

ANNUAL REPORT 2016



This report summarises Seasearch activities throughout Britain and Ireland in 2016. It includes a summary of the main surveys undertaken (pages 2-5), reports produced and a summary of the data collected. This includes records of Priority habitats and species, locally important features and nationally scarce and rare species (pages 6-9) and habitats (pages 9-11). It also includes a summary of the training courses run for volunteer divers (page 12) and information on how Seasearch is organised and the data is managed and made available (page 13).

All of the reports referred to may be downloaded from the Seasearch website and the species data may be accessed through the National Biodiversity Network website. More detailed datasets are available on request.

Seasearch Surveys 2016

Seasearch continued to target much of its survey activity in existing and proposed marine protected areas. In England 23 new Marine Conservation Zones (MCZs) were designated in January 2016, making a total of 50; four Northern Ireland MCZs, including the site at Waterfoot Bay proposed by Seasearch, were designated in December 2016.

The following pages summarise the main surveys undertaken in 2016. They were arranged by Seasearch Coordinators and other volunteers; we would like to thank all of the organisations who supported survey activity at a local level. In addition to the surveys outlined here there were many other dives both organised by Seasearch coordinators and undertaken by individual divers. The map shows the location of all the 2016 dives. Data from all of the surveys has been entered into the Marine Recorder database and can be freely accessed on the National Biodiversity Network website www.nbn.org.uk. In addition to this, there are separate datasets for crawfish and pink sea fan survey forms. In some cases Summary Reports (denoted ®) can be downloaded from the Seasearch website.



Seasearch is co-ordinated by the Marine Conservation Society (MCS) on behalf of the Seasearch Supporters which comprise the Marine Conservation Society, Wildlife Trusts, Joint Nature Conservation Committee, Natural England, Natural Resources Wales, Scottish Natural Heritage, Department of the Environment Northern Ireland, Environment Agency, Marine Biological Association, Nautical Archaeological Society, British Sub Aqua Club, Sub Aqua Association, Professional Association of Diving Instructors, Scottish Sub Aqua Club and Irish Underwater Council.

Financial support in 2016 at a national level was given by the partners on the right in addition to the MCS.



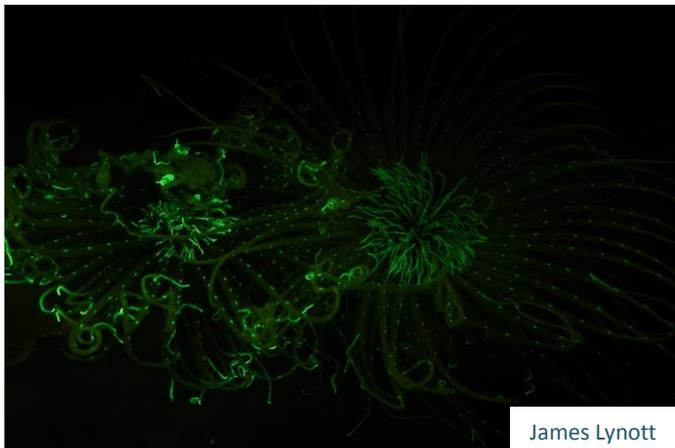
Seasearch is coordinated and delivered locally in England by Wildlife Trust and MCS coordinators, in Scotland, Wales, Northern Ireland, Jersey and the Isle of Man by MCS coordinators and in the Republic of Ireland by the Irish Underwater Council/Comhairle Fo-Thuinn.

SCOTLAND ®

1 Orkney: a liveaboard survey was organised with a focus on priority marine habitats including flame shell, *Limaria hians*, beds and maerl, targeting the less-dived areas of Scapa Flow including a pinnacle off Auskerry.

2 South Skye: surveys in Lochs Slapin, Eishort and Skavaig were carried out in collaboration with the local South Skye Sealochs Initiative group who wanted baseline data for an area potentially under threat from fish farm applications.

3 Argyll: ongoing monitoring of priority marine features, confirming the presence of fireworks anemones (*Pachycerianthus multiplicatus*, photographed with UV light by James Lynott, below) in Loch Shira, flapper skate surveys Sounds of Mull and Jura, large areas of horse mussels (*Modiolus modiolus*) at Greenock in the Clyde and regeneration of serpulid reefs in Lochs Creran and Tarbert.



James Lynott

4 Loch Sunart East Càrna site: Within a small bay to the east of Càrna all three types of sea pen, *Funiculina quadrangularis*, *Virgularia mirabilis* and *Pennatula phosphorea* were recorded as well as fireworks anemones and *Modiolus modiolus*.

5 West Loch Tarbert: Seasearch divers found relict serpulid reefs and native oysters. The reefs had obviously been dead for some years but there must have been living reefs in West Loch Tarbert in the 1980s.

6 Sound of Jura: New locations for fireworks anemones and the northern seafan *Swiftia pallida* were recorded during this survey.

7 Staffa Archipelago (Porcupine): A group of divers from the Porcupine Marine Natural History Society carried out Seasearch surveys in the Staffa Archipelago, a previously little-surveyed area.

WALES ®

8 North & West Anglesey: Unfortunately in 2016 the weather scuppered plans to dive North Anglesey as an organised Seasearch event, so attentions were focused on gap filling wherever possible off West Anglesey. Dives were carried out at four unusual and interesting sites lacking previous records.

9 South Anglesey (Menai Strait & Conwy Bay SAC): As a reliable fallback in case of bad weather (very necessary in 2016), many of the sites in this area are deemed high priority such as searches for mixed muddy sediments, revisiting MNCR survey sites to confirm biotopes and searches for strange features within the Strait that have shown up on recent multibeam surveys. A highlight of the year in North Wales were muddy gravels, particularly the unusual biotope *Sabella pavonina* with sponges and anemones on infralittoral mixed sediment (SS.SMx.IMx.SpavSpAn, where *Sabella pavonina* was abundant and characterising) at three separate sites. These are important Annex 1 habitats within the SAC.

10 Llyn Peninsula (Pen Llŷn a'r Sarnau SAC): Criccieth, a beachside resort on the South Llyn peninsula, fringing the northern end of Tremadog Bay, was the focus of the North Wales observer training event in order to confirm the presence of the sparse subtidal seagrass bed, *Zostera marina*, which has previously been surveyed by Seasearch during boat surveys. *Sabellaria alveolata*, the honeycomb reef forming worm, was recorded on intertidal boulders here. This species is known to form Annex 1 notifiable reefs at the other end of the beach.

11 South Pembrokeshire: Three sites in South Pembrokeshire were dived in 2016, with the highlight being the first UK record of flatworm *Prosthecereus roseus* (below) at Crow Rock, an islet just off Linney Head.



Hayden Close

12 Skomer & Skokholm: Three sites around Skokholm were dived in 2016, the highlights being records of the curled octopus *Eledone cirrhosa* and the unusual nudibranchs *Okenia elegans* and *Thecacera pennigera*. A volunteer diving survey of king scallop, *Pecten maximus*, was completed at Skomer MCZ, which is managed by Natural Resources Wales.

13 Milford Haven: In addition to the 'usual' Seasearch dives in this area, additional surveys took place concentrating on native oyster (*Ostrea edulis*) to support the Milford Haven Oyster Regeneration Project.

14 The Smalls: An extremely exposed and tideswept group of wave-washed basalt and dolerite rocks 20 miles off the Pembrokeshire coast, The Smalls are very rarely dived but amazingly flat conditions allowed two visits in 2016, one of which resulted in the first Welsh record of the red blenny (*Parablennius ruber*), photographed by Kerry Lewis.



Kerry Lewis

15 Ramsey Island is located off the coast of the St David's peninsula on the northern side of St Brides Bay. Seasearch has been completed around the island in previous years but the exposed west coast has always been a challenge and unusually calm conditions were used to dive the south west point (Allt Felin Fawr).

ENGLAND

16 North Devon: The north coast of Devon (apart from Lundy) is much less well-surveyed than the popular south coast due to strong tides, poor visibility and challenging access but keen individuals continued to provide data from this area, which gained two new MCZs (Bideford to Foreland Point and Hartland to Tintagel) in the second tranche of designation in January 2016.

The traditional diving hotspot of Lundy continued to attract individuals and groups, who confirmed the continuing presence of sunset cup corals (*Leptopsammia pruvoti*) at Knoll Pins and also recorded the false cowrie *Simnia hiscocki* on a seafan.

17 Cornwall – Fal maerl beds: The maerl beds in the Fal estuary are the best and most extensive in England, exhibiting 90-100% live maerl in the densest areas. As a priority habitat and one that is potentially under threat by port expansion, Seasearch divers continued to gather baseline data on this special area.

18 Manacles ®: The area around Dean Quarry adjacent to The Manacles MCZ continued to be a focus of attention as uncertainty reigned over the quarry plans. A report covering all the Seasearch activities and data from 2001-2015 has been prepared and is available for download from the Seasearch website.

19 South Devon: Gap-filling in the extensive marine protected areas of South Devon accounted for the vast majority of the survey effort in 2016. The continuing revival of the crawfish population was also a notable feature with records being passed on to the local IFCA (Inshore Fisheries and Conservation Authority) to inform management. Some sites now guarantee sightings while smaller juveniles have also been recorded, suggesting at least two seasons of successful recruitment. The priority habitat of seagrass beds continued to be surveyed by the Community Seagrass Initiative project and many of their divers filled in Seasearch forms, for which we are grateful. The popular dive site at Babbacombe saw two interesting records of species possibly moving west, the snakelocks anemone shrimp *Periclimenes sagittifer* and the nationally-rare nudibranch *Trapania pallida*. Both species are more frequently recorded in Dorset.

20 Lyme Bay – Devon & Dorset: The reefs of Lyme Bay continue to be monitored to assess the effects of the closed areas and management thereof. Pink sea fans are a prominent feature, often being common to superabundant, and interesting aspects of their biology were revealed. Although many large seafans were recorded in excellent condition, many others were fouled with didemnid ascidians. Successful recruitment was seen, with unbranched and small branched individuals. Rare white individuals, with some bearing well-camouflaged white specimens of the fan nudibranch *Tritonia nilsodhneri* were spotted.

On the Dorset side, dives continued to target areas chosen from the DORIS bathymetric map to fill in gaps and ground-truth the topography (particularly of boulder stony reef). A notable find was the presence of broken chalk reef (a priority habitat and Feature of Conservation Importance, FOCI) south of Lyme Regis.

21 Chesil Beach and Stennis Ledges MCZ: One weekend of diving enabled a visit to Stennis Ledges close to Portland where well-developed colonies of *Pentapora foliacea* (ross 'coral', actually a bryozoan) and fine examples of pink seafans were found. The mixed

sediment between the ledges was consolidated by an unusual turf of the orange sea squirt *Stolonica socialis*. The unusual feature of Charlotte's Clay, identified as Oxford Clay, qualifies as another habitat FOCI and the reef above supports well developed individual pink seafans as well as many juveniles up to about 8cm high. These dives were logged with towed GPS units to georeference the photographs and data, which we hope will provide sufficient evidence that the MCZ can be extended about 300m all along its southwest boundary in order to include this feature.

22 South Dorset: Early starts and tide-scoured habitats characterised the dives from Portland and Swanage, with particularly impressive displays of sea squirt turf and elephant hide sponge (*Pachymatisma johnstonia*) being noted. A long journey over to Christchurch Ledge on the eastern boundary of Poole Bay yielded a long list of seaweeds to the delight of the local co-ordinator. Mobile coarse sand over bedrock reef is a favoured spot for finding the nationally-scarce sponge *Adreus fascicularis* which is relatively abundant in Dorset

23 Poole Harbour *Sabella*: During the summer a lot of survey effort concentrated on a collaborative project with Natural England and Southern IFCA to ground-truth the drop-video of the dense areas of peacock worm (*Sabella pavonina*) in the channels around Brownsea Island and the south of the harbour.

24 Channel Islands liveaboard ®: The liveaboard trip



postponed from autumn 2015 finally took place in May 2016 and enabled some isolated, exposed and rarely dived sites (e.g. the Casquets, left) to be visited for the first time by Seasearch.

The classic Channel Island 'yellow reefs' were much in evidence and also species that have a restricted distribution and are generally rare, but recorded here in significant abundances (e.g. *Balanophyllia regia*, scarlet-and-gold cup corals). Large crawfish were proof of the difficult tide-swept conditions curtailing fishing activity. Many of the seafans appeared to be in poor condition, with tissue die-back, epifaunal growth and entanglement.

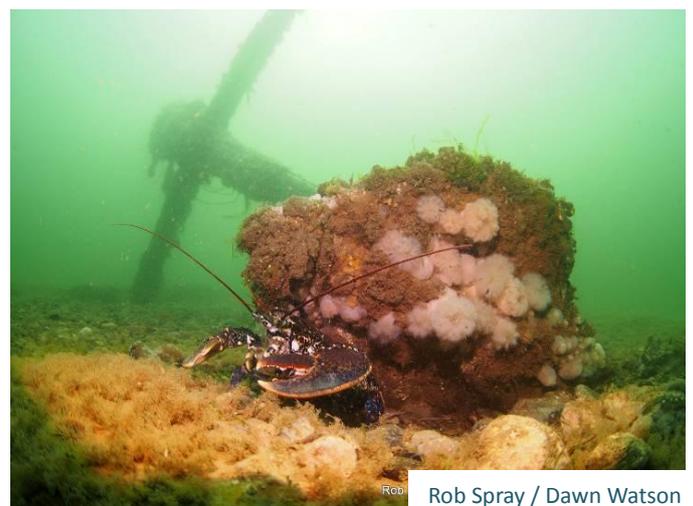
25 Jersey reef survey ®: The annual week-long reef survey in August was unfortunately plagued with bad weather – strong winds from the south west caused very lumpy seas but didn't stop the trip out to the amazing Les Sauvages site almost on the French border between Iles Chausey and the Minquiers plateau. Here we recorded rare sunset cup corals and crawfish as well as the 'usual' southern reef species. A dive on the maerl

beds on the east coast found a southerly species of nudibranch (*Dendrodoris limbata*) for the second year running. Survey effort continued to focus on priority habitats such as maerl beds, providing baseline data to inform local management initiatives.

26 Hampshire/Isle of Wight: Scarce resources and bad weather meant that only two dives took place, on the wrecks of the "War Knight" (SW of IOW) and the "Sally Jane" on the Dorset border at Christchurch Ledge.

27 Kent Marine Conservation Zones: All of the Seasearch dives organised by Kent Wildlife Trust took place in MCZs, with exciting records of species new to the area: a burrowing sea cucumber in gravel, captured on video, a cup coral (*Caryophyllia* sp., unfortunately not possible to definitively ID to species) and the first confirmed record of jewel anemones, *Corynactis viridis*, on the wreck of the Mandovi. A total of 7 diving days were organised, but 4 were cancelled due to poor weather and one due to boat engine failure.

28 East Anglia ®: An interesting year with lots of new species seen and new sites explored. Sightings of *Sabellaria spinulosa* have continued to increase and the tiny colonies seen in 2015 are all expanding. Notable species include tompot blennies (*Parablennius gattorugine*), which have gone from a single individual seen every couple of years to at least one on every reef dive off Norfolk, and one individual off Suffolk. They have all been subadult, so it will be interesting to see how they survive the winter. Two species of stalked jellyfish (priority species) were recorded, generally on the meadows of *Halidrys siliquosa* which are becoming quite frequent off East and West Runton, but also once on *Plocamium cartilagineum*. Several new species of seaweed have also been recorded.



Rob Spray / Dawn Watson

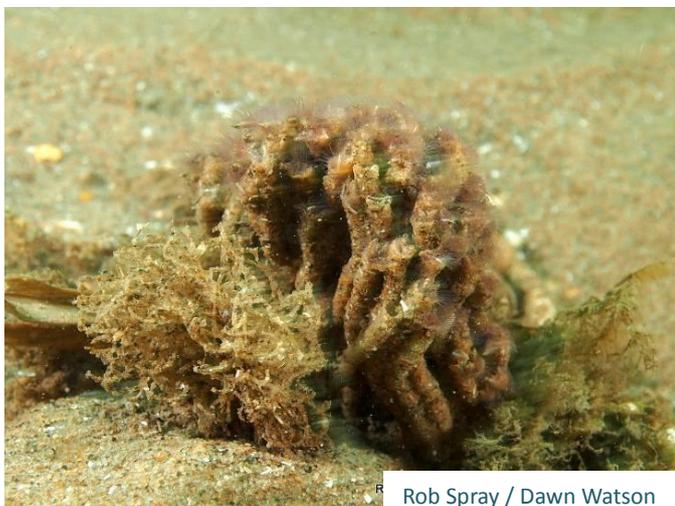
29 East Anglia – Essex: Essex dives were very frustrating in 2016 and many planned trips fell through due to weather or boat problems. Two dives were made with the Colchester BSAC club from Wrabness on the river Stour, a mid channel drift and a shore dive onto boat

moorings. The drift dive was very pleasant with at least 6m visibility and a rolling seabed from 5-10m deep, covered in meadows of peacock fanworms (*Sabella pavonina*) and piles of non-native but now very widely distributed slipper limpets (*Crepidula fornicata*), all providing anchorage for a range of seaweeds and animals, including the nationally rare sponge *Suberites massa* previously only recorded on the south coast.

30 East Anglia – Suffolk: 2016 was a very good year for Suffolk, with a brief period in September when visibility at the shore got up to a mighty 1-2m, a vast improvement over the usual 'drinking chocolate' seen locally. 3 new sites were dived on the coast (including Lowestoft, Aldeburgh and Felixstowe) and an extra river site added. Non-native species recording continued at Levington marina.

31 East Anglia - North Norfolk ®: The focus of most of the dives in this area in 2016 was to explore widely with GPS buoys and fill in gaps in the Cromer Shoal Chalk Beds MCZ designated in January 2016, as well as setting up a public snorkel trail on the Victorian sewer pipe at Sheringham.

32 Lincolnshire and The Wash: Dives were carried out with the Eastern IFCA to deploy colonisation plates and ground-truth drop video footage, which had managed to record the seabed between all the areas of *Sabellaria spinulosa* reef without actually finding any reef...!

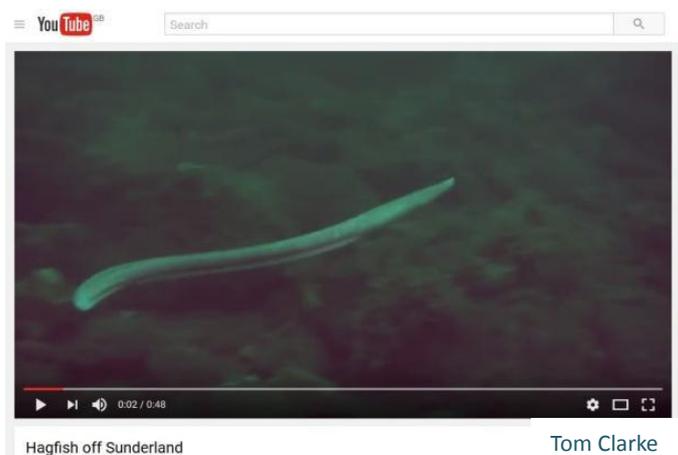


Rob Spray / Dawn Watson

33 Yorkshire: Seasearch has received very little data from Yorkshire for the past couple of years (a mere two forms in 2015!) as there are no dive charters operating in this area. The situation improved greatly this year thanks to an arrangement with Scarborough dive club, South Bay Scuba, which enabled us to survey six local sites, comprising wrecks, reefs and coastal defences. A survey of Calf Allen Rocks in Cayton Bay revealed the entire reef to be densely covered in young *Mytilus edulis*; this site has been visited regularly by Seasearch since 2011 and this was a new occurrence, it will be interesting to monitor their success. Other highlights

included the nudibranchs *Lomanotus marmoratus*, *Rostanga rubra*, and a pair of spawning *Goniodoris castanea*, a species previously recorded in Scarborough in 1972 but with no other records from any other part of the Yorkshire coast.

34 Durham Heritage Coast (DHC) ®: With the support of the Durham Heritage Partnership Seasearch divers continue to monitor and record the recovery of this post-industrial marine landscape. Both northern, boreal species and, increasingly, warmer-water Lusitanian species are found in the waters off the DHC. Exciting discoveries in 2016 included a hagfish off Sunderland (below), a fish normally found offshore in much deeper water, the first record for the dorid nudibranch *Geitodoris planata*, and unusual sponge records for *Clathrina lacunosa*, *Raspailia ramosa* and *Stelligera rigida*.



35 North-east England - Coquet to St Marys MCZ: With financial support from the North Sea Wildlife Trusts, Seasearch dives were carried out at seven sites between Coquet Island and St Mary's Island, an area which was designated as an MCZ in January 2016. Habitats surveyed included rich kelp forests, surge gullies with diverse sessile fauna, and shipwrecks supporting large shoals of fish. One of the highlights was the huge spawning aggregations of the nudibranch *Onchidoris bilamellata*, which covered extensive areas of reef at Seaton Sluice. A further three sites outside the MCZ were surveyed, providing information on species and habitats in the wider Tyne and Wear coast area.



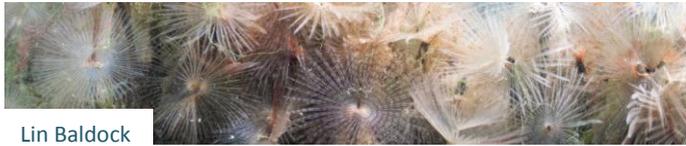
Paula Lightfoot

Species recorded in 2016

A total of 48,257 taxon records were made during 2016. The following table provides a summary of the species recorded and identifies both the most commonly recorded species and those of special interest.

Priority (formerly Biodiversity Action Plan) species and habitats continue to be a major focus for our surveys and are highlighted in the table as are occurrences of nationally scarce and rare species as defined by the JNCC. The JNCC list has not been revised for some years and the records also include some nationally scarce and rare fishes which are not in the JNCC list and records of other southerly species which have only been recently recorded in our area. The list also identifies non-native species, based on the Marine Biological Association guide.

Phyla and commonly recorded species (> 200 records)	Priority (P), Scarce (S), Rare (R) & Non-native (NN) species
FORAMINIFERA , (27 records - 2 taxa)	
BACTERIA , (5 records, 1 taxon)	
CHROMISTA , (1 record)	
ENTOPROCTA , (4 records, 1 taxon)	
NEMATODA , (1 record)	
PORIFERA , Sponges (4952 records, 109 taxa)	
<i>Cliona celata</i> (455 records), <i>Amphilectus fucorum</i> (327), <i>Dysidea fragilis</i> (298), crusts (282), <i>Sycon ciliatum</i> (249), <i>Hemimycale columella</i> (241), <i>Pachymatisma johnstoni</i> (215)	<i>Desmacidon fruticosum</i> (R, 2 records from Isles of Scilly) <i>Dysidea pallescens</i> (R, 6 records in Dorset and Norfolk) <i>Suberites massa</i> (R, 10 records in Dorset, Essex and Norfolk) <i>Adreus fascicularis</i> (S, 17 records in Dorset, Devon and Channel Islands) <i>Axinella damicornis</i> (S, 55 records in Pembrokeshire, Isles of Scilly, Devon and Channel Islands) <i>Tethyspira spinosa</i> (S, 5 records from Devon, Dorset and Channel Islands)
CNIDARIA , Jellyfish, hydroids, siphonophores, anemones and corals (7066 records, 171 taxa)	
Jellyfish (178 records, 20 taxa)	<i>Lucernariopsis campanulata</i> (P, 15 records in Orkney, Staffa, Skye, Isle of Gigha, Norfolk, Cornwall and Isles of Scilly) <i>Lucernariopsis cruxmelitensis</i> (P, 3 records in Dorset and Staffa) <i>Haliclystus auricula</i> (P, 1 (uncertain) record in Dorset)
Hydroids (2676 records, 78 taxa)	<i>Aglaophenia kirchenpaueri</i> (S, 14 records from Pembrokeshire, Isles of Scilly, Devon, Dorset and Channel Islands) <i>Hartlaubella gelatinosa</i> (S (3 records) and P in Scotland (1 record)) <i>Laomedea angulata</i> (S, 8 records in Dorset) <i>Tamarisca tamarisca</i> (S, 1 records in Lundy)
Anemones and corals (4212 records, 73 taxa)	<i>Alcyonium digitatum</i> (508 records), <i>Caryophyllia smithii</i> (448), <i>Urticina felina</i> (408), <i>Sagartia elegans</i> (262), <i>Corynactis viridis</i> (261), <i>Metridium senile</i> (261), <i>Anemonia viridis</i> (229), <i>Eunicella verrucosa</i> (216)
	<i>Amphianthus dohrnii</i> (P/R, 11 records from Devon, Cornwall, Isles of Scilly) <i>Eunicella verrucosa</i> (P, 216 records from Channel Islands, Dorset, Devon, Cornwall and Pembrokeshire) <i>Swiftia pallida</i> (P, 8 records from Staffa, Skye, Sound of Jura, Firth of Lorn) <i>Arachnanthus sarsi</i> (P, 2 records from Outer Hebrides) <i>Pachycerianthus multiplicatus</i> (P, 20 records from West Scotland) <i>Funiculina quadrangularis</i> (P, 13 records from West Scotland) <i>Leptopsammia pruvoti</i> (P, 7 records from Lundy, Isles of Scilly and Jersey) <i>Hoplanguia durotrix</i> (R, 5 records from Isles of Scilly, Dorset and Jersey) <i>Scolanthus callimorphus</i> (R, 2 records in Dorset and Cornwall; photo left) <i>Phellia gausapata</i> (R, 1 record from Orkney) <i>Aiptasia mutabilis</i> (S, 44 records from Dorset, Devon, Lundy, Pembrokeshire and Jersey) <i>Anemonactis mazeli</i> (S, 1 record in Loch Duich) <i>Cataphellia brodrickii</i> (S, 3 records in Cornwall and Isles of Scilly) <i>Parazoanthus anguicomus</i> (S, 5 records from West Scotland)
CTENOPHORA , Comb Jellies (26 records, 4 taxa)	
PLATYHELMINTHES , Flat worms (75 records, 3 taxa)	

Phyla and commonly recorded species (> 200 records)**Priority (P), Scarce (S), Rare (R) & Non-native (NN) species****NEMERTEA**, Ribbon Worms (57 records, 5 taxa)**ECHIURA**, Spoon Worms (6 records, 2 taxa)**ANNELIDA**, Segmented worms (2634 records, 73 taxa)*Spirobranchus* (410 records), *Lanice conchilega* (388), *Sabella pavonina* (310; **photo below**), *Bispira volutacornis* (209)

Lin Baldock

Sabellaria spinulosa (Priority habitat when reef-forming, 44 records from North Wales (Anglesey, North Llyn), Dorset, Channel Islands, Kent, East Anglia and Tyne & Wear; most not reef-forming)*Serpula vermicularis* (Priority habitat when reef-forming, 71 records from Orkney, West Scotland, Co. Galway, Isles of Scilly, South Devon and Norfolk; most not reef-forming)*Sabella spallanzani* (southerly) – 7 records in Guernsey and Jersey**PYCONOGONIDA**, Sea spiders (51 records, 3 unique taxa)**CRUSTACEA**, Barnacles, amphipods, isopods, crabs, lobsters and prawns (5538 records, 117 taxa)*Cancer pagurus* (643 records), *Necora puber* (610), *Cirripedia* (435), *Carcinus maenas* (338), *Pagurus bernhardus* (337), *Homarus gammarus* (329), *Maja brachydactyla/squinado* (270), *Macropodia* (230), *Inachus* (207), *Pagurus* (203)*Palinurus elephas* (P, 215 records in Rathlin, Cornwall, Isles of Scilly, Devon, Lundy, Pembrokeshire, North Wales, Orkney, Jersey and Guernsey)*Dromia personata* (S, 3 records in North Devon, Pembrokeshire and North Wales)*Austrominius modestus* (NN, 3 records in Dorset, Cornwall & N. Wales)*Periclimenes sagittifer* (southerly) – 15 records in Dorset, Devon and Jersey**MOLLUSCA**, shells, sea slugs, bivalves and cephalopods (4820 records, 240 taxa)*Calliostoma zizyphinum* (434 records), *Gibbula cineraria* (271), *Pecten maximus* (214)

Charlotte Bolton

Ostrea edulis (P, 47 records from Jersey, Dorset, Sussex, East Anglia, Loch Tarbert, Pembrokeshire and Cornwall)*Arctica islandica* (P in Wales (3 records))*Facelina annulicornis* (P in Scotland (3 records))*Limaria hians* (Priority habitat, 8 records from Isles of Scilly, West Scotland and Orkney)*Modiolus modiolus* (Priority habitat, 52 records from Isle of Man, West Scotland, Orkney and Shetland)*Acanthocardia aculeata* (R, 1 records from Loch Duich)*Aeolidiella sanguinea* (R, 1 record from Dorset)*Okenia elegans* (R, 7 records from Channel Islands, Dorset, Devon, Pembrokeshire, North Wales and Sound of Jura)*Trapania maculata* (R, 3 records from Dorset)*Tritonia nilsodhneri* (S, 68 records from Channel Islands, Dorset, Devon, Cornwall, Isles of Scilly)*Trapania pallida*, (S, 7 records from Dorset and Devon)*Hero formosa* (S, 2 records from Skye)*Doris sticta* (S, 1 record from Guernsey)*Crepidula fornicata* (NN, 169 records from Dorset, Jersey, Guernsey, Pembrokeshire, Falmouth, Torbay, Norfolk, Sussex, Essex and Lincolnshire)

Southerly species:

Haliotis tuberculata (5 records in Alderney and Jersey)*Dendrodoris limbata* (2 records in Jersey; **photo left**)**BRYOZOA**, sea mats and sea mosses (3526 records, 99 taxa)*Alcyonidium diaphanum* (351 records), crusts (278), *Electra pilosa* (260), *Flustra foliacea* (250), *Membranacea membranipora* (220), *Pentapora foliacea* (200)*Schizobrachiella sanguinea* (R, 1 record in South Cornwall)*Bugula neritina* (NN, 3 records in Dorset and Guernsey)*Tricellaria inopinata* (NN, 4 records in Dorset and Sussex)**PHORONIDA**, horseshoe worms (64 records, 3 taxa)**ECHINODERMATA**, starfish, sea urchins and sea cucumbers (3660 records, 65 taxa)*Asterias rubens* (731 records), *Echinus esculentus* (499), *Marthasterias**Ophiopsila aranea* (R, 2 records from South Devon)

Phyla and commonly recorded species (> 200 records)*glacialis* (427), *Henricia* (308), *Crossaster papposus* (204)**Priority (P), Scarce (S), Rare (R) & Non-native (NN) species****TUNICATA**, sea squirts (3764 records, 78 taxa)*Clavelina lepadiformis* (367 records), *Botryllus schlosseri* (267), *Ascidia aspersa* (231)*Polysyncraton lacazei* (R, 3 records from Jersey)
Pycnoclavella aurilucens (S, 44 records from Channel Islands, Dorset, Devon, Cornwall and Pembrokeshire)
Phallusia mammillata (S, 54 records from Jersey, Dorset and Devon)
Corella eumyota (NN, 4 records in Dorset, Essex, Suffolk and Staffa),
Perophora japonica (NN, 10 records in Norfolk and Dorset), *Botrylloides diegensis* (NN, 37 records in Dorset), *Botrylloides violaceus* (NN, 9 records in Dorset and Suffolk), *Styela clava* (NN, 65 records in Dorset, Jersey, Pembrokeshire, North Wales, Co. Galway, Falmouth, South Devon, Loch Tarbert (Argyll), Sussex, Suffolk and Essex)**PISCES**, fishes (4453 records, 141 taxa) (fish are not included in the JNCC rare and scarce species lists)*Labrus bergylta* (375 records), *Ctenolabrus rupestris* (294), *Taurulus bubalis* (224), *Pomatoschistus* (212), *Symphodus melops* (207), *Labrus mixtus* (206), *Pollachius pollachius* (200)

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Anguilla anguilla (P, 5 records in Dorset, Jersey and Norfolk)
Gadus morhua (P, 21 records in Co. Cork, Staffa, Shetland, Skye, Orkney, Loch Long, Loch Leven, Firth of Forth, Loch Etive, Anglesey, Durham Heritage Coast, Yorkshire, Norfolk and Cornwall)
Merlangius merlangus (P, 5 records from North Wales, Arran, Orkney, South Devon and Strangford Lough)
Molva molva (P, 20 records from Jersey, South Cornwall, South Devon, Co. Galway, Co. Wexford, North Wales, Staffa, Loch Linnhe, Orkney, Shetland, Durham Heritage Coast)
Lophius piscatorius (P, 10 records from Guernsey, Co. Cork, Sound of Mull, Sound of Jura, Pembrokeshire, South Devon and South Cornwall)
Ammodytes tobianus (P, 2 records from Orkney and Firth of Forth)
Trachurus trachurus (P, 2 records from South Cornwall and South Devon)
Pleuronectes platessa (P, 47 records from all coasts)
Solea solea (P, 12 records from Jersey, Co. Galway, Cornwall, Devon, Dorset, Kent and Norfolk)
Salmo salar (P, 1 record from Loch Leven)
Hippocampus guttulatus (P, 1 record from Dorset; **photo left**)
Dipturus batis (P, 2 records from Jersey and Firth of Lorn)
Raja undulata (P, 9 records from Sussex, Dorset and Jersey)
Raja clavata (P in Wales (2 records) and Scotland (10 records))

Southerly species:

Tripterygion delaisi (12 records)
Parablennius ruber (12 records)
Symphodus ballioni (6 records)
Balistes capriscus (1 record)
Spondylosoma cantharus (6 records)
Torpedo marmorata (1 record)**AVES & MAMMALIA**, birds & mammals (22 records of birds, seals and dolphins, 4 taxa)**ALGAE**, seaweeds (7426 records, 245 taxa)**Rhodophycota**, Red seaweeds (4049 records, 154 taxa)Rhodophyta (419 records), *Delessaria sanguinea* (230), *Heterosiphonia plumosa* (206)

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Dasya punicea (R, 1 records from Dorset)
Gelidiella calcicola (R, 1 record from Falmouth)
Gigartina pistillata (S, 1 record from Jersey)
Gracilaria bursa-pastoris (S, 7 records from Dorset and Jersey)
Gracilaria multipartita (S, 12 records from Dorset)
Asparagopsis armata (NN, 21 records from Jersey, Guernsey, Isle of Man, Falmouth, Dorset, Lundy, St. Abbs, Skye and Orkney),
Bonnemaisonia hamifera (NN, 4 records from Falmouth, Dorset and Staffa)
Antithamnonella ternifolia (NN, 5 records from Falmouth and Dorset),
Heterosiphonia japonica (NN, 46 records from Falmouth, Pembrokeshire, Dorset, Skye, Staffa, Anglesey and Liverpool Docks),
Anotrichium furcellatum (NN, 3 records from Dorset)
Pikea californica (NN, 2 records from Isles of Scilly)
Solieria chordalis (NN, 12 records from Dorset)
Grateloupia turuturu (NN, 8 records from Dorset, Plymouth, Falmouth, Guernsey)
Maerl (Priority habitat, 82 records, most not identified to species, from Channel Islands to Orkney on south/western coasts; high abundances (maerl beds in Jersey, Ireland, Isle of Man, Falmouth (**photo left**) and West Scotland)

Phyla and commonly recorded species (> 200 records)	Priority (P), Scarce (S), Rare (R) & Non-native (NN) species
Phaeophyceae , Brown seaweeds (2205 records, 65 taxa) <i>Laminaria hyperborea</i> (322 records), <i>Dictyota dichotoma</i> (274)	<i>Padina pavonica</i> (P/S, 1 (possibly 2) records from Dorset) <i>Carpomitra costata</i> (S, 11 records from Devon, Cornwall, Isles of Scilly, Pembrokeshire, Isle of Man and Skye) <i>Sargassum muticum</i> (NN, 58 records from Dorset, Guernsey, Jersey, Isle of Man, Ireland (Co. Kerry, Co. Down), Falmouth, Torbay and Suffolk), <i>Undaria pinnatifida</i> (NN, 22 records from Guernsey, Jersey, Dorset, Plymouth and Suffolk) <i>Colpomenia peregrina</i> (NN, 18 records from Loch Sween, Guernsey, Isle of Man, Co. Kerry, Falmouth, Torbay and Dorset)
Chlorophycota , Green seaweeds (569 records, 24 taxa)	
ANGIOSPERMAE , flowering plants (72 records, 3 taxa)	<i>Zostera marina</i> (Priority habitat, 70 records from Scotland, Isle of Man, North Wales, Ireland, Cornwall, Devon, Dorset, Channel Islands)

TOTAL TAXA RECORDED = 1376

Habitats and Biotopes

Seasearch records habitats and animal and plant communities in two ways.

For the Observation Form data the recorder identifies one or more Seabed Cover Types (SCT) for the whole of their record from a list of nine options. For the Survey Forms the data is separated into a number of different Samples and each sample is given a Biotope Code using the MNCR 15.03 suite devised by the Joint Nature Conservation Committee. This is carried out by a post survey assessor rather than the recorder themselves as it requires specialist knowledge of the biotope system.

During 2016 2941 SCTs and Biotopes were identified, of which 64% (1891) were MNCR Biotopes & 36% (1050) SCTs.

MNCR 15.03 Biotopes

The 2941 biotopes assigned were divided by main habitat as follows:

Littoral rock/sediment 51

Infralittoral rock 489

Circalittoral rock 649

Sublittoral sediment 702

In almost all cases more detailed biotopes were assigned within these broad categories. These are based on variations in the type of physical habitat, and different communities of plants and animals.

Some habitats have been assessed as priority habitats for conservation in the UK. Whilst these are not identified in the same way in Ireland, Irish records have been included below. Priority habitat records were as follows:

Subtidal chalk

CR.MCR.SfR: Soft rock communities; 5 records from Norfolk, Kent and Isle of Wight

Seabed Cover Types

The 1050 SCTs recorded were divided as follows:

Kelp forest and kelp park 191

Mixed seaweeds 202

Encrusting pink algae 52

Short animal turf on rock 301

Tall animal turf on rock 158

Animal beds (*e.g.* mussels, brittlestars) 9

Sediment with life apparent 116

Barren sediment 21

This data provides a broad indication of the habitats and communities present at the site. In some cases it is apparent that the level of detail on the record is sufficient to assign a MNCR Biotope to an Observation Form.

CR.MCR.SfR.Pid: Piddocks with a sparse associated fauna in sublittoral very soft chalk or clay; 13 records (not all on chalk) from Norfolk, Suffolk, Sussex and Isle of Wight

CR.MCR.SfR.Pol: *Polydora* sp. tubes on moderately exposed sublittoral soft rock: 24 records from Norfolk

Tide-swept channels

CR.HCR.FaT.BalTub: *Balanus crenatus* and *Tubularia indivisa* on extremely tide-swept circalittoral rock; 2 records from Dorset and Guernsey

CR.HCR.FaT.CTub: *Tubularia indivisa* on tide-swept circalittoral rock: 3 records from Kent, Devon and Guernsey

CR.HCR.FaT.CTub.Adig: *Alcyonium digitatum* with dense *Tubularia indivisa* and anemones on strongly tide-swept circalittoral rock: 4 records from offshore Pembrokeshire (The Smalls) and Devon (Dartmouth)

IR.MIR.KR.LhypT.Ft: *Laminaria hyperborea* forest, foliose red seaweeds and a diverse fauna on tide-swept upper infralittoral rock: 2 records from Jersey and Staffa

IR.MIR.KR.LhypT.Pk: *Laminaria hyperborea* park with hydroids, bryozoans and sponges on tide-swept lower infralittoral rock; 14 records from North Wales (Anglesey and the Menai Strait), Milford Haven and the Channel Islands

IR.MIR.KT.FilRVS: Filamentous red seaweeds, sponges and *Balanus crenatus* on tide-swept variable-salinity infralittoral rock: 1 record Milford Haven (Pembrokeshire)

IR.MIR.KT.XKT: Mixed kelp with foliose red seaweeds, sponges and ascidians on sheltered tide-swept infralittoral rock: 3 records from Co. Kerry, Loch Eishort (Skye) and Devon (Bigbury Bay)

IR.MIR.KT.XKTX: Mixed kelp and red seaweeds on infralittoral boulders, cobbles and gravel in tidal rapids: 1 record from Babbacombe (Devon)

Fragile Sponge and Anthozoan Communities

CR.HCR.XFa.ByErSp.Eun: *Eunicella verrucosa* and *Pentapora foliacea* on wave-exposed circalittoral rock: 23 records from Lizard (Cornwall), Plymouth, Eddystone and Lundy (Devon), Lyme Bay (Devon & Dorset)

CR.HCR.XFa.ByErSp.Sag: Mixed turf of bryozoans and erect sponges with *Sagartia elegans* on tide-swept circalittoral rock: 6 records from North Norfolk and Jersey

CR.MCR.EcCr.CarSwi: *Caryophyllia smithii* and *Swiftia pallida* on circalittoral rock; 2 records from the Sound of Jura and the Firth of Lorn

CR.MCR.EcCr.CarSwi.Aglo: *Caryophyllia smithii*, *Swiftia pallida* and *Alcyonium glomeratum* on wave-sheltered circalittoral rock: 1 record from Staffa

***Sabellaria spinulosa* reefs**

CR.MCR.CSab.Sspi: *Sabellaria spinulosa* encrusted circalittoral rock: 2 records from Swanage Bay (Dorset) and Tyne and Wear (Coquet to St Mary's MCZ)

CR.MCR.CSab.Sspi.ByB: *Sabellaria spinulosa* with a bryozoan turf and barnacles on silty turbid circalittoral rock; 3 records from Lyme Bay (Dorset)

SS.SBR.PoR.SspiMx: *Sabellaria spinulosa* on stable circalittoral mixed sediment: 6 records from Norfolk and Suffolk

Subtidal sands and gravels

This habitat has a broad definition and many biotopes are included. The following are all broad scale habitats and in many cases there are more detailed biotopes in our records.

SS.SCS.CCS: Circalittoral coarse sediment: 96 records

SS.SCS.ICS: Infralittoral coarse sediment 36 records

SS.SSa: Sublittoral sands and muddy sands: 5 records

SS.SSa.CFiSa: Circalittoral fine sand: 10 records

SS.SSa.CMuSa: Circalittoral muddy sand: 5 records

SS.SSa.IFiSa: Infralittoral fine sand: 19 records

SS.SSa.IMuSa: Infralittoral muddy sand: 13 records

Horse mussel beds

SS.SBR.SMus.ModHAs: *Modiolus modiolus* beds with fine hydroids and large solitary ascidians on very sheltered circalittoral mixed substrata: 4 records from West Scotland sealochs

Mud Habitats in deep water

SS.SMu.CFiMu: Circalittoral fine mud: 10 records from Devon (south and north), Dorset (Lyme Bay, Portland, Purbeck)

SS.SMu.CFiMu.SpnMeg: Seapens and burrowing megafauna in circalittoral fine mud: 12 records from Outer Hebrides (Lewis) and West Scotland (Lochalsh, Sound of Jura, Firth of Lorn, Lochs Duich, Leven and Long)

Maerl beds

SS.SMp.Mrl: Maerl beds: 26 records from West Ireland (Co. Kerry, Co. Galway), Northern Ireland (Rathlin, Antrim), West Scotland (Skye, Staffa), Isle of Man, Falmouth and Jersey

SS.SMp.Mrl.Lgla: *Lithothamnion glaciale* maerl beds in tideswept variable salinity infralittoral gravel: 1 record from Loch Sween (Argyll)

Serpulid reefs

SS.SBR.PoR.Ser: *Serpula vermicularis* reefs on very sheltered circalittoral muddy sand: 1 record from Loch Creran

Seagrass beds

SS.SMp.SSgr: Sublittoral seagrass beds: 2 records from Ringstead (Dorset) and Jersey

SS.SMp.SSgr.Zmar: *Zostera marina/angustifolia* beds on lower shore or infralittoral clean or muddy sand: 47 records from Isle of Man, West Scotland (Loch Sween, Skye, Staffa and Arran), Orkney, Ireland (Co. Galway), Northern Ireland (Antrim), North Wales (Criccieth), Cornwall (Helford River), Devon (Plymouth, Salcombe and Torbay), Dorset (Weymouth & Portland) and the Channel Islands (Alderney, Guernsey and Jersey)

Seasearch Training in 2016

The Seasearch training programme provides courses and survey skills at three levels, Observer, Surveyor and Specialist.

The **Observer** level training consists of a one-day course for divers without previous survey experience. This covers an introduction to Seasearch, identifying marine habitats and species, and a series of practical skills from position fixing to recording from filmed surveys. The aim is to equip participants to complete the Seasearch Observation Form. Dives are arranged where participants can undertake surveys with a tutor present to help with form completion and identifications. The Observer qualification involves participation in the course and completion of 5 Observation Forms.

There were 22 Observer courses held in 2016 in England (15), Scotland (2), Wales (2), Jersey (2) and Northern Ireland (1). Over 200 divers took part in the Observer courses, the great majority of whom were new to Seasearch.

The **Surveyor** level training is aimed at volunteers with some existing experience of marine recording, whether as a Seasearch Observer or elsewhere, and aims to equip them to successfully complete the Seasearch Survey Form. It involves a weekend course, completion of 6 survey dives and an ID test.

Four Surveyor Courses were held in 2016, taking place in England (Plymouth and Norfolk), Scotland and Jersey. There were 34 participants in total.

Seasearch **Specialist** courses are aimed at either teaching new survey skills or improving knowledge and identification of marine life.

Seven courses were held in 2016. Subjects covered seaweed (Kent and Pembrokeshire), photography (Dorset) and general marine life ID (Jersey, Northern Ireland and Dorset).

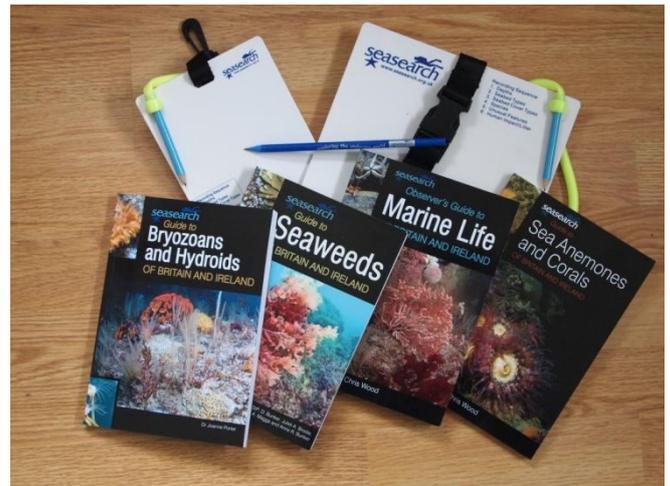
Seasearch Observer and Surveyor training courses are delivered by our team of tutors, all of whom are experienced Seasearch recorders and active divers. We had 2 new Observer Tutors in 2016, Natalie Hirst (Scotland), Cathryn Quick (Hampshire) while Chris Webb (Devon) became a Surveyor tutor.

Seasearch qualifications are awarded to those completing the Seasearch Observer (course and 5 acceptable observation forms), or Surveyor (course, 6 acceptable survey forms & an ID test) programmes. In 2016 44 volunteers achieved the Observer qualification and 6 volunteers the Surveyor qualification.

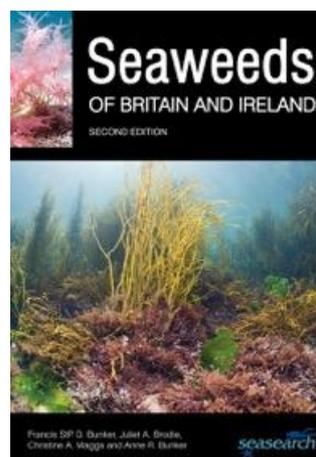
The qualification process not only acts as a reward to participants but is also an official recognition of the skills available within the Seasearch community of volunteer divers and thus the validity of their observations.

Seasearch Identification Guides and survey materials

As a part of our aim to improve the identification skills of volunteer divers we produce a range of illustrated field identification guides. We currently have four titles in the series.



The general Marine Life Guide is popular as an introductory guide and sells primarily on Observer Courses. We have three more specialised Guides covering Seaweeds, Bryozoans and Hydroids and Sea Anemones and Corals.



The second edition of the seaweeds guide is in the final stages of preparation and will be published in early 2017. A completely new guide covering Sea Squirts and Sponges is also in preparation.

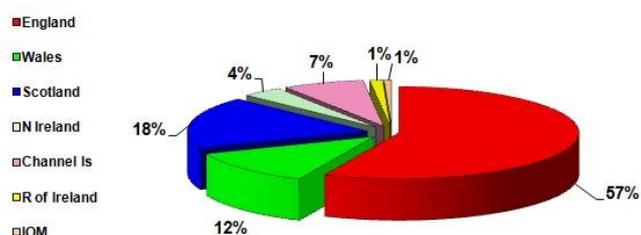
In addition to the guides, Seasearch also produces writing slates in two sizes and recycled plastic pencils to aid the recording of information underwater. Guides and recording materials are available at Seasearch courses and events, through regional coordinators and can also be purchased online via the MCS shop.

Seasearch Data

A total of 1,478 forms were received from dives in 2016, which was less than in recent years but a small increase on 2015. This may be a result of falling numbers of divers in British and Irish waters. The number of data-rich Survey forms was slightly greater than that of Observation forms which is encouraging.

The 2016 dataset comprises 96 surveys, 1093 survey events, and contains 48,257 individual species records and 2,941 biotopes.

The pie chart shows the origin of each form. The percentage from England and Wales were slightly higher than for 2015 but there small decreases in Scotland, Isle of Man and the Channel Islands.



All of the data is made available on the National Biodiversity Network Atlas.

Seasearch Coordination and Promotion

The day to day activities are organised by the National Coordinator and a team of Local Coordinators throughout Britain & Ireland. At the end of 2016 the team was as follows:

National Coordinator	Charlotte Bolton MCS
Scotland	Natalie Hirst MCS
West Scotland	Owen Paisley MCS
Northern Ireland	Charmaine Beer MCS
Republic of Ireland	Tony O' Callaghan IUC/CFT
Isle of Man	Tony Glen MCS
North Wales	Liz Morris-Webb MCS
South & West Wales	Kate Lock MCS
North East England	Paula Lightfoot MCS
North West England	Wendy Northway MCS
East Anglia	Dawn Watson MCS
Kent	Fiona White Kent WT
Sussex	Sarah Ward Sussex WT
Hants/Isle of Wight	HIWWT
Dorset	Lin Baldock Dorset WT
Devon	Chris Webb MCS
Cornwall	Matt Slater Cornwall WT
Jersey	Kevin McIlwee MCS

Thanks to all the Seasearch Tutors and coordinators for their enthusiasm, organising and teaching skills during 2016 and to all of the volunteer divers who have participated in Seasearch training, recording and promotion.

Text by Charlotte Bolton with contributions from coordinators. Images by James Lynott, Kerry Lewis, Hayden Close, Rob Spray/Dawn Watson, Tom Clarke, Rik Girdler, Lin Baldock, Hugh Waite, Paula Lightfoot and Charlotte Bolton. Original design by Chris Wood.

Data validation and management

On receipt of a Seasearch form, summary information is recorded in a database and the position mapped in Google Earth. This data is available to download from the Seasearch website. Clicking a record displays the date, type, recorder and any significant findings. This also acts as the first stage in the validation process for the data which is carried out by the local coordinator, national coordinator or a Seasearch tutor.

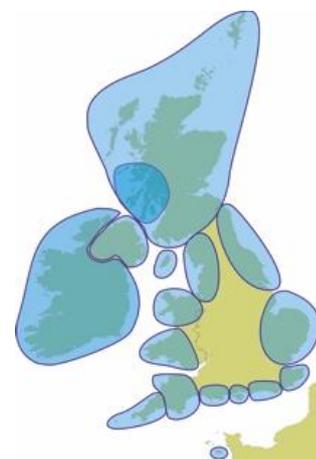
All Observation and Survey Form data is entered into the Marine Recorder database by a variety of experienced individuals and organisations. They are responsible for the second stage of verification of the data and for the assignation of MNCR biotopes. The data is retained locally and also passed on and merged with all the other data to produce a single Seasearch dataset for the year. At this stage the third validation check is carried out by the National Seasearch Coordinator.

Additional data on pink sea fans and crawfish is entered into separate databases.

In addition to the annual update the data is managed on an ongoing basis and amendments, updates and corrections are made to earlier data as required.

The National Coordinator is responsible for publicity and promotion at a national level, managing the training programme, budgetary control and development of Seasearch activities in new locations.

Local Coordinators are responsible for Seasearch activities within their own areas (see map right). This includes promotion to local dive clubs and other groups, communication with local volunteers and arranging training courses and surveys.



This report has been produced on behalf of Seasearch by the Marine Conservation Society, Overross House, Ross Park, Ross-on-Wye HR9 7US.

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