



Seasearch Cymru/Wales 2010 Summary Report



Aberystwyth May 2010, Richard West

report prepared by
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Seasearch Wales 2010

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 on behalf of the Seasearch Steering Group.

There are two Seasearch regional coordinators in Wales. Kate Lock coordinates the South and West Wales region which extends from the Severn estuary to Aberystwyth. Liz Morris coordinates the North Wales region which extends from Aberystwyth to the Dee. In addition to the two coordinators, there are four other active Seasearch Tutors in North Wales, Harry Goudge, Kirsten Ramsay, Lucy Kay and Rohan Holt; and one in South and West Wales, Jen Jones. Overall guidance and support is provided by the National Seasearch Coordinator, Chris Wood.

This report summarises the Seasearch activity in Wales in 2010. 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 data as this has been entered into the Marine Recorder database and supplied to the Countryside Council for Wales for use in its marine conservation activities. The data is also available on-line through the National Biodiversity Network.

Data from Wales in 2010 comprised 153 Observation Forms, 141 Survey Forms, 8 online crawfish records and 1 online sea fan record. The total of 303 represents 14% of the data for the whole of Britain and Ireland. The proportion of higher level Survey Forms (46%) is higher than for the Britain and Ireland dataset as a whole (36%) and reflects the high quality of recording by volunteer divers in Wales.

Seasearch Cymru 2010

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 gydylynu gan y Gymdeithas Cadwraeth Forol ar ran Grŵp Llywio Seasearch.

Mae gan Seasearch ddau gydlynnydd rhanbarthol yng Nghymru. Kate Lock sy'n cydlynu'r gwaith yn rhanbarth De a Gorllewin Cymru, sef rhanbarth sy'n ymestyn o aber Afon Hafren i Aberystwyth. Liz Morris yw cydlynnydd rhanbarth Gogledd Cymru, sy'n ymestyn o Aberystwyth i Afon Dyfrdwy. Yn ogystal â'r ddau gydlynnydd ceir pedwar o Diwtoriaid Seasearch eraill yng Ngogledd Cymru, sef Harry Goudge, Kirsten Ramsay, Lucy Kay a Rohan Holt, a cheir un yn Ne a Gorllewin Cymru, sef Jen Jones. Rhoddir arweiniad a chymorth cyffredinol gan Chris Wood, Cydlynnydd Cenedlaethol Seasearch.

Mae'r adroddiad yma'n crynhoi holl weithgareddau Seasearch yng Nghymru yn ystod 2010. Mae'n cynnwys crynodebau o'r safleoedd a arolygwyd ac mae'n nodi rhywogaethau a chynefinoedd prin neu anghyffredin a welwyd. Mae'r rhain yn cynnwys nifer o gynefinoedd a rhywogaethau Cynllun Gweithredu'r DU ar Fioamrywiaeth. Nid yw'n cynnwys yr holl fanylion gan fod cofnod o'r rhain i'w cael yn y gronfa ddata *Marine Recorder* a gyflwynwyd i Gyngor Cefn Gwlad Cymru ar gyfer ei defnyddio yn ei waith ar warchod y môr. Mae'r data ar gael hefyd ar-lein trwy'r Rhwydwaith Bioamrywiaeth Cenedlaethol.

Roedd y data ar gyfer Cymru yn 2010 yn cynnwys 153 o Ffurflenni Arsylwi, 141 o Ffurflenni Arolygu, 8 o gofnodion ar-lein yn ymwneud â chimychiaid coch, ac 1 cofnod o fôr-wyntyll. Mae'r cyfanswm o 303 yn cynrychioli 14% o'r data ar gyfer Prydain ac Iwerddon i gyd. Mae canran y Ffurflenni Arolygu lefel uwch (46%) yn uwch nag ar gyfer set ddata gyfan Prydain ac Iwerddon (36%), gan adlewyrchu ansawdd da'r gwaith cofnodi a wnaed gan ddeifars gwirfoddol yng Nghymru.

Seasearch Recording in 2010

The maps below shows the location of Seasearch Observation and Survey records received in Wales in 2010.



Observation Form records

Survey Form records

In the following pages there are summaries of the surveys undertaken area by area.

A total of 303 Seasearch records were completed, split as follows:

Observation Forms	153	(50%)
Survey Forms	141	(47%)
Sea fan Forms	1	
Crawfish online records	8	(3%)

The high proportion of Survey forms is due to the number divers taking part in Surveyor training courses, both in 2010 and previous years. The Survey Form provides a much higher level of detail and we are glad that so many of the regular Seasearchers have wanted to move on to that level. Experienced Seasearchers also regularly buddy up with new divers training for their Observer qualification and provide their experience and help.

All of the 2010 data has been entered into the Marine Recorder database. It can also be accessed through the National Biodiversity Network (NBN) website.

South and West Wales Summary

2010 was a successful year in South and West Wales. 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 complete qualifications.

At the beginning of the year a meeting was held with the West Region Countryside Council for Wales Senior Marine Conservation Officer and Marine Biodiversity Officer. It was agreed that there would be a focus on BAP species and habitat recording, including tidal rapids, reef sites in the Cleddau and native oysters at sites both in the Cleddau and along the south Pembrokeshire coast. An additional focus was information gap filling in the areas of Ramsey, south Pembrokeshire and off the Aberystwyth coasts.



Five organised Seasearch survey weekends were completed and forms were also submitted by individuals organising their own dives. Surveys were completed in the Dau Cleddau, Caldey Island and the Lydstep cliffs (south Pembrokeshire), Skomer Island, Stack Rocks (St Brides Bay) and Sarn Cynfelin (Aberystwyth). A weekend planned to dive the Gower coast had to be cancelled due to unavailability of boats. Training dives were completed at Martins Haven, St Brides Haven and Abercastle (north Pembrokeshire).

The Seasearch display was presented at the Pembrokeshire Coastal Forum wildlife evening and at the Pembrokeshire biodiversity gathering day. Links with Universities continue with students from Aberystwyth and Glamorgan completing the training courses.

2010 Specials

- Pink seafan *Eunicella verrucosa*, scarlet and gold star coral *Balanophyllia regia*, cluster anemone *Parazoanthus axinellae* and indian feather hydroids *Gymnangium montagui*, Skomer MNR;
- Elegant nudibranch *Okenia elegans*, Skomer MNR and *Trapania pallida*, Skomer MNR and Cleddau;
- Native Oysters, *Ostrea edulis* at Cleddau sites;
- Crawfish *Palinurus elephans* records at Skomer MNR and Milford Haven;
- Large aggregations of spiny spider crab *Maja squinado* at south Pembrokeshire sites;
- *Mytilus edulis* mussel beds and dense ascidian and sponge communities found on limestone reefs at south Pembrokeshire sites;
- Nationally scarce sponges: *A. damicornis* and *Tethyspira spinosa* Skomer MNR;
- Grey Triggerfish *Balistes carolinensis* and Starry smooth hound *Mustelus mustelus* at south Pembrokeshire sites;
- *Mytilus edulis* mussel beds at Stack Rock - St Brides Bay and Sarn Cynfelin;
- Tidal rapid reef site Llandstadwell drop off and Castle rocks in the Cleddau waterway;
- Icelandic cyprine, *Arctica islandica*, at Morfa Bwchan, Aberystwyth.



North Wales Summary

2010 was also a successful year in North Wales. We saw a rise in the number of active Seasearchers in the area, including an increasing number of experienced Seasearch divers able to produce good quality Surveyor forms. Enthusiastic experienced surveyors have been able to assist 22 keen new Seasearchers to improve their skills on Seasearch survey weekends.



At the beginning of the year a meeting was held between the Countryside Council for Wales and local Seasearch tutors. During this meeting four key objectives were set for the year:

1. concentrate tutor time on developing marine identification skills of existing Seasearchers and increase the number of local active Surveyors.
2. attempt to visit and confirm areas of suspected skate and ray nursery / breeding grounds off the Llŷn Peninsula and Colwyn Bay coasts and report eggcases still attached to the seabed.
3. re-visit carpet mussel (*Musculus discors*) reefs off the North Llŷn Peninsula in order to establish whether this Welsh BAP habitat is ephemeral. On the same survey, ground truth areas of *Musculus discors* reefs predicted by HABMAP modelling
4. Seasearch areas where there is a lack of recent information, including the Skerries, Bardsey Island and the South East Anglesey coast.

13 boat days were spent on dedicated Seasearch surveys in North Wales, visiting a total of 35 sites (most of which were new or had not been dived recently). Some Seasearchers also submitted forms from independent and club dives, mostly at popular dive sites. Due to windy weekeds we did not manage to visit the Skerries or Colwyn Bay coast, but instead did some interesting gap filling closer to shore. Surveys were completed around Anglesey (including sites around Carreg Malltraeth, Rhoscolyn, North Stack, Dulas Bay and off Ynys Dulas), five sites in the Menai Strait, south Caernarfon Bay, *Musculus* reefs off the North Llŷn Peninsula, Bardsey Island and several sites in Tremadog Bay. Observer training and refresher dives were also completed at Newry Beach (Holyhead) and Cemlyn Bay (North Anglesey), whilst surveyor training was completed in the Menai Strait.

2010 Specials

- Large patches of the yellow cluster anemone *Parazoanthus axinellae* at Bardsey Island;
- Carpet mussel, *Musculus discors* reefs off the North Llŷn Peninsula;
- Rare native Oysters, *Ostrea edulis*, in the Menai Strait and Colwyn Bay SAC;
- Nationally scarce sponge *Tethyspira spinosa* off the North Llŷn Peninsula;
- Unexpected patchy subtidal seagrass (*Zostera marina*) beds off Caer Arianhod, south Caernarfon Bay;
- The rarely recorded small anemone *Halcampa chrysanthellum* not previously recorded in the area, Dulas Bay;
- Unexpected beautiful erect sponge and hydroid communities off Hell's Mouth;
- Large numbers of juvenile *Mytilus edulis* at many sites off south west Anglesey and the Llŷn Peninsula, including the Outer Shoal, near Maen Mellt, Carreg Maltraeth, Dinas Bach, and shallow inshore sites near Rhoscolyn and Rhosneigr. Only time will tell if these become established mussel beds.



South and West Wales dive sites

South Pembrokeshire – Caldey Island, Lydstep and Manorbier



In 2010 two weekends diving were organised operating from Stackpole Quay on the south Pembrokeshire coast. Sites were explored along the mainland coast below the impressive limestone cliffs and caves of Lydstep Head and the sandstone cliffs of Manorbier. Offshore Lydstep Ledges and Woolhouse Rock are limestone reef formations.

The main characteristic of the sites was the sculptured rock formations, networks of maze-like gullies with steep vertical faces and a rich sponge and ascidian fauna. Typical of limestone were the carved out pits and holes which provide homes for large

numbers of crustaceans and fish species. At the mainland sites deep clefts and caves were explored where a superabundance of spider crab *Maja squinado* were found, forming in some cases a 'moving wall' of 2-3 animals thick. The seabed below these congregations was thick in the crab's casts. Mussel *Mytilus edulis* beds with huge common starfish *Asterias rubens* were found at all sites. Grey triggerfish *Balistes carolinensis* were recorded at two sites and starry smoothhounds *Mustelus mustelus*, were found patrolling the gullies.



The sites around Caldey Island were very shallow as the rocks gave way to a sandy seabed at 6-8m bcd. Many of the species recorded were typical intertidal species, a highlight were superabundant patches of *Onchidoris pusilla* and a juvenile angler fish *Lophius piscatorius* found on the sands.

Short dives were completed at 2 sites to check for presence of native Oysters *Ostrea edulis*, these dives are summarised later in this report under 'Special Projects'.

Dau Cleddau, Milford Haven



Two sites identified from multibeam survey that showed possible rocks were investigated. At Llandstadwell there was an impressive wall 5-8m high just outside of the mooring area and at Castle Rocks a reef extended out from the shore. Both sites were located in strong tidal currents and the species found were typical of these conditions. They included large formations of finger sponge *Haliclona oculata*, breadcrumb sponge *Halicondria panicea* and shredded carrot sponge *Amphilectus fucorum*. Oaten pipe hydroids *Tubularia indivisa* were found on both the rocks and growing out from the sponge formations, feeding on these were nudibranchs including the Christmas



tree nudibranch *Dendronotus frondosus*. Notable was the nudibranch *Trapania pallida* (right), a scarce species in the UK.

At each site a thick silt cover was found on the rocks. Between the rocks were areas of pebbles and mixed ground, here slipper limpets *Crepidula fornicata* were common and occasional native oysters *Ostrea edulis* were recorded.

The wreckage of a landing aircraft off Angle Bay was dived. The wreck is located on a mixed sediment plateau with plenty of life crawling about. Several highland dancers *Pleurobrancus membranaceus* were found, the hermit crab *Pagurus prideaux* which evacuated its shell that was covered in a cloaked anemone

Adamsia carcinopados (below right). The wreckage itself was decorated in the nudibranch *Lomanotus genei* (below left) present in three colour morphs and laying its large eggs frills on the antenna hydroid *Nemertesia antennina*.



Jenkins Point, Castle Reach and Beggars Reach were targeted to survey the current condition of native oyster *Ostrea edulis*. These sites are summarised later in this report under 'Special projects'.

Skomer Marine Nature Reserve

The Skomer MNR is managed by the Countryside Council for Wales, and 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, the management plan identifies that these need continued updating with new records. To assist with this, Seasearch forms were completed at sites on the south side: South Middleholm, Thorn Rock, High court reef and on the north side at North Middleholm.

South Middleholm: The rocks were covered in red algae and animal turf dominated by sponges, hydroids and bryozoans. Patches of the indian feathers hydroid *Gymnangium montagui* and hornwrack *Flustra foliacea* were found on the reef and sponges included yellow staghorn *Axinella dissimilis* and prawn cracker sponge *A. infundibuliformis*. Recorded too were both the pink seafan *Eunicella verrucosa* and a patch of the scarlet and gold cup coral *Balanophyllia regia*. A diverse number of nudibranchs were recorded including large golden and white variations of the white hedgehog seaslug *Acanthodoris pilosa* on the finger bryozoan *Alcyonidium diaphanum* (right).



North Middleholm: An interesting site with rocky reef, large boulders and shell-sand gullies. The reef was covered in common mussel *Mytilus edulis* beds and dead men's fingers *Alcyonium digitatum*. However, the highlight of the site was the large numbers of crustaceans found, in particular edible crab *Cancer pagurus*. Three pink seafans *E. verrucosa* were seen and their condition recorded.

High Court Reef: A series of rock pinnacles plunging down to 15m with 5m wide gullies between filled with boulders. An impressive species list was gathered by the divers including 20 sponge and 15 cnidarian species. Some of these are listed in the Skomer highlights below.

A list of nudibranchs was completed for Martins Haven on the Seasearch Nudibranch course. This list included some rare and scarce UK species.

2010 Skomer highlights included:

- Crawfish *Palinurus elephas*
- *Trapania pallida*, new record for Skomer MNR at Martins Haven
- Elegant nudibranch *Okenia elegans*
- Pink seafan *Eunicella verrucosa* (right)
- Scarlet and gold cup coral *Balanophyllia regia*
- Sponges: *Axinella dissimilis*, *A. damicornis*, *A. infundibuliformis*,



Tethyspira spinosa and *Polymastia pencillus*

- Indian feather hydroids *Gymnangium montagui*
- Yellow cluster anenome *Parazoanthus axinellae*

Stack Rock, St Brides Bay

A weekend was planned for diving around Ramsey Island, but after one turbulent dive, groundswell on the west coast made diving unmanageable and the second dive was undertaken at Stack Rocks in St Brides Bay. On the Sunday dives were completed around Skomer.

In 2009 extensive mussel beds, *Mytilus edulis*, were recorded at Stack rock, so the aim of the 2010 survey was to assess the current status. A rocky reef habitat dominated in kelp forest *Saccorhiza polyschides* was found descending from 9m to 12m with underlying mussel beds and an abundance of the common starfish *Asterias rubens*. The mussel beds were abundant in patches however and other encrusting animals were also found including carpets of the jewel anenome *Corynactis viridis*. Between 12 to 18m bcd the reef walls were dominated by dead men's fingers *Alcyonium digitatum* and the Devonshire cup coral *Caryophyllia smithii*. Gravel and sand was found at the bottom of gullies.

Aberystwyth, Sarn Cynfelin

A weekend was organised based in Aberystwyth with the assistance of Scott Tompsett and support of Philip Hughes, Friends of Cardigan Bay. In previous years dives had been focused on Sarn Cynfelin, a glacial moraine that extends from just north of Aberystwyth from the coast to seven miles offshore. The moraine is a gravel bank that is 6m below sea level in the shallowest areas dropping down to 12m. The algae cover is very seasonal with thick carpets of weed found in the shallows during the summer months. The site is a congregating and feeding area for bottle nosed dolphins *Tursiops truncatus* and is studied by the Friends of Cardigan Bay.

In 2010 dives were completed at:

Sarn Cynfelin (1 mile offshore), the site was covered in mussel bed *Mytilus edulis* with large numbers of dahlia anenomes *Urticina felina*. In the shallower areas carpets of algae dominated and a diverse number of fish were recorded including greater pipefish *Syngnathus acus* and plaice *Pleuronectes platessa*.

Morfa Bwchan (South Aberystwyth) A shallow gently sloping cobble and gravel bank covered in mixed seaweed, bryozoans and sponges including the prawn cracker sponge *Axinella infundibuliformis* and hornwrack *Flustra foliacea*. An abundance of snakelocks anenomes *Anemonia viridis* and the crater sponge *Hemimycale columella* were recorded and the site was peppered in a rich diversity of life. Also notable was the presence of Icelandic cyprine, *Arctica islandica*.

A dive was also completed at Aberystwyth Pier. A shallow rocky reef was found with a kelp park and thick seaweed meadow. The site was rich in crustacean and fish species.



North Wales dive sites

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

In 2010 six Seasearch survey days were undertaken around the area the Pen Llŷn a'r Sarnau SAC. In total 17 sites were surveyed, four of which were specialist surveys of carpet mussel, *Musculus discors*, reefs on the North Llŷn and are summarised separately in the 'Special Projects' section of the report. Despite a dedicated day's searching, no live skate or ray eggcases were seen at sites suspected to be ray nursery grounds. Most of the other Llŷn sites were chosen to fill in knowledge gaps around the SAC identified by the Countryside Council for Wales, the most interesting of which are summarised below.

Mud in Tremadog Bay, South Llŷn Peninsula

Slightly offshore from the Outer Shoal near Pwllheli we descended through 3 meters of surface moon jellies (*Aurelia aurita*) aiming for the charted but unsurveyed Sunderland Wreck. However, we landed 16-17m below chart datum on pure mud, which is unusual for Tremadog Bay, which is otherwise famed for its muddy gravels. Luckily, as long as there's something living on or in it, mud is still of interest to an exploratory North Wales Seasearcher! A distinctive black polychaete, *Ophiodromus flexuosus* right, was noted as frequent at the site and seemed to be both on and under the mud's surface. Also recorded were the auger shell, *Turritella communis*; an *Ocnus* sp. of sea cucumber; sea mice, *Aphrodita aculeata* and the sea potato *Echinocardium cordatum*. There were occasional signs of wreckage and litter, but no sign of the Sunderland.



Sea Hare Surprise, west Hell's Mouth

A surprising diversity of hydroids, colourful sponge, bryozoa and sea hares (*Aplysia punctata*) was found at Sea Hare Surprise.



Other south Llŷn Sites

2010 saw a good year for *Mytilus edulis* spat fall and so several shallow sites were covered in a layer of juvenile mussels and their predators. It will be interesting to see if this affects the sites in 2011. This little shore clingfish, *Diplecogaster bimaculata*, was 'spotted' 50 minutes into Paul Kay and Wendy Northway's dive off the Outer Shoal, near Pwllheli. Also present in high numbers were the leathery seasquirt, *Styela clava*, which has been noted frequently subtidally in the area in recent years.

Bardsey Island

3 beautiful sites were surveyed around the most exposed southern point of Bardsey. There was a superabundance of the Oaten Pipe hydroids *Tubularia indivisa* at the most exposed tip, now named 'Oaten Point'. Just east of the most exposed point were large walls of the yellow cluster anemone *Parazoanthus axinellae* at 'Cluster Cwm' (below left). Also spotted was the nudibranch *Crimora papillata* (below right) which until 2008 a southern visitor to the area, but is now regularly spotted around the Llŷn and Anglesey coasts.



Porth Colmon and Penryhn Melin, North Llŷn Peninsula

There were focussed specialist surveys around Penrhyn Melyn and Porth Colmon as part of a search for carpet mussel, *Musculus discors*, reefs. Details of *Musculus discors* reefs are in the Special Projects section later in this report. On sites where there were no *Musculus* we found beautiful diverse sponge, sea squirt and bryozoan communities typical of subtidal rocky reefs off the North Llŷn Peninsula. Also seen off Penrhyn Colmon was the nationally scarce sponge, *Tethyspira spinosa*,

Maen Mellt, North Llŷn Peninsula

Edible mussels, *Mytilus edulis*, were found on subtidal sediment off Maen Mellt, a popular dive site. As spring 2010 seemed an unusually good year for mussel settlement it is uncertain whether the 'reef' would be large or mature enough to constitute the Biodiversity Action Plan habitat, but the site is certainly worth revisiting in future years to establish whether the BAP habitat is present or whether mussels manage to survive at the site.

Trefor Pier, Caernarfon Bay

This is a popular dive site just outside of the SAC from which Seasearch regularly receives records, but is little reported on. Trefor is a Pier in disrepair, with broken wooden pier legs falling in to the sea and lots of angling litter scattered around the site. That said, it hosts a wealth of marine life including sponge, spider crabs, rare octopuses and little cuttlefish, brown and red seaweeds. Around the pier itself is a sandy bottom hosting several juvenile flatfish, gobies, daisy anemones and mobile crustacea.

In April, May and June 2010 Seasearch had many records from Trefor, Porth Ysgadon and other sites around North Wales of shallow octopus (*Eledone cirrhosa*) giving bold displays for Seasearch divers. Prior to breeding, female octopus are thought to hunt intensively to build enough energy to enable them to tend to their eggs for up to 40 days without feeding. It is thought that female octopus use their siphons to jet water over their developing eggs, which they lay like strings of white grapes under overhangs and caves. Females will not leave their eggs unguarded, and usually die once the juveniles hatch. The theory that they are bolder pre-breeding is speculation based on diver comments, but it might be worth looking for their eggs hanging from an overhang next time you find an octopus curled up in a crevice or overhang. If you find them, don't forget to photograph and report them!



Caer Arianhod, Caernarfon Bay

Caer Arianhod was an unexpected Seasearch site, again outside of local SACs due to windy weather restrictions. But those on board were pleasantly surprised: subtidal eelgrass, *Zostera marina* was found where it had not been previously reported. Seagrass was patchy and it is uncertain whether it would be considered in high enough density or size to comprise a bed, but was teeming with greater pipefish (*Syngnathus acus*) photo below, masked crabs (*Corystes cassivelaunus*), sea cucumbers (*Labidoplax digitata*) and other sandy species. Also, at another station, was a large juvenile mussel spat fall, which again may or may not establish itself over coming years. Despite not being in a SAC we hope to revisit this site in future to establish whether the subtidal seagrass is considered big or established enough to be a BAP habitat.



Menai Strait and Colwyn Bay Special Area of Conservation

The Menai Strait

Five sites in the Menai Strait were surveyed as part of organised Seasearch events, either chosen as training sites re-visiting well surveyed areas, or in two cases, sites ('Carrot Patch' and 'Line in the Sand') where few records currently exist. Most sites were circalittoral rocky reef and gravels, dominated by sponge and anthozoan communities typical of the Menai Strait. The 'Line in the Sand', a drift dive just south of Port Dinorwic was a very different habitat of tide swept mobile coarse sediments with clumps of *Mytilus edulis*, rare native oysters, *Ostrea edulis*, and mobile fauna.

Sandy gravels off the Great Orme

On a weekend when we hoped to get out and look for skate and ray eggcases on muddy gravels off Colwyn Bay, we were blown inshore yet again. However, it opened up the rare opportunity to fill gaps in the existing knowledge of flat sandy gravels north west of the Great Orme. It was found to be an area of circalittoral sandy gravel where the dominant macrofauna were burrowing anemones *Cerianthus lloydii* and *Sagartia troglodytes*, with sporadic *Ophiothrix* brittlestar beds.

Anglesey

A total of 18 Anglesey sites were surveyed outside of marine Special Areas of Conservation, only the highlights of which are presented in this report. Seasearch 2010 sites were chosen to fill in knowledge gaps around the Anglesey coast identified by the Countryside Council for Wales, and dive inshore areas around west Anglesey suspected to be breeding grounds for skates and rays. One potential blonde ray eggcase was identified at Euphrates Point, near Rhosneiger, in May.

Rhoscolyn Pinnacle, west Anglesey

This was a re-visit to a deep (22-24.5m bcd), dark tidally swept pinnacle approximately 2.32nm off Rhoscolyn Beacon, where the previous survey had to be abandoned. This spectacular dark site was covered in a superabundance of *Sagartia elegans* (below right), with a dominant cover of sponge (including *Axinella dissimilis* and *Haliclona oculata*), bryozoans and cnidarians, resulting in the record of an unusual biotope for the area, CR.HCR.XFa.ByErSp.Sag. *Sabellaria spinulosa* was common on the pinnacle, and formed thick surface 'gravel' at the base of the reef.



Inshore sites near Rhoscolyn and Carreg Malltraeth

2010 saw a great year for *Mytilus edulis* spat fall on Anglesey (photo left). Several shallow sites were covered in a layer of juvenile mussels and their predators, reflecting what was also witnessed on the Llŷn Peninsula. It will be interesting to see if mussels establish themselves as reefs in 2011.

North Stack

The little surveyed Cliffs South of North Stack also proved to be an unusual tide-swept and scoured habitat near the entrance of caves in limestone cliffs, where the dominant cover was the sea squirt *Dendrodoa grossularia* on very large boulders.

East Anglesey

This survey was carried out to fill gaps in the existing knowledge of the seabed around east Anglesey, and to look for an area of *Modiolus* habitat which had been reported near Moelfre, Anglesey. No live horse mussel, *Modiolus modiolus* reef was identified. Three sites were visited: an area of sandy mud in Dulas Bay, where the small, rare anemone *Halcapa chrysanthellum* (right) was identified and photographed; an area of shallow, circalittoral muddy mixed sediments with *Ophiothrix* brittlestar beds south of Ynys Dulas; and a heavily silted circalittoral boulder community dominated by *Alyconium digitatum*, *Flustra foliacea* and mixed red algaenear Point Lynas. Sites off east Anglesey were heavily silted, which is quite typical of the area, but also very different to west Anglesey and the Llŷn Peninsula so an interesting area to Seasearch.



Special Projects

Crawfish *Palinurus elephas* historical records project



Crawfish has now been identified as a species that needs protection and is on the UK Biodiversity Action Plan species list. In Wales, it is found around Llŷn Peninsula and Pembrokeshire, although numbers are now very low. Commercial fishery (netting) still exists off the Pembrokeshire coast.

The Wales Biodiversity Partnership funded Seasearch to complete project to collect historical and current crawfish records from recreational divers and a project report has been produced.

A total of 164 dive records were been received by recreational divers and entered onto a spreadsheet and GIS distribution maps for Wales produced.

An amazing 112 dive records were provided by Ieuan Morris, he dived regularly with his club from 1968 to 1991, at sites primarily on the north Pembrokeshire coast. These records have been particularly valuable as they are for the period before and during the time of the crawfish fishery (both netting and diver caught) in the late 70's and early 80's.

38 dive records for Welsh sites have been received for 2009 and 2010, these records showed that the numbers of crawfish recorded on dives in Wales was low and the few sightings observed were at only a handful of locations. This is in contrast to the high numbers that were recorded by divers during the 1970's and into the 1980's.

Many sites in Wales where crawfish have historically been recorded by divers have been identified in this survey. It is therefore possible to select sites with suitable habitat for crawfish if any restoration programmes occur in the future.

Sites where current records of crawfish have been observed should be used as target sites for future monitoring to assess any recovery of the population. However these sites need to be protected either with a fisheries byelaw prohibiting taking of crawfish or by locating the monitoring sites within 'Statutory No Take Zones' to ensure full protection, for example with 'Highly protected Marine Conservation Zones'.

Native Oysters *Ostrea edulis*

South Pembrokeshire

In South Pembrokeshire sites with historical records of native oysters *Ostrea edulis* off Tenby and Stackpole were surveyed using drop down video by CCW contractors. Old oyster shells were identified in the survey at a handful of sites. Seasearch was requested to confirm if there was any presence of live animals and dives were completed at two sites.

Dive site 1. NE Giltar Point, Tenby, Camarthen Bay.
Drift dive eastwards. Seabed plateau at 9m.
Cobble/pebble/shell and shell gravel mixed ground with shallow ripples to the east. Approx 70% cover of mixed seaweed including small *Laminaria hyperborea* and *Ulva lactuca*, many cobbles covered in encrusting pink algae. Small numbers of *Asterias rubens*, hermit crabs and *Urticina felina* present. Moderate numbers of old native oyster *O. edulis* shells were found, some very large and encrusted with *Pomatoceros* sp. *Balanus* sp, sponges and hydroids.



Dive site 2. Barafundle Bay, Stackpole.

Flat bedrock at 20m with small pockets of shell gravel. Dead shells included some old native oyster *O. edulis* shells heavily encrusted with tube worms. A selection of photos were taken to show the habitat including an

octopus hiding behind an old oyster shell. The rock areas were not thickly covered but more like sprinkled in a high diversity of animals including the bryozoans *Cellapora pumicosa* and the potato crisp bryozoan *Pentapora foliacea*, different sponges, cnidarians and ascidians.

Dau Cleddau, Milford Haven

Three sites were dived where records of native oysters *O.edulis* are historically known. The aim of this survey was to estimate the current abundance of native oysters and also of the invasive slipper limpet *Crepidula fornicata*.

Castle Reach and Beggars Reach are stretches of the Cleddau river located upstream of the Cleddau bridge. The main area of the river bed is a pebble plain with occasional boulders. At both sites a superabundance of the slipper limpet was found as it formed a very dense bed over the substrate. Small boulders provided the only opportunity for sponges and hydroids to attach to. Amongst the slipper limpet bed occasional native oysters were found.

At Jenkins Point the diving team was divided into two groups, one dived the area between the boat moorings and the other targeting just outside of the moorings. We speculated that the area within the moorings may have higher densities of native oysters, as these areas may not have the same intensity of oyster dredging by fishing boats due to the difficulty of towing gear between the moorings. An abundance of slipper limpets was found but possibly lower densities to those at Castle and Beggars Reach. Small boulders were found smothered in sponges and hydroids typical of the Cleddau area. Interestingly native oysters were recorded with an abundance rating of 'occasional' outside of the moorings but with 'frequent' within the moorings. We intend to return to the site and complete some systematic transects with native oyster counts.



CCW Volunteer Diving Project

Some experienced Seasearchers took up the opportunity to assist in monitoring of Welsh Marine Special Areas of Conservation by joining the CCW volunteer diving programme, organised by Marine EcoSol. On September 18th, 2010 five volunteers went out with the CCW and targeted an area of known subtidal seagrass (*Zostera marina*) around Long Oar Bay in Milford Haven. To avoid unnecessary anchoring within the seagrass bed, a basic mapping exercise was undertaken to confirm areas of sand which might be used to fix permanent moorings. The results are published within a separate CCW document: 'Goudge, H. & Morris, E.S. 2010. Summary of 2010 Seagrass Surveys in Long Oar Bay, Pembrokeshire. CCW Marine Monitoring Interim Report'. Seasearchers on board also completed Seasearch forms to augment the mapping exercise undertaken. Thank you to all those who participated. Unfortunately two other CCW volunteer weekends were cancelled due to bad weather.

Carpet Mussel, *Musculus discors*, reefs in North Wales

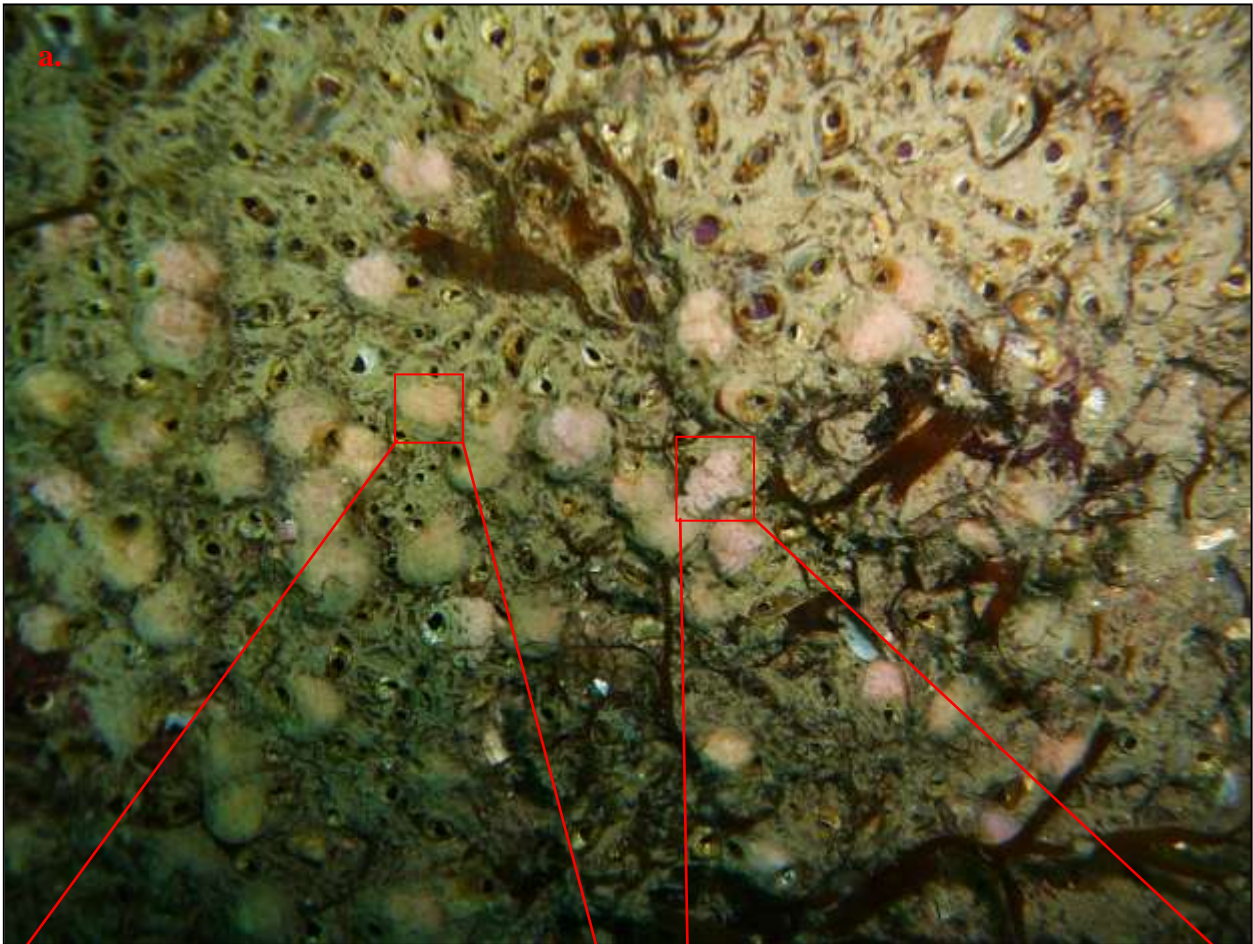
Sites around the North Llŷn coast were identified by the Countryside Council for Wales with an interest in revisiting old *Musculus discors* reefs. We aimed to confirm their continued presence, or to identify new reefs in areas predicted by the CCW HABMAP model. 8 stations were visited at four sites, 4 stations of which confirmed the presence of live *Musculus discors* reefs at 2 sites. Both sites were those predicted by the HABMAP model and covered over 0.25 miles surveyed using drift dives. *Musculus discors* reef was also confirmed at a third site, west of Church Bay on north Anglesey (right), which was first identified during MNCR surveys of the late 1990s.



An approximate count of a sample comprising 10x10cm of the reef confirmed 632 live individuals, which extrapolates up to 63,200 *Musculus discors* individuals per m²! The reefs overlaid boulder and bedrock reef, sometimes consolidating areas of gravel between boulders. The reef appeared healthy, with at least two size classes of live *Musculus* in the samples, some of which showed what appear to be larval sacs (see photos

below). *Musculus* is an interesting marine mollusc, as the species has 'crawling' larvae which are thought to settle around the reef, rather than most marine invertebrates which disperse widely through the plankton.

Carpet mussel *Musculus discors* reefs brooding larval 'sacs'. b) and c) close-ups of larval sacs. Photographed off the North Llyn Peninsula in September 2010.



Training and Data

Training Courses

The following training courses were run in 2010:

date	Course type	location	Tutor(s)	Participants
17 th April	Observer	Bangor	Liz Morris	17
24 th -25 th April	Observer	Marloes, Pembrokeshire	Kate Lock	8
24 th -25 th April	Observer	Rhyl	Harry Goudge	13
15 th -16 th May	Surveyor	Mathry, Pembrokeshire	Jen Jones	6
21 st May	Surveyor (fast track)	Menai Bridge	Jen Jones	16
22 nd -23 rd May	Marine Life ID	Menai Bridge	Rohan Holt & Jen Jones	17
19 th -20 th June	Nudibranch ID	Marloes, Pembrokeshire	Bernard Picton, Jen Jones & Kate Lock	
25 th -26 th September	Observer	Marloes, Pembrokeshire	Jen Jones	10



There were training dives associated with the Observer and Surveyor courses. This included one day of Seasearch Observer training dives run at two beaches (Newry Beach and Cemlyn Bay both on Anglesey) which was an opportunity for new and old Seasearchers to get together, inspire each other and sign off their Seasearch qualification logbooks. 38 people attended this Seasearch refresher/training day.

North Wales also organised and ran a 3 day 'Fast-track Surveyor and Marine Life ID course'. This was aimed at UK divers who had previous experience of subtidal marine survey (possibly abroad or on specific research projects) who wanted to fast track to the complete Survey Forms. This course was popular, although difficult to get people to commit their money to (thought to be a combination of the fact they were students and that the weekend clashed with Radio 1's Big Weekend locally). In the end it was well subscribed, with 16 people attending the full course, and 1 more attending only the 2 marine ID day element.

Qualifications

During 2010 14 divers who had trained and carry out their Seasearching in Wales achieved the Seasearch observer Qualification and 2 the Seasearch Surveyor qualification. They were:

Observers: Phil Hart, Sarah Peters, Steve Parkinson, Lucy Phillips, Louise Bebb, Dylan Jones, Janine Gartshore, Louise Stevens, Paul Slater, Fiona Henderson, Morag Gordon, Ed Male, Brian Pentland and Axelle Jorcin.

Surveyors: Mandy Knott and Richard Yorke.
Congratulations to them all.



Independent Seasearch recording

A potentially worrying fact is that the huge majority of the data received in Wales is a direct result of 50% funded, organised Seasearch events (92% of forms in North Wales in 2010). This is good, as it means records are from more unusual targeted sites, rather than merely from popular dive sites. However, the very low number of records from independent dives means that, should funding ever be lost, the flow of new data would virtually cease. To try to redress this coordinators and tutors will actively encourage surveyors to fill out forms on their own dives, and to dive away from popular dive sites. In North Wales we are concentrating on dive clubs that dive regularly in the area to try and encourage them to complete forms from the sites that they regularly visit.

In a further attempt to encourage the submission of forms from independent dives one day's free diving was awarded to Wendy Northway as '2010's Most dedicated North Wales Independent Seasearcher'. Another prize was awarded to Richard Yorke who was named '2010's Most dedicated North Wales Seasearcher', to acknowledge his dedication to Seasearch around the country and assistance at Seasearch training events in North Wales.

In 2011 we aim to put on more weekends organised diving to facilitate new Seasearchers getting out on boats and assisting clubs to Seasearch by placing a tutor or experienced Seasearcher on board. As a result we hope that both the number of regular Seasearchers and independent records in the region will increase.

Acknowledgements

Many thanks to all the Seasearch volunteers and skippers that have taken part and supported Seasearch during the 2010 season. Jen Jones and Scott Tompsett for Seasearch project support in south and west Wales; and Kirsten Ramsay, Rohan Holt, Lucy Kay, Harry Goudge, Mandy Knott, Ruth Sharratt and Richard Yorke in North Wales.

Photo credits: Richard West: Front page, red algae, pink seafan and white hedgehog nudibranch. Blaise Bullimore: Grey triggerfish, scenic reef and octopus. David Kipling: Nudibranchs *Coryphella browni*, *Trapania pallida* and *Lomanotus genii*, sponges and oaten pipe hydroid, cloaked anemone, hermit crab, native oysters and dahlia anemone. Paul Kay: group photo taken on *Musculus* survey, Sept 2010, North Wales Seasearch summary; the yellow cluster anemone *Parazoanthus axinellae* at Cluster Cwm, Bardsey Island; the abundant polychaete *Ophiodromus flexuosus* and clingfish on computer, near the Sunderland wreck, Tremadog Bay; cheeky camouflaged *Inachus* in the Menai Strait; the rare anemone *Halcapa chrysanthellum* at Dulas Bay. Liz Morris: Dig's dream day, Seasearching ladies off Rhoscolyn Beacon; *Sagartia* on a Rhoscolyn pinnacle; *Musculus discors* brooding larval sacs; Fast track Surveyor Course. Paul Holmes: Mussels on hermit crab; Mussels everywhere at Carreg y Trai; *Musculus* off North Anglesey. Ruth Sharratt: Nudibranch, *Crimora papillata* off Bardsey; Peter Griffin: Greater Pipefish in seagrass off Caer Arianhod. Dylan Jones: Octopus off Trefor

Seasearch is a volunteer underwater survey project for recreational divers who wish to contribute to conserving the marine environment.

Financial support for the project during 2010 has been given by:



Appendix 1

Records of Marine Species and Habitats 'of Principal Importance for Conservation of Biological Diversity' in Wales, December 2007 (Welsh BAP Species)

Section 42/Wales BAP: Marine Habitats		2010 Seasearch records
Seagrass beds	SS.SMp.SSgr	2 records from Caer Arianhod, Gwynedd (2) and Milford Haven (1)
Tide-swept channels	CR.MCR.CFaVS.CuSpH CR.MCR.CFaVS.CuSpH.VS	8 records from Daugleddau, Milford Haven
Subtidal sands and gravels	SS.SSa, SS.SMx	Many records from all areas
<i>Musculus discors</i> beds	CR.MCR.CMus.Mdis	7 records from N Llyn (4) and NW Anglesey (3)
Blue mussel beds	SS.SBr.SMus.MytSS, CR.MCR.CMus.CMyt	9 records from N Llyn* (1), Sarn Cynfelyn, Aberystwyth (4), St Brides Bay (2), S Pembrokeshire (1) and Tenby/Caldey Island (1) 14 records from SW Anglesey* (2), Skomer MNR (2), S Pembrokeshire (2) and Tenby/Caldey Island (8) *Juvenile beds which may or may not establish

Section 42/Wales BAP: Marine Fish		2010 Seasearch records
<i>Ammodytes marinus</i>	Sandeel	2 records of <i>Ammodytes</i> from S Llyn Peninsula and Caldey Island, Pembrokeshire. Neither identified to species
<i>Gadus morhua</i>	Cod	2 records from Great Orme Head and Woolhouse Rock, Pembrokeshire.
<i>Pleuronectes platessa</i>	Plaice	11 records from Menai Strait (1), North Llyn (3), South Llyn (1), Sarn Cynfelyn, Aberystwyth (2), Milford Haven (1) Manorbier, S. Pembrokeshire (2), Caldey Island, Pembrokeshire (2)
<i>Raja clavata</i>	Thornback Ray	2 records from North Cardigan Bay and Milford Haven
<i>Solea vulgaris</i>	Sole	2 records (of <i>Solea solea</i>) from South Llyn Peninsula and Caldey Island, Pembrokeshire
<i>Merlangius merlangus</i>	Whiting	1 record from Martin's Haven, Pembrokeshire
<i>Lophius piscatorius</i>	Sea Monkfish	1 record from Caldey Island, Pembrokeshire

Section 42/Wales BAP: Marine Invertebrates		2010 Seasearch records
<i>Haliclystus auricula</i>	Stalked Jellyfish	1 record from Stackpole Quay, Pembrokeshire
<i>Eunicella verrucosa</i>	Pink Sea -fan	8 records from North Pembrokeshire (1), St Brides Bay (1) and Skomer MNR (6)
<i>Arctica islandica</i>	Icelandic Cyprine or Ocean Quahog	3 records from North Cardigan Bay (2) and Milford Haven (1)
<i>Ostrea edulis</i>	Native Oyster	21 records from Menai Strait (1), South Llyn (1) and Milford Haven (19)
<i>Palinurus elephas</i>	Crayfish, Crawfish or Spiny Lobster	10 records from Skomer MNR(9) and Milford Haven (1)

Records of other Nationally Scarce or Rare Species as defined by the Joint Nature Conservation Committee (JNCC)

N.B. This list has not been revised for some years and does not include some recently identified species or any fishes

Species			2010 Seasearch records
<i>Thymosia guernei</i>	S	Mashed potato sponge	1 record from North Pembrokeshire
<i>Axinella damicornis</i>	S	Crumpled duster sponge	7 records from S Llyn (1), Ramsey Island (1), Skomer MNR (4) and S Pembrokeshire (1)
<i>Tethyspira spinosa</i>	S		2 records from N Llyn & Skomer MNR
<i>Eunicella verrucosa</i>	S	Pink sea fan	9 records from N Pembrokeshire (1), St Brides Bay (1) & Skomer MNR (7)
<i>Parazoanthus axinellae</i>	S	Yellow cluster anemone	4 records from Bardsey Island (2) & Skomer MNR (2)
<i>Aiptasia mutabilis</i>	S	Trumpet anemone	1 record from S Pembrokeshire
<i>Balanophyllia regia</i>	S	Scarlet and gold star coral	2 records from Skomer MNR
<i>Dromia personata</i>	S	Sponge crab	1 record from S Pembrokeshire
<i>Trapania pallida</i>	S		1 record from Skomer MNR
<i>Thecacera pennigera</i>	S		1 record from Skomer MNR

Some nudibranch records from Skomer have been entered into the MNR database and do not appear in the Seasearch records, from which the table above is derived.