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Appendix 1. Sites surveyed during BIOMAR survey (From Biomar, 1997)

Portnagarribane, Fanad, Lough Swilly.

55° 16.62' N; 007° 38.52' E

Depth 0.5-1.5 m

Boulders 60%, pebble 30% sand 10%

The site was located on the open coast, facing north-west. It consisted of an extensive rugged granite shore with a small sandy bay behind a natural rock barrier. The sand at LWST had extensive growths of *Zostera marina*. The rocky shore was densely populated with *Fucus* and *Ascophyllum*. The shore backing was of rounded granite boulders with no *Pelvetia* zone present.

Habitats

Exposed granite bedrock *Fucus vesiculosus* zone

Exposed granite bedrock *Fucus serratus* zone

Exposed lower shore Boulders and sand with *Zostera marina*

Great Pollet Arch, Lough Swilly

55° 15.36' N; 007° 37.08' E

Depth 0m,

100% bedrock

Exposed rocky shore close to the entrance of a large marine inlet. Bedrock strata lay at an angle of approximately of 40 degrees and had eroded to give several parallel peaks down the shore. The supralittoral fringe was dominated by the lichen *Verrucaria maura*, *Ramalina* spp. and *Xanthoria parietina*. Below the lichens the *Pelvetia canaliculata* and *Fucus spiralis* zone was restricted to the top of bedrock peaks and for a short distance down the gently sloping seaward facing bedrock. Below this zone on the sloping bedrock was the *Mytilus edulis* and *Semibalanus balanoides* zone with frequent *Fucus vesiculosus*. *Palmaria palmata* was common in both these zones. The sublittoral fringe occurred partly on the gently sloping bedrock and partly on a vertical seaward face dominated by *Alaria esculenta* in the upper part and *Laminaria digitata* seaward. A crevice running parallel to the sea in the mid sublittoral fringe had abundant bryozoan crusts and *Asterias rubens*.

Habitats

Lichen Zone in supralittoral fringe

Pelvetia canaliculata and *Fucus spiralis* zone

Mytilus edulis and *semibalooides* zone with *Fucus vesiculosus*

Palmaria palmata zone with *Mytilus edulis* and *Semibalanus balanoides*

Sublittoral fringe with *Alaria esculenta* and *Laminaria digitata*

Knockalla Point, Lough Swilly

55° 10.85' N; 007° 34.26' E

Depth 13.2-14.7 m,

Bedrock 85%, sand 15%

The site was located on a headland with moderately strong tidal streams. The first habitat was at the tip of the headland and the second habitat was slightly in the lee of the headland. The bedrock was rugged with pockets and areas of coarse sand. In the first habitat *Alcyonium digitatum* was dominant with a wide variety of other species present. In the second habitat *Ophiothrix fragilis* was dominant and the diversity of species was lower than in the first.

Habitats

Circa littoral bedrock exposed to moderately strong tidal streams

Rugged circalittoral bedrock dominated by *Ophiothrix fragilis*

Bay S of Carnsore Point, Lough Swilly.

55° 09.66' N; 007° 33.54' E

Depth -4.4m

Sand 90% other 10%

A shallow sheltered bay on the western side of Lough Swilly. The seabed was a plain of fine rippled sand with sparse plants of *Zostera marina*. The polychaete worm *Lanice conchilega* was characteristic and the gastropod mollusc *Hinia reticulata* was common.

Habitats

Fine rippled sand with *Zostera marina*

S side of Anny Point, Lough Swilly

55° 09.30' N; 007° 32.94' E

Depth 5.5m

Boulders 80% pebbles 20%

A rocky headland on the west side of Lough Swilly, close to some fish farms. There was a plain of uneven, extensively worked sand with *Echinocardium cordatum*, bivalves and polychaetes, a narrow strip of wave rippled gravel, then small boulders with red foliose algae and a few *Laminaria hyperborea* plants.

Habitats

Boulders with red algae

Narrow gravel strip with waves and ripples adjacent to the shore

Uneven worked sand plan with *Echinocardium cordatum*

SE of Macamish Point, Lough Swilly

55° 08.16' N; 007° 31.02' E

Depth 4.3m

95% gravel 5% sand

The site was located on the west side of a sea lough close to shore just south of a point. The habitat of fine sand/mud at 4.3 m BCD with small ripples was unlikely to extend over a large area. The habitat was characterised by *Echinocardium cordatum* buried approximately 5 to 10 cm below the surface, the most abundant species on the surface was *Ophiura albida*. Visibility was < 5 m.

Habitats

Sediment of fine sand with small amounts of shell fragments well sorted with small ripples. *Echinocardium cordatum* abundant just below the surface and *Ophiura albida* common on the surface. *Lanice conchilega* tubes were frequent.

Saltpans Bank, Lough Swilly.

55° 07.98' N; 007° 30.42' E

Depth 7.6m

100% sand

A large offshore bank of mobile clean sand extending into Lough Swilly, mostly about 7 m BCD. There was no infauna in core samples. *Ophiura ophiura* and *Ophiura albida* were common on the surface.

Habitats

Duned current-swept mobile clean sand.

W of White Sands Rocks, Lough Swilly.

55° 08.99' N; 007° 30.00' E

Depth 11-12.4 m

Pebble 5%, gravel 10%, sand 50%, mud 35%

The site was on the east side of White Sands Bay. The seabed consisted of soft fine sandy/mud on a very gentle current swept incline. *Ophiura ophiura* was common with *Ophiura albida* abundant. Numerous dabs *Limanda limanda* were in the area. The surface was covered with small bivalve shells, probably tellins but none were found alive. Tufts of bryozoans were common on the large

Habitats

Current swept fine sandy mud with *Ophiura albida* and *Ophiura ophiura*. Tufts of bryozoans were common on the larger pebbles with some *Sertularia cupressina* and *Sertularella polyzonias* covered with *Alcyonidium parasiticum*. Anemones *Sagartia ? troglodytes* were common in the sediment. Polychaete tubes, possibly *Pygospio elegans* were abundant.

W of Dunree Head, Lough Swilly.

55° 12.83' N; 007° 33.24' E

Depth 9.4 10 m

100% bedrock

The site was located on the eastern side of a large inlet adjacent to a prominent headland. The seabed consisted of a large rocky pinnacle (possibly an extension of the cliff) rising from a sandy plain at 14.4 m BCD vertically to its peak at 8.3 m BCD. The sand at the base of the pinnacle was rippled but not surveyed. The bedrock was characterised by *Alcyonium digitatum* and sponges particularly *Cliona celata* and *Raspailia ramosa* (Habitat 2). At 7.1 m BCD red algae were recorded from the rock (Habitat 1) predominantly *Hypoglossum hypoglossoides* and some *Delesseria sanguinea*. Generally not a very inspiring site.

A generally restricted habitat at the peak of an isolated rock pinnacle. The flora was characterised by the red weed *Hypoglossum hypoglossoides* with some *Delesseria sanguinea*. The rock face was covered with *Balanus crenatus* with sponges *Cliona celata* and a small *Leucosolenia complicata* colony. *Metridium seni*

Habitats

Steep upper circalittoral sediment covered bedrock with *Alcyonium digitatum* and *Sagartia elegans* and sponges *Cliona celata* with small patches of *Hemimycale columella* and *Raspailia ramosa*. *Flustra foliacea* was rare on the rock adjacent to the sediment/rock boundary.

Ballmastrocker Bay, Lough Swilly.

55° 12.29' N; 007° 37.14' E

Depth 0m

100% sand

Site is on west side of Lough Swilly, to the south of Port Salon, Co. Donegal. A sandy beach ca. 3 km long, quite steep, of yellow sand facing north-west. The beach appears species poor with little evidence of biota at the surface. Open to northerly winds but otherwise with limited fetch.

Habitats

Scattered patches of algal wrack on fine sand, talitrids present.

Sandy beach, fairly steep, yellow sand, no surface evidence of life.

Steep, dry, smooth, sandy beach. No surface evidence of life. Few single shells. *Eurydice* could have been brought into sieve washing pools on flood tide.