

Wester Ross Survey Report 2018

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Bingham SAC RHIB picking up a diver



Inverness SAC RHIB off Tanera Beg



Sara Nason of Sea Change Wester Ross filming proceedings from the Bingham SAC RHIB

Introduction

In 2018 a diving expedition was organised by Seasearch in conjunction with the community group Sea Change Wester Ross. The team comprised of ten divers from all over the UK with a strong contingent from Inverness BSAC club which has long been a supporter of the Wester Ross MPA. Of special note were the four divers who travelled from the depths of England to take part including three members of Bingham Sub Aqua Club and one stalwart who travelled all the way from Essex. Over the period 22 Sept to 28 Sept twenty five dives were carried out resulting in the completion of 16 Surveyor forms and 10 Observer forms. Sadly the weather was not particularly co-operative and diving around the Summer Isles was only possible on three days, with another two days diving taking place in Loch Broom and Ardmair Bay and a final days diving in Bardentabet Bay.

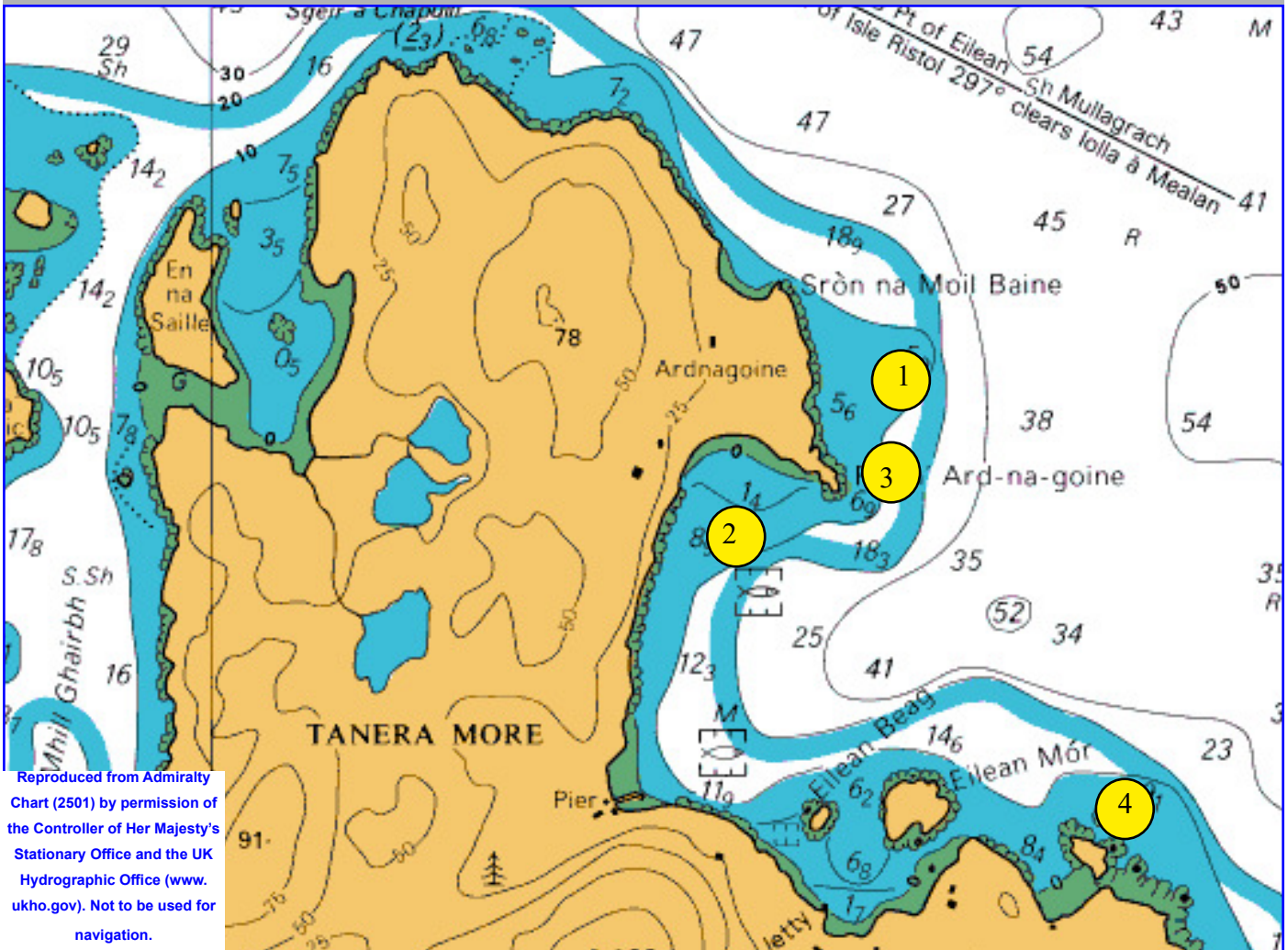
A number of interesting finds were recorded during the surveys. In Loch Broom a slow motion competition for space was observed with Horse Mussels, *Modiolus modiolus* competing for space with Flame Shells, *Limaria hians*. The Horse Mussels seemed to be holding their own in the shallower water but were being overgrown by the Flame Shells in the deeper water. Around the Summer Isles surveys were carried out over maerl beds which at the time of the survey were heavily overgrown with seasonal algae. A surprising observation was some fragments of live maerl exposed to the air during a low tide by Tanera Beg. In Tanera More bay the known distribution of the anemone *Anthopleura ballii*, was extended to two new sites. In the channel between Tanera More and Eilean Fada Mor the surveyors were surprised to find a specimen of the rarely recorded holothurian *Parastichopus tremulus*

In the following pages each dive site is described with a brief summary of the main findings. The survey forms for each site are included as an appendix.

Thanks to all who participated in this project especially the members of Sea Change Wester Ross who provided accommodation for the dive team and Inverness Sub Aqua club for providing a RHIB. Special thanks to Bingham Sub Aqua Club who not only provided a second RHIB but also saved the expedition with their “spare” compressor. Finally grateful thanks to Tanera for covering some of the surveys basic expenses for which the team were enormously grateful.

Divers were, Lynne Mackay Hilary Mackay, Owen Paisley, Caroline Bishop, Steve Bishop, Rob Spray, Frank Melvin, Lewis Press, Mike Verner and David Moore

Location of Tanera More Dive Sites 1 - 4



Shoals of juvenile fish accompanied the divers on nearly all the dives.

Site 1 Rubh Ard-na-Goine. “The Nursery” (SW18/103)

The surveyors recorded kelp covered bedrock and boulders down to 6-10 metres then a sloping sediment plain with occasional rock outcrops. As on all the survey dives during the week the divers were accompanied by shoals of young fish. These were mainly juvenile Pollack and Saithe but juvenile cod were also noted in amongst the kelp. In addition to the fish large numbers of juvenile starfish were also noted, These were mainly *Asterias rubens* but *Marthasterias glacialis*, *Luidia ciliaris* and *Porania pulvillus* were also seen. The sediment slope was dominated by the burrowing anemone *Cerianthus lloydii* and clusters of the seasquirt *Asciidiella aspersa*.



Old mooring ropes and other debris provided additional habitat in the anchorage bay

Site 2 The Anchorage (SW18/104)

This dive took place in the shallow water found in the NW corner of the anchorage. A fair amount of debris was recorded on the seabed here including the wreckage of a rowing boat, steel boxes, old and in-use moorings. Away from the moorings and wreckage the seabed was gently sloping silty sand with burrowing anemones, kelp and sea squirts. The southern anemone *Anthopleura ballii* was recorded as frequent here and this survey extended its known presence to further north in the bay.



Typical view of the seabed in Anchorage Bay dominated by sea squirts and kelp

Site 3 Rubh Ard-na-goine South

(SW18/105)

The third dive took place to the south of site 1 and just north of the anchorage bay. Not surprisingly the site was very similar to site 1 with bedrock and boulders down to around 10 metres then a sediment slope down to 19 metres. The rock had scattered kelp with shoals of juvenile Pollack and Saithe, spider crabs, feather stars, urchins and starfish amongst the kelp. The sediment slope was again dominated by the burrowing anemone *Cerianthus lloydii* and clusters of sea squirts but with the addition of the tube building worm *Lanice conchilega* and occasional scallop, The relatively rare starfish *Luidia sarsii* was also recorded here. The surveyors suspected that the sediment area had been dredged at some point in the fairly recent past.



Anthopleura ballii, generally a southern species, seems to be thriving in its northernmost outpost Tanera Mor Anchorage

Site 4 East of Eilean Mor, “Anemone Garden”

(SW18/124)

This dive took place in the shallow water at the southern edge of the anchorage just to the south of a tidal rock. In contrast to sites 1 and 3 a kilometre to the north the surveyors did not record shoals of juvenile fish but they did record 5 species of anemones in a small area. The sediment held *Anthopleura ballii*, *Sagartia troglodytes*, *Actiniothoe sphyrodeta* and *Cerianthus lloydii* while the snakelocks anemone *Anemonia viridis* was recorded on the kelp. This abundance of sediment dwelling anemones may be a result of the protection afforded by the nearby tidal rock. In addition to the anemones the burrowing starfish *Astropecten irregularis* and the cushion star *Porania pulvillus* were noted.



L.Press



H.MacKay

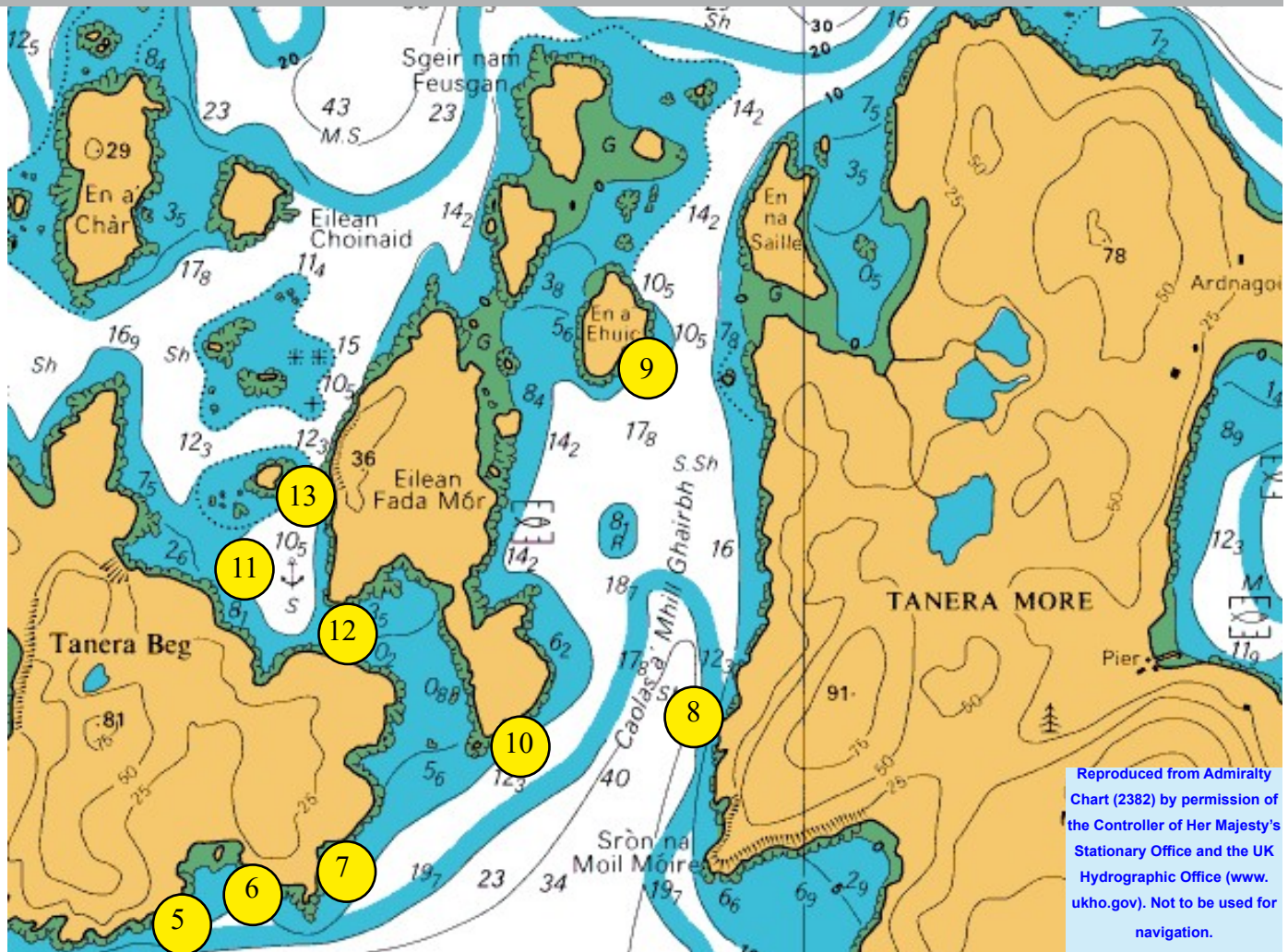
Luidia sarsi, much rarer than its seven armed cousin but relatively common around the Summer Isles.



L.Press

A snakelocks anemone, (*Anemonia viridis*) one of several anemone species recorded in the Anemone Garden

Location of Dive Sites 5-13



Site 5 Mol Bheag, South Tanera Beg

(SW18/106)

At this site the surveyors encountered a seabed covered in large boulders from 4 to 15 metres where the boulders were replaced by a coarse sand/gravel seabed. Above 12 metres the boulders were covered in kelp forest with associated hydroids such as *Obelia geniculata* and molluscs such as *Gibbula cineraria* and *Callisotoma zizyphinum*.

Amongst and above the kelp two spotted gobies and juvenile Pollack/Saithe were common. Unusual sightings at this site included a 15 spined stickleback, *Spinachia spinachia* and the stalked jellyfish *Lucernariopsis cruxmelitensis*.



Here the abrupt transition at site 5 between boulders and sand is clearly visible

Site 6 Mol Bheag East, South Tanera Beg

SW18/107

This dive took place on the eastern side of the Mol Bheag. Once again the divers found boulders from the shallow water which eventually petered out and were replaced by a sand and gravel seabed. Kelp forest dominated the boulders with abundant feather stars in the deeper water alongside clusters of the sea squirt *Asciadiella aspersa*. *Sagartia troglodytes* anemones were common in the sediment between boulders while top shells *Calliostoma zizyphinum* were common on the actual kelp. An old creel rope was spotted on the seabed.



One of several 15 spined sticklebacks seen during the expedition.



Brown crabs were encountered at most sites.

Site 7

(SW18/125)

This dive was to the east of Mol Bheag and the divers encountered a bedrock and boulder slope which gave way to a sandy seabed at around 15 metres. In the shallower water kelp forest dominated with associated feather stars and red algae. Stalked jellyfish were also noted. The kelp was gradually replaced with encrusting pink algae grazed by urchins and clumps of *Asciadiella* and *Ciona* sea squirts. On the sand large numbers of *Ensis* shells were noted.



F.Melvin

The rarely recorded sea cucumber *Parastichopus tremulus*

Site 8 SE end of Caolas a'Mhill Ghairbh

(SW18/109)

This was an unusual site with a bedrock cliff down to 12 metres followed by a shelly sand slope to 21 metres the limit of the survey. Strangely the sand slope was interrupted by band of boulders and cobbles parallel to the shore at various depths. Echinoderms seemed to like this site with ten different species recorded here including the rarely recorded holothurian *Parastichopus tremulus*. The bedrock cliff supported a kelp forest and large numbers of the feather star *Antedon bifida* while the boulder strips sheltered large numbers of the squat lobster *Munida rugosa*.

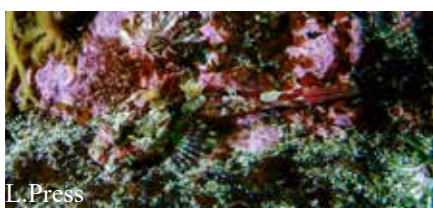


Diver surveying the bedrock wall at En a Ehuic

Site 9 En a Ehuic

(SW18/108)

This dive took place along the SE side of En a Ehuic. For much of the 250 metres surveyed the divers found a bedrock/boulder wall dropping to a coarse sand/gravel seabed at 5 metres with scattered kelp. The sheltered conditions here allow sugar kelp, *Saccharina latissima* to thrive alongside the usual *L.hyperborea* while the sand was dominated by burrowing anemones.



L.Press

A well camouflaged scorpion fish

Site 10 Southern End of Eilean Fada Mor

(SW18/126)

A shallow site with boulders and rocky reef interspersed with patches of sand. The rocky areas were dominated by kelp forest with unusually *Saccorhiza polyschides* as the dominant kelp. As in the other sites dived along the southern edge of the Summer Isles stalked jellyfish were noted along with the usual urchins and seasquirts. On the sand the burrowing anemone *Cerianthus* was seen along with razor shells and the polychaete worm *Lanice*. Some dead maerl was also noted though this may have washed down from the nearby maerl bed between Tanera Beg and Eilean Fada Mor



R.Spray

The stalked jellyfish *Lucernariopsis cruxmelitensis*



A razor shell at En a Ehuic



A dense cluster of *Cerianthus* anemones.



Healthy patch of maerl at Site 12



Maerl overgrown with filamentous algae



R.Spray
Highland Dancer at Site 13



The Dive Team

Site 11 The Anchorage, Tanera Beg

(SW18/111)

Here the surveyors found a gently sloping sandy seabed with scattered boulders supporting kelp. The current running between the islands coupled with the sheltered conditions seemed to provide an ideal habitat for a variety of small fish including plaice, grey gurnard, greater pipefish, painted goby, poor cod, two spot goby and leopard spotted goby. In between the boulders and kelp burrowing anemones were common with wandering common and spiny starfish. The white striped anemone *Actinotheroe sphyrodeta* was recorded here, (and also at site 4) a welcome confirmation of its presence since the last recorded sighting in 1996. This area is an occasional anchorage and some yachting debris was noted including a metal dinner plate and some cleaning wipes.

Site 12 Caolas na Gaimhich

(SW18/112)

A tide swept channel with a maerl bed in the centre. Unusually at this site live maerl was noted on the beach at low tide. In the centre of the channel an extensive maerl bed was overgrown with filamentous red and brown algae along with scattered kelp and sea whip, *Chorda filum*. The algal growth was so extensive that in places it completely covered the maerl. Amongst the maerl brown and swimming crabs were common as were common, spiny and 7-arm starfish. Above the bed shoals of juvenile pollack/saithe were observed feeding in the current while juvenile cod and sand eels were seen amongst the maerl. A very rich site.

Site 13 West side The Anchorage, Tanera Beg

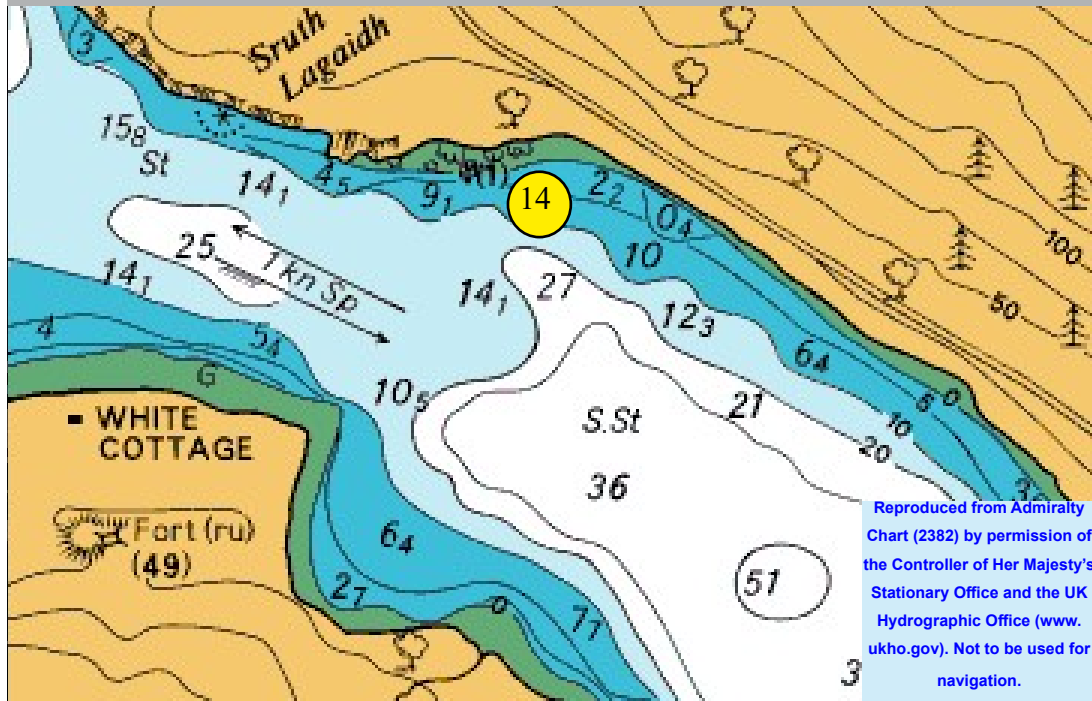
(SW18/110)

During this dive the surveyors swam south east from an unnamed skerry over a sand/gravel seabed eventually meeting a vertical rock face on the side of Eilean Fada Mor. Noticeable on the sand were a number of apparently loose living *Suberites* sp sponges as well as the usual burrowing anemones. The Highland Dancer *Pleurobranchus membranaceus* was recorded here, an unusual record for the summer isles though previously recorded at the nearby Carn Skerries in 2004. Juvenile Pollack/saithe were frequent in the area.



Velvet Crabs were common amongst the Maerl

Location of Dive Site 14 Loch Broom



Cuttlefish Eggs found in Loch Broom amongst the Horse Mussels



Horse Mussels were common between 3 and 6 metres



A flame shell found inside an old Horse Mussel shell

Site 14 Loch Broom Boat yard

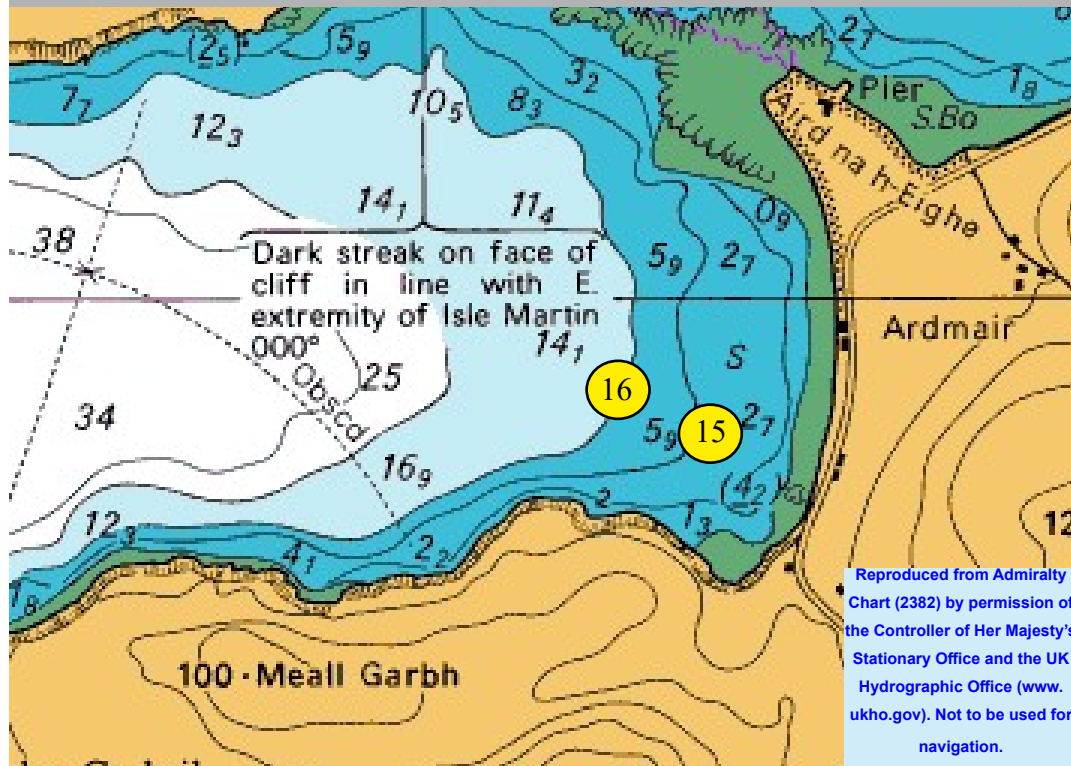
(SW 113, 114, 115, 116, 119, 120, 128)

As the survey took place in late September there were several days when diving was not possible at the Summer Isles. On these days a number of dives were undertaken at the boat yard just east of Corry Point narrows. In all 6 dives took place at this site and the continued presence of an extensive area of flame shell nests, first recorded in 1991, was confirmed. An added bonus was the recording of large numbers of horse mussels in the shallower water in a band above the flame shell nests. Amongst the horse mussels and flame shell nests were an assortment of crustacea including shore crabs, swimming crabs, long clawed squat lobsters, brown crabs, sea toads and spider crabs. *Psammechinus* sea urchins were frequent, more numerous than their larger cousins *Echinus*. Feather stars were frequent around the flame shell nests and unusually they were mainly the larger *Antedon petasus* rather than the more commonly recorded *Antedon bifida*.



Below 6 metres an extensive area of Flame Shell nests was recorded. In places they seemed to be overgrowing and possibly out competing the Horse Mussels.

Location of Dive Sites 15-16



L.Press

The distinctive *Sacchoriza polyschides* holdfast



Dead mans fingers thriving in Ardmail Bay.



L.Press

A boulder covered in encrusting pink algae in Ardmail Bay

Site 15 South East Ardmail Bay

(SW18 117)

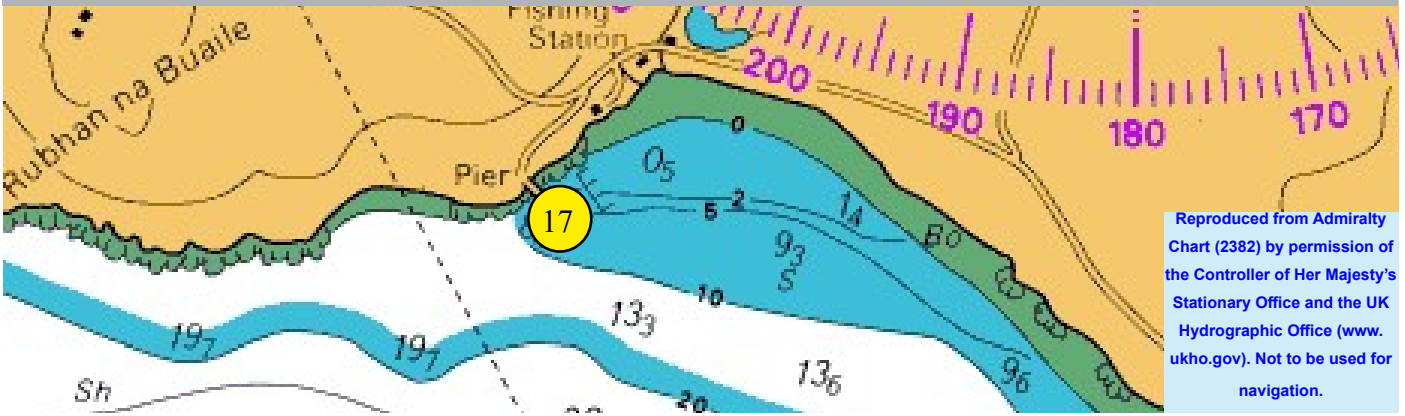
Weather conditions prevented diving at the Summer Isles so two dives were carried out in Ardmail Bay. The first followed the southern shore where the surveyors found a sandstone bedrock reef dropping down to 6 metres then a gently sloping sandy seabed. The flatter reef was covered in kelp forest mainly *Laminaria hyperborea* and *Halidrys siliquosa* with some *Sacchoriza polyschides*. The more vertical reef was dominated by keel worms and sea squirts with a few cup corals and dead mans fingers. The sand had obvious signs of burrowing with lugworm casts on the surface and *Astropecten* starfish. Shore, swimming and hermit crabs were also present. As in most sites dived over the week shoals of juvenile pollock/saithe were present along with juvenile cod amongst the kelp.

Site 16 Ardmail Bay

(SW18 118)

Rather than follow the southern cliffs the surveyors headed out into the bay. The initial cover of boulders and cobbles gave way to coarse sand and scattered cobbles. The boulders were dominated by *Fucus serratus* giving way to *Halidrys siliquosa* and *Chorda filum* in deeper water. A variety of crabs were noted amongst the boulders including shore, swimming, harbour, spider and hermit crabs. Over the sand gobies, scorpion fish, 15 spined stickleback and greater pipefish were noted. The sea slug *Jorunna tomentosa* was recorded. Previously the most recent record of *Jorunna* in this area held in the NBN atlas dated from 1984.

Location of Dive Site 17



A difficult entry at Bardentarbat Pier

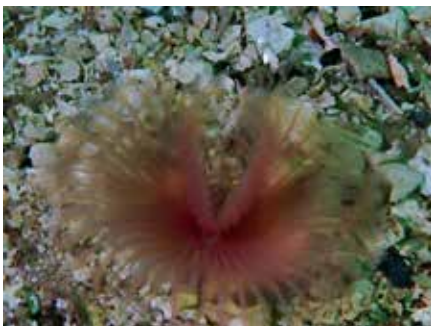
Site 17 Badentarbet Pier (SW18 121,122,123,127)

At the time of the survey Badentarbet pier was semi derelict and in need of repair with undercut foundations. Shortly after the survey, repairs were carried out by Tanera and the pier is now back in use. To either side of it the surveyors found a boulder slope from the surface to around 6 metres then a gently sloping sandy seabed. Evidence of the working nature of the pier was all around with large numbers of scallop shells and assorted rubbish including a toilet, scrap metal, rope, abandoned creels, bottles and frequent angling lures. The old pier and the larger lumps of metal were colonized by a variety of marine life including blue mussels, barnacles, cup corals and plumose anemones.



Scallop shells dumped at Bardentarbat Pier

Away from the pier there were scattered boulders on the sand providing a substrate for scattered kelp and other algae. The sand itself held the usual bed of *Cerianthus* burrowing anemone as well as several *Chone* sp fan worms. A wide range of crustacea were recorded including swimming crabs, spider crabs, squat lobsters and hermit crabs along with numerous clumps of the sea squirt *Asciidiella*. Common and burrowing starfish and the occasional scallop were also present. Once again the divers were accompanied by shoals of juvenile Pollack/Saithe with two spot gobies and scorpion fish hiding amongst the kelp. A surprisingly rich site.



Chione sp at Bardentarbat Pier





The Starfish Puzzle



At most of the sites surveyed, divers came across individual starfish with regenerating limbs. Some are shown in the attached pictures. It is not unusual to come across a starfish regenerating one or more limbs but the number of starfish seen during the expedition and the variety of species was unusual. The source of the trauma can only be a matter of conjecture. A common cause of damage is trawling and dredging but the damaged starfish were noted at various depths and in areas unlikely to be subject to mobile gear pressure. An interesting possibility is that this is an early sign of a recovering ecosystem with some as yet unidentified element increasing in numbers leading to increased predation on starfish.



The Return of the Fish

Very noticeable during the dives were the large numbers of juvenile fish seen. Mixed shoals of juvenile Saithe and Pollack accompanied divers on most dives and juvenile cod were frequently seen amongst the kelp. This may just be the result of a good breeding year but the large number of fish seen is a hopeful sign for the future.



Next Steps

The initial idea behind this survey was to revisit 40 sites originally surveyed in 1981 over two weeks by a team of 11 divers led by Drs F. Dipper and D.Moss. It would be fair to say that revisiting these sites with a team of 10 divers over 6 days was a little over ambitious, especially when it was only possible to dive around the Summer Isles on 3 days. However the team managed to revisit 7 sites and produced a species list comparable to that of the 1981 survey though biased towards those species easily identifiable underwater. Greatest differences were noted in groups such as sponges, molluscs and algae as the 1981 team were able to collect samples to allow accurate identification. Some new records were noted including the anemone *A.ballii* and the holothurian *P.tremulus*

Since 1981 the area around the Summer Isles has been subject to many pressures from commercial fishing and aquaculture. The recent designation of the area as a Marine Protected Area and subsequent ban on scallop dredging will hopefully lead to a period of recovery and some signs of this were visible during the surveys including large shoals of juvenile fish and healthy maerl beds. However proposals to increase the size of the salmon farms operating in the area must be viewed with concern given the proximity of maerl beds which are vulnerable to increases in nutrient levels and sedimentation.

The scope for diving around the Summer Isles is vast and assuming volunteers and funding are available it is hoped that further surveys will take place in 2019 and 2020. Initial plans for these include revisiting more of the 1981 sites especially the maerl bed to the SW of Tanera More and more of the outlying skerries. In particular sites to the NW of Tanera Beg and to the south around Horse Island and Eilean Dubh. These future surveys will take place in partnership with local community groups and photographs and film taken during surveys will be used to raise awareness and appreciation of the amazing marine life to be found with the Wester Ross Marine Protected Area.

Table 1-Summary of species recorded

Group	No of species recorded
Sponges	14
Cnidarians	36
Worms	11
Crustaceans	23
Molluscs	32
Bryozoans	10
Echinoderms	23
Sea Squirts	11
Fishes	30
Algae	23
Other (Foramanifera and Diatom)	1
Total	214

Table 2-List of Dive Sites

Dive No.	Site Name	Lat (N)	Long (W)
1	Ardnagoine, Tanera More	58 ⁰ 00.965	05 ⁰ 23.694
2	Ardnagoine, Tanera More	58 ⁰ -01.056	05 ⁰ 23.766
3	Tanera More bay anchorage	58 ⁰ -00.935	05 ⁰ 23.927
4	South Tanera More bay anchorage	58 ⁰ -00.567	05 ⁰ 23.163
5	SE Tanera Beg, Carn Sgoite	58 ⁰ -00.598	05 ⁰ 26.154
6	SE Tanera Beg, Mol Bheag	58 ⁰ -00.281	05 ⁰ 26.563
7	Carn Sgoite	58 00.328	05 26.197
8	SE Tanera Beg, Mol Bheag	58 ⁰ -00.296	05 ⁰ 26.431
9	Caolas na Mhil Ghairbh West	58 ⁰ -00.503	05 ⁰ 25.781
10	Caolas na Mhil Ghairb East	58 ⁰ -00.530	05 ⁰ 25.283
11	Caolas na Mhil Ghairbh North En Huic	58 ⁰ -01.050	05 ⁰ 25.431
12	Caolas Na Gaimhich S	58 ⁰ -00.646	05 ⁰ 26.171
13	CnG N, Eilean Fada Mor	58 ⁰ -00.845	05 ⁰ 26.304
14	Loch Broom Boatyard	58 ⁰ 00.626	05 ⁰ 26.372
15	Loch Broom narrows	57 ⁰ .52.637	05 ⁰ 07.231
16	Loch Broom narrows	57 ⁰ .52.637	05 ⁰ 07.231
17	Loch Broom narrows	57 ⁰ .52.637	05 ⁰ 07.231
18	Ardmair Bay	57 ⁰ 55.759	05 ⁰ 12.121
19	Sruth Lagaidh Narrows	57 ⁰ 52.672	05 ⁰ 07.286
20	Sruth Lagaidh Narrows	57 ⁰ .52.672	05 ⁰ 07.286

Seasearch is a volunteer underwater survey project run by MCS which encourages recreational divers to contribute towards the conservation of the marine environment. The financial support provided by Scottish Natural Heritage during 2018 is gratefully acknowledged as is the logistical support provided by members of Sea Change Wester Ross

