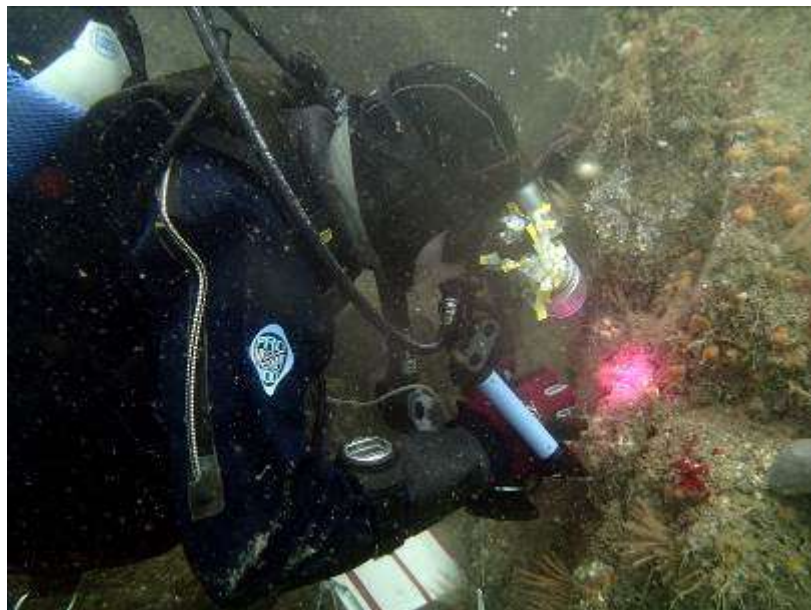




Seasearch Wales 2013 Summary Report



Sea squirt recording, armed with camera and sample bags.

Report prepared by
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Seasearch Wales 2013

Seasearch is a volunteer marine habitat and species surveying scheme for recreational divers in Britain and Ireland. It is coordinated by the Marine Conservation Society.

This report summarises the Seasearch activity in Wales in 2013. It includes summaries of the sites surveyed and identifies rare or unusual species and habitats encountered. These include a number of Welsh Biodiversity Action Plan habitats and species. It does not include all of the detailed data as this has been entered into the Marine Recorder database and supplied to Natural Resources Wales for use in its marine conservation activities. The data is also available on-line through the National Biodiversity Network.

During 2013 we continued to focus on Biodiversity Action Plan species and habitats and on sites that had not been previously surveyed. An additional focus was on sea squirts (ascidians) in preparation for a new Seasearch Identification Guide.

Data from Wales in 2013 comprised 69 Observation Forms and 132 Survey Forms. The total of 201 represents 11% of the data for the whole of Britain and Ireland.

Seasearch in Wales is delivered by two Seasearch regional coordinators. Kate Lock coordinates the South and West Wales region which extends from the Severn estuary to Aberystwyth. Liz Morris coordinated the North Wales region which extends from Aberystwyth to the Dee during 2013. The two coordinators are assisted by a number of active Seasearch Tutors, Assistant Tutors and Dive Organisers. Overall guidance and support is provided by the National Seasearch Coordinator, Chris Wood.

Seasearch Cymru 2013

Cynllun gwirfoddol sy'n arolygu rhywogaethau a chynefinoedd y môr yw *Seasearch*. Cafodd ei lunio ar gyfer deifars sy'n deifio yn eu hamser hamdden ym Mhrydain ac Iwerddon. Caiff ei gydlynu gan y *Marine Conservation Society*.

Mae'r adroddiad hwn yn crynhoi gweithgareddau'r prosiect *Seasearch* yng Nghymru yn ystod 2013. Ynddo ceir crynodebau o'r safleoedd a arolygwyd a nodir y rhywogaethau a'r cynefinoedd prin neu anarferol y daethpwyd o hyd iddynt. Mae'r rhain yn cynnwys nifer o gynefinoedd a rhywogaethau a restrir yng Nghynllun Gweithredu Bioamrywiaeth Cymru. Nid yw'r adroddiad yn cynnwys yr holl fanylion data, oherwydd cofnodwyd y rhain yn y gronfa ddata *Marine Recorder* a chawsant eu rhoi i Cyfoeth Naturiol Cymru i'w defnyddio yn ei waith ar warchod y môr. Mae'r data hefyd ar gael ar-lein trwy'r Rhwydwaith Bioamrywiaeth Cenedlaethol.

Yn ystod 2013, roeddem yn parhau i ganolbwyntio ar rywogaethau a chynefinoedd y Cynllun Gweithredu Bioamrywiaeth, ac ar safleoedd nad oeddynt wedi'u harolygu o'r blaen. Rhoddwyd sylw ychwanegol ar chwistrellau môr (ascidians) er mwyn paratoi at Canllawiau Adnabod newydd Seasearch.

Roedd y data a ddeilliodd o Gymru yn ystod 2013 yn cynnwys 69 o Ffurflenni Arsylwi, 132 o Ffurflenni Arolygu. Mae'r cyfanswm o 201 yn cynrychioli 11% o'r data ar gyfer Prydain ac Iwerddon.

Caiff y prosiect *Seasearch* yng Nghymru ei gyflawni gan ddau gydlynnydd rhanbarthol. Kate Lock sy'n cydlynu'r gwaith yn Ne a Gorllewin Cymru, sef rhanbarth sy'n ymestyn o Fôr Hafren i Aberystwyth. Liz Morris oedd yn gyfrifol am gydlynu'r gwaith yng Ngogledd Cymru, sef rhanbarth sy'n ymestyn o Aberystwyth i Afon Dyfrdwy, yn 2013. Caiff y ddau gydlynnydd eu cynorthwyo gan nifer gweithgar o Diwtoriaid *Seasearch*, Tiwtoriaid Cynorthwyo a Threfnwyr Deifio. Rhoddir cymorth a chanllawiau cyffredinol gan Chris Wood, Cydlynnydd Cenedlaethol *Seasearch*.

Summary of Data Received in 2013

The map shows the sites from which Seasearch forms were received during 2013. The records are concentrated in two areas, North Wales, primarily the Llŷn Peninsula and Anglesey, and West Wales. We did not receive any records from Central Wales or South Wales in 2013. Because of the geographical split, much of the report is split by the two areas.

The composition of forms for the last 5 years is as follows:

	2009	2010	2011	2012	2013
Observation	227	153	198	192	69
Survey	129	141	125	154	132
Sea Fan	1	1	0	1	0
Crawfish	22	8	43	0	0
Eggcase	17	0	0	0	0
Total	396	303	366	347	201



The number of forms received was less than in recent year. There are two main reasons for this, both weather-related:

1. The number of Observation Forms decreased by over 50% largely due to the cancellation of 3 training days following courses. These training days generate both large numbers of forms and also incentivise new participants into completing their Observer qualification.
2. The planned crawfish surveys in North Pembrokeshire were not undertaken due to bad weather. Again this would have contributed a significant number of forms. Hopefully this will be undertaken in 2014.

However the number of Survey Forms received is similar to previous years and for the first time the number of Survey Forms exceeds that of Observation Forms. (66% of all forms received). Survey Forms typically contain three times as much information as Observation Forms and, because they are divided into different habitats, enable us to identify MNCR biotopes as well as recording species. The continued high percentage of Survey Forms reflects our efforts to prioritise Surveyor training and encourage volunteers to move up to this level of recording.

All data has been entered onto Marine Recorder and made available directly to participating organisations as well as to everybody on the National Biodiversity Network website. Data on a small number of species, including scallops, native oyster and crawfish is entered into Marine Recorder but is tagged as sensitive in accordance with NRW guidelines. Access to this data is therefore restricted.

Survey Planning

In both North and West Wales meetings were held early in the year to identify priorities. In North Wales a list of potential dive sites was selected to fill knowledge gaps in local inshore marine habitats. In West Wales it was agreed to continue information gap filling around St Anne's head, south Pembrokeshire and the offshore islands. Individual weekend dive plans were kept flexible so that most sites could be selected based on the weather and tides.

Survey weekends were also planned in both areas on sites known to be rich in ascidians. In West Wales this was supplemented by trialling a Sea Squirt ID Course. On these surveys both photographic records and specimens were collected in preparation for a forthcoming Seasearch Identification Guide.

Two weekends were also planned with funding secured from Pembrokeshire Biodiversity fund to continue the crawfish survey work in north Pembrokeshire started in 2011. Sadly the funding was not approved until mid summer and the weather in September and October did not allow the diving to go ahead.

North Wales Summary

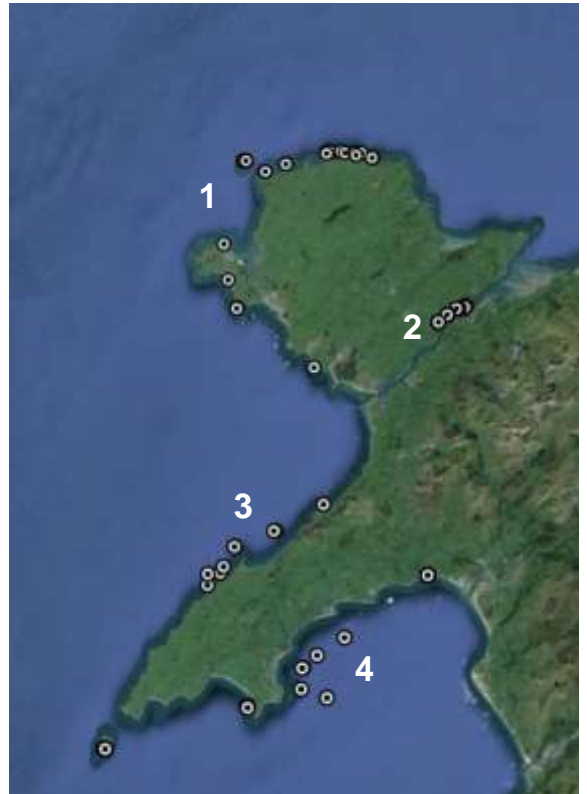
Eight Seasearch boat survey days were completed in North Wales. Unfortunately five other survey days and two shore diving days had to be cancelled due to weather conditions. The North Wales Seasearch weekends were organised by Liz Morris assisted by Harry Goudge and Tom Stamp.

Survey dives were completed in the following areas:

1. North and West Anglesey – 12 sites
2. Menai Strait – 6 sites
3. North Llŷn Peninsula – 8 sites
4. Tremadog Bay and South Llŷn Peninsula – 10 sites

Highlights of the surveys were:

- Confirmation that the Seagrass, *Zostera marina*, bed at Criccieth, Tremadog Bay, is still present (albeit very patchy), following earlier Seasearch surveys in 2007
- The nationally scarce native oyster (*Ostrea edulis*).
- The recognition of the undescribed strawberry sea squirt, *Aplidium* like species, and raspberry and honeycomb squirts in North Wales. These are all being investigated by David Kipling and should appear in the forthcoming Seasearch Guide
- Large specimens of rare cushion star, *Asterina phylactica*, off the North Anglesey coast



Strawberry" Sea squirt
Richard's Reef North Llŷn Peninsula



Sarcodictyon catenatum/roseum,
Bardsey Bay



Native Oyster - *Ostrea edulis*
Menai Strait - Biodiversity Action Plan Species

West Wales Summary

Six general survey weekends were completed. In addition there was a Bioblitz weekend at Stackpole and two days sea squirt diving. Two planned survey weekends and the crawfish survey dives were cancelled due to poor weather. All of the West Wales weekends were organised and run by Kate Lock, with assistance on 1 by Richard West. A good combination of experienced Seasearch divers along with a number of new keen divers participated on the surveys. This allowed a good quality of survey data to be collected and the new divers to gain experience and complete qualifications.

Survey dives were completed in the following areas:

- 5 Skomer MNR – 3 sites
- 6 Grassholm – 1 site
- 7 Skokholm – 6 sites
- 8 St Ann's Head – 2 sites
- 9 Dau Cleddau waterway – 3 sites
- 10 South Pembrokeshire – 9 sites



Highlights of the surveys were:

- Extensive Blue Mussel beds, West Grassholm and Wild Goose Race, West Skokholm
- Strawberry sea squirt and other un-named *Aplidium*-like species currently called caramel two spot, grey one spot and honeycombed sea squirts (Kipling pers comm).



Okenia elegans and *Thecacera pennigera*
Marias Reef – Skokholm



Janolus hyalinus
Mad Bay pinnacles – Skokholm

Description of Sites Surveyed

The following is a brief description of the sites surveyed (both independent and organised) in each area. The habitat types present are described together with characterising species and any other species of importance (e.g. non-native, invasive, Biodiversity Action Plan).

1 North and West Anglesey

Carmel Head, North Anglesey Coast

This headland site comprises gently sloping seaweed dominated bedrock which progresses into faunal dominated bedrock with boulders in deeper water, from 1.88m – 14.88m BCD. The shallower bedrock is dominated by a kelp forest which thins in deeper water to a park and red seaweeds with a mixed faunal community forming an understory. The animal dominated bedrock at 2.86-8.76m BCD, beneath the kelp zone, was dominated by a mixed faunal community with abundant sponges, notably the Elephant Hide (*Pachymatisma johnstonia*) and Boring (*Cliona celata*) Sponges, and locally unusual Cocks Comb Weed (*Plocamium cartilagineum*). Within the boulders (7.08-14.08m BCD) a tide swept faunal community was present, dominated by oaten pipe hydroids (*Tubularia indivisa*), barnacles, and the shredded carrot sponge (*Amphilectus fucorum*).

Skerries Rock is a small set of islands north of Holyhead, which can be inaccessible due to their weather exposure and had not been surveyed by Seasearch since 2011. Seasearch surveys were undertaken on both the north and south sides of Skerries Rock..

On the north side there was shallow, seaweed dominated bedrock reefs and gullies that progressed into deeper animal dominated bedrock and large boulders from 0.31m ACD – 7.69m BCD, this rock was surrounded by sand with occasional emergent rock surfaces from 1.45-4.45m BCD. On top of the bedrock reef was Cuvie kelp (*Laminaria hyperborea*) forest and park. Within the kelp zone there was also a mixed faunal community dominated by the antenna hydroid (*Nemertesia antennina*), unidentified nudibranchs and sponges. Below the rock the surrounding sediments were characterised by the burrowing anemone *Cerianthus lloydii*, and occasional patches of red weeds and kelp (*Laminaria hyperborea* & *Saccharina*) on the emergent rock surfaces.

On the South side of the island, there were silted, seaweed dominated, bedrock reefs which progressed into silted animal dominated bedrock and then in deeper water, to cobbles, pebbles and patches of mud, from 0.95-7.68m BCD. On the shallower bedrock reef Cuvie kelp (*Laminaria hyperborea*) forest was found. Beyond this, in the deeper animal dominated bedrock, there was a sparse faunal community with oaten pipe hydroid (*Tubularia indivisa*) and white clawed sea mosses (*Crisia spp.*). On the cobbles and pebbles there was a sparse faunal community dominated by barnacles.

Sea Squirt Identification Dives, As part of focused sea squirt identification dives, Seasearch North Wales surveyed two sea squirt rich sites on the North Anglesey Coast, Llanbadrig Head and East of Borthwen.

Llanbadrig Head, is a headland on the North Coast of Anglesey. Here, large seaweed dominated boulders cascade into deeper smaller boulders surrounded by mixed muddy sediments and low lying bedrock reefs, from 3.18 – 14.36m BCD. On the horizontal shallow boulders kelp (*Laminaria spp*) and foliose red seaweeds were recorded as frequent. The rare cushion star (*Asterina phylactica* – right) was present in unusual abundance, and growing large for the species, with patches of tiny recently released juveniles present amongst the weeds (see the yellow patch on the left of the image). The deeper, small boulders had a small amount of Cocks Comb Weed (*Plocamium cartilagineum*) (12.55m BCD), The deeper habitats of the site were very silted in parts and



characterised in some areas by Baked Bean Sea Squirt (*Dendrodoa grossularia*) and branching sponges, notably Yellow Staghorn Sponge (*Axinella disimilis*). In other areas, however, the circalittoral was characterized by a diverse and abundant mixed faunal turf with an array of sponges (8 species), the most abundant being the Hedgehog Sponge (*Polymastia boletiformis*). Bryozoans were also common; notably White Claw Sea moss (*Crisia*), Hornwrack (*Flustra foliacea*) and spiral bryozoans (*Bugula spp.*). The low lying, animal dominated, bedrock reefs were dominated by White Clawed Sea Mosses (*Crisia denticulata* & *C.eburnea*) and other fauna including Rosy Feather Stars (*Antedon bifida*), Club Sea Squirt (*Apildium punctum*) and Herring Bone Hydroid (*Halecium halecinum*).



East of Borthwen, is a site adjacent to the derelict Borthwen Brick works, on the North Anglesey Coast. Three habitats were found; silted shallow bedrock and boulders, which lead into deeper boulders and cobbles surrounded by mud, from 3.94-14.85m BCD. Within the shallows a silted bedrock reef was dominated by Cuvie (*Laminaria hyperborea*) and red seaweeds, notably Sea Beech (*Delessaria sanguinea*). Purse sponges (*Scypha ciliata*), Dead Men's Fingers (*Alcyonium digitatum*), Candy Striped Flatworm (*Prostheceraeus vittatus*), Club Sea Squirt (*Morchellium argus*) were also present. Scavenging Common Starfish (*Asterias rubens*) were frequently encountered, as was the rare Cushion Star *Asterina phylactica*. The silted deeper bedrock reef was dominated by Grape Sea Squirts (*Molgula spp.*) and bryozoans, White Clawed Sea Moss *Crisia spp.* & Square End Hornwrack (*Securiflustra securifrons*). One Seasearcher also recorded the Rosy Feather star (*Antedon bifida*, including its difficult to spot stalked pentacrinoid 'juvenile'

form, left) and the horse shoe worm (*Phoronis hippocrepia*) as common. Below the silted reef was a habitat of circalittoral mixed muddy sediments, which was not fully surveyed.



Interesting Pinnacles is an animal dominated bedrock reef south of Llanbadrig Head, uncharted and found accidentally by Seasearchers passing over the site. The reef forms vertical bedrock pinnacles which are surrounded by coarse sand/gravel sediments and extends from 5.84-14.72m BCD. The pinnacles (left) are colonised by a faunal community with a high diversity of colourful and more unusual sponges (at least 10 species, including a diversity of varied coloured unidentifiable *Hymedesmia spp.*) and anemones, and is characterised by a turf of White Clawed Sea Mosses (*Crisia spp.*), Rosy Feather Stars (*Antedon bifida*), and Club Sea Squirts (*Morchelum argus*). The surrounding sediments and cobbles off the reef were colonised by an unusually rich diversity of burrowing anemones, hydroids and bryozoans (below).





Bull Bay (East). On eastern edge of Bull Bay, North Anglesey, is a faunal dominated silted bedrock and boulder reef with steep sided gullies surrounded by coarse sand/ gravel at an approximate depth of 5.99-12.1m BCD. The reef is colonised by a dense short faunal turf which was characterised by the Rosy Feather Star (*Antedon bifida*), Dead Men's Fingers (*Alcyonium digitatum*) and Dahlia Anemones (*Urticina felina*). Within the gullies Hornwrack (*Flustra foliacea*) and Sea Chervil (*Alcyonidium diaphanum*) were dominant. The base of the gullies was filled with silted sediments within which Burrowing Anemones (*Cerianthus lloydii*) and Gravel Sea Cucumbers (*Neopentadactyla mixta*) were common. The coarse sediments that surrounded the circalittoral reef were characterised by Burrowing Anemones (*Cerianthus lloydii*), brittlestars (*Ophiura spp.*) and dragonets (*Callionymus spp.*).

Mae's Rock is a steep sided bedrock reef west of Cemlyn Bay, North Anglesey, that extends from 0.61m ACD - 11.48m BCD. The tops of the reef are dominated by Cuvie kelp (*Laminaria hyperborea*) with an understory dominated by dense foliage of filamentous and foliose red seaweed, with some occasional brown weeds. The sides of Mae's Rock are steeply sloping with some vertical faces. The reef sides had some filamentous and foliose red seaweeds, however the community was predominantly characterised by an abundant faunal turf with a high diversity of sponges (13 species), as well as Antenna Hydroid (*Nemertesia antennina*), and bryozoans; white Clawed Sea Mosses (*Crisia spp.*), Sea Chervil (*Alcyonidium diaphanum*) and Hornwrack (*Flustra foliacea*).

Transit Marks, Is a steep headland north of Carmel Head which is exposed to high tidal streams and wave energy, The site is composed of seaweed dominated bedrock that progresses into deeper animal dominated large boulders and bedrock pinnacles, from 11.22-13.42m BCD. On the bedrock reef were sparse foliose red seaweeds and a mixed faunal community dominated by Sea Chervil (*Alcyonidium diaphanum*), sponges notably the Elephant Hide (*Pachymatisma johnstonia*) and Shredded Carrot (*Amphilectus fucorum*) sponges. The large boulders and bedrock pinnacles were characterised by a super abundance of Baked Bean Sea Squirrels, (*Dendrodoa spp.*).

Independent Seasearch surveys around Anglesey.

Records were also received from six dive sites surveyed independently by Seasearch volunteers.

Rhoscolyn Beacon is a small set of islands south of Borthwen Bay, Rhoscolyn. Surrounding the islands is a series of bedrock and boulder reefs that extend from the intertidal to deeper water where they are replaced by cobbles and pebbles interspersed with patches of undulating sand. A seaweed dominated reef led to faunal dominated cobbles and small boulders, with occasional patches of sand and gravel, at 12.39m BCD, Cuvie kelp (*Laminaria hyperborea*) was sparse but there was a high diversity of red seaweeds although in low abundance. A rich faunal turf community was also present, dominated by Spiral Bryozoans (*Bugula spp.*), which were recorded as common. However other species of hydroids, sponges and Dead Men's Fingers (*Alcyonium digitatum*) were also frequently recorded. The animal dominated cobbles and pebbles were dominated by Antenna Hydroid (*Nemertesia antennina*) with little other fauna. In the surrounding sandy sediments the Gravel Sea Cucumber (*Neopentadactyla mixta*) was common, but other epifauna was sparse.

Kimya Shipwreck

The Kimya is a popular shipwreck for scuba diving on the Anglesey coast, located between Aberffraw and

Newborough. The shipwreck sits upright surrounded by silted sand and gravel at approximately 7.04m BCD. On the top of the wreck is a kelp park with the remaining vertical and horizontal surfaces colonised by an abundant mixed faunal turf which included a high diversity of sponges, Dahlia Anemones (*Urticina felina*) Dead Mens Fingers (*Alcyonium digitatum*), and mobile crustaceans such as spider crabs (*Maja squinado*), brown crabs (*Cancer pagurus*) and the velvet swimming crab (*Necora puber*).

The Cool Wall,

The cool wall is a feature of a shore dive site called Raven's Point, Treaddur Bay. The site is a series of seaweed dominated bedrock reefs which have large gullies with vertical and overhanging rock surfaces, at 5.93-9.93m BCD. On top of the reefs is a dense mixed kelp forest (*Laminaria spp.*). Colonising the vertical and overhanging rock surfaces is a rich short faunal turf with diverse array of bryozoans, including the bryozoan *Chartella papyracea* and White Clawed Sea Mosses (*Crisia spp.*), as well as patches of Jewel aAnemones (*Corynactis viridis*) and Devonshire Cup Corals (*Caryophyllia smithii*).

Mackenzie Pier

Mackenzie Pier is a man-made pier at Newry beach, Holyhead Marina. There is a wall extending from the intertidal to the shallow infralittoral (2.06m ACD– 2.94m BCD). Kelp park (unidentified species) was recorded and a short faunal turf composed primarily of the sea squirts *Ascidia aspersa*, encrusting sponges and mobile crustaceans.

Bull Bay

Seasearch Observation Forms were completed at **Bull Bay North** and **Bull Bay slipway**. Both these dives were shore dives. Bull bay North was in area exposed to high tide and wave energy, whereas the slipway is in a protected location in the North west of Bull Bay.

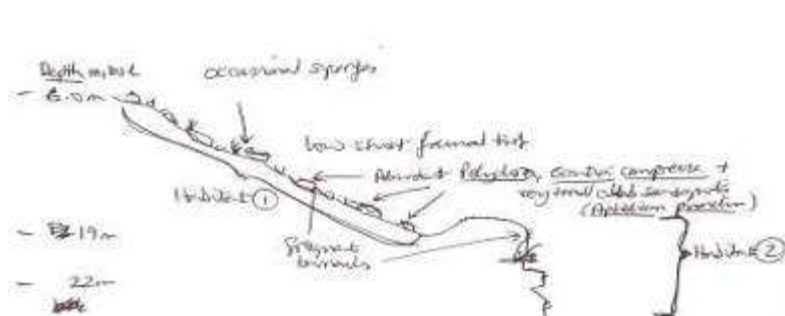
At Bull Bay North there was a sloping bedrock reef extending from the intertidal and through the shallow seaweed dominated waters. The bedrock was dominated by mixed seaweeds, with rare kelp (*Laminaria*). There was also a mixed faunal community with rock dwelling species such as Crevice Sea Cucumber (*Pawsonia saxicola*) and Antenna Hydroid (*Nemertesia antennina*)

At Bull Bay slipway was a shallow bedrock reef surrounded by sandy sediment, which was surveyed to a depth of 0.46m BCD. Due to the shallow depth the community was dominated by mixed seaweeds, such as Sea Oak (*Halidrys siliquosa*) Serrated Wrack (*Fucus serratus*), and occasional kelp (*Laminaria sp.*).

2. Menai Strait

The Menai Strait is part of the Menai Strait and Conwy Bay Special Area of Conservation and as such is of great interest to conservationists and divers alike. One Seasearch organised weekend occurred in 2013, in which four dive sites were surveyed. Four other sites were surveyed as a result of independent surveys.

Pwllfanog (below), is just North of the Old Manor House Plas Newydd. The seabed is composed of cobbles with patches of pebbles and sandy gravel from 2.5-15.6m BCD, continuing to a bedrock vertical cliff from 15.5m BCD, to an unsurveyed depth. In the shallower cobbles and pebbles there was a short faunal turf with an abundance and diversity of sponges, notably the shredded carrot sponge (*Amphilectus fucorum*), the lace sponge (*Clathrina sp.*, below) the purse sponge (*Grantia compressa*), barnacles (*Balanus crenatus*) and the Polychaete *Polydora spp.* tubes. On the vertical bedrock cliff there was a similar faunal community, however the abundance and diversity of sponges was lower.





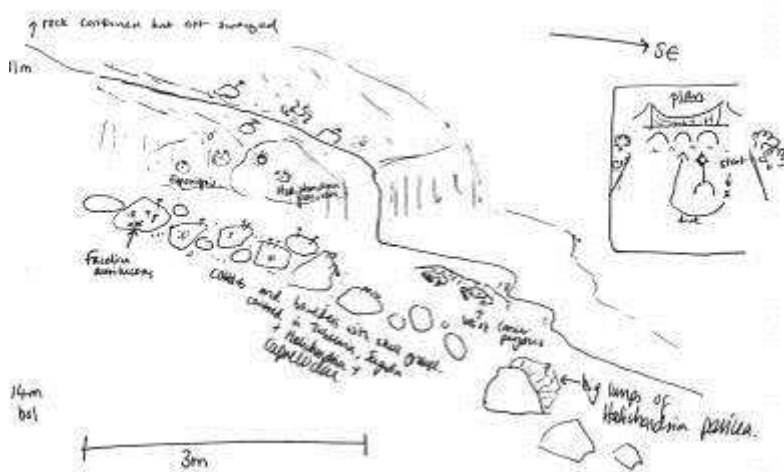
Plas Newydd, Is adjacent to the old manor house “Plas Newydd” on the north shore of the Menai Strait. The seabed is composed of seaweed dominated boulders and pebbles from 4.71-6.71 m BCD, leading to faunal dominated cobbles and pebbles surrounded by shell gravel from 5.6-10.6m BCD. The shallow boulders and pebbles were only briefly surveyed but the presence of the non-native red seaweed Japanese Siphon Weed (*Heterosiphonia japonica* - left) was noted. In the deeper animal dominated cobbles and pebbles area there was a tall faunal turf, which contained a high diversity and abundance of branching sponges notably the Shredded Carrot Sponge (*Amphilectus fucorum*) and Mermaids Glove Sponge (*Haliciona oculata*, below right) a species which is distinctive of the area.

Native Oyster (*Ostrea edulis* – photo page 4) was noted within this habitat. The presence of Native Oyster in the area is known, however receiving Seasearch records from 2013 shows it is still present, albeit in low abundance.



Ynys Gorad Goch, A dive site adjacent to the island “Ynys Gorad Goch” under the Britannia Bridge. The site was composed of patches of shallow bedrock surrounded by mobile gravel which extended from 0.6-2.6m BCD. The bedrock reef was dominated by a Cuvie kelp (*Laminaria hyperborea*) park and mixed red weeds, dominated by Dulse weed (*Palmaria palmata*), Fine Veined Crinkle Weed (*Cryptopleura ramosa*) and *Gracilaria spp.* There was also an abundance of Bread crumb Sponge (*Halichondria panicea*), *Polydora* polychaete worm tubes, common starfish (*Asterias rubens*) and brittlestars. A further interesting species recorded at the site was the non-native sea squirt *Corella eumyota*, however this was recorded as rare.

Swellies Rock (right), is a bedrock reef in the middle of the Menai Strait located between the Britannia Bridge and Menai suspension bridge. The reef extends from the intertidal to deeper water where at its base is surrounded by mobile gravel from 0.18-11.82 m BCD. Due to the reef’s position it is highly exposed to tidal water movement and the resident animal and plant community reflects this. Within the intertidal/shallows Oar Weed (*Laminaria digitata*) forms a kelp forest which at depth is replaced by Cuvie kelp (*Laminaria hyperborea*) park with a hydroid understory. There are also records of small patches of *Mytilus edulis* attached to the rock reef. Deeper still, a



short faunal turf is present on the reef, with sponges and cnidarians being the dominant cover (right). The oaten pipe (*Tubularia indivisa*) and branched oaten pipe (*Tubularia larynx*) hydroids were abundant with *Polydora* and unidentified barnacles, Shredded Carrot (*Amphlectus fucorum*) and the Breadcrumb Sponge (*Halichondria panicea*) and Elegant Anemone (*Sargartia elegans*) were also common.



Independent surveys In the Menai Bridge Area.

In 2013 four independent surveys were conducted, three under the Menai Suspension Bridge known as; “the Cable”, the “The Nature Trail” and “under the Menai Bridge”. The remaining survey was conducted at Perch Rock, a bedrock reef north of the bridge.

The Cable and Nature Trail are shore dives from the North shore of the Menai Strait. The Cable dive follows a telecommunication cable between Anglesey and mainland Wales which runs parallel to the Menai Suspension Bridge. The Nature Trail and under the Menai Bridge are shore dives that follow a bearing under the Menai Suspension Bridge itself. These dives are generally a more “rocky” dive than The Cable which is surrounded by mobile gravel and coarse sand.

The cable follows cascading intertidal bedrock and boulder reefs to deeper coarse sand and gravel with occasional rocky outcrops, at approximately 11m BCD. The Nature trail follows a steeply sloping bedrock and boulder reef (0.46m ACD – 11.04m BCD) At both sites Fucoids and Oar Weed (*Laminaria digitata*) kelp forest occur in the intertidal/shallow water. Below this, Cuvie kelp (*Laminaria hyperborea*) park with a hydroid understorey, replaces the oar weed and fucoids. Below the kelp zone, red seaweeds and a diverse and abundant faunal community dominate. This includes an abundance of sponges, mainly Mermaids Glove (*Haliclona oculata*), Goosebump (*Dysidea fragilis*) and Breadcrumb (*Halichondria panicea*) sponges, which grow very large at these sites and are characteristic of the Menai Strait. Other common species include oaten pipe hydroid (*Tubularia indivisa*), Dahlia anemone (*Urticina felina*), Hornwrack (*Flustra foliacea*) and Common Starfish (*Asterias rubens*).

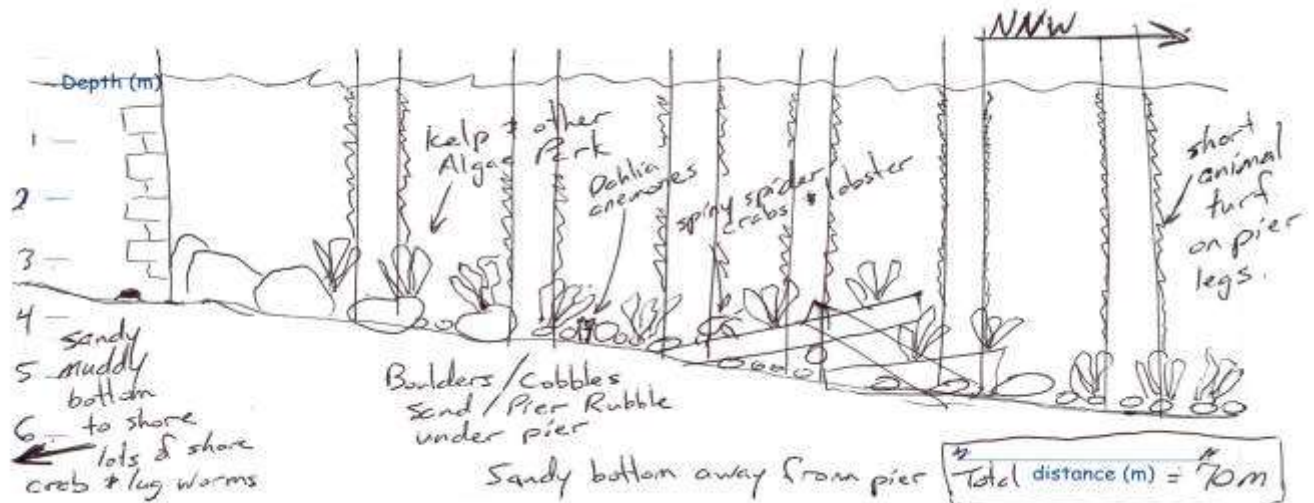
Perch Rock forms a rock pinnacle which extends to 10.08m BCD, where coarse gravel and pebbles surround the base of the reef. The fauna and flora at the site is similar to that found at the Cable and Nature Trail.

3. North Llŷn Peninsula

Pen Llŷn a'r Sarnau Special Area of Conservation and surrounds

The Llŷn Peninsula is part of the Pen Llŷn a'r Sarnau Special Area of Conservation (SAC). Within the area there are a number of special (Annex 1) habitats these include; eel grass (*Zostera marina*) beds, Horse Mussel (*Modiolus modiolus*) reefs, rocky reefs and large sandy bays. Due to the importance of these habitats to local and national biodiversity they have been identified as features of the SAC and as part of European legislation of the SAC, Natural Resources Wales (NRW) monitors the condition of these habitats. Seasearch survey areas are advised by NRW in order to fill knowledge gaps in inshore marine habitats, and are therefore very valuable in that survey effort can be provided which may be outside the scope of NRW's monitoring effort. In 2013 Seasearch North Wales targeted sites where there was very little previous information (for example the sediment substrates off Bardsey Island) and Sea Squirt abundant sites; “Richard’s Reef” and “Diplosoma Day Dream”, to catalogue and identify sea squirts, but also to collect samples for the forthcoming Seasearch Sponge and Sea squirt identification guide authored by Prof David Kipling. In 2013 five independent Seasearch dives were also conducted within the area which were spread over a number of different habitats.

Trefor Pier, Caernarfon Bay is a popular shore dive site in south Caernarfon Bay, on the edge of the Llŷn Peninsula but outside of the SAC. The dive site is under an old pier which in recent years has begun to fall into the sea. Under the pier there are seaweed dominated boulders, cobbles and pebbles surrounded by sand and gravel which extend from the intertidal to 2.33m BCD. On the rock surfaces there is a Cuvie Kelp (*Laminaria hyperborea*) park with a variety of seaweeds, the pier supports themselves are typically colonised by a short faunal (animal) turf. As a popular angling mark there is an abundance of fish and bait waste, so a high abundance of crustacea under the pier.



Site 36, 5.2km northwest of Porth Dinllaen, North Llŷn.

Cobbles and small boulders interspersed with gravel, shell and sandy mud from 12.52 - 13.42m BCD. Occasional brown and red weeds were present, however the site was characterised by a mixed faunal community dominated by sponges, bryozoans and crustaceans. The Crater (*Hemmycale columella*) and Goosebump (*Dysidea fragilis*) sponges were frequent, as well as Pink Shrimp (*Pandalus montagui*), squat lobsters (*Galathea*) and Sponge Spider Crabs (*Inachus sp.*). Bryozoans Square End Hornwrack (possibly *Securiflustra securifrons*) and *Scrupocellaria* were also frequently encountered. Unusual species recorded included the bryozoan *Bowerbankia citrina* and red gurnard (*Aspitrigula cuculus*). One Seasearcher named this site "Sea Hare Orgy", due to the commonly encountered sea hares (*Aplysia punctata* – right) found here.



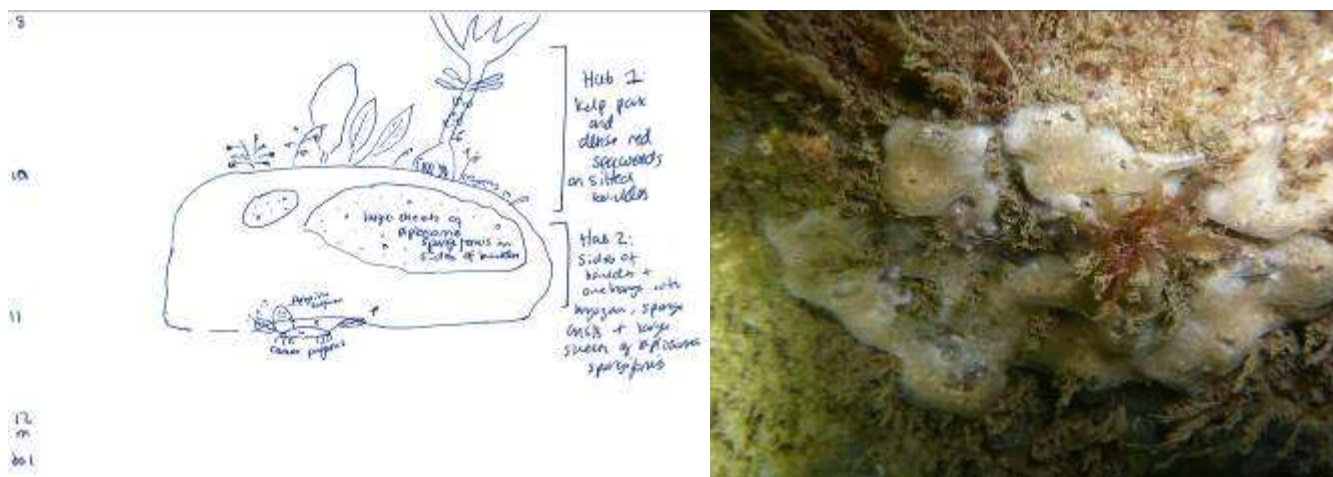
Site 45, 1.81km north of Porth Dinllaen, North Llŷn; Faunal dominated boulders, cobbles and pebbles at 20.08m BCD. The site was characterised by a mixed assemblage of short faunal turf species. A number of species were recorded as common, including the sponges; *Polymastia boletiformis* and *Phorbas fictitius*, Antenna Hydroid (*Nemertesia antennina*), Sandy Creeplet Anemone *Epizoanthus couchii*, and brittlestar species *Ophiotrix fragilis* and *Ophiura indet.* As well as other more mobile species; squat lobsters (*Galathea spp.*) and hermit crabs (*Pagurus bernhardus*).

Station 44, 2.16km south west of Porth Dinllaen, North Llŷn; Coarse sand and shell gravel at 13.14m BCD. Life was apparent within the sediment, however could not be identified. Predominantly mobile fauna such as hermit crabs (*Pagurus bernhardus* & *P. prideauxi*) and the necklace shell (*Euspira catena*) were recorded. Sparse fauna was present colonising occasional pebbles within the gravel, notably Oaten Pipe Hydroid (*Tubularia indivisa*).

Harry's Boulders, 2.71km south west of Porth Dinllaen, North Llŷn; There were faunal dominated bedrock outcrops and boulders surrounded by mixed sediment of muddy shell gravel and pebbles from 10.63 -13.13m BCD. Bedrock and boulder surfaces were colonised by abundant "White snow" sea squirt (*Didemnum maculosum*). Mixed seaweeds were also encountered, notably the Brown fan (*Dictyota dictyota*), red siphoned feather (*Heterosiphonia plumosa*) and red hook weeds (*Acrosorium venulosum*). Encrusting and branching sponges were also common/frequent at the site, notably the goose bump sponge (*Dysidia fragilis*), as well as hornwrack bryozoan (*Flustra foliacea*). Life within the mixed sediments surrounding the bedrock and boulders was mainly mobile brittle stars and the brown algae "sea fern" (*Halopteris filicina*) attached to pebbles.

Sea Squirt Identification Dives, As part of focused sea squirt identification dives, two sea squirt rich sites on the North Llŷn Peninsula, named "Richards Reef" & "Diplosoma Daydream" were surveyed.

Diplosoma Daydream (Below - left), 2.4km North of Porth Ysgaden, North Llŷn; At the site there were seaweed dominated bedrock outcrops and boulders surrounded by muddy pebbles, from 7.63-9.63m BCD. On the horizontal rock surfaces there was a Cuvie Kelp (*Laminaria hyperborea*) park with a dense understory of red seaweed, dominated by Fine Veined Crinkle Weed (*Cryptopleura ramosa*) and occasional Cock's Comb Weed (*Plocamium cartaligineum*). The vertical and overhanging rock surfaces of the boulders had a mixed faunal turf, characterised by unusual sheets of the sea squirt *Diplosoma spongiforme* (below) and sponges (mainly Breadcrumb, *Halichondria panicea*, and Shredded Carrot, *Amphilectus fucorum*) and other sea squirts.



Richard's Reef, 3.15km North of Porth Ysgaden, North Llŷn; is a series of low lying bedrock reefs surrounded by coarse sand that run along the North coast of the Llŷn Peninsula between Porth Dinllaen and Porth Ysgaden. The low lying reefs are at a depth of 16.7-19.7m BCD, and are colonised by colourful array of fauna, particularly sea squirts, bryozoa and sponges.



The rocky reef was characterized by a mixed assemblage of sponges (nine species), hydroids (four species), bryozoans (six species) and a notable abundance and diversity of sea squirts (twelve species). Interesting species records include the undescribed "Honeycomb", recorded as common, and *Aplidium* "strawberry" (right), recorded as rare, sea squirts. Further noteworthy species records include the abundance of Potato Crisp Bryozoan (*Pentapora foliacea*) and Monkey Puzzle Bryozoan (*Omalosecosa ramulosa*), both species recorded as frequent. *Caloria elegans* the nationally rare nudibranch was also recorded as the site, and seems to be making regular attendance on the North Wales coast. Sea squirt samples were taken from the site for further identification and cataloguing.

4. Tremadog Bay and South Llŷn Peninsula

Bardsey Bay, Bardsey Island, Bardsey Island is found at the southernmost tip of the Llŷn peninsula. Bardsey Bay is located at the south eastern point of Bardsey Island. The rocky reefs of the island are well described, but there is a lack of information at the less vertical areas and sediments. In 2013 Seasearch divers were deployed at a range of depths from 10-26.5m BCD in order to target different habitats at the site.



Four distinct habitats were recorded in the Bay. The shallowest survey (10.23m BCD) found a faunal dominated bedrock and boulder reef. Colonising the reef was an abundant mixed faunal turf, dominated by Antenna Hydroid (*Nemertesia antennina*), and an unidentified red weed community. Unusual species included the Yellow Cluster Anemone (*Parazoanthus axinellae*), which has a patchy distribution along western coasts of Britain and Ireland and is used as an indicator of reef health within Pen Llŷn a'r Sarnau. Between 13.23-17.73m BCD there were cobbles and pebbles which had a similar mixed faunal and red weed community as the shallower reef. However, the community found on the cobbles was less abundant and less diverse. Beyond the circalittoral cobbles was an area of rippled sand, occasional boulders and cobbles at 16.23-19.23m BCD, dominated by Gravel Sea Cucumbers (*Neopentadactyla mixta*), Burrowing anemones (*Cerianthus lloydii*) and Hermit Crabs (*Pagurus bernhardus*). From 22.25-26.49m BCD the rippled sand became diverse mixed sediment composed of mud, pebbles, shells and cobbles. A mixed faunal assemblage was present with an abundance of bryozoans (*Crisia*, *Cellaria*, *Alcyonidium diaphanum* and *Bugula* spp.), sea squirts (*Aplidium* & *Polycarpa pomaria*). The soft coral *Sarcodictyon roseum/catenatum* (right) which also has a patchy west coast distribution, was also recorded as frequent at the site, dominating many cobbles and small boulders,



East side of Porth Neigwl. Surveyors were deployed at two sites on the East Side of Porth Neigwl, a highly exposed location locally known as "Hells Mouth". **Paul's Magic Mountain**, was a steeply sloping bedrock pinnacle/reef which extended from the intertidal to a the circalittoral (2.66m ACD) – 10.38m BCD). The intertidal section of the reef was not surveyed, however the shallows beyond this depth were dominated by a Cuvie Kelp (*Laminaria Hyperborea*) park with an abundant understory of red seaweeds (unidentified). Beyond the kelp zone there were fewer red seaweeds. Hydroids, anemones and dead men's fingers (*Alcyonium digitatum*) were all common.

The second site, called **Squirt Shelf**, comprised steep sided gullies from 1.8-12.3m BCD. The bedrock reef extended through the shallows with a mixed kelp park of Dabberlocks (*Alaria esculentus*) and Oar weed (*Laminaria digitata*). Beyond this depth a Cuvie Kelp (*Laminaria hyperborea*) park extended from 1.8 – 9.3m BCD, from 1.8m – 4.9m BCD with a colourful superabundant understory turf of sea squirts dominated by the Lesser Gooseberry (*Distomus variolosus*) (Right), Baked Bean (*Dendrodoa grossularia*) and *Polycarpa scuba* sea squirts, and characterised by sponges in overhangs and gullies. Beyond 4.9m BCD the sea squirt understory turf



was replaced by silted Hornwrack (*Flustra foliacea*). The circalittoral zone of the reef was composed of vertical and overhanging rock surfaces with a mixed faunal assemblage, dominated by Dead Men's Fingers (*Alcyonium digitatum*), sponges, pink encrusting algae and bryozoans. At the base of the reef (9.8-12.3m BCD) the community became highly scoured and there was little life.

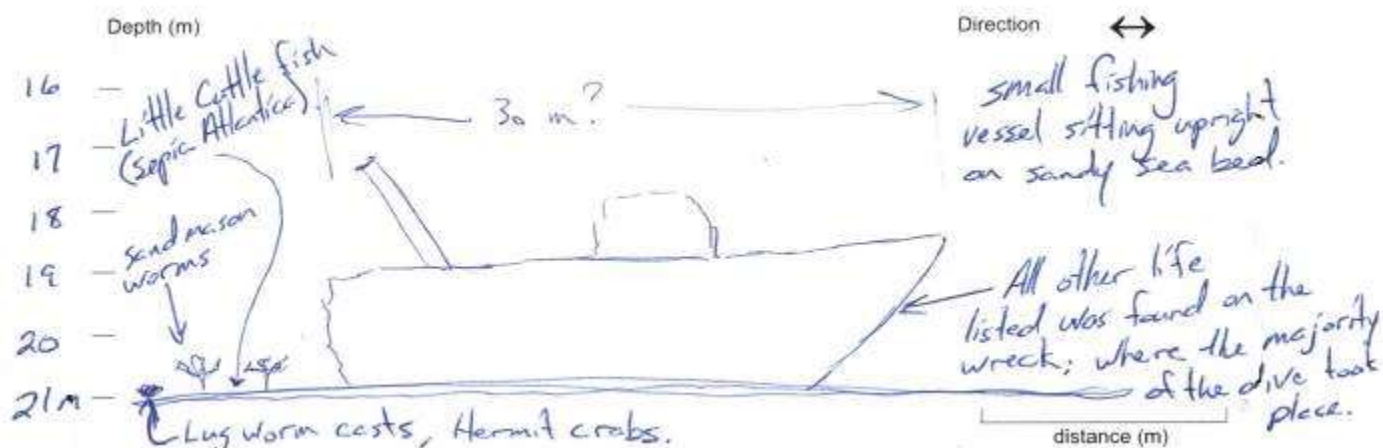
Criccieth Seagrass Bed, To the east of Criccieth Castle, previous Seasearch survey records have reported the presence of Eelgrass (*Zostera marina*) a Biodiversity Action Plan (BAP) Habitat. Records from 2013 show the bed to be highly patchy with a maximum of 30% plant coverage. The bed was found at 0.72-1.58m BCD, in rippled sand, gravel, and patches of mud. The Eelgrass bed supports a diverse epifauna community. The sea slug *Acteon tornatilis* was found to be particularly abundant at the site, with burrowing sea cucumber *Labidoplax digitata*, flat fish and Sand Mason Worm (*Lanice conchilega*) also present. Fewer pipefish were recorded than on the 2007 surveys, but this could be due to the surveys taking place at different times.

Mason Sands, Two surveys were carried out. The shallower survey (6.85m BCD) recorded sediment comprising sand, gravel and dead maerl, with life apparent. The site was dominated by red seaweeds (unidentified) and mobile opportunistic fauna such as Hermit Crab (*Pagurus bernhardus*), Harbour Crab (*Liocarcinus depurator*), and starfish (unidentified). Sponges, anemones, sea slugs and fish were also recorded.

The deeper survey (8.11-8.61m BCD) recorded sediment of dead maerl, fine sand, gravel and pebbles with a mixed seaweed and fauna community. Sugar Kelp (*Saccharina latissima*) and a diverse array of seaweed species (red and brown) were common. Sponges and *Chaetopterus* tubes and hydroids were also common. An interesting feature of the site was the frequent occurrence of burrows within the sediment, which may have possibly been of the mantis shrimp *Rissoides spp.* however this was not confirmed. There was also evidence of dredging activity in the form of abundant empty scallop shells and rows of pebbles as if ploughed.

Wrecks of Tremadog Bay

Three shipwrecks were independently surveyed in the Tremadog bay area by a single keen Seasearch Observer. These include the "Timbo" and the "Challenger". Both ship wrecks are located east of Saint Tudwal's Islands. The Timbo (10.39m BCD) is surrounded by boulders and mixed sediments. The wreck had a kelp park (unidentified species) on the horizontal surfaces and a mixed faunal turf of hydroids and bryozoa on the vertical surfaces. The Challenger (below) (19.2m BCD) is surrounded by sand and gravel, and due to its deeper depth, was found to have no seaweed or kelp. Instead the wreck had a mixed faunal turf with a high diversity and abundance of crustacea, and a high abundance of the common starfish (*Asterias rubens*).



A survey was also attempted at a third ship wreck the "Progress", south of Pwllheli, however this could not be located and instead the site was renamed "Lack of Progress". It comprised faunal dominated cobbles, pebbles and mixed ground at 6.94m BCD, with an abundant faunal community of starfish, sponges, anemones and bryozoans.

5. Skomer Marine Nature Reserve

The Skomer MNR is managed by Natural Resources Wales, its dedicated team of marine scientists have established a programme of littoral, sublittoral and oceanographic monitoring.

Although habitat and species records are considerable for the MNR, it has been identified by the MNR management plan that these need continued updating with new records. To assist with this Seasearch forms were completed at the High Point, Martins Haven and from North Castle to Waybench along the north coast of Skomer. Highlights were records of 2 nudibranch species not previously recorded in the Reserve, *Cuthona caerulea* (right) and *Cuthona viridis*. Both species were recorded and photographed at Martins Haven West.



6. Grassholm

Grassholm is a small island located 14 miles off the west coast of Pembrokeshire and is internationally protected for its gannet colony. It is an incredible island to visit as the whole island and air is filled with these sea birds. The currents are very strong around the island and it is important to dive at the slackest part of the tide and tuck into sheltered areas of the reef.



West reef: A dive was completed on the western reef between 15 – 20m BSL. A rugged reef was found with deep fissures. A mix of short and tall animal turf dominated the reef with Antenna Hydroids (*Nemertesia. antenina* and *N. ramosa*) and Oaten Pipe Hydroids (*Tubularia. Indivisa*) along with spiral bryozoans (*Bugula plumosa* and *B. flabellata*) all frequently recorded. Barnacles were abundant in some areas and in others small blue mussels (*Mytilus edulis*) and a fine layer of sediments carpeted the rocks. Small pockets of shell fragments were found filled with Dahlia Anemones, (*Urticina. Felina*) and Velvet Swimming Crabs, (*Necora puber*) filled



every available crack. Numerous Lesser Spotted Catshark (*Scyliorhinus canicula*) were present and Butterfish (*Pholis gunnellus*) were occasionally recorded.

7. Skokholm

Skokholm is an old red sandstone island located 2 miles off the Pembrokeshire coast. Seasearch dives were completed at sites around the island between 2004 and 2006. The aim in 2012 was to dive some new sites but to also revisit some for further species recording and this continued in 2013. Dives were completed on the Mad Bay Pinnacles (of which there are a number in the bay) and at Marias reef (an extensive area off the SE end of the island).Skokholm. Dives were also carried out at the 'Wild Goose Race' off the west end of the island, an area known for its rip currents and also at the more sheltered location of Little Bay Point.

Mad Bay Pinnacles are a cluster of reefs found in Mad Bay made up of slanted bedrock roughly in parallel running east to west with wide gullies. Kelp forest covered the rocks in the shallow areas down to 8m depth giving way to vertical faces with a turf of sponges, bryozoans and hydroids. South facing walls were dominated by Elephant Hide Sponge (*Pachymatisma. johnstonia*) and Shredded Carrot Sponge (*Amphilectus fucorum*. In contrast the north facing walls were much richer in twiggy bryozoans *Cellaria spp.* And White Clawed Sea Moss (*Crisia spp.*).

Species records were diverse with 18 species of sponges and 7 bryozoans recorded. Species included

Potato Crisp Bryozoan (*Pentapora foliacea*), Hornwrack (*Flustra foliacea*), Yellow Staghorn Sponge (*Axinella dissimilis*) and Mashed Potato Sponge (*Thymosia guernei*) along with patches of Indian Feathers Hydroids (*Gymnangium montagui*). The well-camouflaged nudibranch *Janolus hyalinus* was also spotted amongst red seaweed.

Wild Goose Race is an area located off the west end of the island and is notorious for its strong currents. The reef was made up of a series of ridges between 14 to 22m BSL dominated by beds of Blue Mussels (*Mytilus edulis*) with scattered Dahlia Anenomes, (*Urticina Feline*) and sea squirt *Synoicum incrustatum*, Survey time was limited by the strong current. Divers could tuck in on the reef wall from 22 to 26m. The vertical walls here were dominated by Oaten Piped Hydroids, (*Tubularia indivisa*) and Antennas Hydroids (*Nemertisa antennina* and *N. ramosa*). Nudibrachs were frequently recorded, including the Christmas Tree Slug (*Dendronotus frondosus*), *Cuthona pustulata*, Crystal Sea Slug, (*Janolus cristatus*) and White Edged Polycera, (*Polycera faeroensis*). In some areas the Spiny Starfish (*Marthasterias glacialis*) and Common Starfish (*Asterias rubens*) were common, both feeding on the mussels.



Marias Reef (East reef) is an offshore reef located south east of Skokholm. The rocky reef is made up of slanted bedrock, boulders and overhangs of various sizes. At the base of the rocks at 21m depth is a mixture of pebbles and coarse sand with occasional Common Brittle Stars (*Ophiothrix fragilis*).

The rocks were characterised by short animal turf mixed with the massive sponges Elephant Hide sponge, (*Pachymatisma johnstonia*), Boring Sponge (*Cliona celata*) and Shredded Carrot Sponge (*Amphilectus fucorum*). Yellow Staghorn Sponge, (*A. dissimilis*) was occasional and Mashed Potato Sponge (*Thymosia Guernei*) was found beneath overhangs. Notable too were both Potato Crisp Bryozoan, (*Pentapora foliacea*) and Hornwrack (*Flustra foliacea*) both of which were common in some areas. Patches of Indian Feathers Hydroids, (*Gymnangium montagui*) were found and there was a single record of a Pink Seafan, (*Eunicella verrucosa*). Reef fish were prominent and included Goldsinny Wrasse, (*Ctenolabrus rupestris*), Cuckoo Wrasse, (*Labrus mixtus*) and Ballan Wrasse, (*L. bergylta*). Several nudibrach species were recorded, the most notable being *Aeigeres punctilucens*, *Thecacera pennigera* and 2 records of the nationally rare *Okenia elegans*.



8. St Anns Head

St Anne's Head is located at the tip of the Dale Peninsula and its lighthouse marks the entrance to Milford Haven waterway. The headland is well known for its strong tidal currents that create steep standing waves and prevailing SW winds which create constant wave action along the west side of the headland. The steep cliffs of old red sandstone form a dramatic landscape and these continue down below the surface with rocky reefs and large boulder fields. In 2013 2 sites were dived. **Welshmans Bay** was visited to record and collect sea squirts as it was found to have rare species in 2012. **Vomit Reef** was dived in September but conditions were very bouncy and visibility poor, so only limited recording could take place.

9. Dau Cleddau, Milford Haven

Milford Haven is a very active area with both commercial and recreation interest. Seasearch has completed many dives in the area looking at BAP habitats and species including tidal rapid reefs, Eelgrass (*Zostera marina*) and native oyster beds (*Ostrea edulis*). There are also high numbers of non-native species such as the invasive Slipper Limpet (*Crepidula fornicata*). Further exploration in the area is a continuous need. In 2013 only 3 sites were dived, all of which had been previously surveyed. The Warrior and Castle Rocks were targeted to collect sea squirts as part of the 2 days of focused diving.



In September the Landing Craft wreck located in Angle Bay was dived as it was the only sheltered spot possible in the storms. Notable were the large numbers of the nudibranch *Eubrancus tricolor* found on thick carpets of Antenna Hydroid (*Nemertesia. Antennina*) and the beautiful Candy Striped Flatworm (*Prostheceraeus vittatus*) right.

10. South Pembrokeshire



The South Pembrokeshire limestone coast has been a focus for Seasearch dives over the past few years and during 2013 eight further sites were explored. Surveys were completed at 2 sites near Linney Head: East Toe - Crow Rock and Brimstone Rock. Linney Head is an impressive headland of towering limestone cliffs and marks the start of the Castlemartin Range. Strong currents are found around the headland and care must be taken to choose slack water times. 3 sites were explored along the Castlemartin range: Flimstone Head and Bay and Moody Nose. Calm seas also allowed further exploration at 3 offshore reefs between 1-3 miles off St Govans Head: St Govans Shoals, Tope Reef and Tompot Reef.

Crow Rock is an islet just off Linney Head which has several ridges running off it called the Toes.

East Toe: A jumbled series rocky gullies around 3m high were found with slanted rock walls and some overhangs. The base of the gullies at 16m BSL were filled with coarse sand and broken shells along with a scattering of wreckage made of artillery shell castings and bits of metal sheeting. The shallow rock areas were covered in kelp park and red algae meadows. Vertical faces and overhang areas were dominated by sponge and sea squirt communities with 15 species of sponge and 13 species of sea squirts identified. Gooseberry Sea Squirt, (*Dendrodoa grossularia*) and Four Spotted Sea Squirt (*Morchellium argus*) were both abundant. Notable too were *Didemnum maculosum*, *Synoicum incrustatum* and the un-named 'Strawberry squirt'. Oaten Pipe Hydroid (*Tubularia indivisa*) was abundant interspersed amongst the sponges and sea squirts.

Brimstone Rock was made up of broken bedrock ridges interspersed with boulders ranging from massive to medium sized and with coarse sand at the bottom of gullies. A pretty kelp park with red algae, sponges and sea squirts was found in the shallow areas. Below the kelp massive sponges were common, including Breadcrumb Sponge, (*Halichondria panicea*), Shredded Carrot Sponge, (*Amphilectus fucorum*) and Elephant Hide Sponge, (*Pachymatisma johnstonia*).



The most common sea squirts were the

Gooseberry Sea Squirt, (*D. grossularia*), baked bean sea squirt (*Distomus variolosus*) and *Synoicum incrustatum*. Boulders found next to the coarse sand were scoured and covered in encrusting red algae.

St Govans Shoals is 3 miles off St Govans Head. It is an exposed current-swept site with a limestone reef found between 16 and 21m BSL. The reef is very rugged with wide broad gullies and faces up to 2m high. The faces were covered in Branched Oaten Pipe Hydroids, (*Tubularia larynx*) and Dead Mens Fingers, (*Alcyonium digitatum*), whilst the gullies were carpeted in Hornwrack, (*Flustra foliacea*). Nudibranchs included grazing *Coryphella browni*, *Flabelina pedata* and *Catriona gymnota*.

Tope Reef is found 1 mile off St Govans Head. It is named after the large numbers of Tope caught here by anglers. At 13m BSL a horizontal rock plateau was found which was rich in red algae and sea squirts, At the edge of the plateau a steep wall dropped down 4m to sand and occasional boulders which with relatively sparse life except for abundant Dahlia Anemones, (*Urticina felina*) right. The vertical faces were densely packed with sponges and sea squirts, along with Oaten Pipe Hydroid, (*Tubularia indivisa*) and Dead Mens Fingers, (*Alcyonium Digitatum*). The site was particularly rich in sea squirts with 15 species recorded, some of which were unknown and so collected for further identification. Species included *S. incrustatum*, an unidentified *Aplidium sp*, and the unnamed strawberry sea squirt, all of which are typical of this area.



Tompot Reef is found 1 mile off Flimstone Bay. The top of the reef was 19-22m bsl with steep walls going down to 35m. The reef had a rugged topography, At the top it was pitted with large 2-3m diameter bowl shaped depressions, some deep gullies and ridges and some mini 'pinnacles' up to 1m high. The reef was dominated by amphipod tubes, *Jassa spp*, overlying twiggy bryozoans *Cellaria sp* and white claw sea mosses *Crisia spp*. Dead Mens Fingers, (*Alcyonium digitatum*) were also abundant. Lobsters, (*Homarus gammarus*) were found in the gullies where there were also many Tompot blennies, (*Parablennius gattorugine*) right, after which the reef was named.



Castlemartin Ranges. Three further sites were explored along the coast in 2013:

Moody Nose. An undulating rugged rock reef with wide gullies around 2m wide and up to 4m high. The gullies were filled with gravel and shell fragments sparse in life except for the occasional Dahlia Anemone, (*Urticina. felina*). The horizontal ledges at 11m BSL were covered in kelp park and red algae with sponges, hydroids and sea squirts found on the kelp stipes. Vertical faces were dominated in sponge and squirt communities, in particular Club Sea Squirt (*Aplidium punctum*) and Gooseberry Sea Squirt (*Dendrodoa. Grossularia*) mixed with red algae. A total of 13 sea squirt species were found including the un-named strawberry squirt, and 17 sponge species, no dominant species but notable was the presence of Chimney Sponge (*Polymastia penicillus*). A handful of nudibranch species were found including the sponge eating *Jorunna tomentosa*. Hiding in crevices were Spiny Squat Lobsters, (*Galathea strigosa*).

Flimstone Head A sloping bedrock reef from 12 to 15m BSL forming a series of low bedrock ridges running east to west with areas of small boulders and cobbles. Kelp park and dense tall red algae meadows

covered the tops of the reef and sponges dominated the vertical and overhanging faces. Evidence of military debris was found scattered around.

Flimstone Bay A low bedrock reef around 2m high with a kelp park on the top with red algae turf and abundant Gooseberry Sea Squirt, (*Dendrodoa grossularia*). Kelp stipes were heavily encrusted by Breadcrumb Sponge (*Halichondria panicea*). The vertical walls were also covered in *D.grossularia* along with algal turf and sponges. Small boulders and cobbles were found in the gullies. Crustaceans included Spiny Squat Lobster, (*Galathea strigosa*), and Common Prawn (*Palaemon serratus*) were tucked into rock crevices with scorpion fish, (*Taurulus bubalis*) and Leopard Spotted Goby, (*Thorogobius ephippiatus*).

Stackpole Quay was the location for a Bioblitz in May where species recording was completed over a 24 hour period. Despite fantastic weather the visibility was sadly pretty poor, but 8 keen divers recorded as much as they could and brought back crabs and nudibranch species to the shore. The public took part in various seashore activities which included checking out the animals in large seawater tubs before they were safely returned to the sea.

Sea Squirt identification focused dives.

Two days of diving was completed with a team focusing on sea squirt identification, this was led by Prof David Kipling and Sarah Bowen and involved taking digital photographs in situ and collecting samples for further microscope work. The work continued on throughout the season during regular Seasearch weekends so that further sites could be explored and additional species sampled.

It was notable how many different sea squirt species were found at the Pembrokeshire sites. Some such as *Archidistoma aggregatum*, are a very inconspicuous part of the turf so probably overlooked as opposed to particularly rare. Another example is the *Pynoclavella* group, when divers know what to look out for, huge areas of *P. aurilucens* have been found carpeting rocks at Skomer and Skokholm in particular.

Notable finds in 2013 included

- the rediscovery of the so- called Strawberry Sea Squirt, as yet lacking a scientific name;
- *Didemnum fulgens* and *Polysyncrator lacazei* which are usually more southerly species.
- The glossy-looking white cushions of *Aplidium glabrum* now being discovered in significant numbers in the Cleddau are thought to be the same species found in the Netherlands and Belgium and may have been brought in by visiting ships.



Training and Publicity

Training Courses

Four Seasearch Courses took place as follows:

Month	Course Type	Location	Participants	Tutor(s)
March	Observer	Menai Bridge, Anglesey	17	Liz Morris & Tom Stamp
April	Observer	Marloes, Pembrokeshire	16	Kate Lock
April	Marine Life ID	Menai Bridge, Anglesey	15	Lin Baldock, Jen Jones, Liz Morris
June	Ascidian ID	Marloes, Pembrokeshire	20	Bernard Picton and David Kipling

Shore diving was planned following each Observer course however, due to high winds, the diving following the Menai Bridge course had to be cancelled.

Participants in both Observer courses were encouraged to attend other Seasearch organised diving or to carry out independent surveys. In North Wales one participant, Lonn Landis, subsequently completed five independent Observation Forms. In the case of the Pembrokeshire course most of the participants were from Swansea and Aberystwyth Universities and although very enthusiastic during the course very few forms were completed during the season by participants.

The Intermediate Marine Identification course (right) had an emphasis on sponges, hydroids and seaweed identification.

The Ascidians course was attended by participants from Wales, England and Scotland. Ascidian identification in the field for some species is particularly difficult and many species are still to be named. David Kipling and Sarah Bowen are currently working on a new Seasearch photographic guide which will help significantly with survey recording.

No Surveyor Courses were run in 2013 as there were not thought to be sufficient Observers ready to move on to the higher level.



Qualifications

Three volunteers achieved the Seasearch Observer Qualification during the year. They were: Lonn Landis (Menai Bridge Course), Matthew Boa (Marloes Course + forms in North Wales) and Alice Goward-Brown (Course in 2011).

Five volunteers completed the Seasearch Surveyor Qualification during the year. They were: Lucy Phillips (Marloes Course 2012), Jon Chamberlain (Marloes Course 2012), Mattias Biber (Menai Bridge Course 2012), Emma Kenyon (Marloes Course 2007) and James Bull (Marloes Course 2007).

As can be seen there can be a considerable time lag between course and qualification. This particularly applies at the Surveyor level where five additional Survey Forms and an identification test need to be completed satisfactorily after the course to achieve the qualification.

Congratulations to all of those achieving qualifications during the year.

Publicity

Seasearch continued to be publicised to diving clubs and universities. Seasearch Facebook Groups in both North and West Wales also continue to be used to publicise courses and surveys and for photo identification.

Presentations were given at the Porcupine Natural History Society annual conference in April by Prof David Kipling. Joint presentations were given at the Dale Fort Marine Symposium in April and Welsh Sub Aqua Club meeting in October by Kate Lock and Prof David Kipling. Kate additionally gave a presentation at Pembrokeshire Biodiversity workshop in April and the 'Pembrokeshire Wildlife Sightings' event hosted by the Pembrokeshire Coastal Forum in November.

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Tutors on specialist courses: Jen Jones, Lin Baldock, Bernard Picton and David Kipling.

For assistance with survey dives: Harry Goudge, Lucy Kay, Liz Morris, Kirsten Ramsay and Richard West.

Boat skippers Paul Turkentine, Waterline, Auberry Diggle, SBS boat charters, Elfyn Jones, Julie-Anne Charters, Scott Waterman, Quest Diving Charters, Alun Lewis, Cleddau King and Andy Truelove, Volsung, Their seafaring skills and local knowledge helps the teams safely dive in locations that would not otherwise be possible.

Photo credits: Liz Morris (all North Wales photos), Blaise Bullimore (Brimstone rock scenic and with diver), David Kipling (Janolus hyalinus, strawberry squirt), Richard West (Candy striped flat worm *Thecacera pinnegera* and *Cuthona caerulea*), Emily Williams (Dahlia anemone and Tompot blenny) Kate Lock (cover and all other West Wales photos).

Dive Site Sketch Credits: Trefor Pier (Lonn Landis), Diplosoma daydream (Liz Morris), Challenger wreck (Lonn Landis) Swellies rock (Carol Horne), PwllfanogI (Lucy Kay).

Porcupine Marine Natural History Society and the Systematics Research Fund also supported the Ascidian course and survey dives in West and North Wales respectively.

Natural Resources Wales continues to support Seasearch in Wales and also contributes to the national coordination of the project. We could not carry out the programme described in this report without their support.



Seasearch is co-ordinated by the Marine Conservation Society on behalf of the Seasearch Supporters Group which includes the Marine Conservation Society, The 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 at a National level, and support for local/regional coordination for 2013-4, has been given by the organisations with logos above and there are a number of other supporters at a local level.

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