MarLIN		2009
	3.2		Support Beachwatch and Adopt-a-beach events to combat marine litter and raise awareness by promoting at all events attended and via EGCP website	EGCP/MFP	WDGS MCS Ranger service	Staff time	Ongoing
	3.2	Objective 2 Target 2.1	Produce literature and leaflets on specific issues each year; 1 habitat and 1 species. Link this with the Macduff Marine Aquarium, ranger services, Maritime Museum, etc to raise awareness of sublittoral species and habitats in the NE	EGCP/MFP	LBAP MCS Sea Watch Foundation WDGS		2008
	3.2	Objective 2	Organise or facilitate at least one	LBAP	Ranger Service		2009

Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
		Target 2.1	event per year to publicise a particular issue		MCS, SWF, WDCS		
	3.3	Objective 2 Target 2.1	Promote best practice at all events attended to users of the marine environment eg the "Scottish Marine Wildlife Watching Code" and DSP	DSP WDCS	EGCP/MFP WiSe MFP		Ongoing
	3.3		Increase awareness of the presence of marine mammals in the NE by 1 press release/yr detailing where they can be seen from land + Identification guide	EGCP/MFP	LBAP	Staff time plus funding for ID guide	2009
<b>Communication and Liaison;</b> To improve links between the community and industry and LBAP partner bodies	4.1		Create a database of 10 potential projects suitable for team building events/corporate responsibility and promote these to local industry	EGCP/MFP		Staff time	2009
	4.1		Carry out a quarterly update to highlight positive environmental work carried out by local maritime industries to communities through the EGCP and LBAP websites	EGCP/MFP	Local maritime industries		Ongoing
	4.1		Include a 6 monthly newsletter update to maintain links between the community, industry and LBAP partner bodies and share ideas and projects	EGCP/MFP	LBAP		2009
	4.1		Liaise with EGCP and local communities in developing a Marine Spatial Plan for the area between Fraserburgh and St. Cyrus out to	EGCP/MFP	SNH, FRS		2010

Operational Objective	Target	Links with Marine Biodiversity Plan	Outline Prescription	Lead Partner	Partners	Potential Resources	Start Date
			6.5nm/12km				
	4.1		Encourage fishing industry students to take part in 1/yr in a local beach clean	EGCP	MCS	Equipment available from LA	2010
	4.1		Provide quarterly updates to community notice boards to keep local people informed of current activities	EGCP		Staff time	2009
	4.1		Create links with Moray Firth Partnership Fisheries Action Group and provide partners with 6 monthly updates and more where required	EGCP/MFP		Staff time	2010
<b>Research and Monitoring;</b> 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 MCS	In kind- FRS SEPA SNH MCS	2010
	5.1		Identify the inshore fisheries in the NE and produce a report showing their potential impacts on biodiversity. Possible link with MAFCONS project in FRS	FRS	SNH	Staff time	2010
<b>Monitoring</b>			Review action plan and its progress every 3-5 years	N/A	N/A	N/A	N/A

**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	Entanglement from fishina 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	Orange		Orange	Orange	Orange	Orange	Orange	Orange	Orange				Orange				Orange		
<i>Tursiops truncatus</i> , Bottlenose dolphin	Orange		Orange	Orange	Orange	Orange	Orange	Orange		Orange			Orange	Orange			Orange		
<i>Grampus griseus</i> , Risso's dolphin														Orange					Orange
<i>Lagenorhynchus acutus</i> , Atlantic white-sided dolphin																			Orange
<i>Lagenorhynchus albirostris</i> , White-beaked dolphin							Orange							Orange	Orange				
<i>Balaenoptera acutorostrata</i> , Minke whale	Orange		Orange		Orange	Orange	Orange					Orange							
<i>Balaenoptera physalus</i> , Fin whale	Orange				Orange	Orange	Orange					Orange							
<i>Megaptera novaeangliae</i> , Humpback whale												Orange							
<i>Delphinus delphus</i> , Common dolphin			Orange											Orange					
<i>Cetorhinus maximus</i> , Basking shark			Orange					Orange						Orange	Orange				
<i>Phoca vitulina</i> , Common seal	Orange					Orange	Orange				Orange		Orange	Orange		Orange			
<i>Halichoerus grypus</i> , Grey seal	Orange					Orange	Orange				Orange		Orange	Orange		Orange			

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries	Entanglement from fishina 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>Ammodytes marinus</i> Lesser sandeel																			
<i>Gadus morhua</i> Atlantic cod																			
<i>Clupea harengus</i> Atlantic herring																			
<i>Hippoglossus hippoglossus</i> Atlantic halibut																			
<i>Merlangius merlangus</i> Whiting																			
<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																			

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries	Entanglement from fishina nets	Recreation	Prey depletion/ Competition for food	Climate change	Disease	Habitat degradation/ disturbance	Nest Disturbance and/or persecution	Largely Unknown
<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																			
<i>Alca torda</i> , Razor bill																			
<i>Cepphus 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																			

	Pollution	Oil spills	Bycatch	Dredging	Construction and development	Underwater noise	Marine Renewables	Marine litter	Interspecies conflict	Aquaculture	Fisheries	Entanglement from fishna nets	Recreation	Prey depletion/ Competition for food	Climate change	Disease	Habitat degradation/ disturbance	Nest Disturbance and/or persecution	Largely Unknown
<i>Phalacrocorax aristotellus</i> , Shag	■	■												■					
<i>Somateria mollissima</i> , Eider	■									■				■				■	
<i>Pandion haliaetus</i> , Osprey											■						■	■	
<i>Haliaeetus albicilla</i> , White-tailed eagle																		■	
<i>Sterna hirundo</i> , Common tern					■								■	■				■	
<i>Sterna paradisaea</i> , Arctic tern					■								■	■				■	
<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		■										■		■					



NORTH EAST SCOTLAND  
BIODIVERSITY



	Largely Unknown		
Nest Disturbance and/or persecution			
Habitat degradation/disturbance			
Disease			
Climate change			
Prey depletion/Competition for food			
Recreation			
Entanglement from fishing nets			
Fisheries			
Aquaculture			
Interspecies conflict			
Marine litter			
Marine Renewables			
Underwater noise			
Construction and development			
Dredging			
Bycatch			
Oil spills			
Pollution			
<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

<b>Designation</b>	<b>Relevance to the Northeast Marine LBAP</b>
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 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

Designation	Relevance to the Northeast Marine LBAP
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](http://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](http://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/](http://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/](http://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/](http://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/](http://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](http://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/](http://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](http://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](http://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/](http://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](http://www.sepa.org.uk)

**Scottish Natural Heritage**, is the statutory conservation agency for Scotland and aims to secure the conservation and enhancement of Scotland's natural heritage, to foster an understanding and to facilitate an enjoyment of it and to encourage its sustainable use.



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.marinecode.org](http://www.marinecode.org)

The WiSe (**W**ildlife **S**af**E**) 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/](http://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/](http://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/](http://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.keeptoscotlandbeautiful.org/](http://www.keeptoscotlandbeautiful.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](http://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/](http://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/](http://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](http://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](http://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](http://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/](http://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](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.