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velvet crab & gooseberry seasquirts



diver & guillemot



#### Cape Wrath Survey

As well as being a famous nautical landmark, Cape Wrath marks a geographical and biological boundary between the exposed, current-swept north coast and Pentland Firth, and the more gentle waters of the Minch. The survey covered 24 sites spread over a large area of this spectacular part of north-west Scotland.



#### North Coast

Sites 9, 19, 20 and 21 on the north coast were swept by strong currents, and exposed to waves from northerly directions. Cuvie kelp forests grew in shallow water, with dense red algae (*Delesseria sanguinea, Plocamium cartilagineum, Phycodrys rubens* and *Odonthalia dentata*) on stipes and on rocks beneath. At the extremely exposed offshore rock Duslic (Site 19), clumps of blue mussels grew on kelp stipes, and breadcrumb sponge was common wrapped around kelp stipes at several sites. In deeper water, animal turfs covered rocks. Dominant animals varied from site to site, but colonial and small solitary seasquirts were particularly abundant. At An Garb Eilean (Site 9), a small island used by the military for target practice, north-east facing rock slopes were covered with dense oaten-pipe sea fir *Tubularia indivisa*, together with abundant elegant anemones on vertical faces. Where rocks were scoured by nearby sand, bushy sea mats *Securiflustra securifrons* and *Flustra foliacea* were common, with featherstars and scattered jewel anemones on vertical faces.

## **Cape Wrath**

Cape Wrath (Site 15) proved as spectacular underwater as above, with wave-battered slopes covered with cuvie kelp (Laminaria hyperborea), and a dense short turf of animals beneath the kelp and in deeper water. Seasquirts were particularly abundant, together with sea mats, sea firs, and anemones including dahlia, jewel, plumose and elegant (Sagartia elegans). There were two caves at the base of the rock slope. One was only 2-3m high, but extended at least 20m into the cliff, and had a sand floor with abundant burrowing anemones Cerianthus Iloydii. The other cave was more than 8m high and 15m deep, with rock around the entrance covered with gooseberry seasquirts and the white sponge Clathrina coriacea (see front cover). Clean sand at the base of the rock slope was inhabited by small cuttlefish Sepiola atlantica, and marbled crabs Liocarcinus *marmoreus* (see front cover)

### Am Balg and Am Buachaille

These sites (12-14, 16-18) were intermediate in character between the current-swept north coast and the more urchin-grazed Minch sites to the south. The seabed beneath the spectacular stack of Am Buachaille (Site 17) was of horizontal rock with deep, wide gullies floored with clean mobile sand. Amongst the many scour-resistant organisms were keelworms, barnacles, red seaweeds, colonial seasquirts and the bushy sea mat *Flustra foliacea*. Vertical rock faces had many deep cracks inhabited by a particularly wide variety of fish, including 3-bearded rockling, ling, lemon sole, Yarrell's blenny, and tompot or red blenny (see back cover). Offshore sites around Am Balg were less scoured, and vertical rock faces were covered with soft corals, sponges and other animals.

## Islands west of Loch Inchard

Sites 22 and 23 were the furthest south in the Minch, and in the lee of small islands. Communities here reflected less extreme water movement, with rock slopes in deeper water more urchin-grazed, and with ascidian and anemone turfs replaced by featherstars and dense turfs of small hydroids. Soft corals were abundant on vertical rock.



#### Loch Inchard

In complete contast to the exposed coasts, Site 24 inside Loch Inchard was an extremely sheltered sheer cliff plunging to deeper than 40m, with communities typical of deep rock inside sealochs. The sealoch anemone *Protanthea simplex* was very abundant, with brachiopods *Neocrania anomala* and *Terebratulina retusa*, peacock fanworms, tubeworms *Serpula vermicularis*, parchment worm *Chaetopterus variopedatus* and seasquirts *Ascidia mentula*. Also found were the bright blue sponge *Hymedesmia paupertas* and stalked sponge *Haliclona urceolus*.







# **Faraid Head**

Rock and boulders at Sites 10 and 11, slightly sheltered from the main current by offshore rocks had little development of animal turf except for vertical faces where soft corals were dense in places. Cobbles and clean sand at the base of the rock slopes scoured surrounding rocks, which were covered with pink and brown encrusting algae and keelworms, with dahlia anemones growing in rock crevices and patches of black brittlestars on bedrock outcrops.

## **Eilean Hoan**

Eilean Hoan (Sites 1-4) is made of Durness limestone, which was often pitted, forming a sheltered refuge for a variety of infauna, including large numbers of the uncommon banded brittlestar *Ophiactis balli* (see front cover). The crevice brittlestar *Ophiopholis aculeata*, pea crabs, molluscs and seasquirts were also common. At Site 2, the hairy hermit crab *Pagurus cuanensis* was found in the shell of the large snail *Colus gracilis*.

# Loch Eriboll

Sites 5-8 near the entrance to Loch Eriboll had vertical rock covered with dense mussels in the infralittoral fringe, with cuvie kelp and soft corals below. At the cliff base, rock and boulders were urchin-grazed, leaving encrusting coralline algae as the predominant cover. Below about 10m, slopes of sand and shell gravel became increasingly muddy with depth, and were inhabited by a variety of typical species including hermit crabs, brown crabs, burrowing anemones, razor shells and common starfish. The giant naked foraminifera *Toxisarcon alba* was found at Sites 6 and 7.

#### Species seen on the survey

The table opposite summarises the numbers of species recorded in each group, and lists some common species. The number of species recorded by the survey reflects the type of survey which concentrated mainly on habitats, and prominent, easily identifiable species. There are fewer total species in the north of Britain than in the south, but the survey totals are boosted by inclusion of a wide range of sites with varying exposure, substrata and habitats, from extremely exposed headlands to extremely sheltered sealochs. A few species are more common in the north, including the red seaweeds Odonthalia dentata and Ptilota gunneri, starfishes Stichastrella rosea and Leptasterias muelleri, and Yarrell's blenny Chirolophis ascani.



Stichastrella rosea

The bottlebrush sea fir Thuiaria thuja, another species with a northern distribution common in the North Sea, was found well into the Minch at Sites 13. 16 and 17. as well as on the north coast.



bottlebrush hydroid Thuiaria thuja

Some	species		groups	were
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Pisces   Fish   25   Ballan wrasse Labrus bergylta     Butterfish Pholis gunnellus   Butterfish Pholis gunnellus     Sea scorpions   Ling Molva Molva     TOTAL SPECIES   193				Star sea squirt Botryllus schlosseri
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Ling Molva Molva   TOTAL SPECIES   193				Sea scorpions
TOTAL SPECIES 193				Ling Molva Molva
	TOTAL SPECIES		193	

notable feature of many exposed sites on the current-swept north coast' and around An Buachaille on the west coast, was the abundance and variety of seasquirts. Fifteen species were recorded, but it is likely that many more could be identified by an expert in this group.

25 species of fish were seen, British waters of a 2m shark, considerably to the excitement of recorded

diving at Cape Wrath! A basking shark was also seen at the surface near Site 18. Am Buachallie (Site 17), proved particularly good for fish, with several species living in deep crevices. A brightlycoloured 'tompot' blenny recorded from here may have been the red or Portuguese blenny Parablennius ruber, only recently recorded from Britain at a number of sites on the west coast of Scotland and Ireland.

including a most unusual sighting in The giant naked foraminiferan Toxisarcon alba and the sealoch anemone Protanthea simplex were possibly a make, which added both found within fjordic sealochs, their only habitat Britain. in

Surveyors taking part were: Neil Cowie & Calum Duncan (organisers), Frank Fortune, Anne Frankland, Mary Harvey, Digger Jackson, Keith Pritchard, Sue Scott, Chris Turkentine, Paul Turkentine and Paul Tyler. Thanks to Paul & Chris Turkentine for the use of

their boat. Seasearch Cape Wrath funded by SNH: Report and photographs by Sue Scott.



Seasearch is a volunteer underwater survey project for recreational divers to contribute to the conservation of the marine environment. Financial support for the project during 2003 and for the production of this summary report has been given by:





