



# Seasearch Scotland 2014

---

## *Diving Summary Report*



*Report prepared by Georgia Conolly,  
Seasearch Coordinator, Scotland*

Financial support for Seasearch in Scotland during  
2014 was given by:



**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad



## Contents

### **1. Background to Seasearch in Scotland**

### **2. Summary of Seasearch in Scotland 2014**

2.1 Courses

2.2 Dives

2.3 Data

2.4 Priority Marine Features (PMFs) and other interesting records

### **3. Coordinated Seasearch Diving in Scotland 2014**

3.1 Argyll and West Scotland Coordinator, Owen Paisley

3.2 Orkney Coordinator, Joanne Porter

3.3 Seaweed Specialist Course

3.4 Seasearch North-East Berwickshire dives

3.5 COAST South Arran MPA dives

### **4. Seasearch records from independent sources**

4.1 Berwickshire

4.2 East Lothian

4.3 Fife

4.4 Aberdeenshire

4.5 Orkney

4.6 Offshore

4.7 Sutherland

4.8 Western Isles

4.9 Skye and Lochalsh

4.10 Lochaber

4.11 Argyll

### **5. Appendix A - Number of taxa in each kingdom, phylum, subphylum or class**

### **6. Acknowledgements**

## 1. Background to Seasearch in Scotland

Seasearch is a project for volunteer sports divers who have an interest in what they're seeing underwater, want to learn more and want to help protect the marine environment around the coasts of Britain and Ireland. The main aim is to map the various types of habitats found in the near-shore zone around the whole of Britain and Ireland. In addition volunteers record the species they see in each area, establishing the richest sites for marine life, the sites where there are problems and hence, the sites which need protection. The Marine Conservation Society (MCS) coordinates [www.seasearch.org.uk](http://www.seasearch.org.uk) across the British Isles.

With funding from Scottish Natural Heritage (SNH) there were four Seasearch coordinators in Scotland during 2014: Calum Duncan (MCS Scotland Programme Manager) coordinated Seasearch on a national level; Owen Paisley coordinated activities in Argyll and the west of Scotland and Joanne Porter coordinated Seasearch in Orkney. In November 2014 Georgia Conolly, a postgraduate student at The University of Aberdeen and former Marine Ranger for the St Abbs and Eyemouth Voluntary Marine Reserve was recruited to take over the Scotland Coordinator role from Calum, who continues to provide project oversight, expertise and training support as required.

## 2. Summary of Seasearch in Scotland 2014

### 2.1 Courses

The previous SNH funding package came to an end in March and the new funding package began in August, which reduced Seasearch coordinated activity during this time. Despite this, Observer courses took place in Edinburgh delivered by Calum Duncan (16 participants – 10<sup>th</sup> May and in Orkney by Joanne Porter (2 participants – 8<sup>th</sup> November). Paula Lightfoot of Seasearch North-East ran a Surveyor course in Eyemouth (8 participants – 28<sup>th</sup> and 29<sup>th</sup> June) although the weather did not allow for any diving to take place. Owen Paisley organised 2 Observer courses and diving trips to take place at Lochaline Dive Centre on 8<sup>th</sup> to 14<sup>th</sup> June and 13<sup>th</sup> to 18<sup>th</sup> July. Both trips were cancelled due to lack of interest which may have been due to no diving subsidy being available. Leigh Morris of the Royal Zoological Society of Scotland (formerly the Royal Botanical Garden Edinburgh) organised a Seaweed Specialist course in conjunction with Seasearch (13 participants – 7<sup>th</sup> and 8<sup>th</sup> June) which was held in Eyemouth.



Eyemouth Seaweed Specialist course participants

### 2.2 Dives

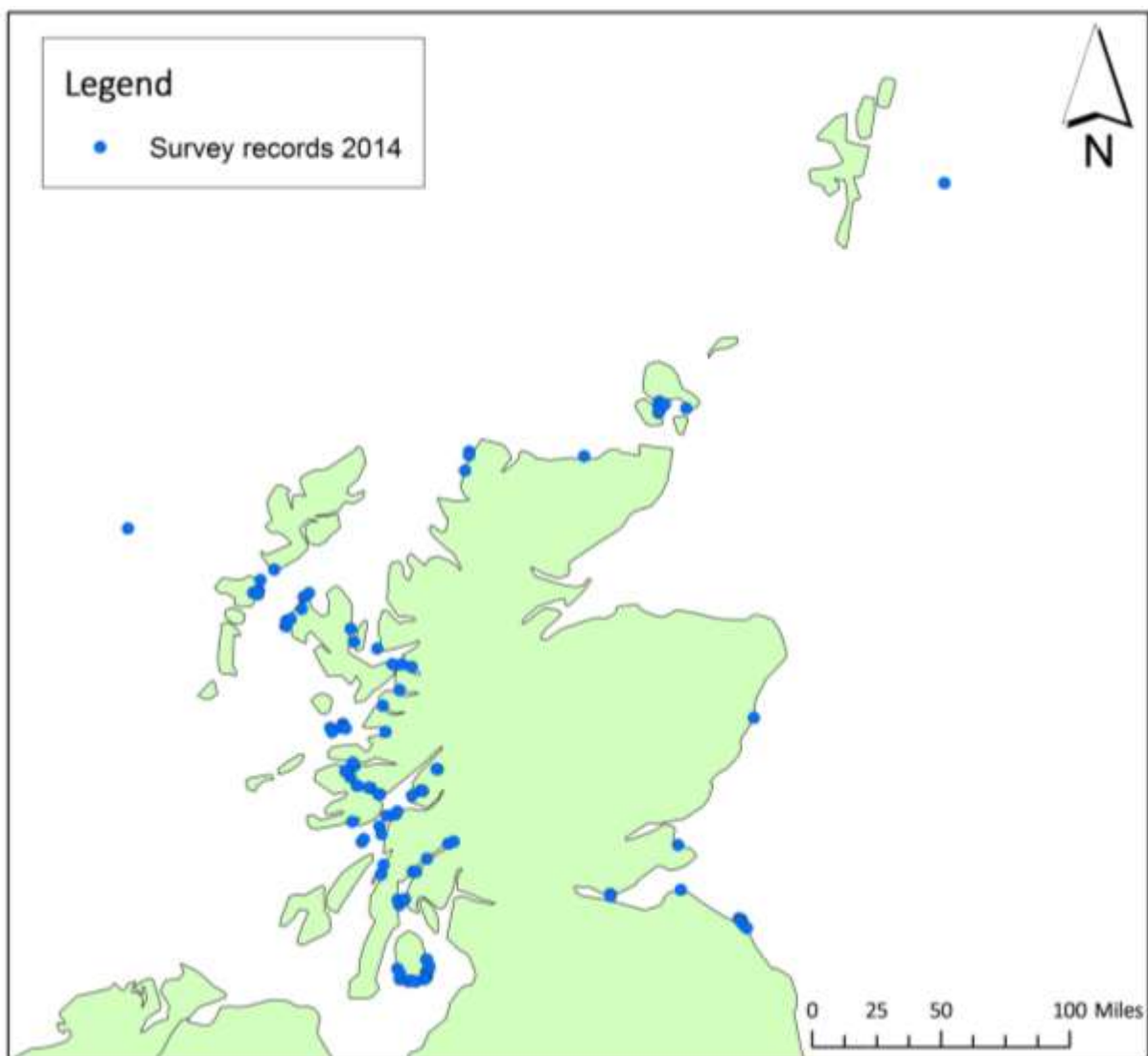
Owen Paisley organised 12 days of survey diving in the Argyll and west of Scotland area during the year. Horse mussels *Modiolus modiolus* and fireworks anemones *Pachycerianthus multiplicatus* were targeted on some dives, whereas others were general survey dives. Joanne Porter organised a weekend of diving in Scapa Flow which took place concurrently with an Observer course. 9 qualified Seasearch divers took part in the diving with 7 Survey forms and 5 Observation forms returned as a result. Calum Duncan organised 2 training dives in Loch Long on 18<sup>th</sup> May which were attended by 7 divers.

### 2.3 Data

The reduced funding situation and subsequent lack of coordinated activities is reflected in the number of forms that were submitted. A total of 154 forms were returned (72% of which were Survey forms), the lowest number of records received in Scotland for 7 years. Volunteers submitted forms from surveys that took place between 11<sup>th</sup> January and 17<sup>th</sup> December from the east of Shetland to south Arran and from St. Kilda to Cove in Aberdeenshire (Figure 1). Scotland's data contributed 9% of total Seasearch data received across the UK and Ireland, 7% down on the contribution in 2013. A total of 420 species and, where species could not be determined, genus and family were recorded, as set out in Appendix A.

Thank you to all who submitted survey forms. Becky Hitchin (35 Survey forms – nearly a quarter (23%) of all the forms submitted in 2014), Claire Youdale and Nicola Faulks (13 Survey forms each) and James Lynott (12 Observation forms) merit a special mention for the number of forms submitted, between them 47% of all records submitted in 2014.

Congratulations to all the divers who became qualified Seasearchers in 2014. Observers: Liz Mclardy (Inverness 2013), Valerie Storey (Inverness 2013), Ivan Houston (Orkney 2013), Robert Beharie (Orkney 2013), Gerald Storey (Inverness 2013) and Amy Houston (Orkney 2013). Surveyors: John Lampett and Tim Parmley (Eyemouth 2014).



**Figure 1** The distribution of Seasearch records (Observation and Survey) returned in 2014.

## 2.4 Priority Marine Features (PMFs) and other interesting records

PMFs are species and habitats which are considered to be marine nature conservation priorities in Scottish waters. Some PMFs and other interesting records identified by Seasearch in Scotland are set out in Table 1. The most commonly recorded PMFs were horse mussels (although not always forming beds) and the northern sea fan *Swiftia pallida*.

**Table 1** Priority Marine Features and other interesting species and the locations at which they were recorded.

<b>Priority Marine Feature</b>	<b>Locations recorded in 2014</b>
<i>Arctica islandica</i>	South Arran
<i>Funiculina quadrangularis</i>	Loch Sunart, Outer Hebrides
<i>Leptometra celtica</i>	Firth of Lorn, Lochaline, Sutherland, Loch Hourn, Loch Alsh, Loch Nevis, Outer Hebrides
<i>Limaria hians</i>	Scapa Flow
<i>Lophius piscatorius</i>	South Arran, St Abbs, Skye, Scapa Flow
Maerl indet.	Loch Sween, Skye, Scapa Flow, Small Isles, Outer Hebrides
<i>Modiolus modiolus</i>	Loch Creran, Loch Fyne, St Abbs, Loch Gair, Scapa Flow
<i>Molva molva</i>	Small Isles, Loch Linnhe, Scapa Flow
<i>Mytilus edulis</i>	Loch Fyne, Loch Carron, Firth of Forth, Fife
<i>Pachycerianthus multiplicatus</i>	Loch Shira, Loch Fyne
<i>Parazoanthus anguicomus</i>	Sound of Kerrera, Firth of Lorn, Sound of Mull, Skye
<i>Swiftia pallida</i>	Loch Buie, Outer Hebrides, Firth of Lorn, Sound of Mull, Small Isles
<b>Other interesting records</b>	<b>Locations recorded in 2014</b>
<i>Alcyonium hibernicum</i>	Firth of Lorn
<i>Atelecyclus rotundatus</i>	Scapa Flow
<i>Bolocera tudiae</i>	Loch Fyne
<i>Diazona violacea</i>	Sound of Kerrera, Firth of Lorn, Sound of Mull, Small Isles, Sutherland, Lochaline, Outer Hebrides, Skye, Loch Hourn, Kyle of Lochalsh, Sound of Jura
<i>Diplecogaster bimaculata</i>	Loch Fyne, Loch Creran
<i>Elminius modestus</i>	Lochaline
<i>Elysia viridis</i>	Orkney
<i>Hero formosa</i>	Deepwater trawl east of Shetland
<i>Hippolyte prideauxiana</i>	Sound of Mull
<i>Lucernariopsis campanulata</i>	Small Isles
<i>Megalomma vesiculosum</i>	Loch Linnhe
<i>Myrianida pinnigera</i>	Lochaline, Loch Sunart
<i>Nephrops norvegicus</i>	Small Isles, Loch Duich, Loch Fyne, Skye
<i>Okenia aspersa</i>	Outer Hebrides
<i>Parazoanthus axinellae</i>	Firth of Lorn
<i>Peachia cylindrica</i>	Outer Hebrides
<i>Pennatula phosphorea</i>	Scapa flow
<i>Pentapora foliacea</i>	Outer Hebrides
<i>Salmacina dysteri</i>	Outer Hebrides, Sutherland, Cuan Sound
<i>Sarcodictyon roseum</i>	Sutherland
<i>Sargassum muticum</i>	Loch Fyne
<i>Serpula vermicularis</i>	Loch Fyne, Loch Linnhe, Loch Creran, Loch Nevis, Loch Duich
<i>Styela clava</i>	Loch Sween
<i>Thuiaria thuja</i>	Sutherland



### 3. Coordinated Seasearch Diving in Scotland 2014

#### 3.1 Argyll and West Scotland Coordinator, Owen Paisley

The lack of funding during 2014 restricted activity and contributed to the cancellation of 2 Observer courses at Lochaline. However in addition to the diving outlined below 2 new citizen science projects were set up, the first monitoring fireworks anemones and the second horse mussels. Volunteer divers placed 6 marker poles beside selected anemones in Loch Shira at depths of 18 to 22m. The aim of the project is to gather information on individual longevity and survival by marking selected anemones and photographing them regularly. The second project involved revisiting historical horse mussel sites in Lochs Fyne, Creran and Goil. A recording form based on previous work at Strangford Lough was devised and 5 sites visited. The results were mixed: at 3 sites no mussels were found apart from a single empty shell. At another site, 4 individuals were found and finally at the fifth site in Loch Creran over 100 mussels were recorded. In addition to these 2 projects a report was completed on the maerl bed at Inchmarnock Island (available to download from the Seasearch website).



Fireworks anemone beside a monitoring stake (OP)

11 survey days were organised by Owen which equated to 34 diver-days in the Argyll and west area resulting in 6 Survey forms, 8 Observation forms, 3 fireworks anemone forms and 2 horse mussel forms. The non-native seaweed *Sargassum muticum* was recorded in Loch Fyne and the tunicate *Styela clava* was recorded in Loch Sween. Collapsed *Serpula vermicularis* reefs were also noted by divers in Loch Creran.

1. **Rubh'an-t Sergeant, Loch Fyne**, 27<sup>th</sup> February – Owen Paisley did not find any horse mussels although he did record 10 creels and trawl warps.
2. **Yeomans, Loch Creran**, 2<sup>nd</sup> March – Trevor Davies recorded serpulid worm reefs in 4 to 12m deep water that appeared to have collapsed under their own weight.
3. **Queenie Reef, Loch Creran**, 9<sup>th</sup> March – amongst a seabed of sand, mud, gravel and occasional rocky outcrops Trevor Davies recorded horse mussels, queen scallops *Aequipecten opercularis* and a thornback ray *Raja clavata*.
4. **Barmore Island, Loch Fyne**, 29<sup>th</sup> July – Owen Paisley recorded the non-native seaweed *Sargassum muticum* as well as an abandoned beam trawl and broken bottles. Empty ocean quahog *Arctica islandica* shells were also noted.
5. **Oyster Bar Moorings, Loch Fyne**, 9<sup>th</sup> August – on a survey of a muddy seabed Gary Gubby recorded fireworks anemones, the fountain anemone *Sagartiogeton laceratus* and the small-spotted catshark *Scyliorhinus canicula*.



6. **Rubh'a Dubh, Loch Fyne, 27<sup>th</sup>** August – crustaceans and echinoderms were frequent and dredge marks were noted on the seabed at 12m.

7. **Ardcastle, Loch Fyne, 31<sup>st</sup>** August – on a horse mussel survey John Rees found 4 live individuals as well as numerous empty horse mussel and ocean quahog shells.

8. **Ardmarnoch Bay, Loch Fyne, 22<sup>nd</sup>** September – Owen Paisley surveyed a gently sloping seabed of cobbles and gravel dominated by sugar kelp *Saccharina latissima* to 8m.



Maerl bed and common sunstar *Crossaster papposus* (OP)

Below this the sea cucumber *Labidoplax digitata* was frequently recorded on the heavily burrowed mud seabed. Empty horse mussel and native oyster *Ostrea edulis* shells were also spotted.

9. **North Cuan Ferry Slip, Cuan Sound, 19<sup>th</sup>** October – John Rees and Owen Paisley surveyed a tidally swept channel and nearby vertical rocky reef. The rocky reef was dominated by dead man's fingers *Alcyonium digitatum*, sponges and hydroids.

10. **Fourth Layby, Loch Creran, 23<sup>rd</sup>** November – Trevor Davies surveyed a mud slope and recorded horse mussels, scallops *Pecten maximus* and *Aequipecten opercularis* and the black goby *Gobius niger*.

11. **Caol Scotnish, Loch Sween, 30<sup>th</sup>** November – Owen Paisley surveyed 3 habitats at this site: a shallow sediment area dominated by sea oak *Halidrys siliquosa*, knotted wrack *Ascophyllum nodosum* and the fragile brittlestar *Ophiothrix fragilis*; a reef and boulder wall with an animal turf of ascidians and sponges and finally a maerl bed of *Lithothamnium gracile* with brittlestars *Ophiothrix fragilis* and *Ophiocomina nigra*. The non-native sea squirt *Styela clava* was also recorded on the edge of the maerl bed.

### 3.2 Orkney Coordinator, Joanne Porter

Joanne Porter organised a weekend of Seasearch diving from the MV Halton in Scapa Flow over the weekend of 8<sup>th</sup> and 9<sup>th</sup> November. 5 sites were dived resulting in 7 Survey forms and 5 Observation forms.

- **Gutter Sound** – a mixed sediment seabed was dived by Becky Hitchin, George Brown, Neil MacInnes and Georgia Conolly who recorded maerl, occasional horse mussels and flame shell *Limaria hians* 'nests' beneath a covering of mixed seaweeds. Litter was also noted including glass



Flame shell in Gutter Sound (GB)

bottles and monofilament fishing line.

- **Konig wreck** – Bob Anderson, Ivan and Amy Houston recorded numerous fish species associated with the wreck including an angler fish *Lophius piscatorius* and ling *Molva molva*.
- **Cava Island (west)** – a sand/gravel seabed with patches of pebbles and shell and occasional glass bottles. Mobile life dominated in particular *Inachus* sp., *Macropodia* sp. and hermit crabs *Pagurus* sp.
- **Kronprinz Wilhelm wreck** – the wreck was dominated by an animal turf of anemones, corals and sponges and occasional red seaweeds.
- **Seydlitz wreck** – a shell/pebble seabed with areas of wreckage, patches of flame shell nests and occasional king and queen scallops.

### 3.3 Seaweed Specialist Course

Leigh Morris organised a seaweed specialist course in partnership with the Royal Botanical Society Edinburgh which was held in Eyemouth over the weekend of 7<sup>th</sup> – 8<sup>th</sup> June. The course tutors were Jane Pottas from the University of Hull and Greg Kenicer from the Royal Botanical Society Edinburgh. A dive took place to collect deeper specimens whilst non-divers collected samples from the shore. The dive was carried out in Greenends Gully where 13 seaweeds were identified to species level and recorded on 1 Survey form.



Eyemouth specialist seaweed course divers and shore collection

### 3.4 Seasearch North-East Berwickshire Dives

Paula Lightfoot of Seasearch North-East organised a weekend of Seasearch diving off the Berwickshire coast in July resulting in 8 Observation forms and 3 Survey forms. At the White Heugh an angler fish was recorded, as well as the crevice sea cucumber *Pawsonia saxicola*; a rare record for the east coast. A large shoal of saithe *Pollachius virens* and shoals of lesser sandeels *Ammodytes tobianus* were also recorded as well as squid eggs attached to lobster pots. At the Craig a large shoal of mackerel *Scomber scombrus* was observed as well as a large lemon sole *Microstomus kitt* and cod *Gadus morhua*. At Burnmouth Caves many sea anemones were recorded as well as 6 species of nudibranch, with mating *Goniodoris castanea* observed amongst others.

### 3.5 COAST South Arran MPA Dives

The Community of Arran Seabed Trust (COAST) carried out a survey programme within the newly designated South Arran MPA (Figure 2). 21 survey forms were returned by Howard Wood and Claire Youdale (8 and 13 forms respectively):



COAST survey team 2014: Howard Wood, Angus Robson and Claire Youdale

1. **Lamlash Bay** – a gently sloping seabed comprised of shell fragments, sand and dead maerl. Abundant feather stars *Antedon bifida* and burrowing anemones *Cerianthus lloydii* were recorded as well as frequent juvenile cod and mixed seaweeds.
2. **Janolus Bank, Whiting Bay** – a boulder bank rising to 20 metres with abundant hydroid and bryozoan turf. Large clumps of the monkey puzzle bryozoan *Omalosecosa ramulosa* were spotted.
3. **Port Lheac, Kildonan** – a mixed ground seabed with occasional small pieces of maerl.
4. **South Bank, Whiting Bay** – a survey of a mixed ground seabed which had been dredged 2 days previously. Broken scallop shells and starfish remnants were observed.
5. **South Bank, Whiting Bay** – seabed with approximately 3% live maerl present.
6. **Dhunan** – a flat sandy plateau with evidence of previous scallop dredging.
7. **Dhunan (inshore)** – a sandy seabed with many small shell fragments and occasional king and queen scallops.
8. **Trareoch** – seabed comprised of sand and shell fragments with occasional mixed seaweeds and hydroids.
9. **Dippin Head** – a mixed substrate seabed with approximately 50% cover of mixed seaweeds, frequent king scallops and burrowing anemones.
10. **Glenashdale** – a sandy seabed with frequent hydroids and slender sea pens *Virgularia mirabilis*.
11. **Black Cave** – a mixed ground seabed with occasional king and queen scallops and frequent antennae hydroids *Nemertesia antennina*.



Evidence of dredging (left) spotted on a survey dive and juvenile cod over a maerl bed (right) within the Lamlash Bay no-take zone (HW)



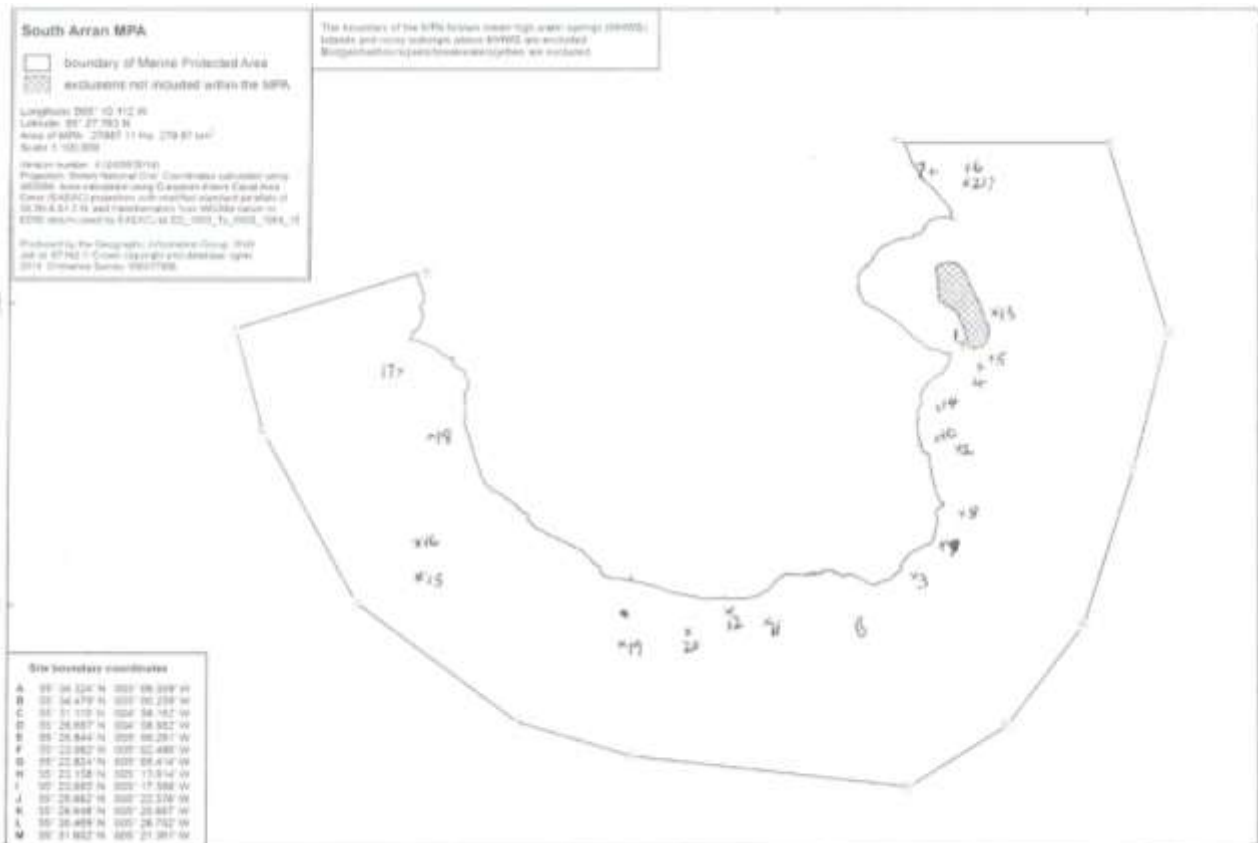


Figure 2 Sketch of South Arran MPA and locations of 2014 survey dives (HW).

12. **West Brennan** – a gently sloping seabed of boulders and cobbles with many echinoderms including common starfish *Asterias rubens*, edible sea urchins *Echinus esculentus* and spiny starfish *Marthasterias glacialis*.
13. **East Holy Isle** – a gently sloping seabed of mixed substrate with frequent cushion starfish *Porania pulvillus* and mixed hydroids.
14. **Whiting Bay School** – a gently sloping seabed with a large dredged area in the middle of the site.
15. **Iron Rock Ledges** – a sandy seabed with frequent king scallops and a shoal of whiting *Merlangius merlangus*.
16. **Iron Rock Ledges** – frequent feathery hydroids were observed on a mixed ground seabed.
17. **Blackwaterfoot** – a gently sloping seabed with hydroids, mixed red seaweeds and evidence of previous dredging.
18. **Brown Head** – a gently sloping seabed with abundant feathery red mixed seaweeds.
19. **Kilmory Water** – a sandy seabed with 10% dead maerl, frequent feathery hydroids, slender sea pens and hermit crabs.
20. **Lenamhor** – a bouldery seabed with frequent echinoderms, ascidians and mixed red seaweeds.
21. **Dhunan** – a sloping mixed substrate seabed with large clumps of the bryozoan *Omaloosecosa ramulosa* and old nets and trawl wires.

## 4. Seasearch records from independent sources

### 4.1 Berwickshire

**Weasel Loch, Eyemouth**, 2<sup>nd</sup> March – 1 Observation form

- The pogge *Agonus cataphractus* was recorded by Nathan Jeffrey as well as angling litter.

**St Abbs**, 28<sup>th</sup> to 30<sup>th</sup> June – 1 Observation form, 4 Survey forms

- Forms were submitted by Graham Jackson and Glenn King who surveyed the wreck of the Alfred Erlandsen, the Black Carrs and West Hurker near St Abbs where heavily urchin grazed boulders and a dense brittlestar bed were recorded.

**St Abbs**, 12<sup>th</sup> July – 2 Survey forms

- Tim Parmley completed 2 shore dives close to St Abbs harbour at Maw Carr and Cathedral Rock. He recorded the European lobster *Homarus gammarus*, a shoal of pollack *Pollachius pollachius* and the European plaice *Pleuronectes platessa*.

### 4.2 East Lothian

**Craigeith (southeast corner), North Berwick**, 8<sup>th</sup> March – 1 Observation form

- Nathan Jeffrey recorded large boulders and gullies on a seabed of cobbles and pebbles. A tall animal turf of dead man's fingers dominated the rocky habitat.

### 4.3 Fife

**Preston Hill Quarry Pier**, 11<sup>th</sup> January – 1 Observation form

- Matt Barnes recorded the sea slug *Onchidoris bilamellata* in their hundreds on the pier pilings as well as sewage related debris and other rubbish.

**East Sands, Maiden's Rock**, 14<sup>th</sup> June – 1 Observation form

- Alex Coram returned a form following a survey of Maiden's Rock. The rocks at this exposed site were encrusted with small (<5mm) blue mussels *Mytilus edulis*. Other habitats present included kelp park, kelp forest, encrusting pink algae, short animal turf and sediment with life apparent. He recorded the European lobster and little cuttlefish *Sepiola atlantica*.



The yellow-lined sea slug *Polycera quadrilineata* recorded in the Firth of Forth (MB)

#### **Port Laing Pier, North Queensferry, 6<sup>th</sup> July – 1 Observation form**

- On a dive at Port Laing Pier Matt Barnes recorded the white mud slug *Philine quadripartita* as well as single use plastics and sewage related debris. This Observation form is the easterly-most Seasearch record from the seldom dived Firth of Forth.



The viviparous eelpout *Zoarces viviparous* was spotted at Cove (BH)

#### **4.4 Aberdeenshire**

##### **Cove Harbour, 30<sup>th</sup> July – 1 Survey form**

- A survey dive of Cove Harbour pier carried out by Becky Hitchin revealed an abundance of life. The wall had gullies, cracks and crevices with many crustaceans hiding within. The wall surface was covered by a short hydroid turf with encrusting anthozoa, ascidians and sponges dominating.

#### **4.5 Orkney**

##### **Second barrier (east side), 11<sup>th</sup> January and Houton, Orphir, 13<sup>th</sup> January – 2 Observation forms**

- On a snorkel survey of the barriers Jenny Taylor recorded 8 species of seaweed including *Codium fragile*. At Houton she recorded the photosynthesising sea slug *Elysia viridis*, *Codium fragile* and the string jellyfish *Apolemia uvaria*.

##### **Holm of Houton, Scapa Flow, 2<sup>nd</sup> March – 1 Survey form**

- A snorkel survey by Penny Martin revealed a sheltered harbour with a sandy seabed and rocky reef with many red and green seaweeds, 7 species of nudibranch and *Elysia viridis*.

##### **Scapa Flow, 4<sup>th</sup> September – 1 Observation form**

- Helen Hadley recorded the phosphorescent sea pen *Pennatula phosphorea*.

#### **4.6 Offshore**

##### **Deep trawl, 70km east of Shetland, 17<sup>th</sup> October – 1 Observation form**

- Luna van der Loos returned an observation form recording just 1 species, the nudibranch *Hero formosa* caught during a survey trawl from 133 metre depth water east of Shetland.

#### 4.7 Sutherland

##### Portskerra Arch, Melvich Bay, 10<sup>th</sup> June – 1 Observation form

- Sarah Conner recorded a number of habitats on this dive including kelp forest, kelp park, rocky reef and a sandy seabed. Species of note included a lumpsucker fish *Cyclopterus lumpus*, a small-spotted catshark, a curled octopus *Eledone cirrhosa* and squid.

##### Kinlochbervie, 26<sup>th</sup> July – 3 Survey forms

- Becky Hitchin returned 3 survey forms from dives in the Kinlochbervie area. At Am Balg she surveyed a canyon, gully and wall area which were covered in large patches of jewel anemones *Corynactis viridis* and an animal turf of ascidians, hydroids, barnacles and sponges. 10 species of nudibranch were also identified to species level. At Na Stacain Becky recorded a kelp forest full of nudibranchs followed by canyons and gullies with walls dominated by anemones, sponges, hydroids, bryozoans and a worm *Salmacina* sp. At the Whaleback Rock pinnacle she surveyed kelp forest above a wall covered with abundant mobile and sessile life, mainly jewel anemones, bryozoans and echinoderms.

#### 4.8 Western Isles

##### Outer Hebrides, 30<sup>th</sup> June to 5<sup>th</sup> July – 10 Survey forms

Following a trip to the Outer Hebrides Becky Hitchin returned 10 survey forms:

- **Madadh Mor** – a vertical reef wall with patches of jewel anemones, Devonshire cup corals *Caryophyllia smithii* and many *Pawsonia saxicola* sea cucumbers in crevices.
- **Madadh Beag** – a very diverse wall and boulder field leading to a sand/shell seabed. The northern sea fan was seen frequently whilst the tall sea pen *Funiculina quadrangularis* and the slender sea pen were recorded rarely and occasionally respectively. The clock face anemone *Peachia cylindrica* was also recorded.
- **Sgarbhstac, St Kilda** – a wall dominated by thick kelp to 20m with jewel anemones and frequent patches of the coral worm *Salmacina* sp.
- **Weaver Point** – a reef wall and boulder area where the northern sea fan was recorded leading to a gravel/sand/shell fragment seabed where the bryozoan *Alcyonidium diaphanum* was abundant.
- **Madadh Gruamach** – kelp covered wall leading to a boulder slope where jewel anemones and goldsinny *Ctenolabrus rupestris* were recorded frequently.
- **Sursay (south east), Sound of Harris** – Becky recorded a bed of live and dead maerl *Phymatolithon calcareum* which comprised 60-70% of the seabed. The bryozoan *Scrupocellaria* sp. was also common.
- **Burnside wreck** – a kelp dominated and heavily silted wreck.
- **Stassa wreck, Loch Rodel** – a largely intact wreck abundant with sessile life dominated by anemones.
- **Sunken Madadh, Loch Maddy** – a submerged pinnacle at 15m with an animal turf of sponges, anemones, bryozoans, hydroids and sea squirts. The northern sea fan was occasionally spotted.
- **Madadh Gruamach, Loch Maddy** – a vertical wall with occasional overhangs leading to a boulder slope area. Jewel anemones were super abundant whilst northern sea fans were abundant and the prawn cracker sponge *Axinella infundibuliformis* was common.



Many fish were seen including cuckoo wrasse *Labrus mixtus*, ballan wrasse *Labrus bergylta* and goldsinny.

#### 4.9 Skye and Lochalsh

North Skye, 26<sup>th</sup> to 30<sup>th</sup> May – 9 Survey forms

9 Survey forms were returned by Nicola Faulks following a trip to north Skye:

- **Loch Bay Pinnacle** – a pinnacle with kelp park at the top, steep walls and a surrounding mixed ground seabed. Many feather stars *Antedon bifida* were recorded and the sea cucumber *Pawsonia saxicola* was occasionally seen.
- **Sgeir A Chuain** – a kelp park, rocky wall and boulder field with rich hydroid life and numerous Devonshire cup corals.
- **Chadwick wreck** – a tide swept wreck with hydroid life abundant as well as jewel anemones and sea hares *Aplysia punctata*.
- **Neist Point** – a tide swept rocky reef wall with mixed anemone, hydroid and bryozoan turf. Jewel anemones and the fried egg anemone *Actinothoe sphyrodeta* were particularly abundant. Lost angling litter was also noted.
- **Waternish Point** – a wall subject to strong currents with kelp park at the top and an unusual sand wave feature at the base. An animal turf of anemones and hydroids dominated the wall, in particular the dahlia anemone *Urticina felina* and jewel anemones.
- **Waternish Point (north)** – a wall full of pock-marks with small clumps of the white cluster anemone *Parazoanthus anguicomus* and the blue sponge *Hymedesmia paupertas* growing inside. Kelp park in the shallows and a sand/broken shell seabed at the base with occasional burrowing anemones.
- **Cave Reef, Loch Pooltiel** – a rocky reef with a cave at the base on a sandy seabed. An animal turf of anemones dominated the reef with large patches of plumose anemones *Metridium senile*, dahlia anemones, jewel anemones and elegant anemones *Sagartia elegans*. Occasional Norway lobster *Nephrops norvegicus* were spotted in burrows.
- **Doris wreck, Neist Point** – a large area of wreckage in a tidal swept area. Many copulating sea hares were noted amongst the kelp forest.
- **Oisgill Bay (south)** – a tidally swept reef in an exposed area. The deepest habitat had bare sections which could have been caused by scour or urchin grazing. 12 species of seaweed were recorded in the shallows.

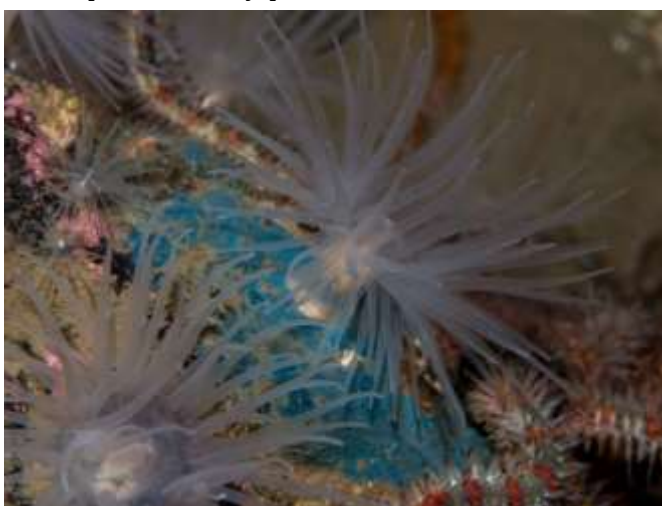


Kelp park and boring sponge *Cliona celata* in its massive form at Waternish Point, north-west Skye (NF)

## Western Highlands and Skye, 22<sup>nd</sup> – 25<sup>th</sup> July – 7 Survey forms

James Lucey completed 7 survey forms during dives on the west coast and Skye:

- **Arnish Point, Kyle of Lochalsh** – a vertical wall with abundant animal turf dominated by sea squirts (10 species recorded) and sea loch anemones *Protanthea simplex*.
- **Rubha Ruahd, Loch Hourn** – a steep slope of small angular boulders dominated by an animal turf of sea squirts.
- **Crowlin Islands, Strathcarron** – a boulder plain where many long-clawed squat lobsters *Munida rugosa* were spotted followed by a level seabed of coarse sand and shell fragments.
- **Port Napier wreck, Kyle of Lochalsh** – wreckage lying on a bed of mud and gravel in a sheltered location, dominated by the yellow-ringed sea squirt *Ciona intestinalis* and kelp *Laminaria* sp. on the upper facing shallow surfaces.
- **Prince Charles' Cave, Sound of Raasay** – a sandy slope leading to an area of small boulders with a diverse animal turf of sponges, hydroids and sea squirts and the northern sea fan.
- **Sgeir Chnapach, Sound of Raasay** – a steep-sided rocky pinnacle with boulders at the base dominated by an animal turf of anemones, hydroids and sea squirts.
- **Loch Nevis Pinnacle** – a rocky reef in the middle of the entrance to Loch Nevis with abundant feather stars *Antedon bifida* and the Celtic feather star *Leptometra celtica*. Eckstrom's Topknot *Zeugopterus regius* was also recorded.



**Wolf Rock, Loch Duich**, 6<sup>th</sup> December – 1 Survey form

- Becky Hitchin recorded a sandy/silty seafloor with occasional boulders and abundant mobile and burrowing life in particular brittlestars *Ophiothrix fragilis* and *Ophiocomina nigra*, hermit crabs *Pagurus bernhardus* and *Pagurus prideaux* and Norway lobsters.

Blue sponge *Hymedesmia paupertas* and sea loch anemones in Loch Duich (BH)

### 4.10 Lochaber

**Piper's Point, Loch Ailort**, 22<sup>nd</sup> March – 1 Observation form

- During a dive over a rocky reef and mixed ground seabed Nathan Jeffrey recorded serpulid worm structures, the sea mouse *Aphrodita aculeata* and many parchment worm *Chaetopterus* sp. casings whose structures supported abundant reef life.

**Small Isles**, 19<sup>th</sup> to 21<sup>st</sup> September – 7 Survey forms

A trip to the Small Isles resulted in 7 survey forms returned by Becky Hitchin:

- **Eigg Wall** – a wall with kelp forest to 13m below which was a diverse animal turf of hydroids and anemones as well as northern sea fans from 17m. There had been dredging in the area recently during construction of the nearby pier and the animal turf was covered with silt.
- **Eilean Chathastail Lighthouse** – a sand and gravel seafloor with occasional cobbles and boulders on which hydroids, dead man’s fingers and numerous anemone species were recorded.
- **Eilean Chathastail (south-west)** - a sand and gravel seabed with small patches of boulders and a small wall section which was dominated by mixed seaweeds.
- **Windmills** – a rock wall stepped with ledges on which patches of sand and gravel had collected. Many species of sponge and cnidarian including the northern sea fan were observed.
- **Godag** – a silty wall with abundant and diverse life in particular jewel anemones and northern sea fans. At the top of the wall was a kelp forest with many species of nudibranch including *Favorinus branchialis*.
- **Eigg Wall (slope)** – a sloping sand and gravel seabed with scattered boulders and cobbles in places. Norway lobster burrows were noted along with king scallops.
- **Maxwell Bank (wall)** – vertical wall dominated by elegant and plumose anemones.



*Favorinus branchialis* feeding on nudibranch eggs at Godag (BH)

#### 4.11 Argyll

**Loch Creran Bridge, 27<sup>th</sup> January** – 1 Observation form

- Animal beds of brittlestars and horse mussels were



Crinoid feather star shrimp *Hippolyte prideauxiana* (LM)

recorded by Nathan Jeffrey as well as hundreds *Flabellina pellucida* sea slugs feeding on hydroids.

**Drishaig reef, Loch Shira, 22<sup>nd</sup> February** - 1 Observation form

- Nathan Jeffrey recorded 13 fireworks anemones, sea loch anemones and the little cuttlefish.

**Ballachulish and Sound of Mull, 28<sup>th</sup> – 29<sup>th</sup> March** – 2 Survey forms

- On a trip to the west coast with Deep Blue Scuba Leigh Morris dived at the Slates, a site which until the 1950s was the old slate industry at Ballachulish in Loch Leven. The site consisted of a steeply

sloping seabed and reef made of slate pieces up to 1m in size. Leigh recorded a knotted wrack park to 6m as well as a small-spotted catshark. The following day Leigh dived at the Waterfalls, a sheltered bay at the north of the Sound of Mull. He recorded the feather star *Antedon bifida* on which he observed the rarely recorded crinoid feather star shrimp *Hippolyte prideauxiana*.

#### **Scottish Narrows, Loch Sween, 30<sup>th</sup> March – 1 Observation form**

- On a shallow dive in Loch Sween over a sand and mud seabed Matt Barnes recorded a rich maerl and black brittlestar animal bed.

#### **Firth of Lorn, 10<sup>th</sup> and 11<sup>th</sup> May – 2 Survey forms**

- On a trip to the Firth of Lorn with Tyneside BSAC 114 Nicola Faulks dived Slippers Reef where she surveyed 3 habitats: kelp park; a steep wall with ledges to 30m and under the ledges. She recorded 13 species of sponge, northern sea fans, jewel anemones, pink sea fingers *Alcyonium hibernicum* and the yellow cluster anemone *Parazoanthus axinellae*. The following day she surveyed the eastern end of the Steps where she recorded pink sea fingers on the overhanging rocky ledges.

#### **Lochaline Pier (west), 12<sup>th</sup> May – 1 Survey form**

- Becky Hitchin surveyed 2 habitats at the pier; habitat 1 was a vertical wall covered in clumps of *Dilsea carnosa*, feather stars *Antedon bifida* and crevices with many long-clawed squat lobsters inside. Habitat 2 was a vertical wall with a wide variety of sessile species including sponges, hydroids and ascidians.

#### **Tonn Vane wreck, Loch Sunart, 25<sup>th</sup> May – 1 Observation form**

- James Lynott surveyed the wreckage of a wooden trawler lying on a sand/mud seabed at 28m. He recorded two species of sea pen *Virgularia mirabilis* and *Funiculina quadrangularis* on the sea bed as well as the nudibranch *Lomanotus genei*.

#### **Loch Fyne, 14<sup>th</sup> June – 2 Observation forms**

- On a trip to Loch Fyne James Lynott dived at Furnace Quarry on a seabed of boulders, rocky reef, cobbles, pebbles and wreckage. He recorded occasional deeplet sea anemones *Bolocera tuediae* as well as rubbish including tyres, recreational angling litter and metal wreckage. The next dive at Drishaig Reef was over a gently sloping seabed mainly comprised of mud to 30m. Fireworks anemones were recorded occasionally as were Norway lobsters and slender sea pens.

#### **Lochaline and the Sound of Jura, 19<sup>th</sup> to 21<sup>st</sup> June – 3 Survey forms**

- A trip to the west coast by Becky Hitchin resulted in 3 Survey forms: 2 at Lochaline Wall and 1 at Sailor's Grave in the Sound of Jura. At Lochaline Wall she recorded 3 habitats: sandy slope, kelp forest and vertical rocky wall where anemones, ascidians, hydroids and sponges were



Tall sea pen (JL)



diverse and abundant. At Sailor's Grave a heavily silted rocky wall was surveyed and northern sea fans were recorded.

**Bach Island, Firth of Lorn, 21<sup>st</sup> June – 2 Observation forms**

- James Lynott completed 2 survey dives at Bach Island which comprised a rocky reef wall with a sandy seabed at the base. Numerous groups of white cluster anemones were recorded on the wall as well as slender sea pens at the base.

**Sound of Mull, 21<sup>st</sup> to 22<sup>nd</sup> June – 1 Observation form (and 2 pre-qualification forms)**

- Mark Taylor completed his pre-qualification observer forms in the Sound of Mull on the wrecks of the Thesis and Rondo where he recorded numerous plumose anemones and peacock worms *Sabella pavonina*. The following day he recorded Devonshire cup corals, jewel anemones and a grey seal *Halichoerus grypus* at Calve Island.

**Queenie Reef, Loch Creran, 19<sup>th</sup> July – 2 Observation forms**

- James Lynott recorded small biogenic reefs made by the worm *Serpula vermicularis*, horse mussels, a large thornback ray and the two-spotted clingfish *Diplecogaster bimaculata*.

**Puffin Dive Centre, Sound of Kerrera, 27<sup>th</sup> and 27<sup>th</sup> July – 2 Survey forms**

- Tim Parmley returned forms from 2 dives near the Puffin Dive Centre, south of Oban. The curled octopus was recorded as well as discarded metal and plastics.

**Insh Island and the Wall of Kerrera, 9<sup>th</sup> August – 2 Observation forms**

- A trip to the west coast resulted in 2 observation forms returned by James Lynott. At the Sgeir Beul Na H-Uamaidh wall a large variety of sponges, patches of the white cluster anemone and the Celtic feather star were recorded. The Wall of Kerrera was characterised by short and tall animal turf, in particular many sea cucumbers *Pawsonia saxicola* and *Aslia lefevrei*.



White cluster anemones and Celtic feather stars recorded at Insh Island (JL)

**Sound of Mull and the Firth of Lorn, 15<sup>th</sup> to 18<sup>th</sup> August – 6 Survey forms**

Graham Jackson and Glenn King returned 6 Survey forms after a trip to the west coast:

- **Meldon wreck** – the wreck was dominated by a hydroid and tunicate turf with numerous mobile species including molluscs and echinoderms. The surrounding seabed comprised mixed substrate and boulders with a mixed turf of anemones, bryozoans and tunicates.
- **Insh Island** – a wall to 28m with numerous ledges characterised by sponges, cnidarians, bryozoans, echinoderms and tunicates including northern sea fans.
- **Hispania wreck** – Graham and Glenn recorded many species of anemone with plumose anemones super-abundant, elegant anemones frequent and sea loch anemones occasional.
- **Rondo wreck** – the wreck hull was dominated by peacock worms and dead man’s fingers.
- **Port of Ardnæs** – a south facing wall with numerous fissures, ledges and overhangs. Sponges, hydroids, anemones and ascidians were recorded frequently.
- **Thesis wreck** – an animal turf consisting of hydroids, corals and bryozoans characterised the wreck in particular the oaten pipes hydroid *Tubularia indivisa*.

**Sound of Mull, 18<sup>th</sup> and 19<sup>th</sup> August – 3 Survey forms**

- Becky Hitchin completed dives in Loch Sunart and the Sound of Mull. At Sligneach Mor in the entrance to Loch Sunart she recorded a wall rich in anemones and hydroids including the northern sea fan. A dive at Doirlinn a’ Chailbhe near Calve Island was characterised by a heavily silted tunicate dominated wall with a very silty seabed at the base. At south-east Calve Island Becky recorded a seafloor comprised of shell, gravel and dead maerl with numerous large clumps of the sea squirt *Diazona violacea*.

**Anchor Point, Loch Fyne, 11<sup>th</sup> October – 2 Observation forms**

- Dives at this popular site resulted in 2 Observation forms from James Lynott during which he recorded the conger eel *Conger conger* and the echinoderm *Stichastrella rosea*.

**Slates, Ballachulish, 12<sup>th</sup> October – 1 Observation form**

- Trevor Davies dived at the site of the old slate quarry where the shallows were dominated by knotted wrack and sugar kelp to approximately 7m below which echinoderms, ascidians and various fish species were found.

**Ferry Slip Wall, North Cuan, 19<sup>th</sup> October – 1 Observation form**

- Trevor Davies recorded 7 species of fish including the painted goby *Pomatoschistus pictus* and numerous sponges, echinoderms, hydroids and anemones.

**Manse Point, Loch Leven, 17<sup>th</sup> December – 1 Observation form**

- James Lynott surveyed a rocky reef with dense brittlestar beds, ling and slender sea pens.

## 5. Appendix A – Number of taxa in each kingdom, phylum, subphylum or class with some commonly recorded examples

Kingdom, phylum, subphylum, domain or class	Number of taxa recorded (number to species level in brackets)	Some commonly recorded taxa
Bacteria	1	
Foraminifera	1	
Algae	77(59)	<i>Delesseria sanguinea</i> , <i>Laminaria hyperborea</i> , <i>Saccharina latissima</i>
Porifera	44(33)	<i>Halichondria panicea</i> , <i>Hymedesmia paupertas</i> , <i>Suberites ficus</i>
Cnidaria	87(71)	<i>Alcyonium digitatum</i> , <i>Caryophyllia smithii</i> , <i>Cerianthus lloydii</i> , <i>Metridium senile</i> , <i>Obelia geniculata</i> , <i>Tubularia indivisa</i> , <i>Urticina felina</i>
Ctenophora	3(2)	<i>Pleurobrachia pileus</i>
Nemertea	2(2)	<i>Lineus longissimus</i>
Platyhelminthes	3(3)	
Annelida	29(18)	<i>Sabella pavonina</i> , <i>Spirobranchus sp.</i>
Arthropoda	50(38)	<i>Cancer pagurus</i> , <i>Liocarcinus depurator</i> , <i>Munida rugosa</i> , <i>Necora puber</i> , <i>Pagurus bernhardus</i>
Mollusca	92(75)	<i>Aequipecten opercularis</i> , <i>Calliostoma zizyphinum</i> , <i>Gibbula cineraria</i> , <i>Pecten maximus</i>
Brachiopoda	2(2)	
Bryozoa	28(21)	<i>Electra pilosa</i> , <i>Membranipora membranacea</i>
Echinodermata	33(27)	<i>Antedon bifida</i> , <i>Asterias rubens</i> , <i>Echinus esculentus</i> , <i>Luidia ciliaris</i> , <i>Marthasterias glacialis</i>
Tunicata	38(25)	<i>Ascidia mentula</i> , <i>Asciidiella aspersa</i> , <i>Botryllus schlosseri</i> , <i>Clavelina lepadiformis</i>
Fish	54(43)	<i>Ctenolabrus rupestris</i> , <i>Labrus bergylta</i> , <i>Labrus mixtus</i> , <i>Pholis gunnellus</i> , <i>Pollachius pollachius</i>
Mammalia	1(1)	



## 6. Acknowledgements

### **Thanks to all the Seasearchers and their buddies who contributed to Seasearch Scotland in 2014!**

Chris Agar, Bob Anderson, Libby Anderson, Matt Barnes, Jo Beaton, Anne Bignall, Mike Bramham, George Brown, Jeremy Brown, Tom Clarke, Sarah Conner, Georgia Conolly, Alex Coram, Debbie Dallison, Trevor Davies, Simon Exley, Nicola Faulks, Tina Frew, Stephen Frew, Justin Garrett, Trish Grey, Darren Gubby, Garry Gubby, Peter Gunn, Helen Hadley, Becky Hitchin, Catriona Hoon, Amy Houston, Ivan Houston, John Howe, Roddy Howe, Rob Hughes, Graham Jackson, Kirsty Jeffrey, Nathan Jeffrey, Robin Jones, Hilary Kerr, Glenn King, Annabel Lawrence, Paula Lightfoot, Ken Loades, Luna van der Loos, James Lucey, James Lynott, Neil MacInnes, Kerry Mackay, Penny Martin, Stephen McGinn, David Millar, Richard Moore, Leigh Morris, Kerry Netherway, Chris Newton, Owen Paisley, John Rees, Angus Robson, Tim Parmley, Ruth Sharratt, Simon Smith, Gerard Storey, Val Storey, Trevor Swanton, Jenny Taylor, Mark Taylor, Veronica Taylor, Laura Walton, Howard Wood and Mark Woombs.

### **Thanks to all who gave permission to use their photographs in this report:**

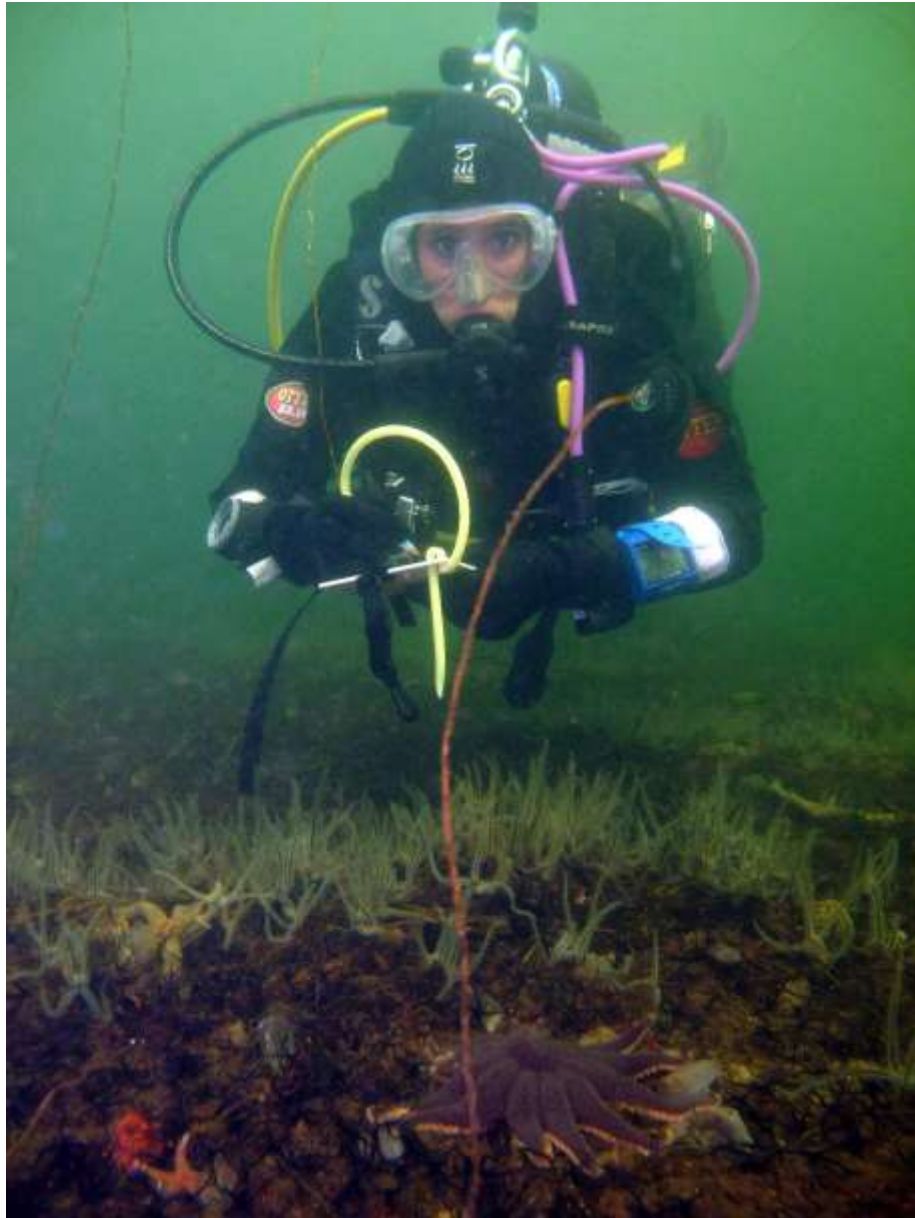
Matt Barnes (MB), George Brown (GB), Nic Faulks (NF), Becky Hitchin (BH), James Lynott (JL), Leigh Morris (LM) and Howard Wood (HW).

### **Front cover photo:**

COAST divers on a survey of the South Arran MPA (HW).

### **Thanks to our funders Scottish Natural Heritage whose funding makes Seasearch in Scotland possible**





Sarah Conner surveys a rich maerl and brittlestar bed in Loch Sween (MB)