SITE SYNOPSIS

Site Name: Mulroy Bay SAC

Site Code: 002159

Mulroy Bay is an extremely sheltered, narrow inlet situated on the north coast of Co. Donegal. The bay is a glacial fiard and the most convoluted of the marine inlets in north-west Ireland. It has three significant narrows where the current is very strong. The Moross peninsula, which separates the North Water from the Broad Water, is a large glacial drumlin. Bedrock is principally metamorphic quartzite, limestone, schist and gneiss, with intrusive granite at the mouth.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1160] Large Shallow Inlets and Bays
[1170] Reefs
[1355] Otter (*Lutra lutra*)

Mulroy Bay displays excellent examples of three habitats listed on Annex I of the E.U. Habitats Directive – reefs, large shallow inlets and bays and mudflats and sandflats not covered by seawater at low tide. The site contains a good range of different sediment types which includes coarse sand, the free-living red calcareous algae called maerl (also known as 'coral') and a variety of exposed and sheltered reefs with strong to weak currents. Extremely sheltered reefs subject to weak currents, as found in Mulroy Bay, are rare in Ireland. The variety of different habitats within the site is reflected in the high number of communities found in the bay and the high species diversity. Rare species found in Mulroy Bay include Couches Goby (*Gobius couchi*), the file shell *Limaria hians*, the anthozoan *Paraerythropodium coralloides* and the hydorid *Halecium muricatum*. Species with a very restricted distribution or which are close to the limits of their distribution are the red alga *Dudresnay verticillata* and the bubble shell *Haminoea navicula*. A large population of the scallop *Pectin maximus* occur in Mulroy Bay and is now commercially managed.

Much of the shores of Mulroy Bay are a mixture of boulder, cobbles and gravel which support a community characterised largely by the alga *Ascophyllum nodosum* typical of these conditions. Tide-swept coarse gravel and boulders occurs at headlands within the bay and in channels leading into small loughs off the bay e.g. Back Lough and Wee Sea. These areas support fucoid (brown seaweeds) dominated communities with a high species diversity (up to 88 species at one site) of largely faunal species representative for the habitat. Rare species are also present, namely the chiton *Leptochiton scabridus*, the file shell *Lamaria hians* and the sea slug *Aeolidiella*

alderi which is close to the northern limits of its distribution. It is unusual to find species such as the sponge *Stelletta grubii* and the bivalves *Venus verrucosa* and *Venerupis senegalensis* on the shore. The small star fish *Asterina phyllactica* occurs at these sites and appears to be close to the limits of its northern distribution.

The shallow water reefs exposed to wave action are rugged bedrock with gullies characterised by the kelp *Laminaria hyperborea* and *Halidrys siliquosa,* with foliose red algae, including *Drachiella spectabilis* (close to northern limits of its distribution) on the upwards facing slopes and by the jewel anemones on the steeply sloping and vertical faces. Both communities are representative for these habitats. The northern hydroid *Abietinaria filicula* occurs here, the southern limit of its distribution being the Kerry Head Shoal, Co. Clare. In the tide-swept areas cobbles and boulders support the brown seaweed *Halidrys siliquosa,* with mixed kelp forests of *Laminaria hyperborea* with the sponge *Esperiopsis fucorum*. This community has a variety of sponges, hydroids and red algae that varies from site to site showing the range of representative examples of this community. In the more sheltered areas with less current the kelp forests of *Laminaria saccharina* occur and have a greater variety of sponges and solitary sea squirts with some variation from site to site. This community is considered to be uncommon. The red alga *Dudresnaya verticillata* occurs in a number of kelp communities and close to the northern limits of its distribution. The very rare Couches Goby occurs in kelp forests in both North Water and Broad Water; the only other known locations for this fish are Lough Hyne, Co. Cork and Cornwall, in the United Kingdom.

On exposed very steep bedrock at depths of 8–24 m animal dominated communities occur. In areas subject to strong tidal streams (e.g. the first narrows) a community dominated by the bryozoan *Flustra foliacea*, hydroids and sponges is present. The scarce northern hydroid *Halecium muricatum* is found here. The sheltered bedrock cliffs in North Water and Broad Water provide a rare habitat with the uncommon sponges *Dercitus bucklandi* and *Stelletta grubii* in abundance at both sites. An undescribed *Polymastia* species of sponge was typical of these communities. The cliff in Broad Water supported a community of *Ascidella aspersa*. Under the overhangs a population of the anthozoan *Parerythropodium coralloides* occurs which, in Ireland, has only been recorded in four locations; it is also rare in Britain. This community is more characteristic of more open waters.

Within Mulroy Bay a large intertidal area occurs around Island Roy and Carrickart. Here the sediment is largely sand to coarse sediment with polychaete *Pygospio elegans* occurring in moderate to low abundances. Nematodes, the bivalve *Cerastoderma edule* and the polychaete *Scoloplos* (*Scoloplos*) *armiger* occur in low abundances. The oligochaete *Heterochaeta costata* is abundant at Carrickart. The colonial sea squirt bryozoan *Bowerbankia* sp. is recorded on the shore at Island Roy.

Subtidally the sediment communities within the bay vary from clean sand in the outer reaches of the bay to mixed sediments with higher levels of fine material in the inner reaches of the bay. In the coarse sand of the outer bay the polychaete *Nephtys cirrosa* and the amphipod *Bathyporeia,* along with the burrowing sea urchin

Echinocardium cordatum, are found. Clean mobile sand with the red algae *Polyides rotundatus* occur where the current increases approaching the first narrows.

The maërl bed consists of the maërl species *Lithothamnion corallioides* and notable species occurring within the beds include the burrowing sea cucumber *Neopentadactyla mixta*, the polychaete *Eupolymnia nebulosa*, the decapod *Necora puber* and the nudibranch *Aplysia punctata*.

Within the shelter of the Moross channel there are extensive beds of the rare file shell *Limaria hians* on gravels where they have constructed nests. This is the only known area in Ireland for beds of this species. Aggregations of the brittlestars *Ophiothrix fragilis* and *Ophiocomina nigra* are found where these beds are dense.

Within the inner bay the heterogeneous nature of the sediment results in a diverse fauna including the bivalves *Corbula gibba* , *Pecten maximus* and *Thyasira flexuosa,* the polychaetes *Jasmineira* sp., *Scalibregma inflatum* and *Prionospio* sp. as well as the echinoderms *Thyone fusus, Ophiocomina nigra, Ophiothrix fragilis, Henricia oculata* and *Crossaster papposus*, the crustaceans *Galathea squamifera*, *Pagurus bernhardus*, *Cancer pagurus*, *Inachus dorsettensis*, *Liocarcinus corrugatus* and *L. puber*, the sponges *Alcyonidium diaphanum*, *A. digitatum* and *A. hirsutum* and the ascidian *Clavelina* sp. The southern anemone *Anthopleura balli* is common; it is close to the northern limits of its distribution here. Where boulders are present in shallow water a variety of red algae may be found.

Extensive reef of flat and sloping bedrock occurs from the south of Melmore Head to Gortnalughoge Bay. The exposure regime of the reef ranges from moderately exposed within the northern reaches of the site sheltered reef inside the First Narrows. Within the inner reaches of the site the reef is extremely sheltered; this type of reef is rare in Irish waters. The reef is predominated by brown algal species including *Fucus* spp. and *Ascophyllum nodosum*; the bivalve *Mytilus edulis* also occurs here.

Eelgrass (*Zostera marina*) occurs in the Wee Sea and in inner Mulroy Bay. The anemones *Anemonia viridis* and *Anthopleura ballii*, the starfish *Asterias rubens* and the burrowing holothurian *Leptosynapta inhaerens* all occur within these beds. In the same area, but slightly deeper in muddy sediment, a rare community characterised by the very small sea cucumber *Ocnus plancki* is present.

The otter, a species listed on Annex II of the E.U. Habitats Directive, frequents the site.

The bay also supports significant numbers of wintering birds, with Mute Swan present in nationally important numbers and several species recorded in regionally important numbers (Brent Goose, Shelduck, Wigeon, Teal, Red-breasted Merganser, Oystercatcher and Dunlin).

Aquaculture, scallop dredging and seaweed harvesting occur within the site and may pose a threat to the ecological value of the area.

Mulroy Bay displays excellent examples of three habitats listed on Annex I of the E.U. Habitats Directive – reefs, large shallow inlets and bays and mudflats and sandflats not covered by seawater at low tide. The ornithological interest and the presence of a population of the Annex II species otter adds further to the importance of the site.