

Phylum/sub-phylum	Common name	Number of species	Total records	Common species (number of records in brackets)
Porifera	Sponges	17	59	<i>Axinella infundibuliformis</i> (7) – Prawn cracker sponge <i>Haliciona urceolus</i> (7) – Stalked tube sponge <i>Hemimycale columella</i> (7) – Crater sponge
Cnidaria	Anenomes, corals, hydroids, jellyfish	30	179	<i>Alcyonium digitatum</i> (25) – Dead men's fingers <i>Caryophyllia smithii</i> (22) – Devonshire cup coral <i>Actinothoe sphyrodeta</i> (17) – White striped anemone
Annelida and Polychaeta	Segmented worms	7	17	<i>Chaetopterus variopeatus</i> (6) – Parchment worm
Crustacea	Lobsters, crabs, barnacles	12	32	<i>Cancer pagurus</i> (7) – Edible crab <i>Necora puber</i> (9) – Velvet swimming crab
Mollusca	Shells, sea slugs, cuttlefish, octopus	14	50	<i>Calliostoma zizyphinum</i> (16) – Painted top shell <i>Janolus cristatus</i> (5) – Crystal sea slug
Bryozoa	Sea mats	14	50	<i>Flustra foliacea</i> (11) – Hornwrack <i>Alcyonidium diaphanum</i> (9) – Jelly finger bryozoan
Echinodermata	Starfish, urchins, sea cucumbers	11	93	<i>Echinus esculentus</i> (20) – Edible urchin <i>Asterias rubens</i> (23) – Common starfish <i>Henricia</i> sp. (19) – Bloody henry starfish
Tunicata	Sea squirts	11	54	<i>Clavellina lepadiformis</i> (21) – Light bulb seasquirt <i>Ascidia aspersa</i> (10) – Fluted sea squirt
Pisces	Fishes	18	63	<i>Labrus mixtus</i> (14) – Cuckoo wrasse <i>Pollachius pollachius</i> (10) – Pollack <i>Labrus bergylta</i> (10) – Ballan wrasse
Algae	Seaweeds	15	58	<i>Delesseria sanguinea</i> (13) – Sea beech <i>Laminaria hyperborea</i> (8) – Cuvie or Northern kelp
Total		149	655	

The table above shows how many species in each Phylum were found and what the most common species were. Listed below are records of particular interest.

Sponges Sponge crusts, the prawn cracker sponge *Axinella infundibuliformis*, and the volcano sponge *Haliciona viscosa* were all common in rocky areas. In the soft sediment around Islandmagee, *Suberites carnosus* and the shredded carrot sponge *Amphilectus furciformis* were present.

Anemones, Corals, Hydroids and Jellyfish The rare hydroid *Polyplumaria flabellata* was recorded from West Maiden, and in larger numbers from East Maiden. Other rarely recorded species were the swimming anemone *Stomphia coccinea* (off the Gobbins) and the anemone *Hormathia coronata*. The white striped anemone *Actinothoe sphyrodeta* and dead men's fingers *Alcyonium digitatum* were very common at several sites.

Crustaceans were not very frequently recorded. The edible crab *Cancer pagurus* and the velvet swimming crab *Necora puber* were the most common species. Several species of spider crabs were also recorded on flat sediment near Islandmagee.

Molluscs The painted topshell *Calliostoma zizyphinum* was common. Several species of nudibranch were recorded, including the sea lemon *Archidoris pseudoargus* and the crystal sea slug *Janolus cristatus*. One record was made of the curled octopus *Eledone cirrhosa*.

Echinoderms The goosefoot starfish *Anseropoda placenta* was present around Islandmagee, which is a Northern Ireland Conservation Priority Species. Common starfish *Asterias rubens* and urchins *Echinus esculentus* were abundant, particularly near Islandmagee.

Fish Wrasse were common around the Maidens, including ballan wrasse *Labrus bergylta*, cuckoo wrasse *Labrus mixtus*, and goldsinny wrasse *Ctenolabrus rupestris*. Large shoals of pollack *Pollachius pollachius* were present at some sites.

Seasquirts The lightbulb seasquirt *Clavellina lepadiformis*, the fluted sea squirt *Ascidia mentula* and the red sea squirt *Ascidia mentula* were all common on the Maidens reefs.

Seaweeds Red algae were common, and on the Maidens extended into fairly deep water (around 24m). The most common alga was the sea beech *Delesseria sanguinea*.



Sea lemon *Archidoris pseudoargus*



Isle of Muck and Maidens survey 2005/2006



Jewel anemones *Corynactis viridis*



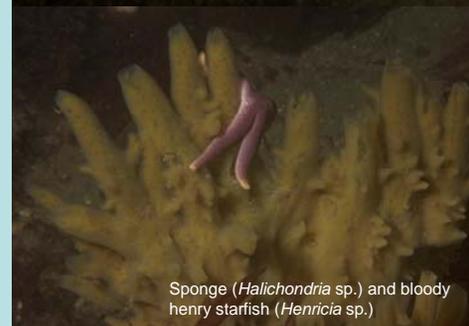
Striped anemone *Actinothoe sphyrodeta*



Cuckoo wrasse *Labrus mixtus*



Survey participants



Sponge (*Halichondria* sp.) and bloody henry starfish (*Henricia* sp.)



Encrusting life on bedrock



Surveyors taking part were: Silvana Acevedo, Elena Deligianni, Claire Goodwin, David Goodwin, Kate Hutchinson, Brian McIlroy, Heather Law, Aoife Ni Rathaille, Johnnie Reeves, Astrid Strosharl, and Maia Taylor. The survey was organised with the help of Kate Hutchinson, Ulster Wildlife Trust/WWF marine officer. We would like to thank North Irish Lodge Dive Centre for providing boat cover and local information.

Seasearch is a volunteer underwater survey project for recreational divers to actively contribute to the conservation of the marine environment (see www.seasearch.org.uk for more information). Financial support for the project was given by the Environment and Heritage Service Northern Ireland. This report was written by Claire Goodwin (thanks to Julia Nunn and Chris Wood for editorial comments). Photos are by Claire Goodwin.



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This survey was carried out over two weekends, one in 2005 and one in 2006. The survey was jointly organised with Kate Hutchinson, Ulster Wildliffe Trust Marine Officer, who was keen to obtain information on the underwater side of the Isle of Muck, an Ulster Wildlife Trust Marine Reserve lying just off Islandmagee. As well as surveying, the Isle of Muck, we aimed to dive some sites on the Maidens. This group of rocks lies about six miles north of Larne. Their steep sides are very exposed to tidal currents, and consequently have a rich animal fauna. They are one of the few locations in Northern Ireland from which the Northern Ireland Conservation Priority (NICP) hydroids *Diphasia nigra* and *Polyplumaria flabellata* are known. The Islandmagee area is also one of the main locations for the goosefoot starfish *Anseropoda placenta*, another Priority species. As well as collecting general records, we looked particularly for these priority species. We found one clump of *Polyplumaria flabellata* on the East Maiden Lighthouse, and the species was also present in small numbers on the West Maiden lighthouse site. The goosefoot starfish was recorded from both the Gobbins and NW of White cliffs.

8. East Maiden lighthouse

Dive on west side of East Maiden lighthouse. A vertical piece of bedrock ran from the base of the lighthouse, at the surface, to between 11.5 and 17m. Red algae, oaten pipes hydroids *Tubularia indivisa* and kelp forest cover this wall. From the base of the wall there was a gentle slope of large and small boulders, with pockets of sand and gravel between them. This became steeper at 26m. The maximum depth surveyed was 29m, but the slope continues to 50m+. The boulders were covered with rich animal turf, including a dense patch of the lacy hydroid *Polyplumaria flabellata*, a rare NICP species, on the 23m contour. Much red algae was present on the upper part of the slope, including abundant sea beech *Delesseria sanguinea* (to approximately 24m), then the cover became progressively more animal dominated. The lightbulb seasquirt *Clavelina lepadiformis*, the hydroids *Aglaophenia tubulifera* and *Abietinaria abietina*, dead men's fingers *Alcyonium digitatum*, and the white cluster anemone *Parazoanthus anguicomus* were all common. Many mobile species including abundant starfish (the common sunstar *Crossaster papposus*, the spiny starfish *Marthasterias glacialis*, and the common starfish *Asterias rubens*) and various species of wrasse were present. Some discarded fishing tackle was present at the site.

6. West Maiden lighthouse

Steep boulder slope (about 45 degrees) on the east side of West Maiden lighthouse, with depths from 15-26m surveyed. The upper part of the slope (15-20m) was formed of large (>1m) square boulders. Although there was no sediment in between the boulders, their surfaces were quite silty. Red algae were abundant. On the lower part of the slope (22.7-26m), the boulders were smaller in size (0.5-1m) and interspersed with pebbles and shell fragments. Lots of hydroids and sponges were growing on the boulder surfaces. The branched sponges *Raspailia hispida* and *Stelligera stuposa* and the prawn cracker sponge *Axinella infundibuliformis* were frequent, as was the hydroid *Aglaophenia tubulifera*. The rare NICP hydroid *Polyplumaria flabellata* was also present in small numbers.

4. The State of Louisiana

Wreck of three masted steamer, sunk in 1878 after running into Hunter rock. Lying against Hunter rock, an outlying rock of the Maidens. Wreckage (18-20.5m) heavily encrusted with hydroids and anemones, including the oaten pipes hydroid *Tubularia indivisa*, the elegant anemone *Sagartia elegans* and plumose anemone *Metridium senile*. Around the south side of the wreck (19.5-20.5m), there was mixed ground of cobbles, pebbles and gravel from 19.5 to 20.5m, which was formed into large waves. Some encrusting life was on the cobbles such as the antenna hydroid *Nemertesia antennina*, but no life was visible in sediment surrounding them. On the west side of wreck between 19.5 and 20.5m, there were ripples of mobile sand. There was very little life in this - only one common starfish *Asterias rubens* was seen.



East Maiden lighthouse

3. NW of the White Cliffs

Area of gently sloping muddy sand with pebbles and scattered boulders - depth surveyed from 8-20m. Shallower areas (<12m) were covered in kelp park, with both forest kelp *Laminaria hyperborea* and sugar kelp *L. saccharina* present. In deeper areas, there were abundant red algae including sea beech *Delesseria sanguinea*, and short and tall animal turf was present on pebbles and boulders. Much life was present at the site - the sponge *Suberites carnosus* was very abundant; hornwrack *Flustra foliacea* and the jelly bryozoan *Alcyonidium diaphanum* were also frequent. The sand burrowing brittlestar *Amphiura* sp. and the white flecked sand brittlestar *Ophiura albida* were present in the sand between boulders. The goose foot starfish *Anseropoda placenta* (a NICP species) was present in small numbers at the site. Unusual white bloody henry starfish *Henricia* sp. were spotted.



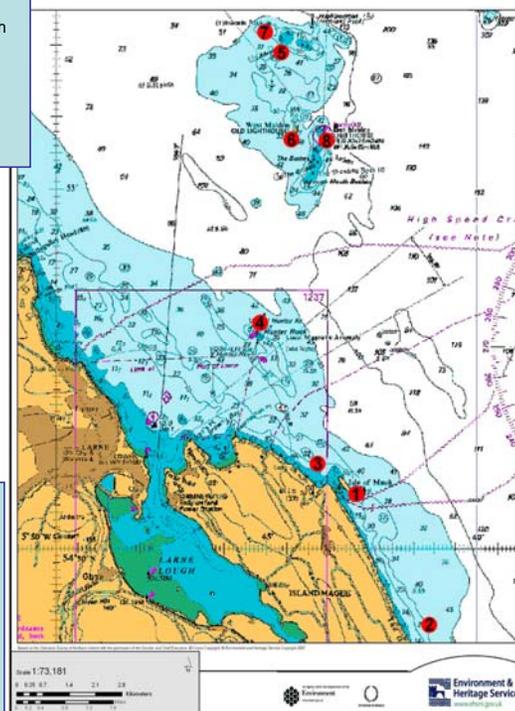
Swimming anemone *Stomphia coccinea*



Unusual white bloody Henry starfish *Henricia* sp.



Rare hydroids *Polyplumaria flabellata* (back) and *Diphasia alata*.



2. The Gobbins

Dive next to the Gobbins cliffs on the Isle of Muck. The substrate was a slightly sloping plain of stable cobbles, pebbles, shell, sand and gravel. Very occasional boulders were present. Depths of between 19.7 and 21.5m were surveyed on a drift dive. Much animal life was present at the site: the bryozoans *Eucratea loricata*, hornwrack *Flustra foliacea* and *Securiflustra securifrons* were frequent; the sponges *Suberites carnosus* and shredded carrot sponge *Amphilectus fucorum*, horseman anemone *Urticina eques*, dahlia anemone *Urticina felina*, parchment worms *Chaetopterus variopeclatu*, and spider crabs were all occasional. Echinoderms were particularly common - the goosefoot starfish *Anseropoda placenta* (a NICP species), the black brittlestar *Ophiocoma nigra*, the white flecked sand brittlestar *Ophiura albida*, the common urchin *Echinus esculentus* were all common. One specimen of the swimming anemone *Stomphia coccinea* was recorded. This species is widespread over the east coast of Northern Ireland, but rarely recorded.

5. The Albia

Wreck of a Spanish tramp steamer which ran aground on Allen rock in 1929. Scattered wreckage is present from 9-16m in depth. Kelp forest was present on the bed rock from 10-14m, then sparser kelp park in deeper areas of the site. Some small gullies were present between 14 and 16m, with sand and gravel in the bottom. The walls of the gullies and open rock faces were covered in short and tall animal turf such as white striped anemone *Actinothoe sphyrodeta*, dead men's fingers *Alcyonium digitatum*, and the volcano sponge *Haliclona viscosa*. One pocket of jewel anemones *Corynactis viridis* was present, completely covering the inside of the wreck's boiler. Kelp (forest kelp *Laminaria hyperborea* and sugar kelp *L. saccharina*) was abundant over the whole site. Not much life was apparent in the soft sediment between the bedrock. Cuckoo wrasse *Labrus mixtus*, ballan wrasse *Labrus bergylla* and pollack *Pollachius pollachius* were common around the site.

7. Russell Rock

Rock between Larne and the Maidens. The north side of the rock was surveyed; depths between 9-25m were dived but the rock extends much deeper to 50m+. Dense kelp forest was present on bedrock from top of rock at 9m, which continued to 16m. Deeper than 16m, the kelp became progressively sparser until at 20m it was open kelp park. This upper part of the rock was gently sloping and had many ledges. As well as kelp, many red algal species were present, particularly sea beech *Delesseria sanguinea*; the oaten pipes hydroids *Tubularia indivisa* and *T. larynx* were also common. Below 16m, the bedrock was much steeper, leading to an area of vertical cliff descending from 22m. Below 19m, the rock was mainly dominated by rich animal turf, sponges such as the prawn cracker sponge *Axinella infundibuliformis*, the volcano sponge *Haliclona viscosa*, the stalked tube sponge *Haliclona urceolus*, the branched sponge *Stelligera stuposa*, and sponge crusts were especially common. Dead men's fingers *Alcyonium digitatum*, the striped anemone *Actinothoe sphyrodeta*, and oaten pipes hydroids *Tubularia* spp. were also frequent, and there were occasional patches of jewel anemones *Corynactis viridis*.

1. South tip of the Isle of Muck

A gently sloping area of boulders interspersed with mud. From 8.5-10.5m, the substrate was composed of very large boulders completely covered in silt with some encrusting hydroids (for example the squirrel's tail hydroid *Sertularia argentea*) and red algae including the sea beech *Delesseria sanguinea*. The common sea urchin *Echinus esculentus* was abundant. Further down the slope (10.5-11.5m), the boulders were larger and mixed about 50:50 with soft mud. Many burrows were visible in the mud, but it was not possible to see what they were formed by - probably some sort of crustacean, but they looked smaller than scampi *Nephrops norvegicus* burrows. Fish such as poor cod *Trisopterus minutus* and the goldsinny wrasse *Ctenolabrus rupestris* were common. There was also a small area of rocky reef approx. 1m high from 11.5-12.5m. The south end of the reef was formed of large square blocks, with lots of encrusting life, the most abundant species being the squirrel's tail hydroid *Sertularia argentea*, and algae such as the sea beech *Delesseria sanguinea* and the sea oak *Halidrys siliquosa*.



Goose foot starfish *Anseropoda placenta*