

diver & guillemot



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marbled swimming crab

# Cape Wrath Survey May 2002 Summary Report



velvet crab & gooseberry seasquirts



brittlestars in pitted limestone



tide-swept kelp forest



lemon sole



### 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.

### 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 lloydii*. 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 *Sepiolo 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.

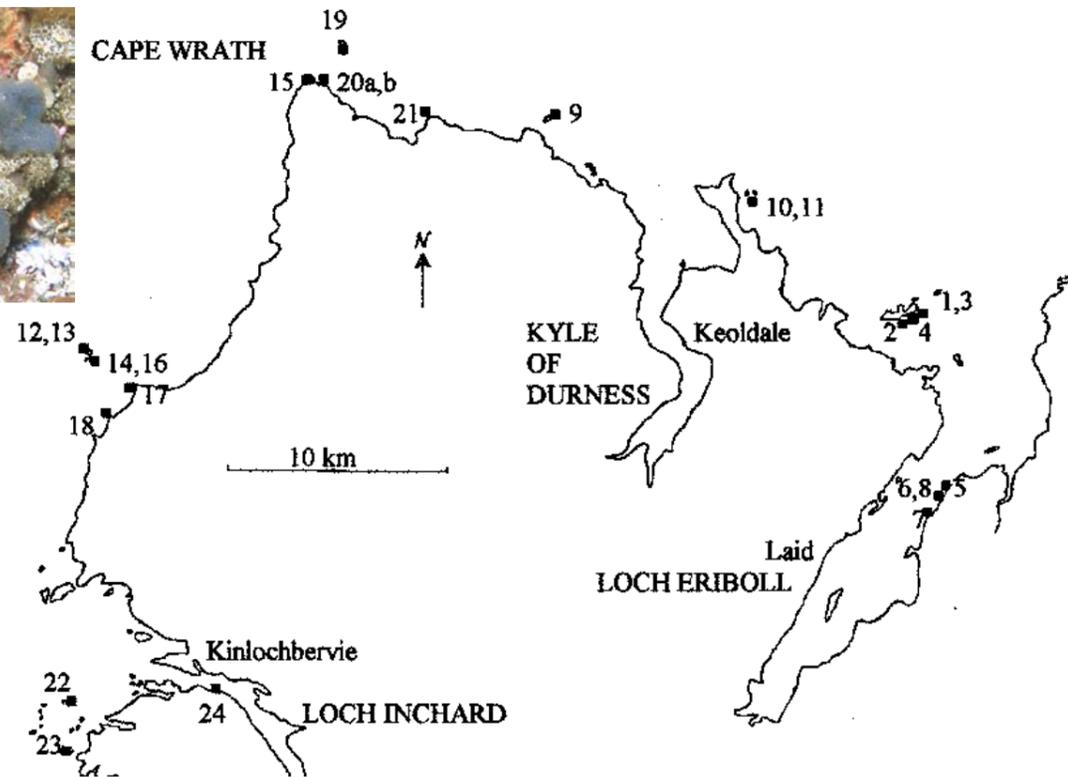
### Islands west of Loch Inchard

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.



### 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.



### 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 Inchard

In complete contrast 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*.



### 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 particularly well represented. A

Phylum	Common name	No of species	Common species
Algae	Seaweeds	36	Encrusting coralline algae Kelp <i>Laminaria hyperborea</i> Sea beech <i>Delesseria sanguinea</i> Sea oak <i>Phycodrys rubens</i> <i>Plocamium cartilagineum</i>
Foraminifera	Foraminiferan	1	Giant naked foraminiferan <i>Toxisarcon alba</i>
Porifera	Sponges	13	Elephant hide sponge <i>Pachymatisma johnstonia</i> Boring sponge <i>Cliona celata</i> Breadcrumb sponge <i>Halichondria panicea</i>
Cnidaria	Anemones, corals, sea fans	19	Soft coral, deadmen's fingers <i>Alcyonium digitatum</i> Dahlia anemone <i>Urticina felina</i> Jewel anemone <i>Corynactis viridis</i> Elegant anemone <i>Sagartia elegans</i> Oatenpipe sea fan <i>Tubularia indivisa</i> Plumose anemone <i>Metridium senile</i>
Ctenophora	Comb jellies	1	
Annelida	Segmented worms	8	Keelworm <i>Pomatoceros</i> sp
Crustacea	Prawns, crabs, lobsters	21	Velvet crab <i>Necora puber</i> Brown crab <i>Cancer pagurus</i> Barnacles Cirripedia Lobster <i>Homarus gammarus</i> Spiny squat lobster <i>Galathea strigosa</i>
Mollusca	Snails, bivalves, sea slugs, octopus	23	Painted topshell <i>Calliostoma ziziphinus</i> Grey topshell <i>Gibbula cineraria</i> Blue mussel <i>Mytilus edulis</i> Squid eggs
Brachipoda	Lamp shells	2	<i>Neocrania anomala</i>
Bryozoa	Sea mats	8	Orange encrusting Hornwrack <i>Flustra foliacea</i> <i>Securiflustra securifrons</i>
Echinodermata	Starfish, urchins, sea cucumbers	21	Common urchin <i>Echinus esculentus</i> Common starfish <i>Asterias rubens</i> Common featherstar <i>Antedon bifida</i> Sunstar <i>Crossaster papposus</i> Bloody Henry starfish <i>Henricia</i> sp Spiny starfish <i>Marthasterias glacialis</i> Red cushion star <i>Porania pulvillus</i>
Tunicata	Sea squirts	15	Lightbulb seasquirt <i>Clavellina lepadiformis</i> Sandy polyclinids Star sea squirt <i>Botryllus schlosseri</i>
Pisces	Fish	25	Ballan wrasse <i>Labrus bergylla</i> Butterfish <i>Pholis gunnellus</i> Sea scorpions Ling <i>Molva Molva</i>
<b>TOTAL SPECIES</b>		<b>193</b>	

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, including a most unusual sighting in British waters of a 2m shark, possibly a mako, which added considerably to the excitement of

diving at Cape Wrath! A basking shark was also seen at the surface near Site 18. Am Buachaille (Site 17), proved particularly good for fish, with several species living in deep crevices. A brightly-coloured '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.

The giant naked foraminiferan *Toxisarcon alba* and the sealoch anemone *Protanthea simplex* were both found within fjordic sealochs, their only recorded habitat in Britain.

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:

