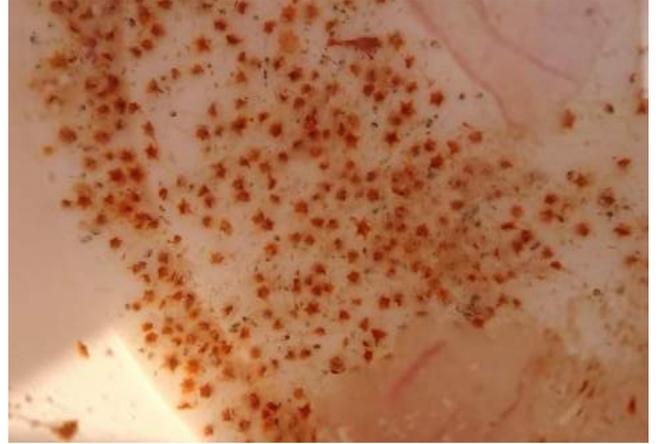


South-West Marine Ecosystems

Report 2018



Catches and observations of blue sharks were high in 2018. Here, a blue shark (*Prionace glauca*) offshore of south-west Cornwall on 25th July. Keith Hiscock.



Late summer and into the autumn, often enormous numbers of starfish (*Luideia* spp) larvae in the surface waters offshore. Here on the plankton net from MBA Sepia on 1st October. Rachel Brittain.



Common octopus (*Octopus vulgaris*) were seen in several locations although never in any numbers. Here, east of Plymouth on 6th August. Barry-Lee Millership.



Towards the end of the year, There were strandings in the Isles of Scilly of salps including this one with the predatory crustacean *Phronima sedentaria*. Nikki Banfield.

Edited by Keith Hiscock & Bob Earll

Lead section editors:

**Tim Smyth, Peter Miller, Angus Atkinson, Keith Hiscock, Doug Herdson,
Sue Sayer, Alex Banks, Dan Jarvis, Duncan Jones, Sarah Clark, Claire Wallerstein
& Delia Webb, Richard White**

2. Objectives of the South West Marine Ecosystems Conference

The objectives of SWME were updated following delegate feedback from SWME 2017 conference and are as follows:

1. **Networking** Through the conferences, website and mailings, to provide a networking opportunity for a wide cross section of people to meet, exchange views and build networks for the south-west's marine ecosystems in order to:

- Provide active support for existing networks enabling and building citizen science projects;
- To encourage collaboration between users, researchers/scientists and managers/policy makers;
- Encourage links between researchers on science projects throughout the region's seas (e.g. the English Channel, Bristol Channel, Celtic Seas and the wider Atlantic Ocean).

2. **Annual Events & Recording** To use the annual conference to record observation on ecological and oceanographic events of the previous year that have affected the south west marine ecosystems and to make the linkages between environmental and biological phenomena. To publish these observations annually. To promote the recording of observations through the year and ongoing regional and national marine recording projects through the SWME website.

3. **Ecology of marine species** To promote research studies that focus on the ecology of marine species, planktonic, benthic and 'mobile' species (fish, birds, mammals, turtles) and the ecosystem that supports them. To understand the status of populations of marine species in the region's seas and how they are responding to environmental and anthropogenic pressures. To enable stories to be told about the ecology of our common species, their distribution, movements and numbers, and importantly to highlight the gaps in our knowledge.

4. **Management of south west marine ecosystems** To encourage strong relationships between policy makers and scientists; to promote science and the evidence base that underpins management of human activities in the coastal and marine environment with a view to supporting and promoting the health of south west's marine ecosystems.

5. **Marine Education and Outreach** To highlight marine education and outreach programmes in the south west. To support the development of new programmes that promote marine management and make use of marine science. To promote good practice in environmental education, interpretation, signage and outreach.

...and to come together to celebrate being part of the South West Marine Ecosystem.

South West Marine Ecosystems Annual Report 2017

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4. Objectives of the South West marine Ecosystems Annual Reports

Why produce the South West Marine Ecosystems annual report?

The overall purpose of the report supports the objectives of the conference: collecting observations, supporting recording and science, helping to build networks and providing feedback to everyone involved in order to make a difference in protecting and managing our marine environment. A detailed breakdown of reasons includes:

1. **Describing 'normal' patterns of events** e.g. the oceanographic and planktonic systems
2. **Marking major events and their effects** e.g. the major winter storms of 2013-14.
3. **Highlighting significant ecological and population changes** including:
 - **Trends** e.g. the increase in seabirds on islands after rat control and blooms of barrel jellyfish.
 - **Good years & bad years – relative status - trends** For species like jellyfish e.g. basking sharks, sunfish, bottlenose dolphins
 - **Noting new records for the south-west**
 - **Recording recovery** e.g. recruitment of spiny lobsters (crawfish) after an absence of c. 40 years.
4. **Highlighting Remarkable sightings** e.g. Bowhead whale, Cornwall in 2016 or the Dalmatian pelican.
5. **Acting to focus interest** Publishing provides a focus for further research, year on year e.g. tuna, spiny lobster, bottlenose dolphins.
6. **Posing questions and exploring interactions – making the links** between environmental, species, habitat and management changes
7. **Telling stories about what we know and providing access – education & outreach**
8. **Making a difference – managing human activities** e.g. wildlife entanglement, fisheries for crawfish or wrasse, the spatial allocation for developments or protected areas, acting on plastics.

The talk will illustrate these points from the SWME annual reports for 2014, 2015, 2016 & 2017 which can be accessed from the SWME website <http://swmecosystems.co.uk/annual-reports>

Annual South West Marine Ecosystems Report 2018

A collation of presentations made, observations reported at the South-West Marine Ecosystems meeting on 12th April 2019 and supplementary material.

5. Introduction

Bob Earll & Keith Hiscock

Contact: bob.earll@coastms.co.uk & khis@mba.ac.uk

This is the fifth in the series of annual reports on the observations of species, ecology and ecosystems for a specific year. Understanding these elements has been at the core of the SWME meetings since its outset. The purpose of the report is to support the objectives that have underpinned the conference but we have also refined the objectives of the report – see below.

As editors we would like to thank the section editors and all the people who have contributed their observations, views and images.

This is a great collaboration illustrating how we can all learn more from working together. This idea of collaboration is illustrated in many parts of this report but it will also be invaluable in answering the various questions arising from the SWME meetings and this report. It is our policy with the work on this report to get as many people involved as possible.

We have 'tidied' the layout of the report a bit more since last year but there is still 'uneven-ness' in style and layout so some improvements continue to be needed!

We are aware that many recorders submit their observations to established reporting schemes but also that some 'casual' observations that we harvest and that may be important need to be submitted to such schemes and/or presented in a way that can be found into the future. Often the observations are broadly-based (no precise location etc.) and we are working with The Archive for Marine Species and Habitats (DASSH) at the Marine Biological Association to establish a protocol to enter data and information.

We know that climate and weather events determine much that we see in the routine observations of marine life in anyone year and 2018 was remarkable in several respects. There were a high number of named storms during 2018 that hit the south-west over the winter of 2017 -18 resulting in a record high number of call outs to BDMLR, CSS and RSPCA to deal with seal pups three times higher in Jan-Feb 2018. The so-called 'Beast from the east', an extreme cold snap at the end of Feb-early March caused mass strandings of marine life in the Channel & North Sea coasts but the south-west was not badly affected. Storm Emma from the east in March caused significant damage to the shallow seabed recorded in Lyme Bay through routine monitoring by Plymouth University. It also washed away a significant part of the Slapton main road. Then, from the end of June to August there was a period of astonishing calm and sunny weather ('summer') where sea surface temperatures rose to 20C and in some places above. The clarity of the water was often reported by divers. We are still working on how best we record these weather events and link them to our observations of marine life.

6. Oceanography background conditions – Western Channel Observatory

Tim Smyth

Plymouth Marine Laboratory

tjism@pml.ac.uk



Figure 6.1. Stations of the Western Channel Observatory

The Western Channel Observatory (WCO) is an oceanographic time-series and marine biodiversity reference site in the Western English Channel (Figure). In situ measurements are undertaken weekly at coastal station L4 and fortnightly at open shelf station E1 using the research vessels of the Plymouth Marine Laboratory and the Marine Biological Association. These measurements are complemented by PML's recognised excellence in ecosystem modelling and satellite remote sensing science. By integrating these different observational disciplines we can begin to disentangle the complexity of the marine ecosystem. The WCO measures several key parameters important to the functioning of the marine ecosystem such as light, temperature, salinity and nutrients. Station L4 has some of the longest time-series in the world for zooplankton and phytoplankton, and fish trawls have been made by the MBA for a century. Station E1 has a hydrographic series dating from 1903. These long series are complemented by hourly measurements made at autonomous buoys situated at both stations. These can elucidate changes not captured by the routine weekly sampling.

Overall conditions for the year – 2018

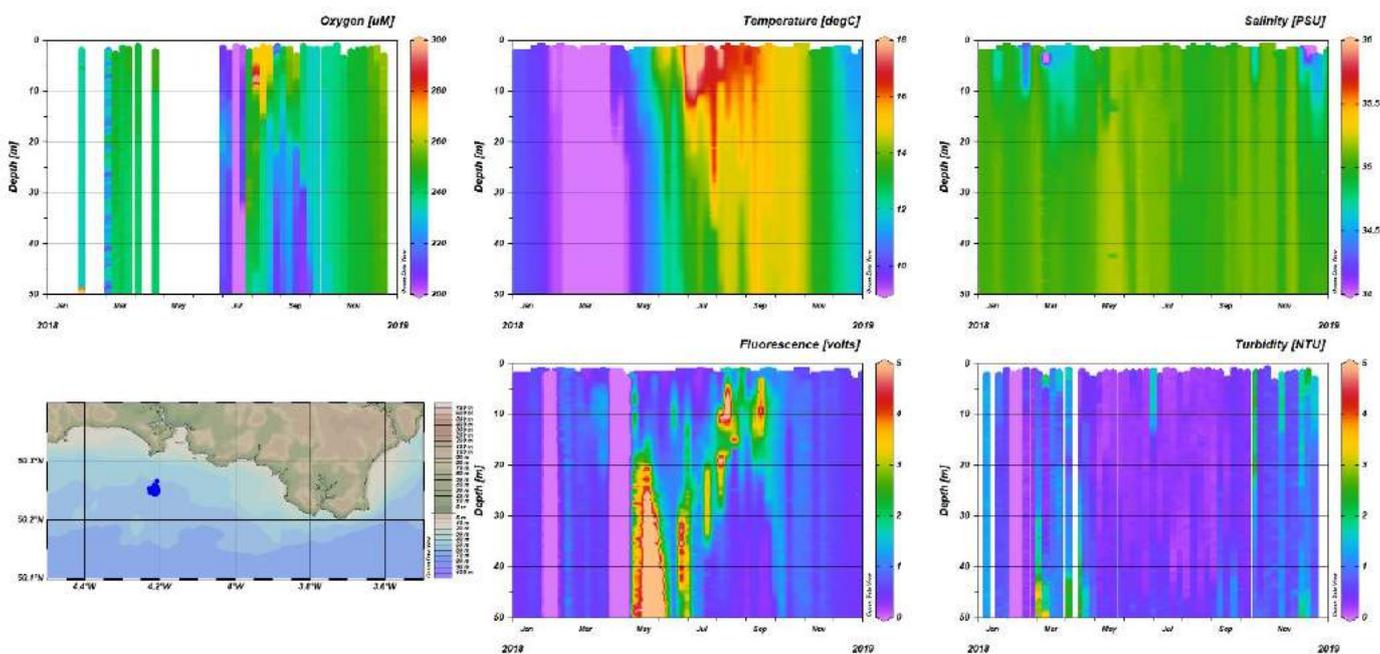


Fig. 6.1. Conditions throughout the water column at station L4 during 2018 from individual profiles taken using a rosette sampler with multi-parameter “CTD”, deployed from the RV Plymouth Quest.

Vertical profiles for multiple parameters are taken using the RV Plymouth Quest on a weekly basis at station L4 (Fig. 6.1). This is at fine enough resolution to observe the start of the thermal stratification of the water column in spring (April) and the breakdown in autumn (September). Very warm ($>19^{\circ}\text{C}$) temperatures were observed in the surface layer (top 10 m) during July following a late, cold start to the season in March (7.8°C on 20 March). Several surface freshening events (see salinity plot) were observed in 2018 as a decrease in salinity below the background value of 35.2 PSU. These were particularly marked in January – March and December. The oxygen sensor required frequent calibration during 2018 due to technical problems however from the record available the maximum in the oxygen was during August ($>280\ \mu\text{M}$), with an oxygen minimum ($\sim 200\ \mu\text{M}$) following the autumn bloom in September at depths $>30\text{m}$. The fluorescence signal shows a vertical “seasonal migration” of the phytoplankton bloom from lower in the water column ($>30\text{m}$) in May (spring bloom) to around 10m as a subsurface chlorophyll maximum by August. The turbidity sensor shows some evidence of higher turbidities being mixed up from the sea-floor during March, with some elevated levels in the early winter (Nov/Dec) due to riverine inputs.

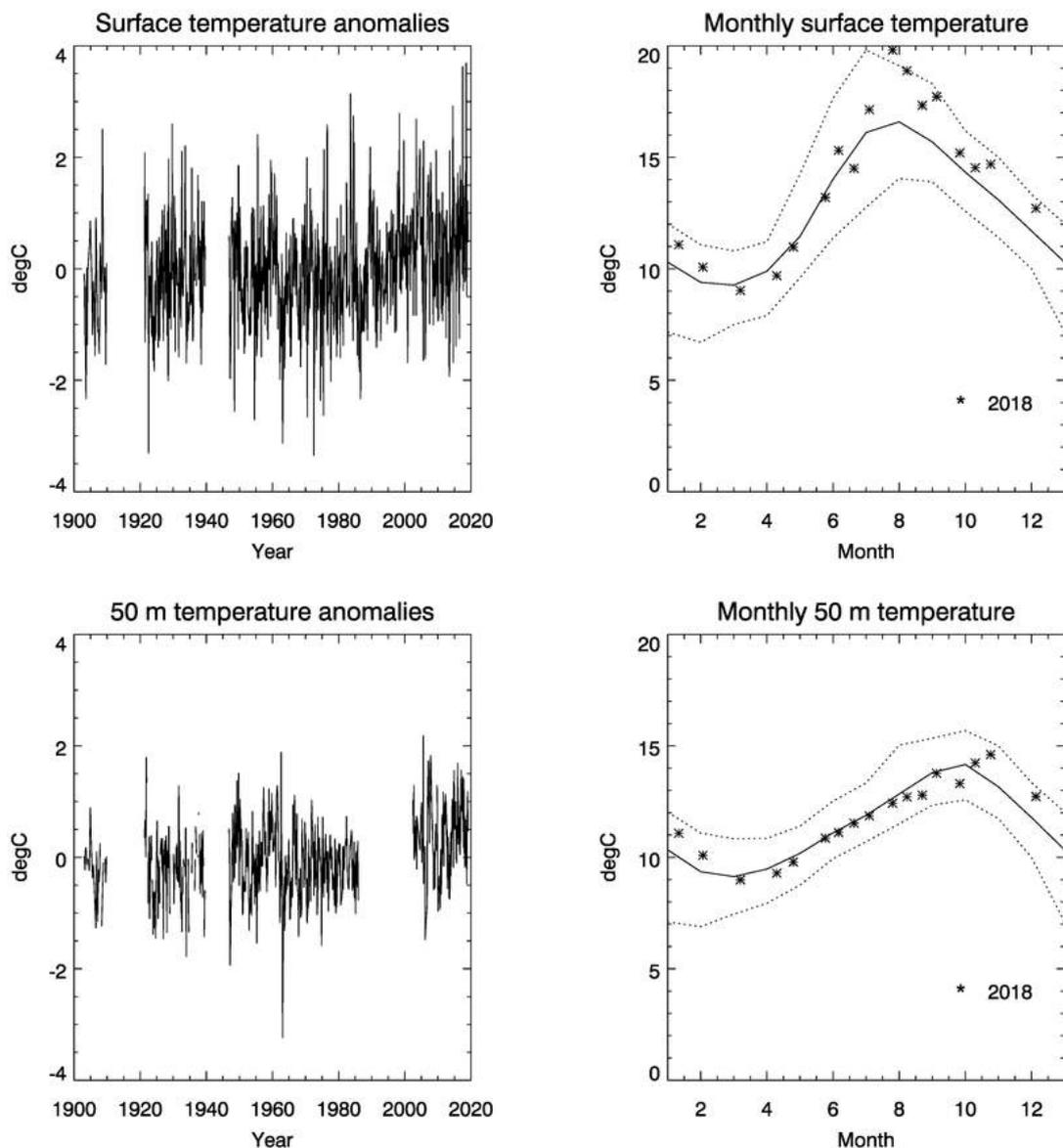


Fig. 6.3. E1 temperature time-series and anomaly analysis. Solid lines show mean monthly temperatures, with dashed lines giving the standard deviation around the mean. Asterisks represent individual observations (17) made by the RV Plymouth Quest.

Figure 6.3 shows the temperature time-series anomalies made at station E1, which is one of the longest hydrographic series in the world. At the surface, E1 started 2018 slightly above average and quickly became cooler during the “beast from the East”. July 2018 was very warm, with some of the highest temperatures recorded in the series (approaching 20°C); this warmth then persisted for the remainder of the year. At 50m, temperatures were for long periods around the series mean.

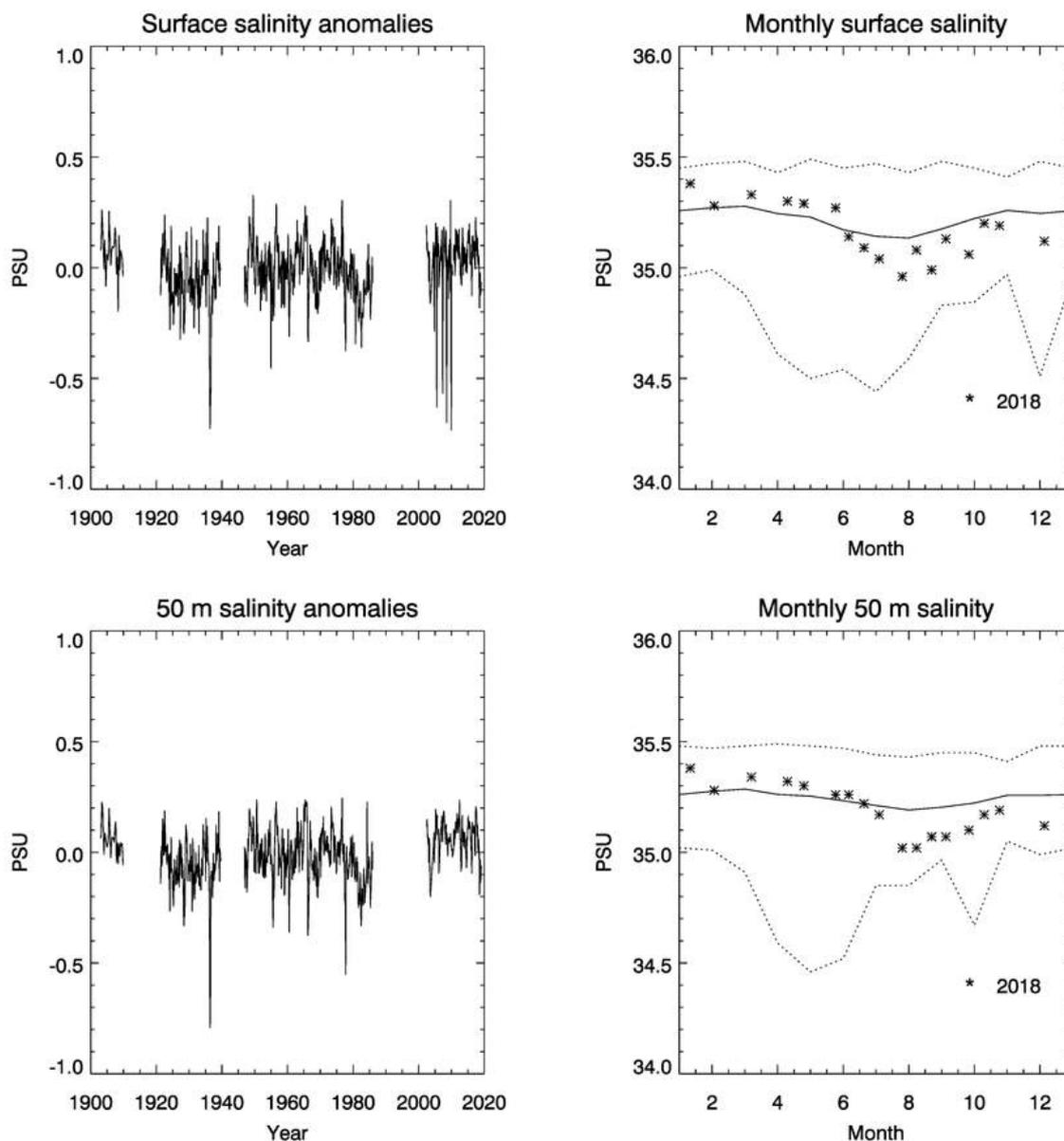


Fig. 6.4. E1 salinity time-series and anomaly analysis. Solid lines show mean salinity, with dashed lines giving the standard deviation around the mean. Asterisks represent individual observations (17) made by the RV Plymouth Quest.

Figure 6.4 shows the salinity time-series made using the CTD profiler at station E1. For the first 5 months of 2018 the waters were at or slightly above the long-term mean salinity. However, during the summer months there was a rapid decrease in salinity ~ 0.2 PSU throughout the water column. At first this seemed counter-intuitive as it had been a warm summer with little in the way of local precipitation. However, upon further investigation we now attribute this dramatic freshening to heavy thundery rainfall in France during the summer of 2018 which led to large fluvial outflows from the Loire and Gironde estuaries which then advected to the western English Channel over a period of 40 – 60 days.

7. Plankton Observations

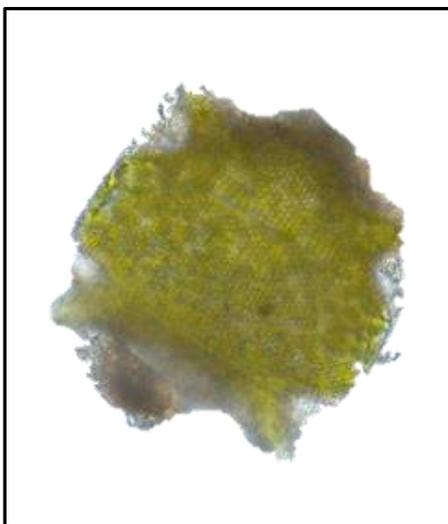
Angus Atkinson, Andrea McEvoy, Claire Widdicombe & Keith Hiscock

Contact person: Angus Atkinson aat@pml.ac.uk

This section is divided into two parts. Part A describes the weekly plankton monitoring at the Plymouth L4 site, 13 km SSW of Plymouth, at 54 m water depth, placing the 2018 results in the context of the last 30 years <http://www.westernchannelobservatory.org.uk/>. Part B provides a good complement to these data, describing the month-to-month chronology of the remaining observations around the West Country that have been reported at the 2019 SWME Conference and/or compiled in the 2018 monthly log by Richard White. These provide wider geographical coverage and observations of large plankton such as jellyfish that are poorly sampled at L4.

A. Summary of the plankton at L4 during 2018

Phytoplankton



Winter storms characterised the start of the year and the associated turbulence brought benthic taxa e.g. *Odontella aurita* and numerous foraminifera up into the water column.

Fig. 7.1 The diatom *Odontella aurita* is regarded as more benthic than pelagic but is occasionally found in the water column at Station L4 following storm events. Image: Claire Widdicombe

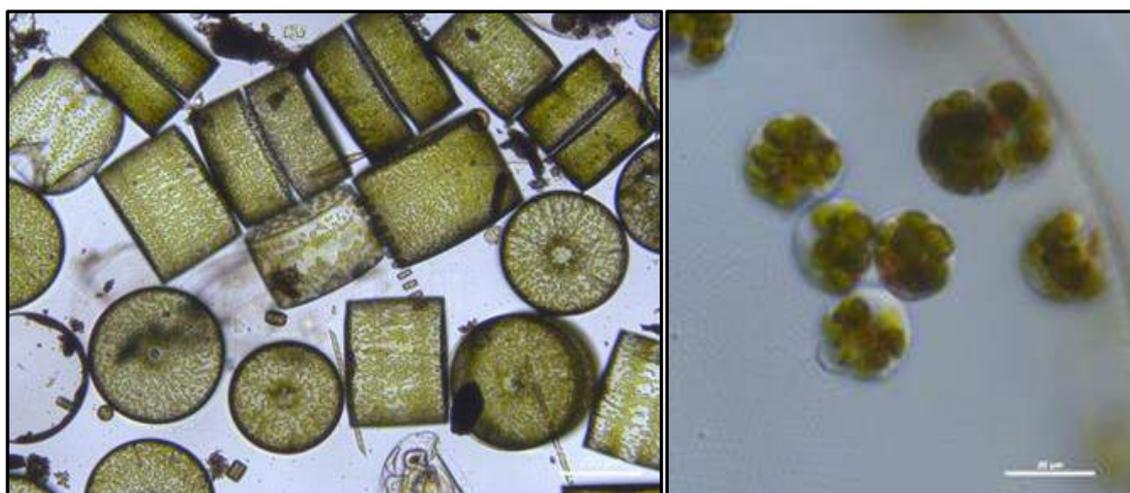
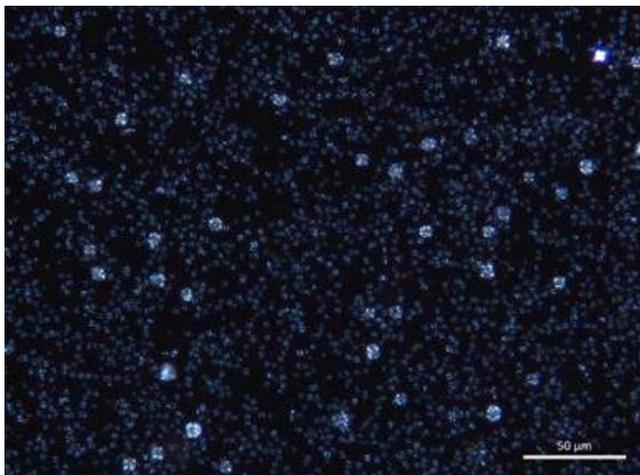


Fig. 7.2. *Coscinodiscus wailesaii* was introduced into the North Atlantic in 1970's and has since become a common species. Although non-toxic it is considered a nuisance when it forms these dense blooms due to the production of copious amounts of mucilage and due to its large size it is inedible to most grazing zooplankton.

An increase in copepod faecal pellets in April suggested the zooplankton were pre-empting the spring bloom which eventually gained momentum in April and was dominated by *Phaeocystis* with a rapidly-changing succession of diatoms. By May, satellite images showed the bloom was waning offshore while high chlorophyll persisted close to the coast. During this time *Phaeocystis* colonies sank out of the water column and were replaced by diatoms such as *Pseudo-nitzschia* and *Leptocylindrus*. The warm, settled weather favoured the growth of coccolithophores and numbers of *Emiliana huxleyi* reached record levels in July (>4,850,000 per litre near L4). Whole cells and individual liths were observed within several ciliates and dinoflagellates, suggesting the *E. huxleyi* bloom was being actively grazed by the microzooplankton.



In late summer, dinoflagellates thrived in the warm sea temperatures, including *Karenia mikimotoi* (a possible toxin-producer) which reached cell concentrations of 50,000 cells per litre and the smaller *Prorocentrum minimum* (also a possible toxin-producer) which peaked at 800,000 per litre. *Noctiluca scintillans*, also known as sea sparkle due to its ability to bioluminesce, was common in net samples until the autumn. The characteristic autumn bloom, dominated by diverse diatom and coccolithophore taxa, persisted until November when the phytoplankton community returned to the typical winter composition.

Fig. 7.3. Microscope image of the *Emiliana huxleyi* coccolithophore bloom recorded on the 3rd July, 2018

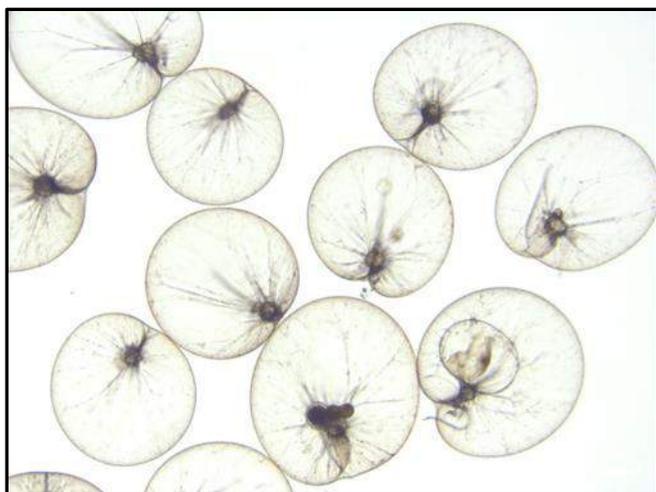


Fig. 7.4. The bioluminescent dinoflagellate *Noctiluca scintillans* usually forms in a thin layer (a few cm) during summer months and can produce red colouration of the sea when in high-enough concentrations.

Zooplankton

The advantage of the L4 zooplankton sampling is that it has been done consistently and with weekly resolution for the last 30 years. This helps to put the results from any single year into the longer term context. Thus a feature that we have been observing over the last few years has been the decline in several of the dominant copepods (see last year's 2017 report). This is important as this group of small crustaceans are the numerical and biomass dominants of the plankton around the UK and are nutritious forming, for example, a key part of the diet of a range of fish.

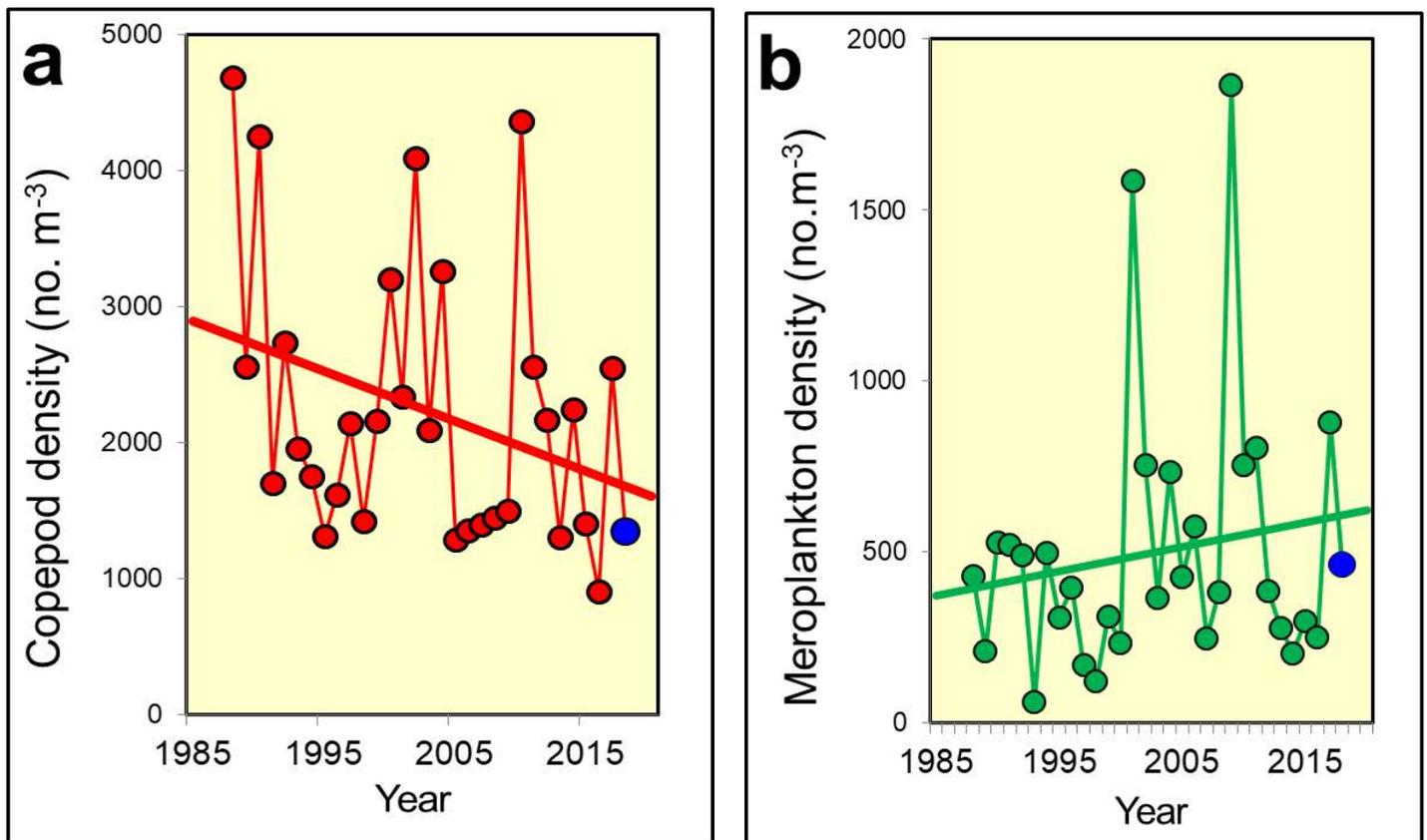


Fig. 7.5. Mean annual summer (June to September) abundance of two major groups of plankton, **a.** Copepods and **b.** The major meroplankton (i.e. pelagic larvae of the seabed-dwelling groups, here including solely barnacles, molluscs, bryozoans, decapods, echinoderms plus polychaetes). The results represent the last 30 years of summer mean average values, with the 2018 summer in blue. The trend line is simply a linear regression line of best fit to the data.

Fig. 7.5 shows that the declines are particularly noticeable in the summer months and are paralleled by a general increase in the meroplankton – the pelagic larvae of seabed dwelling species. The results of 2018 (i.e. blue points in Fig. 7.5) seem to fit this longer term pattern, albeit with large inter-annual variability. These trends appear to be more widespread across UK waters and in conjunction with scientists from MBA, University of Plymouth we are currently investigating their cause. Among the copepods, the relatively large (2-3 mm) species *Calanus helgolandicus* is an important copepod in the food web as it is a dominant zooplankton grazer as well as being a major prey item for higher trophic levels such as fish. In recent years the numbers found at our sampling site L4 are becoming lower in the summer months (**Fig. 7.6**), coincident with the trend in total copepods in **Fig 7.5**. The year 2018 showed this same pattern. Not only did we struggle to find adult females between May and August for our weekly egg production experiments but our time series also recorded low numbers during the summer.

The closely related *Calanus finmarchicus* is a species more common to the colder waters of the North Atlantic. This was found on three occasions during 2018, on Feb 2nd, Feb 19th and March 12th.

Because of the rarity of *Calanus*, we have been using a larger (1m square) net to supplement numbers for the egg production experiments. In early June this larger net captured a large number of fish larvae as well as the Ctenophore *Pleurobrachia pileus*. At this time there were also very few copepods at either L4 or E1. By the middle of June more copepods were captured with the exception of *Calanus helgolandicus*. There was a tailing off of *Pleurobrachia pileus*. Cnidarians spotted in the live samples were *Cosmetira pilosella*, *Leukartiara octona*, *Aequorea* sp, *Cyanea capillata* (lion's mane) and *Chrysaora hysoscella* (compass jellyfish).

From the second week in August through to September high numbers of *Noctiluca scintillans* were found. This is a free-living dinoflagellate that can exhibit bioluminescence. When found in large numbers it appears as an orange colour floating at the surface. Numbers were also very high in early August in St. Austell Bay.

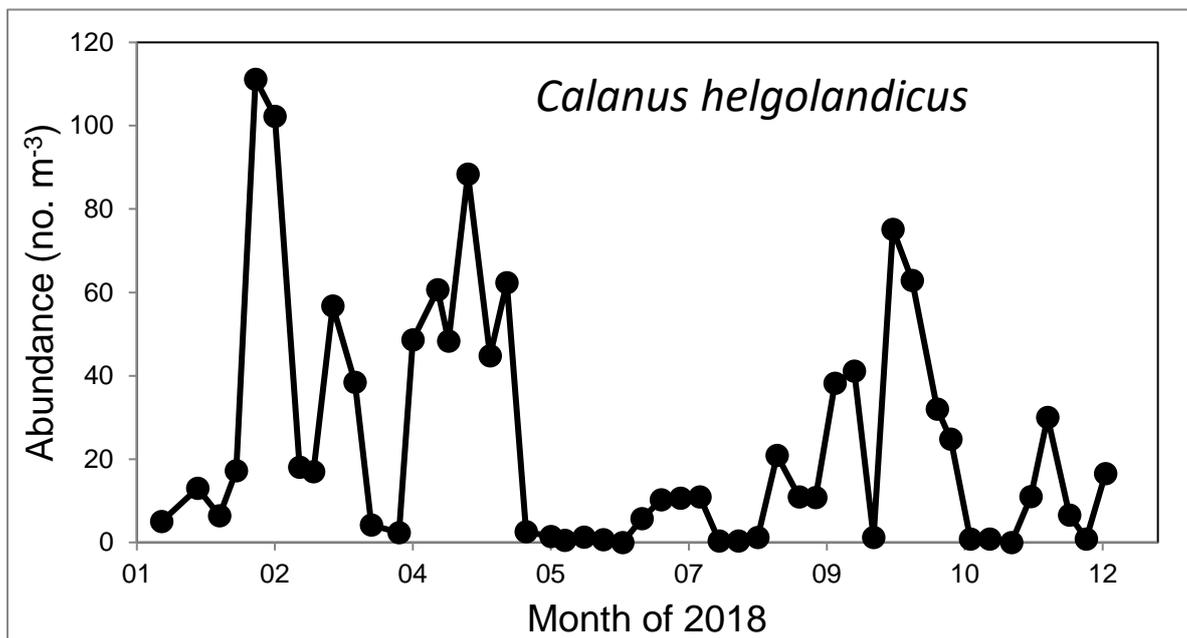


Fig. 7.6. Seasonal abundance of the large, dominant copepod *Calanus helgolandicus* at the L4 sampling site during 2018. Results are based on our standard monitoring using a pair of hauls of a 200 micron mesh, 57 cm diameter ring net hauled slowly to the surface from 50 m depth.

On August 28th high numbers of blue-tinged Doliolids were captured. By September 10th there were still quite a few but most were either dead or very shrivelled. Doliolids are able to asexually reproduce, this may account for their sudden appearance in high numbers.



Fig. 7.7. Larvae of the starfish genus *Luidia*. On the left, *L. sarsii* and, on the right, *L. ciliaris*. Image: Andrea McEvoy

From mid-September to November both *Luidia ciliaris* and *Luidia sarsii* were numerous in the plankton (**Fig. 7.7**). Both species develop as planktonic larvae. The gelatinous stalk has cilia which assist in swimming and create a feeding current. In the final stage (bipinnaria larvae) metamorphosis occurs in the plankton, the juvenile 'rudiment' or disk develops tube feet. At this point *L. ciliaris* resorbs the larval body before settling to the bottom, however *L. sarsii* detaches from the gelatinous section. The larval body can survive in the plankton for over a month while the juvenile sinks to the bottom to live. See also: **Compiled Observations throughout 2018**



On October 22nd the cladoceran *Penilia avirostris* were found (**Fig. 7.8**). They were last recorded at L4 in 2009. Dave Conway advised that they were probably brought here from the French Atlantic coast, or from ballast water. Due to the particular weather conditions it is possible that a small population may have bloomed here. They are capable of asexual reproduction which allows the population to expand rapidly. They persisted through October until early November. see also: **Compiled Observations throughout 2018**.

Compiled Observations throughout 2018

These observations are compiled *verbatim* from the 2018 monthly observations log and the observations reported at the 2019 SWME Conference.

General plankton observations (i.e. with no exact observation date reported)

- Nigel Mortimer. There was NO dinoflagellate bloom in Kingsbridge estuary creeks (last time in >20 yrs). Exeter University taking water samples in 2018.
- Niki Clear Cornwall Wildlife trust (CWT). Plankton ‘Swarms’ of bioluminescent plankton seen off Moenporth, Falmouth during winter months – similar levels to that seen in the late summer.
- Clare Marshall – clmarshall100@gmail.com Plankton *Noctiluca* blooms – Late summer off Plymouth Sound – contact her for more details clare.marshall@mba.ac.uk.
- Charlotte Bolton (Seasearch) Benthos – Oceanography Exceptionally good visibility early summer (later May – July) settled conditions leading to this – 20m+ Lyme Bay reefs with dense covering of ephemeral algae at 25m.
- Elizabeth Bailey Oceanography Blue jellyfish (*Cyanea*) Cawsand. Every year the predominant jellyfish species in the bay seems to change. In 2018 it seemed to be mostly blue jellyfish with occasional comb jellies

January 2018 – no plankton observations reported

February 2018 -no plankton observations reported

March 2018 -no plankton observations reported

April 2018 -no plankton observations reported

May 2018

- From Martin Lilley “There seem to be plenty of Barrel Jellyfish around at the moment (St Austell Bay, the Helford, Devil's Point in Plymouth) and there seems to be a dense yellow-brown plankton bloom to fuel their growth. Interestingly the water is clearer in Torbay”.
- A particularly prolonged and strong *Phaeocystis* bloom from mid-April through to mid-June

June 2018

- Sarah Fawkes Algal bloom In the warmer shallow water on the coast like a thick soup – June 2018 SWISE overlap? Hardcastle beach near Milford on Sea – I reported a similar thing to MCS in 2017.

July 2018 -no plankton observations reported

August 2018 -no plankton observations reported

September 2018 -no plankton observations reported

October 2018



Fig 7.9. 'From late September into October, there were very large numbers of *Luidea* (mostly *L. sarsi* it seems but some *L. ciliaris*) larvae in the plankton at shallow depths offshore of Plymouth at least and visible to divers decompressing. The image is from a standard haul from MBA Sepia on 4 October and shows larvae caught by the tow. The starfish were about 2 mm across and the associated gelatinous sheath of each one cannot be seen.' Image: Rachel Brittain

November 2018

New species of plankton recorded off Plymouth: *Penilia avirostris*. This small crustacean has recently been recorded for the first time off Plymouth. Typically native to warmer waters, it's likely to have been brought in by an influx of warm water + may have established a new local population [#MarineMonitoring](#) [#loveplankton](#) [@thembauk](#)

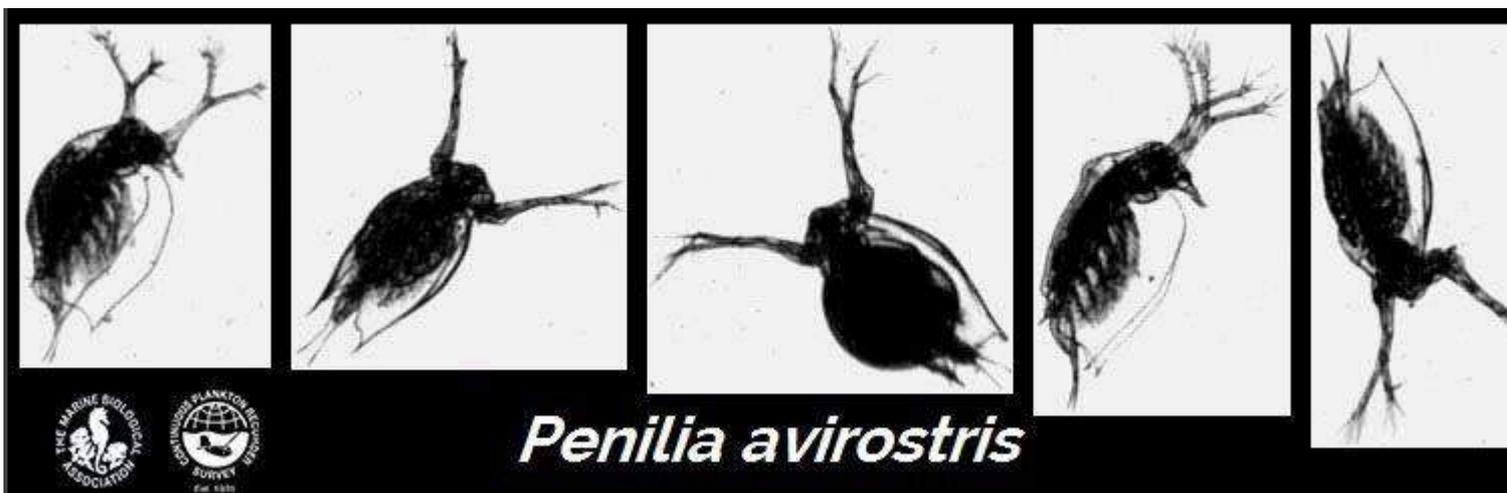


Fig. 7.10.

December 2018

- Nikki Benfield, Isles of Scilly Wildlife Trust. December 2018. Stranding of *Phronima sedentaria* in Barrel salps at Porth Hellick, Io Scilly followed by strandings in lower numbers including barrel salps with eggs.
- More salps (different species to November?) turning-up in the IoS with associated unusuals on and around the 20th.
- BareFootPhotographer (@BareFoot IOS) tweeted at 0:03 pm on Wed, Dec 26, 2018: The aliens have landed! *Phronima sedentaria* live in salps and we have a few washing up on Scilly's beaches at the moment. They are fascinating!?! <https://t.co/uifmk23tqH>. (edited)

8. The Seashore and Seabed

Editor: **Keith Hiscock and David Fenwick**

Contact: khis@mba.ac.uk

Overall, seashore and seabed marine life was much as in 2017.

Notable observations were sparse but, as in previous years, David Fenwick has made a large number of significant observations. Pacific oyster extent and numbers continue to rise and a separate section by Matt Slater has been included here describing observations and work being undertaken.



There were records of the Nationally rare hydroid *Candelabrum cocksii* at Wembury and at Lundy. Image: Dean Jones on 2 May – present under a quartz boulder. A particularly notable observation as the species has been recorded from only a few locations in south-west England. However, L.A. Harvey recorded it from kelp holdfasts (as *Myriothele cocksii*) from several shores at Lundy in the late 1940s. David Fenwick comments: "Most past records of *Candelabrum cocksii* were labelled as *C. phrygium* the NHM had the voucher specimens labelled incorrectly *Candelabrum cocksii* is often reported and confused with a deeper water species *C. phrygium*. According to Segonzac & Vervoort (1995) many misidentifications of *C. cocksii* in England may result from a publication by Cornelius (1977), which did not take into account earlier good descriptions of distinguishing characters (by Sars). *Candelabrum cocksii* is abundant in Mounts Bay."



Crawfish/spiny lobster (*Palinurus elephas*) recruitment appears to be continuing. This image is about 12 cm across and taken at Eastern King Point in Plymouth Sound on 28 June.



There were several observations of common octopus, *Octopus vulgaris*, but, notably, not the 'plagues' that were reported in 1900 and 1950 (Rees, W.R. and Lumby, J.C. 1954: JMBA 33, 515-536). For instance, Barry-Lee Millership along the Hilsea coast in early August (see cover) and caught by Rob King in Lyme Bay in a cuttlefish trap (image credited to @LymeBayReserve).

Geoff Huelin reports (7/7/18) high numbers of spiny spider crabs *Maja squinado* being caught in N. Devon.

David Fenwick reports:

2018 has been one of my most successful years for recording species and for a variety of reasons, but I also have to thank close friends for their help and company on the shore during this time, they know who they are.

Here goes for the weird and wonderful, the downright small and a few snippets of research.

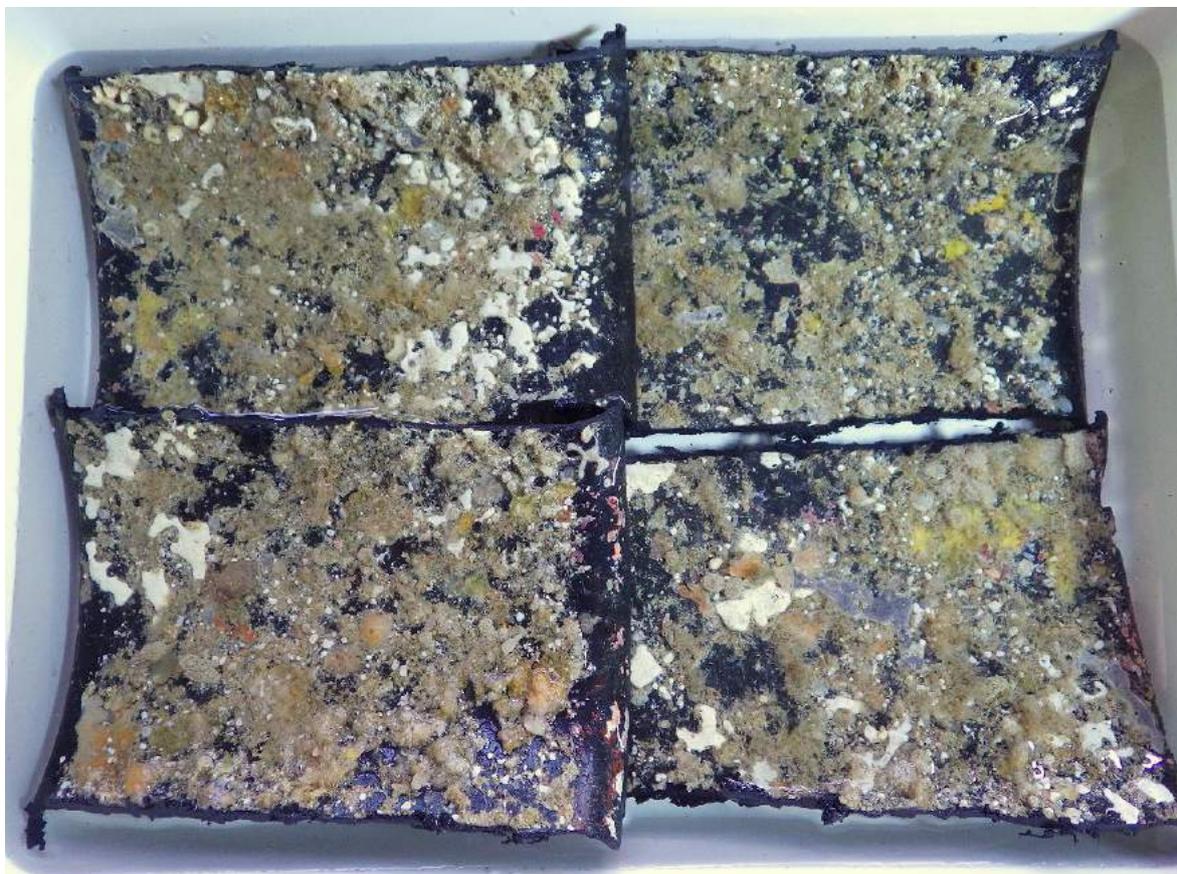
A diary of the best records of 2018:

(All photographs copyright David Fenwick: they may only be reproduced by written permission.)

Native species

18th January. Sennen Cove - On plastic lobster pot creel collar.

The plastic item had just washed-in and was cut up using a battery Dremmel and placed in containers of fresh seawater and then taken away for an inspection that took three days. 72 species were found including two rare species. Species on the plastic collar included the syllid worms *Virchowia clavata* and *Myrianida rubropunctata* and phyllidocid worm *Eulalia expusilla*, nemerteans *Vieitezia luzmurubeae* and *Tubulanus annulatus*, nudibranchs *Facelina annulicornis* and *Knoutsodonta depressa*, chiton *Callochiton septemvalvis*, Devonshire Cup Coral *Caryophyllia (Caryophyllia) smithii* and anemones *Sagartia elegans*, *Metridium dianthus* and *Corynactis viridis* were just some of the species amongst a wealth of bryozoans, tunicates and sponges. So much bad press is given to plastic and fishing gear in oceans but as rock it has the potential to form habitat that is equally as good if not better. So if you remove plastic from the sea I guess it's best to get it a good shake in a rockpool first as what you cannot see is often more important than what you can see.



'Fouling' on the inside of a stranded lobster pot. Sennen Cove on 18th January.

31st January. Hannafore

A three day visit to Hannafore, some of the more unusual species found included the nudibranch *Pruvotfolia pselliotes*, nemertean *Carcinonemertes carcinophila* from eggs under a dead female *Carcinus maenus*, the prawn *Caridion steveni*, polychaete *Dorvillea rubrovittata*, squat lobster *Galathea strigosa*, crab *Achaeus cranchii* and red parasitic algae *Gonimophyllum buffhamii*.

The flatworm *Oligocladus sanguinolentus* turned up in reasonable numbers in Mounts Bay early in 2018, a good year for the species and never known it to be so frequent.

17th October. Saltash.



Four examples of the ingolfiellidean *Ingolfiella britannica* turned up in samples of shell gravel from under the pillar of the railway bridge at Saltash. The only reason I was there was to do a follow-up on Keith Hiscock's polychaete records from the site from many years before. *Ingolfiella britannica* was first found in offshore shell gravels near the Eddystone Reef in 1959 by Spooner. What it is doing half way up the Tamar is anyone's guess. The specimens are being used to ascertain the links between Ingolfiellida and Amphipoda to ensure taxonomic validity.

Ingolfiella britannica

3rd April. Lariggan Rocks

Parasitic *Beggiatoa*-type bacteria on tentacles of the polychaete *Cirratulus*. The species is quite large at 200um and easily photographed using a compact digital camera. Specimens sent to France for DNA testing, as yet no data returned.

10th and 25th May. Newlyn

Beroe cucumis frequent and *Pleurobrachia pileus* (sea gooseberry) in very large numbers.

31st May. Newlyn

Doris cf *ocelligera* peaking in samples, 20-30 per day, *Tenellia adspersa* present and second *Calliopaea bellula* for the year found.

7th June. East Pier pontoon Hayle



High numbers of the flatworm, *Fecampia erythrocephala*, parasitizing adult *Palaemon* species.

Weed washing suspended at Newlyn Marina June 2018, too many juvenile nudibranchs to proceed, numbers of *Eubranchus* and *Polycera qualrilineata* in the thousands. Yes thousands!

Fecampia erythrocephala

10th August. Newlyn and local area

A red tide event of short duration occurred in Mounts Bay, dinoflagellate *Karenia mikimotoi* was found in seawater samples from the area and this was confirmed by the MBA. Crabs appeared to be the group of organisms that suffered the most.

31st August. Lariggan Rocks

One of the nicest things about being in Penzance is that you often get to look for records created by some of the top British Naturalists of the Victorian era. I'd found a text stating John Ralfs had seen *Gracilariopsis longissima* at the mouth of the river that comes out of Newlyn, so I decided to look for it to see if it was still in the area. Yes the species was still about and more towards Lariggan Rocks than the river mouth. Its parasite, the mistle-toe like red algae *Holmsella pachyderma* described later in 1926, was also present on the weed.

9th October. Godrevy Point

Nemertean *Tubulanus banyulensis*, syllid worm *Epigamia alexandri*, nudibranch *Thecacera pennigera*, and rare crab *Xaiva biguttata* were found in a lower shore pool. The *Xaiva* was found on sifting shell sand through the fingers whilst in the water, two toothed crabs were also found, the area of sand had been fish baited two hours before for the collection of *Tritia reticulata*. Also see alien species for *Cephalothrix simula* etc.

4th October Newlyn Marina

The nudibranch egg eating nudibranch *Favorinus blianus* identified at Newlyn for the first time, numbers increasing through the month. A number of fairy anemones, *Aiptasiogeton pellucidus* var. *comatus* were also found on mussels.

September and October - The heterobranch *Runcina ferruginea* found in samples across Mounts Bay, from Newlyn to Long Rock.

9th October Long Rock

The elusive kelp stem boring amphipod *Amphitholina cuniculus* was found in a sieved sample on washing furbelow holdfasts.

15th October and 7th November. Newlyn Marina



Hermaea paucicirra, a southern species of heterobranch first discovered in the UK at Newlyn in the summer of 2015 recorded twice more.

30th October. Newlyn Green

The copepod *Splanchnotrophus gracilis*, a parasite of the nudibranch *Acanthodoris pilosa*. The specimen had to be carefully dissected from the nudibranch to be clearly identified using a microscope for all the body parts of the copepod are inside the nudibranch, all that can be seen on the outside is the eggs of the copepod.

2nd November. Newlyn Marina

The dinophilid worm, *Dinophilus gyrocolatus*, a 0.74mm long female specimen was found in washings of large brown algae.

New species / species new to the British fauna

29th May. Skilly and 1st June. Battery Rocks, Penzance

Turbellarian parasite of heterobranch *Runcina coronata*, only similar parasite found globally is one recently found and described from Japanese waters that is a parasite of *Aplysia* and a few other heterobranchs. Enough material was collected to further research into this new species by the Natural History Museum.

13th June. Watermouth Cove, Ilfracombe

Tritonia cf. *manicata* was found by Jan Whittington, it was likely feeding on the soft coral *Sarcodictyon catenatum* which was found close-by. The species was confirmed by Bernard Picton, photographed and preserved in ethanol for DNA testing. It is 'very' likely that Atlantic specimens of *Tritonia manicata* are a new species and sequencing in Russia will prove this for the first time, although the new nudibranch will have to wait to be described owing to a lack of material, a minimum of five are needed. Later searches at the site only found *Tritonia lineata*. A specimen very much like the one here has also been found on Lundy by Bernard Picton.

24th June Newlyn Marina

Undescribed tergipedid with orange rhinophores found again. Specimen sent away to Spain but still no adult form has been found so the species cannot be described.

Species extending their range

6th March Chimney Rocks, Penzance and 21st April-04-18 Portreath, Cornwall

First UK records of the parasitic red algae *Gelidiocolax margaritoides* on *Gelidium pulchellum*.

31st May and 20th August. Newlyn Marina

First UK records of *Mesoglicola delagei*, a copepod parasite specific to Jewel Anemone, *Corynactis viridis*. On looking through photographs this species was seen as far back as 23rd July 2015. The species had previously been known from the north coast of France. It appears to be locally common.

Non-native species

Pikea californica extending its range in Mounts Bay from Skilly to Battery Rocks.

Grateloupia turuturu extending its range and extent on the eastern side of Mounts Bay.

22nd January. Penzance Harbour under bridge

Grateloupia turuturu in areas of drainage with large *Magallana gigas* on harbour walls.

3 February. Millbrook Lake

Large amounts of *Ficopomatus enigmaticus* observed around the lake, colonies of the bryozoan *Conopeum seurati*, barnacles *Amphibalanus improvisus* and *Austrominius modestus*, and isopod *Lekanesphaera rugicauda* were recorded sharing the same habitat.

18th May. Godrevy Point, Gwithian, Hayle, Cornwall

Cephalothrix simula, the Pacific Death Worm. First UK record of this highly invasive species, two mature specimens found under a Mussel shell that had been stuck to the bottom of a rock, possibly by a terebellid worm on which *C. simula* feeds. The species likely got to Godrevy by planktonic drift from Brest, France, or Galicia, Spain.

Pikea californica (large amounts)

Perophora japonica (large amounts)

11th July. Torquay Marina

Large amounts of *Botrylloides diegensis*, the San Diego or Chain sea squirt found at this marina, but not unusual. Samples were taken from pontoons and one specimen of the nemertean *Vieitezia luzmurubeae* was found. This is the first UK record outside Cornwall. *Vieitezia luzmurubeae* is found in high numbers on all marina pontoons on the Fal Estuary.

10th September. Godrevy Point



Habitat discovered for juvenile *Cephalothrix simula*. Large bed of the red algae *Pikea californica* also present, this is the first record on the north coast of Cornwall and given the amount at Godrevy it will now spread quickly up into the Bristol Channel, perhaps in just a few years. The tunicate *Perophora japonica* was also present in large numbers but was not initially obvious. Edible / regularly foraged seafood gathered by permission of the National Trust (SSSI at Godrevy Point). 50g of meat of each species was collected for TTX toxicity testing at CEFAS Weymouth, the aim to determine if TTX had passed from the *Cephalothrix simula*

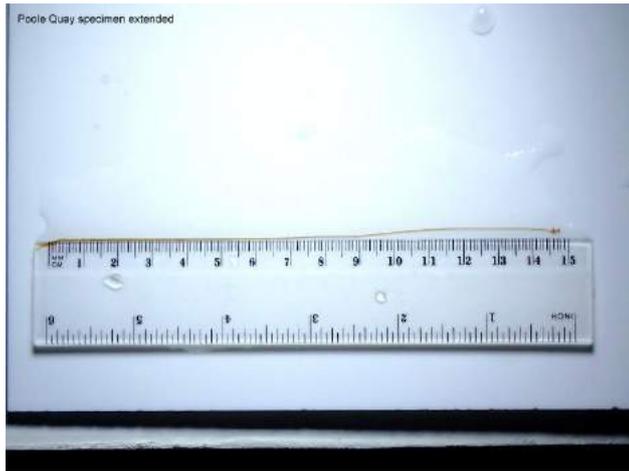
nemertean population to edible seafood. I personally took the specimens to Weymouth as CEFAS could not get a courier. Later CEFAS revealed that there was zero TTX in shellfish at Godrevy Point.

Please note the identification of *Cephalothrix simula* is only by a DNA test.

Also see - New Invasive Nemertean Species (*Cephalothrix simula*) in England with High Levels of Tetrodotoxin and a Microbiome Linked to Toxin Metabolism by Andrew D. Turner, David Fenwick, Andy Powell, Monika Dhanji-Rapkova, Charlotte Ford, Robert G. Hatfield, Andres Santos, Jaime Martinez-Urtaza, Tim P. Bean, Craig Baker-Austin and Paul Stebbing.

<https://www.mdpi.com/1660-3397/16/11/452/htm>

12th September. Poole, Baiter Point



Cephalothrix simula juvenile extended



Cephalothrix simula juvenile contracted

Whilst in Dorset I asked Steve Trehwella where there was a good spot to search close to Poole with the aim of photographing the non-native sea spider, *Ammothea hilgendorfi* and also the tunicate *Botrylloides diegensis*. Numbers of *Ammothea hilgendorfi*, *Botrylloides diegensis* and the beautiful alga *Chondria coerulescens* were photographed, samples also collected for looking at later in the mobile lab. The day before I joked with someone at CEFAS about finding *Cephalothrix simula* at Poole, and because of a TTX detection in bivalves in 2014. We should not have joked, it was present and in quite large numbers given the size of the sample taken. However, this time it was on a shallow sheltered shore in an estuary, so likely more problematic for a variety of reasons, estimated population size 100 per m².

27th September. Godrevy Point

Lots more juvenile *Cephalothrix simula*.

5th October. Newlyn Marina

A mature male *Hexapleomera wombat* was found, the second record for an adult male in the harbour.

12th November. Newlyn Green

Boccardia proboscidea, a very common, invasive species of spionid worm, often found burrowing through *Lithothamnion incrustans*.

Strandings

Nine barnacles of the species *Stomatolepas elegans* were found at the bases of the ventral side of the front flippers of a leatherback turtle, *Dermochelys coriacea*, at Long Rock Station, near Marazion Cornwall, 13th August.

Matt Slater (matt.slater@cornwallwildlifetrust.org.uk) reports:

Pacific Oysters on the move 2018-2019

Following reports of Pacific oysters on the increase, observations were recorded in 2018 and a two year citizen science study, funded by European Marine and Fisheries Fund, began in 2019. The study is led by Natural England and delivered in Cornwall by Cornwall Wildlife Trusts Shoresearch project and, in South Devon, by South Devon AONB Estuaries partnership. We are carrying out repeatable surveys and are recording very large densities of Pacific oysters in all of Cornwall's estuaries. – Helford, Fal, Fowey, Looe and Tamar. Surprisingly we are also finding Pacific oysters settling on the shore in fairly high densities in some quite exposed locations including Whitsand bay, Mounts

Bay, Par Beach and Carbis Bay (St Ives). In Devon, oysters are abundant in the Yealm and Dart Estuaries and many other areas. At many of the sites where oysters have been recorded we know that they were either not there or very rare just a few years ago.



We have trained and equipped 13 volunteer groups to carry out surveys to document oyster densities around the coast of Cornwall and South Devon. Where we have landowners' permission and permission from Cornwall IFCA we are also using volunteers to trial control work by manually breaking oyster shells attached to rocky shore. On one survey day we were able to kill over 10,000 oysters in this way in 1.5 hours with 10 volunteers. This method is being used on oysters growing fused to intertidal rock (which have little use as food as they cannot be removed without damaging the shells therefore they cannot be depurated). We have

also discovered huge reefs of oysters forming in estuaries on shingle/gravel beaches and in these locations we are looking for alternative methods of control as bashing is not practical. We are keen to see a market developed for feral rock oysters 'wonky oysters,' as at present marketing opportunities are very limited. Ruth Crundwell at Natural England is also investigating alternative uses for these oysters – ground as a soil conditioner, used in biotechnology? We are very keen to hear peoples' ideas and to support development of processes that may help us control the oyster population.

Maxine Chavner (Maxine.chavner@Naturalengland.org.uk) noticed that the non-native Pacific oyster has colonised many places in Torbay, including Torre Sands, Preston / Paignton Beach and Ladybird Cove & Shoalstone beach in Brixham. she hadn't noticed any Pacific oyster around the bay, particularly in Brixham, until August 2018. Since then, colonisation seems to have been rapid. The rocks on which Pacific oysters were seen in Ladybird Cove in August 2018 were sizeable boulders (up to ~80cm across) that had not been on the beach prior to the 'Beast from the East' and Emma storms earlier in the year. All the Pacifics seen have ranged between 3cm and 10 cm in size and have been on hard, rocky substrata. Maxine indicates that she has photos of all the following if you would like them:

- 11th August 2018 – On loose boulders in Ladybird Cove, Brixham.
- 11th August 2018 – Found all along the rocky shore, Shoalstone Beach, Brixham.
- 10th September 2018 – On the concrete steps at the back of Torre Sands, Torquay.
- 28th December 2018 – On bedrock and boulders at the back of Goodrington Sands North, Paignton.
- 19th May 2019 – On the seawall around Torre Sands, Torquay.

Interestingly, Maxine has noticed no colonisation at Mansands, between the Dart Estuary and Brixham. Due to the geology perhaps?

Bob Earll comments: They are well established in the Yealm & Dart estuaries

Leonore Williams (leonore.williams@naturalengland.org.uk) observes Pacific oysters recorded from the Severn Estuary on 21st March 2019 at Weston-super-Mare = Clevedon – Portishead. They appeared to be very small/juveniles less than a year old. There are no known oysters recorded from the Severn Estuary.



A photo of one of the several Pacific oysters recorded in the Severn Estuary in March 2019 is shown here.

From the photo you can tell it is an adult (sorry no scale but about 3-4 cm), however they were relatively small compared to the very big ones I have seen previously in the Yealm Estuary for example.

All the oysters recorded (approx. 15) were colonising rock only.

I recorded a few at Weston-super-Mare (Birbeck Pier) and many more at Portishead (Sailing Club shore), probably due to more rock substrata being present.

The nearest oyster farm is located in Porlock Bay.

9. Fish and Reptiles

Edited by **Doug Herdson**

Contact: douglas.herdson@btinternet.com

Fish

Overview

In some ways, 2018 was the year of the sharks. While basking shark numbers were amongst the lowest ever recorded in the area, catches of blue sharks were the largest for many years. Thresher sharks were notable in Lyme Bay and several were seen breaching. Few people have heard of the sixgill sharks, but they are one of the largest predatory sharks and have now been shown to be in the south west. Finally, on the shark theme Cornwall can claim its second 'shark attack' in two years.

Bluefin tuna continue to amaze with their numbers and displays. This endangered species apparently increasing here. It was also a year when their small relative the Atlantic chub mackerel put in an appearance.

Breeding seahorses were found studied and filmed in Torbay. A sea bream caught at Chesil may be a first for England. Surprisingly two species of pufferfish were found, one possible the seventh for the UK. To top things off an American freshwater fish was swimming around a Cornish harbour.

Elasmobranchs

Basking sharks

Continuing the recent dramatic trend basking shark (*Cetorhinus maximus*) numbers continued to decline with only **nine** reported to Seaquest South West off Cornwall in 2018. This compares with 17 in 2017, an average in recent years of around 70 and a peak of 419 in 2012.

The first of the season were two large individuals seen in Mount's Bay on 20th April, when the sea temperature had reached 9°C. From then until 27th September they were seen occasionally all around the Cornish coast. An additional large basking shark was observed by an angling boat off Coverack in mid-May, and a further one at Saunton Sands in North Devon in July.

A basking shark found dead near Mevagissey at the beginning of June was completely entangled in rope and gill net

[The Shark Trust; Marine Discovery; Kieren Faisey; Cornwall Wildlife Trust, Seaquest SW; Cornwall Wildlife Trust, Marine Strandings Network.]

Species	2016	2017	2018
Basking Shark	29	17	9
Ocean Sunfish	164	119	86
Bluefin tuna	5	31	15

Table1. Sightings of ocean sunfish, bluefin tuna & basking sharks. CWT Seaquest Reports

Porbeagles

Angling boats were catching porbeagles (*Lamna nasus*) from May until September. In May, one of an estimated 140kg was caught and released off Hartland Point. Later in the season, Penzance charter boats were finding good numbers of porbeagle sharks offshore, with up to 10 being caught a day. These were relatively small with few over 45kg, but this was a marked increase in numbers compared to previous years.

A commercial fisherman using gill nets to target hake (*Merluccius merluccius*) in depths of around 150 metres, in an area west of the Isles of Scilly, accidentally caught some porbeagles. However, by the time he hauled his nets on-board large chunks had been eaten out of them.

In July, a dead and desiccated porbeagle of about 1.0 m was found on beach at Crow Point, Braunton.

[Liam Faisey; Tim Dodge; John Locker; Kieren Faisey; Kevin McKie; Ryan Holder.]

Thresher sharks



No thresher sharks (*Alopias* sp.) were reported in 2017, but they were much more prominent in 2018. Three threshers were seen breaching in 2018, all in Torbay or the greater Lyme Bay area.

A large (c.150kg) common thresher *Alopias vulpinus* was photographed in mid-June; while a small thresher of just 1m was seen leaping from the water three times on 5th July. Devon Sea Safari often saw small threshers, but were fortunate to photograph one near Thatcher's Rock in August.

Common Thresher, Lyme Bay, 15 June 2018. George and Les Carr

[Tom Brereton; John Burnham; Devon Sea Safari]

Blue Sharks

The summer of 2018 was an outstanding season for the blue shark (*Prionace glauca*). The first occurrence was one washed up on Perran Sands in January.

Shark fishing in West Cornwall was less consistent than previous few years with a slow start to the season and algal blooms keeping the fish further offshore in clearer waters. Water temperatures were notably down compared to same period in 2017, presumably brought on by the cold weather in February and March. Some angling boat skippers felt that the fishery was approaching a month late in developing.

One blue shark was seen in Torbay on 7th July, and the numbers soon built up. The Shark Angling Club of Great Britain had its annual competition out of Looe from 11th July and 71 blue sharks were caught and released during the week. By the end of the month and into early August, blue sharks were regular in some numbers, with some up to 40kg in weight off south coast. Snorkellers were swimming amongst them off the Eddystone and out of Penzance.

They started turning up along the north coast in early August, subsequently building up to reasonable numbers and were exceptionally abundant in mid-August with one vessel out of Plymouth catching and releasing a total of 194

blue sharks with weights up to 60kg over a four-day period. Around the same time a boat out of Penzance handled 96 sharks in a single day.

There were fewer large sharks of more than 70kg, though the numbers of 45 to 60kg fish were good. One study found catch rates overall of 1.7 sharks per hour, with a median length of 151 cm, equating to an estimated mean age of just below 4 years. 86% of the blue sharks were females and almost 20% were mature.



Blue sharks attracted to 'chum' offshore of south-west Cornwall. A trip with Charles Hood. Keith Hiscock



Photography is a major interest for those swimming with blue sharks. Keith Hiscock

[Simon Thomas; Charles Hood; Kevin McKie; Ross Parham; Dave Peake; Chris Lowe; Annabelle Lowe; John Burnham; Aaron Barrett; Liam Faisey; Keith Hiscock; Shark Angling Club of Great Britain; Cornwall Wildlife Trust, Marine Strandings Network.]

Bluntnose sixgill shark

Following the report of entangled porbeagles being attacked by larger sharks, Kevin McKie decided to take his angling charter boat *Size Matters* to investigate. Hence in August five anglers carried out a trip to an area about 60 miles west of the Isles of Scilly, where in a day and a night they caught six bluntnose sixgill shark *Hexanchus griseus*, from a depth of about 150m. These were both males and females ranging in size from 92 to 232 kg (estimated from measurements using the standard formula). The 232 kg fish was a female and is the biggest shark caught in UK waters that has been boated, measured and returned alive. (In July 2009 a sixgill shark of 479kg was caught off the west coast of Ireland. This was killed and landed in order to claim an angling record.) Prior to this only occasional young bluntnose sixgill sharks had been caught in British waters.

This is a deep-water species and one of the largest predatory sharks in the world, which can grow up to 600kg. A number of small ones have been found around the south west of England, suggesting that this might be nursery area, but the presence of such large adults was not known.



Bluntnose sixgill sharks, Western Approaches, August 2018. Kevin McKie

[Kevin McKie; Douglas Herdson]

Other sharks



A few tope (*Galeorhinus galeus*) were caught on the north coast of Cornwall in August, but catches were notably low compared to the previous 3 years. This may have been linked to the lack of mackerel or other baitfish.

In September, a shark of around 1.5m was swimming in large circles in Mayflower Marina, Plymouth. Photographs of this fish aroused a lot of discussion, but eventually it was considered to be a spurdog (*Squalus acanthias*).

The same week a spurdog swam around a boat fishing in Bigbury Bay.

In July, an unidentified shark of about 2.7m swam around St Ives harbour.

During the year a number of small sharks were reported having been found dead on Cornish shores. These consisted of ten nursehounds (*Scyliorhinus stellaris*), one smallspotted catshark (*Scyliorhinus canicula*) and three starry smooth hounds (*Mustelus asterias*). Some of these may have been discarded bycatch from commercial boats or from anglers.

Blue Skate, Western Approaches, August 2018. Kevin McKie

Two of the smooth hounds were reported as common smooth hounds (*Mustelus mustelus*). However, recent morphometric and genetic studies have found no evidence that this species occurs in Britain. Therefore, all British smooth hounds, whether they have the characteristic white spots or not should be considered as starry smooth hounds (*Mustelus asterias*), unless proven otherwise.

[Chris Lowe; Michael Williams; Keith Hiscock; Douglas Herdson; Marc Dando; Ali Hood; Harry Hocking; Archie Pickin; Cornwall Wildlife Trust, Marine Strandings Network.]

Rays and Skates

From August to October, there was a scarcity of blonde rays (*Raja brachyura*) off West Cornwall, where there had been good numbers the previous year.

On the sixgill expedition, west of Scilly, two female blue skate (*Dipturus batis*) of 10 to 15kg were caught at a depth of around 150m. [Note: About ten years ago, the Common Skate (*Dipturus batis*) was found to be two different species; the larger flapper skate (*Dipturus intermedius*) and the blue skate (*D. batis*), though the name *D. flossada* has also been used for the blue skate.]

On 8th August, a marbled electric ray (*Torpedo marmorata*) was photographed in Chesil Cove by Portland. Then on 22nd, another was trawled up one mile south of Chesil Beach. A similar marbled electric ray was caught off Plymouth six days later. Nationally the electric ray (*Tetronarce nobiliana*) is the most widespread, but in the south west the marbled electric rays seems more frequent.

[Liam Faisey; Kevin McKie; Graham Brown; Rod Thompson; Lisa Leanne Maggot.]

Shark parasite



A parasitic copepod *Pandarus bicolor*, found on spurdog caught by Ian Harris off Plymouth on 27th December. Ian Harris

[Liam Faisey]

Another Cornish 'Shark Attack'.

After last year's shark incident, when a surfer cut his finger whilst hitting a smoothhound that had bitten and bruised his thigh.

A young Cornish fisherman had to be airlifted a hundred miles to hospital by helicopter, with serious lacerations to his leg from a porbeagle shark. Mr Berryman was removing a porbeagle from the hake nets on the 'Govenek of Ladram', when he dropped it and its sharp teeth left him with four to six nasty gashes on his leg. It is not clear whether the shark was alive or dead at the time.



Mr Berryman holding a small porbeagle shark in 2017 and his nasty leg injuries. (Images: Tony Fitzsimmons / SWNS.com)

Pelagic species

Large Pelagic Fish

Atlantic Bluefin Tuna

Every year there are more sightings of Atlantic Bluefin Tuna (*Thunnus thynnus*) around the south west and 2018 continued the trend.

Hannah and Duncan Jones of Marine Discovery Penzance, a local wildlife tour operator, summed this up: "We've already seen bluefin tuna on 45 occasions this year and our season isn't over yet. Most of those instances have been large shoals with a mix in the size of fish, but recently most fish seen at the surface have been large. We have certainly seen more this year than ever, which has been the case every year now since 2015!"

Seaquest South West received 16 reports of bluefin tuna and 73 of tuna, giving a total of 89 sightings, from the south and west coasts of Cornwall between 13th August and 27th November.

The CEFAS Peltic pelagic survey cruise observed bluefin tuna in the Bristol Channel on 9th October.

In mid-August, there were lots of bluefin tuna off south coast of Cornwall and Isles of Scilly, and some were seen 'ring fishing'.

In an overview, Thunnus UK report:

"Sightings: Atlantic bluefin tuna (ABFT) were reported to Thunnus UK on 50 separate occasions by 24 different recorders. ABFT were sighted from the 6th of May through to the 16th of December with most sightings occurring in August (n=16) and October (n=9). Most sightings in August were from a tourist vessel operating in the waters off the Isles of Scilly (n=8). All but two sightings were reported from southwest England with a single sighting reported from Brittany, France and a single record from the Inner Hebrides, Scotland. Within the south west most records were submitted from the Isles of Scilly, and southern coasts of Cornwall and Devon, with only a handful of records submitted from North Cornwall and none from North Devon. In addition to sightings submitted by members of the public, the Pelagic ecosystem survey in the Western Channel and Celtic Sea (PELTIC) ran from the 6th October – 9th November and recorded ABFT on 67 separate occasions over 13 days of the survey, with peak observations occurring 30th October – 2nd November off Start Point and in Lyme Bay (n=38).

Strandings: Three ABFT strandings were reported via email, all of which were from Scotland (Isle of Lewis, Orkney and Pease Bay, Berwickshire). The fish stranded on Orkney and the Isle of Lewis were reported to be in a "fresh" condition and one had even had part of the tailstock removed. The fish off Pease Bay was in a state of decomposition and missing a pectoral fin.

Bycatch: Five bycatch events were reported to project staff. Bycaught ABFT (n=6) ranged in size from 157-231cm curved fork length (CFL) (mean size: 209 ± 27cm CFL, ±1 S.D.). Bycatch incidents (n=5) occurred using otter trawls, ring nets, beam trawls and pelagic trawls and fish were reported from four vessels. All specimens were measured and sampled (fin clip, white and red muscle, stomach contents, otoliths and eye lenses) by staff from the CEFAS and University of Exeter."

Additionally the angling charter boat *Size Matters* accidentally caught a 160kg bluefin in early October and released it in good condition.

In Jersey, due to its different legal system it was legal for recreational fishermen to catch and land bluefin tuna, until the legislature introduced a ban on landing at the end of September. A 102kg tuna was landed at the beginning of that month.

A badly decomposed tuna was discovered at Scott's Quay on the Helford River in mid-July.

[Hannah & Duncan Jones / Marine Discovery; Matt Witt; Cornwall Wildlife Trust, Seaquest SW; Cornwall Wildlife Trust, Marine Strandings Network; CEFAS Peltic; Kevin McKie; Thunnus UK / Tom Horton; Paul Chambers; Jersey Evening Post.]

Swordfish

About ten swordfish (*Xiphias gladius*) were caught off the Channel Islands.

[Michael Sharp]

Atlantic Bonito



The small pelagic tuna, the Atlantic bonito (*Sarda sarda*) were not seen until late September, when they were caught off the Ecrehous, north east Jersey; Penzance; Ladram, East Devon and off Chesil Beach.

Over the next few weeks they were encountered along the south coast, from Mount's Bay as far as Lyme Bay, in reasonable numbers.

They were also common in the Bristol Channel, where the Peltic cruise caught 83 and an angler landed one from off Swansea.

Nearly all were small juveniles, with the bonitos from the Bristol Channel ranged between 15 -23 cm and those in Lyme Bay were slightly bigger at 21-30 cm, though all were aged as 0-year old. The fish from Chesil were fair-sized adults.

[Nicolas Jouault; Nathan Cooper; Kieren Faisey; Mark Hewitson; Liam Faisey; Kevin McKie; David Bond; Terry Gunn; Matt Healeas; Michael Puleston; Randolph Velterop; Phil Lockley; CEFAS Peltic]

Juvenile Bonito, off Plymouth, October 2018. Kevin McKie

Frigate or Bullet Mackerel

A specimen of a small tuna with a short head, distinctive pattern and scaled corselet was caught off Chesil Beach. These two species are rare and unfamiliar in Britain. Unfortunately, only a photograph was taken making it very difficult to distinguish between the closely related species of the bullet mackerel (*Auxis rochei*) and the frigate mackerel (*Auxis thazard*). On the basis of body shape and the apparent shape of the corselet, it is most likely that this fish was *A. thazard*.



Probable frigate mackerel, Chesil Beach. Randolph Velterop

Atlantic Saury

The Atlantic saury (*Scomberesox saurus*) was widespread being seen from Devon to the west of Scilly.

[Simon Thomas, Kevin McKie]

Small Pelagic Species

The annual CEFAS Pelagic cruise (PELTIC 18) is largely an acoustic survey with some midwater trawls. Sailing from Swansea it covers the Bristol Channel, out beyond the Isles of Scilly and the whole of the western Channel, including French coastal waters.

The proportional distributions of species are shown in the figure below.

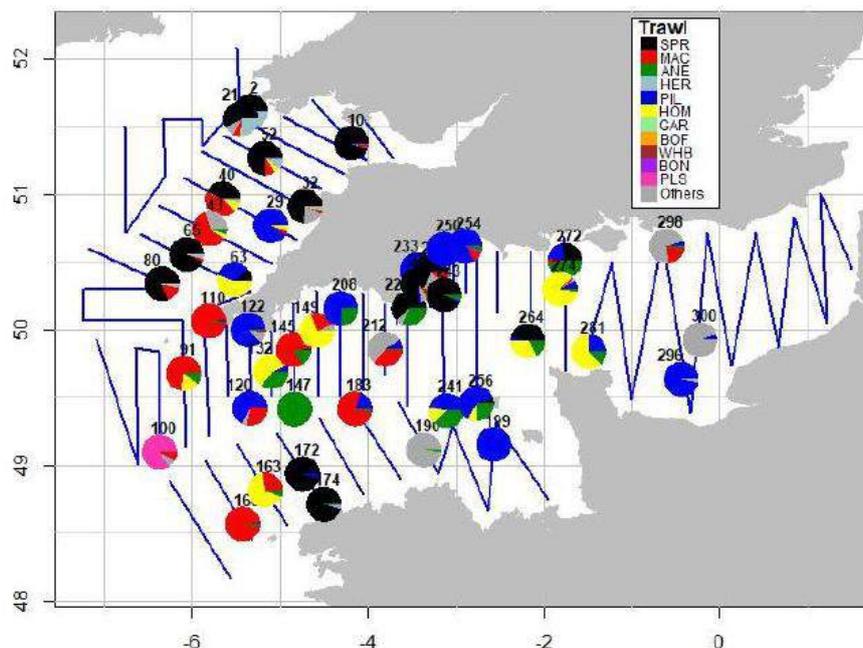


Figure 2. Overview map and detail of the survey area. Top: Acoustic transects (blue lines) and prime stations completed during PELTIC18. Bottom: Trawl stations (pies) with relative catch composition by key species. Three letter codes: SPR=sprat, MAC=mackerel, ANE=anchovy, HER=herring, PIL=sardine, HOM= horse mackerel, GAR=garfish, BOF=Boarfish, WHB=Blue whiting, BON=Atlantic bonito, PLS=pearlside.

Sprat

Sprats (*Sprattus sprattus*) were widespread in most of the survey area with two more important areas, one in the Bristol Channel, including in the coastal waters in the west, and the other in Lyme bay. Medium sized fish (mode of 9 cm) dominated all main areas. As in previous years, the smallest fish were found in the Bristol Channel and the largest (mode of 12 cm) in Lyme Bay.

Anchovy

The anchovy (*Engraulis encrasicolus*) distribution was much more widespread than observed in recent years and preliminary results suggested a higher biomass than in 2017. In contrast to last year, the whole size spectrum was found in each of the main survey strata. In 2018 anchovies in the Bristol Channel were dominated by the largest fish (mode at 17 cm) whereas smaller fish dominated in French waters (6 cm smallest fish caught).

The concentrations of anchovy in Lyme Bay and off Plymouth, were intriguing since very few were landed commercially. However, they were a common bycatch of the local sprat fishery in Torbay.

Atlantic Mackerel

The wintering mackerel (*Scomber scombrus*) continued in good numbers through into February, at least in the St Ives and Fal estuary areas.

However, the summer stock was later than usual and did not appear until the end of July. This could have been related to lower sea temperatures and may have affected the late arrival of blue sharks. The catches increased in August

Predatory shoals in Dorset were seen chasing small clupeids (whitebait) inshore causing lots to strand.

[Chris Oates; Liam Faisey; Bob Earll; Phil Guy; Ross Parham; Em Ma; Michael Puleston.]

Atlantic Chub Mackerel

As the stocks of mackerel increased in August, numbers of Atlantic chub mackerel (*Scomber colias*) were noted to become relatively common in Bigbury Bay and Lyme Bay, while shoals were reported in Torquay Harbour. However, while some were seen off Newquay and in other parts of Cornwall, they were not as abundant as in Devon and south east Cornwall. A few were taken by anglers on the east of the Lizard peninsula.

[Liam Faisey; Phil Guy; Ross Parham; Kevin Mckie, Annabelle Lowe, Michael Puleston]

Boarfish

Boarfish (*Capros aper*) generally goes unreported, especially when it is bycatch in commercial fisheries; however, from mid-March to April low numbers were washed up on beaches from the Isles of Scilly to Kimmeridge in Dorset.

[Amy Gladwell, Tracey Williams; John Rance]

Sunfish

Ocean Sunfish

Despite what appears at first to be a good number of reports of ocean sunfish (*Mola mola*) from around Cornwall, to Seaquest South West, it was actually a continuing decline with 86 reports in 2018. This is a fall from 119 in 2017 and 164 in 2016.

They occurred all around the Cornish coast from mid-May to late September. These were mainly small (50 to 80 cm), although a couple were larger with the biggest at 1.5m. Two were seen to breach, leaping clear of the water. Off the south coast of Devon up to 17 could be seen in a single day.

Three very small individuals (<40cm) were seen off north Devon. And a further one was at the surface, apparently waiting for gulls to clean it, south of Newquay.

They were most abundant in July, and in that month three were accidentally caught by charter boats, two, one of 14kg, off Plymouth and one off Penzance. All were return alive to the sea.

In December, a sunfish was found dead on Polzeath Beach.

[Cornwall Wildlife Trust, Seaquest SW; Shaun Galliver; Ryan Hunnisett; Keiren Faisey; Kevin McKie; Cornwall Wildlife Trust, Marine Strandings Network]

Demersal Species

Gadidae

A couple of the deeper water gadoid blue whiting (*Micromesistius poutassou*) were caught by anglers in 150m, in an area west of Scilly.

[Kevin McKie]

John Dory

John dory (*Zeus faber*) were relatively common with one charter vessel catching eleven with weights up to over 3kg.

[Kevin McKie]

Seahorses

A pair of short snouted seahorses (*Hippocampus hippocampus*) was found in Babbacombe in Torbay in early summer. They were then studied and filmed by a few divers, under license from the Marine Management Organisation (MMO). The initial pair bred at least three times. Unusually they were a slate grey colour, which matched of the colour of the cuttlefish eggs within the weed they were hanging onto. Seahorses will change to a colour that makes them camouflaged and in this case, they were the same colour as the eggs. Andy Jackson made this into a short film 'Sensitive Seahorses' (see a short clip and explanatory note on: <http://subseatv.net/2018/07/28/sensitive-seahorses/?fbclid=IwAR3lwb9LAWV6rT-th0NPeQpkFGxtjIM5d4UbeZXCIm1O Fn6ZBz3oBt2PEo>), before his untimely death.

During the six-month study a total of five individuals were recognised including one spiny seahorse (*Hippocampus guttulatus*).



A clip from the video posted by Andy Jackson on <http://vimeo.com/301465161>. Babbacombe, Torbay. (With permission from Jackie Daly.)

Seahorses were seen from February to November and from Torpoint in south east Cornwall to the Isle of Wight and the Hampshire-Dorset border. As can be seen from the table below, there are no obvious patterns of temporal or spatial distribution by species.

Date	Species	Location	Comments
February 2018	<i>Hippocampus hippocampus</i>	Torpoint, SE Cornwall	
February 2018	<i>Hippocampus hippocampus</i>	Poole Harbour	
March 2018	<i>Hippocampus guttulatus</i>	Poole Harbour	
April 2018	<i>Hippocampus guttulatus</i>	Studland Beach	A small female dead on beach.
May 2018	<i>Hippocampus guttulatus</i>	Poole Harbour	
June 2018	<i>Hippocampus guttulatus</i>	Poole Harbour	
May to November 2018	<i>Hippocampus hippocampus</i>	Babbacombe, Torbay	2 to four breeding individuals.
Summer 2018	<i>Hippocampus guttulatus</i>	Babbacombe, Torbay	
August 2018	<i>Hippocampus guttulatus</i>	Teignmouth	
9 October 2018	<i>Hippocampus guttulatus</i>	Studland Bay	Washed up dead. Neil Garrick-Maidment
2018	<i>Hippocampus hippocampus</i>	Isle of Wight	Four reported

Table 2. The Occurrence of Seahorse in the South West in 2018

[Neil Garrick-Maidment; Seahorse Trust; Keith Hiscock; Terry Griffiths; Andy Jackson; Steve Trehwella; Julie Hatcher]

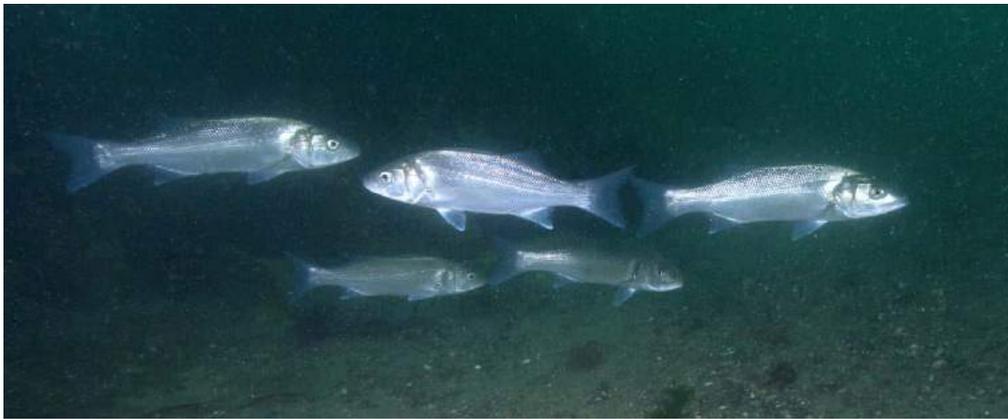
Gurnards

Gurnards are a major part of the biomass of commercial demersal catches. These are principally tub gurnard (*Chelidonichthys lucerna*), red gurnards (*Chelidonichthys cuculus*), and grey gurnards (*Eutrigla gurnardus*), and whilst some go into the retail trade the majority are used for bait. The streaked gurnard (*Chelidonichthys lastoviza*) tends to be found in deeper areas and are seldom seen by divers, but a few were seen in shallow water in Dorset in the spring.

[Steve Trehwella; Douglas Herdson]

Bass

From mid-summer onwards, bass (*Dicentrarchus labrax*) numbers increased, with most fish 1.5 to 2.5 kg. By August, there were large shoals of bass especially off the Eddystone reefs. They were common around the Eddystone until about November/December, when bluefin numbers built up in the area; and were not seen again until after February. Correlation or coincidence?



Bass at West Hoe in Plymouth Sound on 25 August 2018. Keith Hiscock.

[Nick Collins; Dave Peake; Kevin McKie]

Jacks and Trevallies, Carangids

On 24 October 2018 a blue runner (*Caranx crysos*) of about 1kg, was caught in a mullet net shot near Yellow Rock Point, St Martins. A further blue runner was caught by an angler off Chesil Beach.

After three pilot fish (*Naucrates ductor*) were reported in 2017, the only one this year was landed in Plymouth in September.

Previously in August, an Almaco jack (*Seriola rivoliana*) was caught off Saddle Cove, Plymouth.

An angler caught a derbio (*Trachinotus ovatus*) of 216g, during a fishing competition off [Chesil Beach](#), Dorset.



Angler Jeff Frisk with a derbio. Chesil Beach, October 2018. Christchurch Angling Centre.

[Ricky Pender; Steve Walder; Randolph Velterop; Peter Bromley; Jeff Fisk; Andy Horton]

Sea Breams

During the night of 19th July, a Spanish or axillary sea bream (*Pagellus acarne*) was caught over the clay beds at West Bexington, Chesil. It may have been the first of this species to be found in England. It was a small fish, 14cm in length and weighed 114g; but would have been an angling (BRFC) shore record (the existing record is a fish of 236g from Guernsey in 1995, but that was boat caught). However, the captor, Colin Searle, preferred to return it to the sea alive rather than claim a record.



Spanish or Axillary Sea Bream. Chesil, 19 July 2018. Colin Searle

There was a red sea bream (*Pagellus bogaraveo*) off Padstow in July. This species was formerly one of the commoner sea breams, but is now uncommon.

In September, a pandora (*Pagellus erythrinus*) was caught in a mullet net in a depth of 6m off Port Wrinkle in Whitsand Bay. This species and the similar Couch's sea bream (*Pagrus pagrus*) used to be equally rare; but while Couch's is now much commoner, the pandora seems even rarer.



Pandora, Whitsand Bay. 4 September 2018. Andy Giles

Couch's sea bream (*Pagrus pagrus*) is now fairly widespread around Devon and Cornwall and regularly turns up in commercial landings throughout the year. Over a number of weeks in early summer, there were often landings of up to 50kg in a day of medium to large fish. One boat landed 30kg in a single transaction. They were also regularly caught off Newquay.

Gilthead (*Sparus aurata*) are now equally widespread in the south west, occurring in commercial catches, and also specimens of up to 3.0kg being taken recreationally from Cornish estuaries.

Whilst they frequently occur in landings, the large quantities of black sea bream (*Spondyliosoma cantharus*) which used to regularly be sold on Plymouth Fish Market, having been caught from Dorset to Sussex, did not appear this year. Possibly due to the efforts of the Southern Inshore Fisheries and Conservation Authority (IFCA) to stop the targeting of breeding aggregations in that area.

Anglers reported good catches of black sea bream in Swanage Bay and off Weymouth.

[Colin Searle; Stan Spry; Andy Giles; Annabelle Lowe; Douglas Herdson; Mickey Luv; Chris Bird; Sally Ann Charters; Channel Warrior; Liam Faisey]

Wrasse

Records of Baillon's wrasse (*Symphodus bailloni*) have been commonplace in Poole Bay over at least the last 10 years. A diver could expect to see the fish or its nest on virtually every dive, and there are increasing number of records from Weymouth Bay.

One was also seen in shallow water at Swanpool, Falmouth in July.

[Lin Baldock; Ryan Hunnisett]

Weevers

When the tourist numbers rocketed in July, so did the numbers of unfortunate encounters between bathers and lesser weever fish (*Echiichthys vipera*). The RNLI treated at least 68 people for weever stings in a couple of weeks, just at Perranporth, Gyllyngvase and Whitsand Bay.

Dr Benjamin Ciotti and a team of marine biologists and coastal scientists from the University of Plymouth are joining forces to find out why weever fish tend to inhabit certain areas, what they do there and what factors make a sting more likely.

They also hope that, by establishing their habitat needs and natural influences, human impacts on weever fish populations can be anticipated.

Dr Ciotti said: “Weevers are small fish with a big reputation but we still don’t know much about them. Our students are generating valuable new insights into the ecology of the species, including what types of beaches support weevers and promote stings.

“These notorious little fish can’t be blamed for defending themselves, but we do hope that our research will help reduce the risks of getting stung.”

A number of marine biology students will be using small nets to catch and sample weever fish at 17 beaches across Devon and Cornwall.

By working with the university’s Coastal Process Research Group, they will be able to match their data with detailed physical measurements, such as wave conditions, to establish how the characteristics of beaches determine which areas weevers prefer.

Fish are also being taken back to the lab to study their feeding, growth and venom properties.]

[Cornwall Live; Ben Ciotti]

Blennies



Ringneck Blennies (*Parablennius pilicornis*), also known as variable blennies, have been turning up around the Plymouth area, especially in the Sound, since 2007 with some also being photographed around Babbacombe in the Torbay area. Standard and black ringneck blennies were seen at Firestone Bay, and at least six individuals were caught (and released) by kayak anglers fishing within Plymouth Sound during a competition in July.

Ringneck Blenny, Plymouth Sound. 23 June 2018. Liam Faisey

In Cornwall, a black one was in the boiler tubes of the wreck of MV Mohegan at depth of 18m, in the Manacles MCZ in June.

There was only one dubious record of a ringneck blenny from Dorset in 2018, but adults and juveniles were recorded from the wreck of the Royal Adelaide off the Chesil Beach in September 2017.

A very rare species in the UK, the red blenny (*Parablennius ruber*), was seen on a Seasearch Cornwall dive in September at Seggie Rock near Porthcurnow, within the Runnelstone MCZ.

[Martin Palmer; Keith Hiscock; Liam Faisey; Matt Slater; Cathryn Quick, Lin Baldock; Joe Gurney]

Gobies

A Steven's goby, (*Gobius gasteveni*) was photographed off Falmouth in September.

[John Blackwell]

In July, a Blackfish (*Centrolophus niger*) was caught at a depth of 70 metres about 7 miles east of Scilly.

[Jack West]

Triggerfish

Reports of the grey triggerfish (*Balistes capriscus*) have been declining in the last few years, but this year whilst the numbers of dead stranded triggerfish have been low, there is a slight increase in the quantity of live ones observed or trapped. The fall-off in records could be a consequence of reduced reporting due to familiarity, but one diver said that sightings have become scarce possibly since the 2014 winter.

The first sighting of the year was south of Newquay in early July. In August one was watched ten miles south of Lamorna, then at least three were around the wreck of the Royal Adelaide in Dorset. At the end of September and into October two were seen in Plymouth Sound. Two others were seen in the Poole Bay and Swanage area.

Two were trapped in crab or lobster pots in early September, one at Lee Bay in North Devon and one off Stoke Beach in South Devon.

There were only two triggerfish strandings reported in late winter at Godrevy in January, and Abbotsbury in February.

The first autumn stranding was rather early, at Porth in mid-September. A subsequent report from Porth at the end of the month could have been the same fish. The final report of the year was from Long Rock, Marazion in mid-December.

[Cornwall Wildlife Trust, Marine Strandings Network; Charles Hood; Keith Hiscock; Steve Porter; Shaun Galliver; Colin Garrett; Dominic Robinson; Ryan Hunnisett; John; Nicky Lawrence]

Pufferfish

Pufferfish are not recorded in British waters every year but the oceanic pufferfish (*Lagocephalus lagocephalus*) can occur in double figures in some years.

An individual of the rarer smooth or blunthead pufferfish (*Sphoeroides pachygaster*) was trawled up from a depth of 80m, 12miles south of Eddystone lighthouse in February. It appears to be of the East Atlantic form, and is probably the seventh or eighth to be found in Britain.

In October, an oceanic pufferfish appeared in a shallow pool on Mexico Beach, Gwithian. This provoked a media frenzy about the 'Deadly venomous tropical pufferfish found on Cornish beach'.

All pufferfish are toxic with tetrodotoxin but most are not that deadly. They can be fatal if the wrong bit is eaten, but in Japan they risk eating the gonads. Skin and liver are toxic. Eating a sandwich after handling one without washing your hands could be dodgy but unlikely to be fatal.

[Andy Giles; Cornwall Live]

Mystery fish

In October, a novice angler caught an unusual fish from Mevagissey harbour wall. The fish, that weighed around 700g, was photographed and returned to the sea alive. The photo was put on to a Facebook group and elicited a lot of speculation including various wrasses and wreckfish. However, it was obviously none of these and had the general appearance of a centrarchid. These are a family of North American freshwater sunfishes. The photo was shared around a number of experts and various suggestions were made and the most popular choice was a green sunfish *Lepomis cyanellus*. Frances Dipper published this in an article in *British Wildlife*, and in consequence I was contacted by Prof. Gordon Copp, Principal Scientist in Fish Biology and expert on non-native freshwater fish at CEFAS. After examining the photo and consulting North American specialists, it was decided that the fish could only be a rock bass *Ambloplites rupestris* which previously was only known in Britain from a lake in Oxfordshire. This fish must be considered an escaped ornamental, but it is astonishing that it was apparently surviving in good condition in a marine environment. Some other North American centrarchids are known to extend into estuaries but none is marine.



Rock Bass *Ambloplites rupestris*, Mevagissey Harbour, Cornwall, 21 October 2018, Bradley Ritter

[Bradley Ritter; Gordon Copp]

Stranded Fish

While many individual fish were stranded on the beaches of the south west in 2018, the only mass stranding was in July, when hundreds of sandeels were found dead at Porth Askin on St Agnes, Isles of Scilly.

[Belinda Clifford; Martin Goodey; Tracey Williams; Cornwall Wildlife Trust, Marine Strandings Network.]

Lost and Discarded Fishing Gear

In December, Rame Peninsula Beach Care picked up 772 pieces of ghost gear (lost or discarded fishing gear) in just 100m of beach at Tregonhawke, Whitsand Bay. Much more was too big or too tangled to be retrieved. Sad to say fishing gear made up a good 80 to 90% of all the plastics on the beach. Degrading rope and net is recognised as a significant source of microplastics in the marine environment, and also poses a serious threat to seals and seabirds.

Over 300 Cornish seals have been observed with plastics, often fishing net, entangled around their necks, and many seabird chicks die each year through entanglement as a result of fishing gear being used as nesting materials.

Additionally, lost fishing gear can continue fishing for decades; catching and killing marine life, which cannot be retrieved and consequently rots. This is termed 'Ghost Fishing'.

The volunteer divers of Ghost Fishing-UK will recover or remove large sections of lost gear; whilst ports like Newlyn and Plymouth are partners in Fishing for Litter where fishing vessels can bring in and dispose of the marine litter that they bring up.

[Rame Peninsula Beach Care; Douglas Herdson; Plastic Free Plymouth Sound]

Marine Turtles

The total number (18) of sightings or strandings of turtles in UK and Ireland recorded from British and Irish waters in the British Marine Turtle Strandings & Sightings Annual Report 2018 was the lowest for at least ten years. This is very low, compared with the 38 in 2017 and over 60 in 2011. Equally unusual, these were 17 Leatherbacks (*Dermochelys coriacea*) and one Kemp's Ridley (*Lepidochelys kempii*) in North Wales; normally there would be a few Loggerhead turtles (*Caretta caretta*). These included one report from Isles of Scilly and seven from Cornwall.

However, further enquiries have uncovered another 8 reports (covering 11 or 12 individuals) from the south west, giving a total of 16 reports, which is around the average for south west England and the Channel Islands. Of these 14 were leatherbacks and two unidentified specimens. Two reports (5 or 6 turtles) were from the Isles of Scilly; six from North Cornwall, six from south west Cornwall, and two from south east Cornwall. (See Table Y)

There was one dead stranded in January, but no strandings or sightings from February to May. In June and July 8 or 9 were seen alive at sea. There were two floating dead at sea, one washed up dead at Marazion, and one alive at sea in August and September. Similarly, there was one dead at sea, one stranded dead (but this might be the same turtle), and two live animals in October. Finally, one was found dead on Whipsiderry Beach, but this could have been one of the previous animals carried around by waves and tides.

In general, the causes of death were unknown, but one was found entangled in the ropes of lobster pots; and one showed evidence of having been hit by a propeller, but this could have been post-mortem.

Type of record	Number of animals
Stranded dead	4 (1 possible duplication)
Dead at Sea	3
Alive at sea	12 or 13
Total	18 to 20

[British Isles & Republic of Ireland Marine Turtle Strandings & Sightings, Annual Report 2018. R.S. Penrose & L.R. Gander. February 2019. Marine Environmental Monitoring; Cornwall Wildlife Trust, Marine Strandings Network and Seaquest SW; CEFAS PELTIC 2018 report; Ricky Pender; Liam Faisey and Keron Fraser.]

Date	MT record no.	Turtle species	Location	Status	Comment
18/01/2018	T2018/01	Leatherback	Perranporth	Stranded dead	Remains of tail-end of carapace only

11/06/2018	T2018/03	Leatherback	9.6 km north of the Isles of Scilly	Alive at sea	Turtle was entangled in rope, freed by fishermen
02/07/2018		Unidentified	Mullion Cove	Alive at sea	CWT Sequest record
07/07/2018		Leatherback	Falmouth	Alive at sea	CWT Sequest record
14/07/2018		Unidentified	Holywell Bay	Alive at sea	CWT Sequest record
20/07/2018		Leatherback	Sennen	Alive at sea	CWT Sequest record
July 2018		Leatherback	East side of Smith Sound, Isles of Scilly	Alive at sea	4 or 5 seen. Ricky Pender
02/08/2018	T2018/06	Leatherback	St Austell Bay	Dead at sea	Found dead entangled in pot buoy rope, cut free. Several reports on floating carcass until making landfall at Polkerris
12/08/2018	T2018/04	Leatherback	Marizion	Stranded dead	The carapace had seven wounds characteristic of injuries caused by a propeller, suggesting that at some stage this animal was hit by a boat, however it was not possible to determine whether this happened post or pre-mortem.
21/08/2018		Leatherback	Off Penzance	Alive at sea	Seen from <i>Lo Kie Adventures</i> , Liam Faisey
September 2018		Leatherback	About 2 miles from the shore to the west of Fowey	Dead at sea	Keron Fraser
13/10/2018	T2018/10	Leatherback	30 miles NW of Newquay	Alive at sea	Reported via Marine Life UK twitter feed
13/10/2018		Leatherback	off Newquay	Dead at Sea	Seen from CEFAS Peltic 2018 survey.
14/10/2018	T2018/09	Leatherback	The Manacles, Falmouth Bay	Alive at sea	Seen from boat, appeared healthy and swimming towards the shore.
25/10/2018	T2018/11	Leatherback	Tolcarne Beach, Newquay	Stranded dead	Reported via James Barnett. Exeter University students to examine.
21/12/2018	T2018/12	Leatherback	Whipsiderry Beach, Newquay	Stranded dead	Reported on Beachcombing (British Coastline) Facebook Page. Could possibly be remains of T2018/11.

Table 3. Turtles of the South West 2018

The strangest report was of a North American common snapping turtle *Chelydra serpentina*, slithered from the muddy bank into the Alphin Brook, near the Marsh Barton industrial estate, at the top of the Exe estuary. While not in the marine environment, the rock bass and last year's musk turtle show that some freshwater non-natives can survive in saline conditions.

[The Weather Channel]

(This follows the common / eastern musk turtle or stinkpot (*Sternotherus odoratus*), a non-native freshwater species from SE Canada and the eastern United States of America, that was found washed-up alive on the beach at Crantock, near Newquay, Cornwall, during the winter of 2015/16.)

10. Marine and Coastal Birds South West

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Nesting seabirds

(Data source: <http://jncc.defra.gov.uk/smp/>)

Seabirds Count

The national seabird census, Seabirds Count continued in 2018. Boat surveys undertaken by Natural England and the Cornwall Bird Watching & Preservation Society filled the gaps in coastal sections not covered by land-based surveys, and RSPB led a team back to Lundy to complete surveys of the island. Another seabird island, Steepholm, was covered for the first time since 2008 by a team of Natural England ornithologists. Additionally, National Trust funded Footprint Ecology for surveys of the Purbeck Cliffs in Dorset, Isles of Scilly Wildlife Trust continued monitoring on the Isles of Scilly, and data were gratefully received from other professionals and volunteers around the south west.

Over 20,000 birds or nests were recorded from 16 species across 88 sites. Approx. 75% of the total came from three abundant species: Manx shearwater (Lundy), black-headed gull (Poole Harbour) and guillemot (various locations in Devon and Dorset). Counts entered into the Seabird Monitoring Programme (SMP) database are summarised in Table 1.

Manx shearwater numbers reflect continuing increases at Lundy since rats were eradicated in the early 2000s. A comprehensive and heart-warming analysis of seabird recovery at this crucial south west colony recently appeared in *British Birds* (Booker *et al.* 2019) and was reported in the national media. Recovery is also emerging at St Agnes and Gugh (IoS), with 64 pairs of Manx shearwaters in 2018, compared with 22 in 2013 (pre-rat eradication). Gugh also saw evidence of recovery of the lesser black-backed gull colony, up from 296 pairs in 2017 to 452 in 2018 and suggesting the earlier drop in numbers may have reflected a poor breeding season where gulls were present locally but not breeding (which can be a strategy for seabirds if, for instance, they are in reduced body condition).

Numbers of lesser black-backed gulls at Steepholm appear to also have increased slightly over the last two decades, whilst herring gulls at the same location have declined perhaps by 50% – a curious case of two apparently ecologically similar species perhaps in reality responding differently to environmental changes. One apparent beneficiary of environmental change is Mediterranean gull; a count of 155 pairs was reported from Spartina Island in Poole Harbour. This count is greater than the entire GB and Ireland estimate (113) from the previous census which ran from 1998 – 2002. It will be fascinating to discover how large the national population now is once survey work for Seabirds Count concludes in 2020.

Additional insight from Maxine Chavner: fewer breeding Sandwich and common terns at Brownsea Island in 2018. Probably due to late wintry weather.

Table 1. Count data for south west counties held by SMP database for 2018. PU: Atlantic puffin; BH: black-headed gull; GU: guillemot; AF: little tern; CN: common tern; TM: European storm petrel; F.: Northern fulmar; GB: great black-backed gull; CA: great cormorant; HG: herring gull; KI: black-legged kittiwake; LB: lesser black-backed gull; MU: Mediterranean gull; MX: Manx shearwater; RA: razorbill; SA: European shag. PU, TM, MX – Apparently Occupied Burrows; AF, BH, CN, CA, GB, HG, KI, LB, MU, SA – Apparently Occupied Nests; F. – Apparently Occupied Sites; GU, RA – individuals. (UG) – urban gulls.

	PU	BH	GU	AF	CN	TM	F.	GB	CA	HG	KI	LB	MX	MU	RA	SA	Total
Cornwall	2		185				173	96	44	806		2			275	118	1701
Bawden Rocks	2		20					10		10					70	8	120
Beeny																	0
Beeny Sisters										41							41
Buckator							12	2	6	187					55	1	263
Cam Strand							1			4							5
Cligga Bay							5					1					116
Cligga to end SSSI							3			5							8
Cornahey								2		21							23
Crackington							26			16							42
Duckpool							10			6							16
Looe Island							2	78	38	112		1				15	246
Millook																	0
Morwenstow							3			13							16
Penally										3					10		13
Pentargon			9							8					31	4	52
Pentargon Cove			67							6					11		84
Pine Haven							10			96							106
Round Hill							3			3							6
Seal Hole to Trevaunance Cove			89				8	1		10					38	29	175
South Cornwall Coast 10							14			28						16	58
South Cornwall Coast 11							10	1		7							18
South Cornwall Coast 12							8			29						29	66
South Cornwall Coast 13							6	1		1							8
South Cornwall Coast 14							2										2
South Cornwall Coast 15							5			1						5	11
South Cornwall Coast 16							4									1	5
South Cornwall Coast 17																	0
South Cornwall Coast 18							11										11
South Cornwall Coast 19										4							4
South Cornwall Coast 20																	0
South Cornwall Coast 9							14			4						1	19
St. Agnes Head to Newdowns Head								1		13					60	9	83
Trevaunance Cove							3										3
Upton							5			51							56
Varley Head							8			17							25

	PU	BH	GU	AF	CN	TM	F.	GB	CA	HG	KI	LB	MX	MU	RA	SA	Total
Devon			2954			11	80	55	27	385	337	133	5504		235	36	9757
Babbacombe 3							1										1
Berry Head 1			877														877
Bolt Tail 1								2		5						4	11
Cow and Calf			1165				16			7	95				110		1393
Dawlish 2								1	26	5						14	46
Dawlish 3							17	1	1							5	24
Lundy						11		46		229		132	5504				5922
Lynon to Foreland Point										49							49
Rillage Point to Ramsay Beach							15	1		31					10		57
Soar Mill Cove - Bolt Head								4		31						13	48
Straight Point										9	175						184
Wringapeak			912				31			19	67	1			115		1145
Dorset	9	4115	1628	37	40		41	14	88	116	9			155	144	47	6443
Ballard Cliffs							3	4	20	13						2	42
Chesil Beach				37													37
Gad Cliff									11							3	14
Lodmoor RSPB					40												40
Portland 1										1							1
Portland 10																	0
Portland 11								7		6							13
Portland 13																	0
Portland 2							7			1							8
Portland 3							1										1
Portland 4																	0
Portland 5			586				5			2					53	6	652
Portland 6										1							1
Portland 7								1		2							3
Portland 8							7			2							9
Portland 9																	0
Portland Breakwater																	0
Spartina Island		4115												155			4270
St Aldhelm's Head - Durlston Head	9		1042				13	2		49	9				91	33	1248
White Nothe/Bat's Head							1		57	7							65
Worbarrow - Scratchy Bottom							4			32						3	39
Isles of Scilly	43					19	4	136	170	74	35	460	193			82	1387
Annet	43					17	5	46	170	19		6	30			81	570
Gugh						11	2			28	35	452	41				569
Hugh Town										20							20
St Agnes						8	5			7		2	23			1	46
St Helen's													49				49
Menawethan							33										33
Daymark, St Martin's							50										50
Bryher													23				23
Tresco													27				27

	PU	BH	GU	AF	CN	TM	F.	GB	CA	HG	KI	LB	MX	MU	RA	SA	Total
Somerset		1					6	5	104	736		599					1451
Avalon Marshes		1							33								34
Berrow (UG)										4							4
Chard (UG)												1					1
Crewkerne (UG)												1					1
Glenthorne Beach							6										6
Ham Wall RSPB									21								21
Hurlstone Point										1							1
Minehead/ Alcombe (UG)										42		1					43
Porlock (UG)										1							1
Steep Holm								5	50	626		596					1277
Watchet Paper Mills (UG)										30							30
Williton (UG)										32							32
Grand total	54	4116	4767	37	40	205	436	340	263	2117	381	1194	5697	155	654	283	20739

Table 2. Productivity data (chicks per pair) for south west counties held by SMP database for 2018. Where >1 measure from a site, average is presented. Green cells show rates exceeding national average values, red below national averages, orange at (or very near) average values (Horswill & Robinson 2015). No data for storm petrel.

	PU	GU	AF	TM	F.	CA	HG	KI	LB	MX	SA
Looe Island					0.00	1.45					
Lundy	0.55	0.65			0.39			0.31			1.20
Straight Point, Exmouth								1.05			
Isles of Scilly											
<i>St Mary's</i>							1.60			0.00	
<i>Bryher</i>										0.00	
<i>Gugh</i>				0.18				0.00	0.44	0.78	
<i>Samson</i>							0.49				
<i>Menawethan</i>					0.18						
<i>St Agnes</i>										0.70	
<i>St Martin's</i>					0.34						
Chesil Beach				0.68							

Productivity monitoring

For 2018, the SMP database holds data from a handful of sites on the Isles of Scilly, and Lundy, as well as Looe Island and Straight Point, Exmouth (Table 2). The Isles of Scilly are monitored by the IoS Wildlife Trust whereas the others rely on a mixture of professionals and volunteers. Because seabirds typically show responses to change more rapidly in productivity metrics than in abundance metrics, we are always grateful for data on productivity from any seabird species at any site – please contact me if this is something you'd be interested in.

Generally, productivity rates at monitored sites were poor in 2018, in comparison to national averages. Fulmars were monitored at four different locations yet none managed to reach the national average of 0.419 chicks per pair. It is unclear if this reflects a trend, or just a poor year for the species.

Manx shearwater productivity on St Agnes and Gugh was noteworthy as no fledglings were recorded in 2013 (pre-rat eradication). However, no fledglings were recorded at sub-colonies on Bryher and St. Mary's (Peninnis) with rat presence and clear evidence of predation seen on St. Helen's.

Little terns breeding at Chesil Beach, Dorset, benefit from round-the-clock wardening provided by RSPB (including volunteers). Thirty-seven pairs managed to fledge 25 chicks in 2018, giving a productivity rate of 0.68 chicks per pair, above the national average of 0.52 but lower than the 1.92 chicks per pair in 2017.

Storm petrel colony continuing to establish on Lundy

From the LFS Annual Report: “Our survey shows a storm petrel colony in its early stages of establishment at the north end of the island. It was encouraging to see several birds flying over the area at night, which when coupled with the playback survey, provides clear evidence of a small breeding population.” [AB: further evidence that rat eradication from seabird islands can lead to breeding seabird re-colonisation and recovery in fairly short timeframes].

Breeding seabird sightings away from nesting areas

Tracks of nesting Irish gannets entering SW English waters:

- Ashley Bennison (@Ash_w_b) tweeted at 1:17 pm on Fri, Nov 16, 2018:
Ever wondered where northern gannets go when they head offshore?
Here's an animation showing where some of our birds went during the 2017 breeding season! Happy #ScienceWeek2018 #seabirds
@MaREIcentre @uccBEES @UCCResearch @IrishResearch
Thanks @KevinRingelman for inspiration! <https://t.co/wACn6J0DSF>
(https://twitter.com/Ash_w_b/status/1063420711207882753?s=09)

Welsh-ringed storm petrel wandering into Cornwall:

- MARINELife (@MARINELife_UK) tweeted at 6:01 pm on Wed, Sep 19, 2018:
RT @SkokholmIsland: A Storm Petrel ringed here on 14th July had reached Porthgwarra by the following evening. @CornwallBrdNews <https://t.co/GntNbRETWM>
(https://twitter.com/MARINELife_UK/status/1042458710822584320?s=03)

Rafting Manx shearwaters:

- Nikki Banfield, Isles of Scilly Wildlife Trust: Manx shearwater – sightings of large numbers throughout the summer during the day, rafting even between the islands – Isles of Scilly. [AB: such areas will be afforded protection from the Isles of Scilly SPA marine extension, if and when classified]

Seabird feeding locations, abundance and type of food taken

Tom Horton: We noticed a strong association between kittiwakes and feeding bluefin tuna during our tagging observations – Falmouth Bay . Also noticed off Ireland. Perhaps BFT are good for kittiwakes. [AB: possible that kittiwakes targeting same prey as tuna – maybe a feeding cue?]

Non-breeding coastal and marine bird sightings

- Royal tern in St Mary's Harbour on Boxing Day 2018, news tweeted by St Mary's Boatmen <https://t.co/H5ruYACMDY> and enthusiastically retweeted by Scilly Pelagics!

(<https://twitter.com/Scillypelagics/status/1077982831605895170?s=03>) [AB: This American rarity had spent time in Wales but its sighting in the Isles of Scilly was a first for the archipelago.]

- Gara Point Seabird watching: Friday July 20 The seabird watching was very quiet – 5 gannets in 2 hours, lots of herring gulls at sea and on rocks – cormorants and shags flying around. The high spot was a flock of common scoter flying eastward up the channel – 20 + bird distinctive line and clump pattern of the flock in flight. No basking sharks, seals or cetaceans.
- Spoonbill and glossy ibis Bowling Green Marsh (WMN), also Taw-Torridge Estuary https://www.devonbirds.org/news/bird_news/devon_bird_sightings?blogEntry=18575
- Storm Emma: huge numbers of Lapwing, Golden Plover & Oystercatchers came ashore to occupy intertidal region on Portwrinkle beach when Storm Emma snow descended on us. Emma Sheehan (Plymouth University).
- Great northern diver in the Landing Bay at Lundy. LFS Annual Report: “During the late winter and early spring there were records on 24 dates from 6 Jan to 26 Mar. All of these concerned single birds, with the exception of two together in the Landing Bay on 29 Jan. Later in the spring two were in the Landing Bay on 19 Apr (Martin Thorne). In autumn and early winter there were records on 30 dates from 24 Sep to 31 Dec. Most again concerned single birds but there were two on 29 Sep and different individuals were seen on consecutive days in mid-Nov (15th/16th). An adult still largely in breeding plumage was present in the Landing Bay almost daily from 24 Sep to 8 Oct (Chris Dee et al.). During the early morning of 27 Sep it flew high across the island, from west to east and dropped down into the Landing Bay. It had presumably been roosting and/or feeding off the West Side.” [AB: great northern divers are fairly widely distributed at low density around south west England in the non-breeding season, with notable aggregations in the bays of south Cornwall making up the Falmouth Bay to St Austell Bay Special Protection Area].
- The Wetland Bird Survey (WeBS) has fantastic web pages for all non-breeding waterbird data collected around the UK, including the South West: <https://app.bto.org/webs-reporting/>

Thanks to all providing insights and Vickie Heaney and Helen Booker for helpful comments.

11. Seals

Sue Sayer

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Cornwall and Isles of Scilly 2018

Common seals

CSGRT had 22 common seal sightings from seven different locations reported by 10 volunteer recorders.

Grey seals

All other records were grey seals

Seal sightings and highlights

With huge public support, in 2018 alone, CSGRT received 4115 seal records from 370 different volunteer recorders and 4 systematic PIP teams (7 LISPIP; in addition to 3 STAPIP, 4 CASPIP and 4 POLPIP boat surveys across a 115km stretch of Cornwall's north coast) covering 282 different locations across Cornwall, Devon and the Isles of Scilly. An incredible 117,149 photos we processed revealing 9196 identifications of seals.

2018 also saw the return of Septimus to CSGRT – a seal we knew in life and who measured the third longest dead seal in Cornwall. In a project spanning over two years, Rob Wells and Sue Sayer collected Septimus' three part skeleton from Derek Frampton (a professional skeleton articulator) near London and returned him home to Cornwall and his favourite beach for a photo shoot. Ironically Septimus' story has taken on a roller coaster life of his own, as he continues to inspire others to: make a film with our patron Springwatch presenter Gillian Burke (Muddy Duck Productions), compose musical scores (David Smart from Tennessee), scientific drawings (Lee Post in Alaska) and 3d scans and virtual reality experiences (Rose Summers). Next stop a 3d print! 2019 will see the #Septimussomes seal roadshow as he appears at talks in his honour or at exhibitions and conferences. Other seals catapulting themselves into the limelight included little 'Locket' who was born on the Lizard in Oct 2017 and who had made her way to St Ives Bay just 16 weeks later. 'Lucky Star' was first seen by Sue entangled in trawl net on 17/05. His photo had 251,869 Facebook views and despite several sightings, it took until 01/10 until he was finally successfully rescued by Sue and Dan Jarvis (British Divers Marine Life Rescue). Sadly all three seals in Newquay harbour ('Trunk', 'Medallion Man' and 'Radley') were hooked with fishing lures during August, adding impetus to our 'Tough love: Do not feed' campaign work. Other seal celebrities 'H chair' swam from West Cornwall to Lundy; 'Wings' (as one of only a handful of seals known to pup in Cornwall and in Wales) made it Cornwall 2: Wales 1!; 'Windy Dog' returned as Beachmaster at a pupping site in West Penwith having been off our radar for four years whilst 'Millie' returned to the Pentire site after an absence of sightings for nine years. In contrast S3 'Lywans', S4 'Black back C', S5 'Zig Zag', S6 'Hook', S7 'Chairlift', S11 'White back Z', DP2 'White back C' and DP13 'Cnn' (3 females and 5 males) have all been identified in 2018 having been first added to our photo ID catalogues back in 2000.

Disturbance at all sites

CSGRT recorded 235 disturbance incidents of which 145 were level 3 'serious' incidents affecting a total of 1304 seals at 21 different sites around Cornwall. Volunteer Haley Dolton created infographics about how to 'Watch seals Well' from land and sea.

Entanglement at all sites

There were 550 sightings of entangled seals, including Lucky Star shown below



Strandings (data from Cornwall Wildlife Trust's Marine Strandings Network)

179 Atlantic grey seals (*Halichoerus grypus*) were reported stranded during 2018. 19% (n=33) were males, 17% (n=31) females and 64% (n=115) of unknown gender due to either limited or no supporting photos, or because the animal was too decomposed and/or had genital scavenging. Seal strandings followed a similar seasonal pattern as in previous years, with peaks during the autumn and winter months. Generally, 2018 seal strandings were

above the 6 years average (2010 to 2016) with over double the average numbers during January and February this year.

In 2018 there were four matches with known seals to CSGRT that were reported to CWT MSN.

1. On the 24th September an adult male grey seal was recorded dead on Mutton Cove by the CSGRT volunteers. Due to the location and sensitivity of the site, no MSN volunteers were sent out to record the animal but photographs were taken when it was found which confirmed this young adult male as DP1324 'Back Scar Octopus'.
2. An adult male grey seal was reported on Carbis Bay, St Ives on the 22nd October which was retrieved for post mortem. This male was known by CSGRT as DP662 'TR' and had been identified 41 times between 2013 and 2018 at two sites in West Cornwall and was at least 12 years old when he died. He was identified at one of the offshore islands in West Cornwall 11 days before being found on Carbis Bay. Through post mortem examination, this male seal was found to have died from a bacterial infection for which the source remains unclear, but the left eye socket and neighbouring soft tissue could be a possible source.
3. Also on the 22nd October an adult female grey seal was reported on Porth Kidney Sands, Hayle in fresh condition. The seal was pregnant and it was apparent that she got into difficulties while giving birth which was fatal to both the mother and pup. This seal was known to CSGRT as S1019 'Sea horse head', and was originally identified in September 2014, and had been re-identified 19 times between 2014 and 2018, mainly during the autumn and early winter months. She had been last identified on the 28th December 2017 in West Cornwall, 10 months before being found dead on Porth Kidney Sands.
4. On the 24th November an adult male grey seal was reported on Towan Beach, on the Roseland peninsula on the south Cornish coast. This animal was reported and recorded by a MSN callout volunteer, and was in poor nutritional state. This individual was identified as ROM438 'Horns Freckles' by CSGRT, he was last sighted alive on the Lizard on 6th November 2018 and was in reasonable condition at the time, 18 days before washing up dead on the Roseland. This adult male had been known to CSGRT since 2014 and was regularly sighted along the south coast commuting between Roseland and Lizard.

Post Mortem Examinations (PME) (data from Cornwall Wildlife Trust's Marine Strandings Network, CWT MSN and post mortem summaries from James Barnett, veterinary pathologist at the University of Exeter)

16 grey seal pups that stranded on the coast of Cornwall in 2018 were subjected to post mortem examination. Of these, 13 were found alive and either died or were euthanased in the first week of rehabilitation, and three were found dead. The findings in 11 of the grey seal pups were consistent with infectious disease. Conditions seen included septic arthritis, cellulitis, septicaemia, bacterial pneumonia, parasitic bronchopneumonia, pulmonary thromboembolism and vasculitis, meningeal thromboembolism, peritonitis due to ascarid perforation of the stomach wall, pyelonephritis and amyloidosis. Three seals had a traumatic cause of death. One of these was found entangled in a large quantity of net, rope and floats, which appeared to be part of a gillnet, had a large skin deep wound on the neck and was judged to have terminally drowned. A second had traumatic compression of the cervical spinal cord and, coupled with the linear marks in the pelage of the head, it is possible that this pup's head

became trapped in a net and that extreme hyperflexion led to the spinal cord damage. The third pup had a mandibular fracture and subsequent osteomyelitis. The final two pups are believed to have succumbed to starvation, with one showing signs of aberrant feeding, a large quantity of feathers being found in the stomach.

Three adult seals also were subjected to post mortem examination. A bull seal succumbed to septicaemia/endotoxaemia, an adult female was euthanased *in extremis* and had bacterial pneumonia, and a second adult female died on the beach and was believed to have starved secondary to severe oral trauma; there was also evidence of amyloidosis.

North Devon: Lundy - report submitted by Dean Woodfin Jones Lundy Warden



Seals hauled-out at Brazen Ward. Mike Deaton.

The Atlantic Grey seal population has been monitored annually on Lundy since 2011 and to a varying degree beforehand. Previously, the surveys have been carried out by the Conservation Team throughout the breeding season in order to understand the distribution, population dynamics and productivity of this iconic Lundy mammal (Jones, 2017). In 2016 the survey method was reviewed to enable the data collected at Lundy to contribute to wider seal population assessments, such as the Sea Mammal Research Unit (SMRU) national seal surveys. It was not possible to undertake observations by boat in 2018 and the surveys were carried out via land-based observations. During October and November, at the relevant tide times, the island was exposed to strong easterly winds making it difficult to carry-out the quantitative section of the project.

Seal sightings and highlights

The highest count of seals within the survey period was 223 animals (179 females, 22 males, seven juveniles and 15 animals of unknown sex) on August 14th: 47 more animals than the highest count of 2017 on July 30th. This is the second highest count of seals ever recorded on the island from any of the Warden led surveys (the highest was 239 animals on one day in August 2011).

Similar to the surveys of 2017, the majority of animals around the island within each survey were females with some of those, from observational notes, showing obvious signs of pregnancy in some of the popular haul out areas, especially at the start of the land-based surveys. After these high counts (188 of the 223 animals counted on August 14th were females) the numbers of female seals dropped slightly, possibly due to some of the pregnant females moving into the island's inaccessible coastal caves to pup or to other areas in the SW after conditioning themselves in Lundy waters (e.g. 148 on September 10th). Again similar to 2017 there was an obvious increase in males around the island by mid-September compared to mid-August possibly turning up later than the females to patrol beaches and females in order to conceive next year's pups.

Unsurprisingly, the distribution of seals around Lundy is heavily influenced by both weather and sea state. From observations at times when the winds came directly from either the north or south, animals seemed to disappear and move off from some of the more popular haul outs e.g. Rat and Mouse Island either to areas away from the island or to some of the caves or more sheltered bays on the island (e.g. Three-quarter Wall Bay). The highest number of animals recorded at one time from the 46 sub-sections within the survey period was from the area North of Gannets Rock on the September 13th – here 44 individuals were counted hauled out. On average however Three-Quarter Wall Bay and Brazen Ward were found to be the most popular throughout the study period (mean 48 animals throughout the survey period excluding the Knoll Pins).

A total of 27 pups were recorded within the 2018 season, 1 more pup than the 2017 totals. This however is an under-estimate of productivity as it total does not include other pups born in the inaccessible sea caves around Lundy's coast (e.g. Aztec Seal Hole north of St Mark's Stone). The first pup was seen on August 18th on Ladies Beach, 10 days earlier than the first recorded in 2017 (on White Beach). The last pup to be recorded within the survey period was from November 21st, 19 days after the last pup of 2017. The highest number of pups occurred on Ladies Beach this year - where 36% of the total numbers of pups seen were found (White Beach was more popular in 2017). Out of these 27 pups, we know that at least three of these animals did not survive to weaning.

Anthropogenic impacts

Six records of entanglement were recorded during the 2018 season involving at least five different animals (four more animals than in 2017) being ensnared with discarded fishing equipment (one adult male and four juvenile animals).

Almost no disturbances were recorded during the land based surveys this year apart from one instance on September 19th when a number of seals were accidentally flushed off rocks by the surveyors whilst above the southern facing shore of Gannets Bay. This highlights that extra precaution must be taken when navigating this section of the coast, advised that the surveyors stay well clear of the edge of the cliff to avoid disturbance. There were other reports of disturbance resulting from visitors and boats getting too close to hauled-out seals

Notable seal highlights



Photo identification match. LUN315 (originally photographed as LuF1) who gave birth to PUP03 on White Beach in 2018 was first recorded on 17/01/07 so has been visiting Lundy for a least 11 years. Various photographers

A massive thank you to all who submitted their seal sightings and counts throughout 2018. Particular thanks to Joshua Harris and Esther Fritzel-Armitage (Volunteer Assistant Wardens 2018), Emily Trapnell, Mike Jones, Zoë Barton, Siân Cann, Andrew Bengy (Obsession II Charters) and Derek Green. Also huge thank you to the Cornwall Seal Group and Research Trust (Sue Sayer, Kate Williams and Marion Beaulieu) for all their time and enthusiasm in

providing photo identification training with this year’s Lundy volunteers and the Lundy Seal Photo Identification Catalogue.

Reference

Jones, D. W. (2017) Atlantic Grey Seal (*Halichoerus grypus*) population and productivity studies, Lundy 2017. Published by the Landmark Trust and Natural England.

North Devon – mainland submitted by Kate Williams (data collected by Dave Jenkins)

Seal sightings and notable highlights

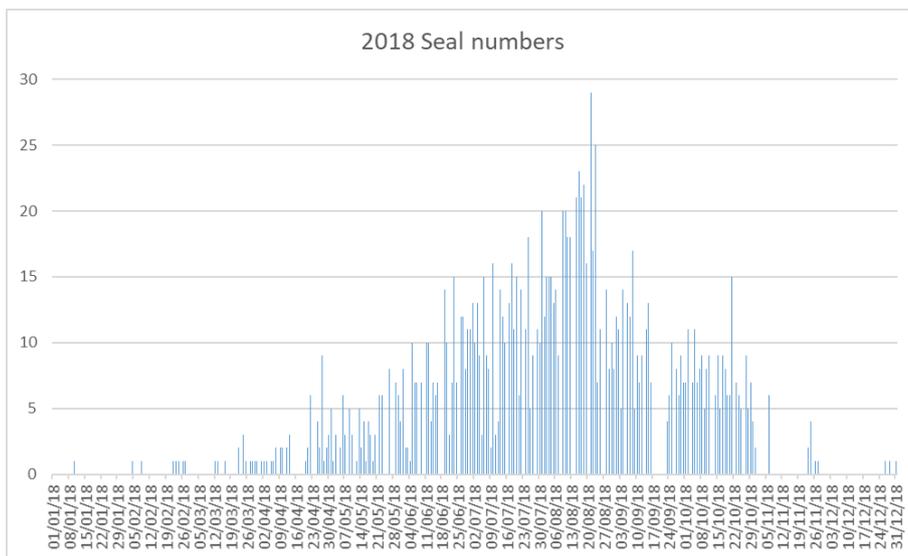
There are now nine full years of survey data: 2010 to 2018.

Survey effort in 2018 was amazing at 218 days (60% of the year). Of these, 155 were at low water (71% of surveys)

Approximately 4,440 photographs were examined for photo-identification (but undoubtedly many more were taken in the field). This demonstrates a real commitment to the NODPIP project, this commitment now ongoing for more than ten years. Congratulations and thank you.

Seals were observed using the habitat at this site in most months of each year. Seal numbers observed were lowest during the winter months and peaked during the summer months. In 2018, seal numbers observed on any day ranged from zero to a maximum of 29 (21/08/2018) which was higher than in previous years. The timing of the peak number of seals observed occurred later than in 2017 and more in line with previous observations.

2010	2011	2012	2013	2014	2015	2016	2017	2018
Mid Aug	June	Mid Aug	Early Jul	Mid Aug				
14	12	20	20	24	17	16	23	29

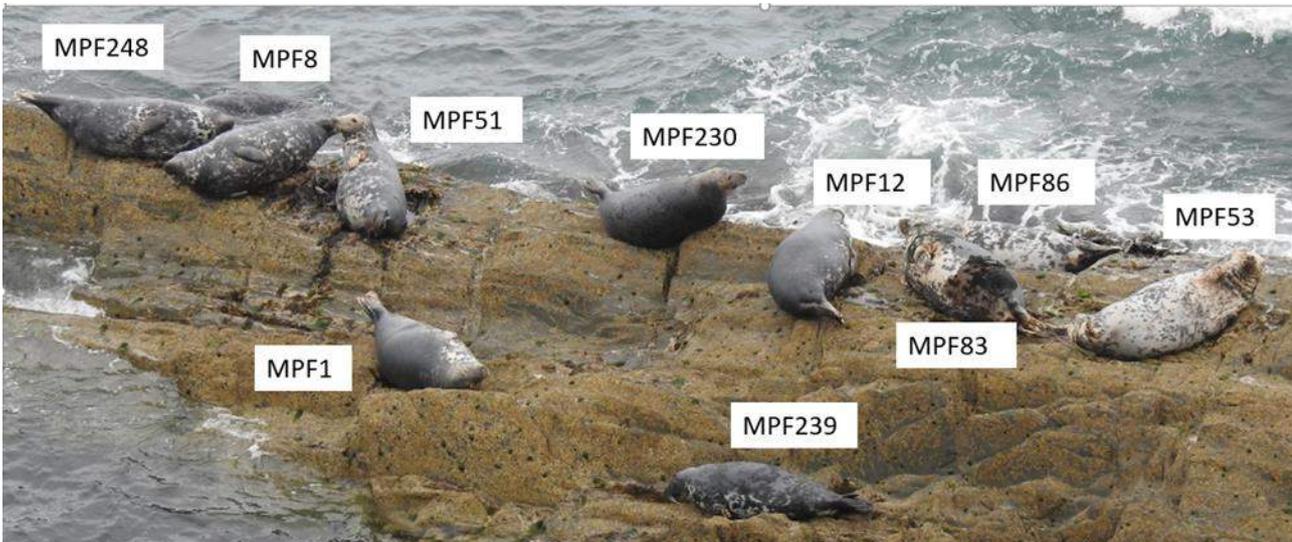


Age and sex of seals seen in 2018

The vast majority of the seals recorded were adult females; there were a few adult males seen from the beginning of July to the end of October and more juvenile seals than in previous years.

Seal habitat use

Although seals were seen in the early months of the year, they preferred to remain in the water. Regular hauling out didn't start until June. The peak number of hauled seals occurred in August. Seals continued to haul out in lower numbers right through to the end of October.



Seal photo identification: all seals in the photo identification catalogue. Photographer not recorded

As at 31/12/2018 there were 384 different seals in the North Devon photo identification catalogue. Of these 319 were female (83%)

The number of seals in the catalogue and the number added to the catalogue each year does not indicate population size. This site is part of a network of sites connected by seals across the Celtic Sea so the numbers vary because different seals are identified each year.

Seal photo identification: seals identified in 2018

Of the 118 seals identified in 2018:

- 41 were new additions to the catalogue
- 41 of the 118 seals were only identified once (probable migrants) and of these 18 were new to the catalogue
- 37 seals were identified 10 or more times (ten of these being probable semi residents)

The most frequently observed seal in 2018 was MPF12 'Smiling Monster' who was identified on 78 different days (36% of visits).

Seal photo identification: exciting re-IDs

April 2018 proved to be an exciting month for re-identifications.

MPF127 'Nettie W frog' was added to the catalogue in August 2012, this seal bears the scars from being entangled around the neck. Seen again just once in both 2013 and 2014, this re-ID on 27/04/2018 was the first time she had been re-sighted for four years. Still doing well despite her injury. Seen three times in 2018 all in the early summer.

MPF251 'Pentagon' was added to the catalogue in August 2012, a re-ID on 27/04/2018 was the first re-sighting.

MPF267 'Cross White neck with bow' was added to catalogue in April 2014. The next ID was in July 2015 and then on 9/04/2018. It was when this 2018 ID was made that a match was made to a seal added to the catalogue in 2017, MPF385 "Tick" so a fuller picture of the movements of the seal were discovered.

MPF365 'Parallel Tetris' was added to the catalogue in May 2017 and seen just three times in 2017. She arrived on 24/04/2018 and was seen once a month in April, May, June; then twice in July and eight times in August. She only hauled out twice, both times only at the edge of the rocks, she seemed to prefer to rest in the water. She was later matched to a seal in the Lundy Island catalogue, LuF136 photographed by scuba divers on 27/06/2014. She is a large adult female, hopefully she will continue to visit in 2019 and be confident enough to haul out completely.

MPF365 Parallel Tetris Ear Hook



LuF136 H Tiny tee shirt



MPF339 'Black rocket' was added to catalogue in March 2017 and seen just twice on consecutive days. She returned on 5/04/2018 and on 22/04/2018. She seems to have a spring visit pattern and we hope she'll be seen in 2019 as well.

The 'Regulars'

Eight seals have been identified at this site over 40 times in 2018. They are all adult females:

- MPF12 'Smiling Monster' 78 times
- MPF6 'Starfish' 62 times
- MPF83 Puppet' 56 times
- MPF17B 'Bat' 51 times
- MPF248 'Circle Smiley' 48 times
- MPF256 'Scarfe' 45 times
- MPF370 'St Piran' 44 times
- MPF230 'Bow Tie' 44 times

Anthropogenic impacts

The site was visited for survey purposes on 218 days. Tripper boats were seen visiting the site on 52 of these days (24%), mostly in July and August. Kayaks were seen on seven days, jet-skis on four days and fishing boats on seven days.

2018 was another busy year for tripper boats visiting the North Devon location but, on the whole, they kept their distance and only disturbed the seals on four occasions. Other disturbance events were caused by smaller vessels: kayaks, jet skis, fishing boats and by people on the land.

12 disturbance events (12 in 2017) were observed during surveys:

Only four of these were caused by tripper boats:

- May: a large RIB arrived at the site, it was not close but all seals went into the water
- June: a large RIB arrived at the site, all the seals went into the water, the RIB anchored (this was unusual) and stayed for 14 minutes,
- July: three tripper boats arrive at once causing most of the seals (seven) to go into the water.
- August: seals were disturbed by an approaching RIB, at least six seals went into the water.

Seals alert

On two days, a combination of events caused two disturbances.

- July: a fisherman in a RIB gets too close and disturbed seven seals into the water. The boat stayed close by for over an hour. Meanwhile three tripper boats came and went. After an hour, two jet-skis arrived and put at least six seals into the water.
- August: a military plane flew over causing three seals to go into the water. 14 minutes later kayaks arrived and got much too close causing the rest of the seals to go into the water.

Two events were caused by people attempting to get too close.

- September: two girls climbed down towards the seals to take photos and all the seals went into the water. The girls then walked along the rocks at the back of the site.
- September: a man with a camera had accessed the lower rocks opposite the seals, all the seals went into the water.

Kayaks caused a disturbance.

- October: 12 kayaks sent one seal into the water from a hidden ledge.

Conclusion

This mainland site in North Devon is of great importance to seals for shelter, rest and socialisation.

Seals need to haul out of the water to rest and digest and seals regularly haul out at this site through the spring, summer and into the early autumn.

There a number of seals that use the site regularly and others that travel through annually. Links to other sites in Cornwall show that the site is also important for seals on the move.

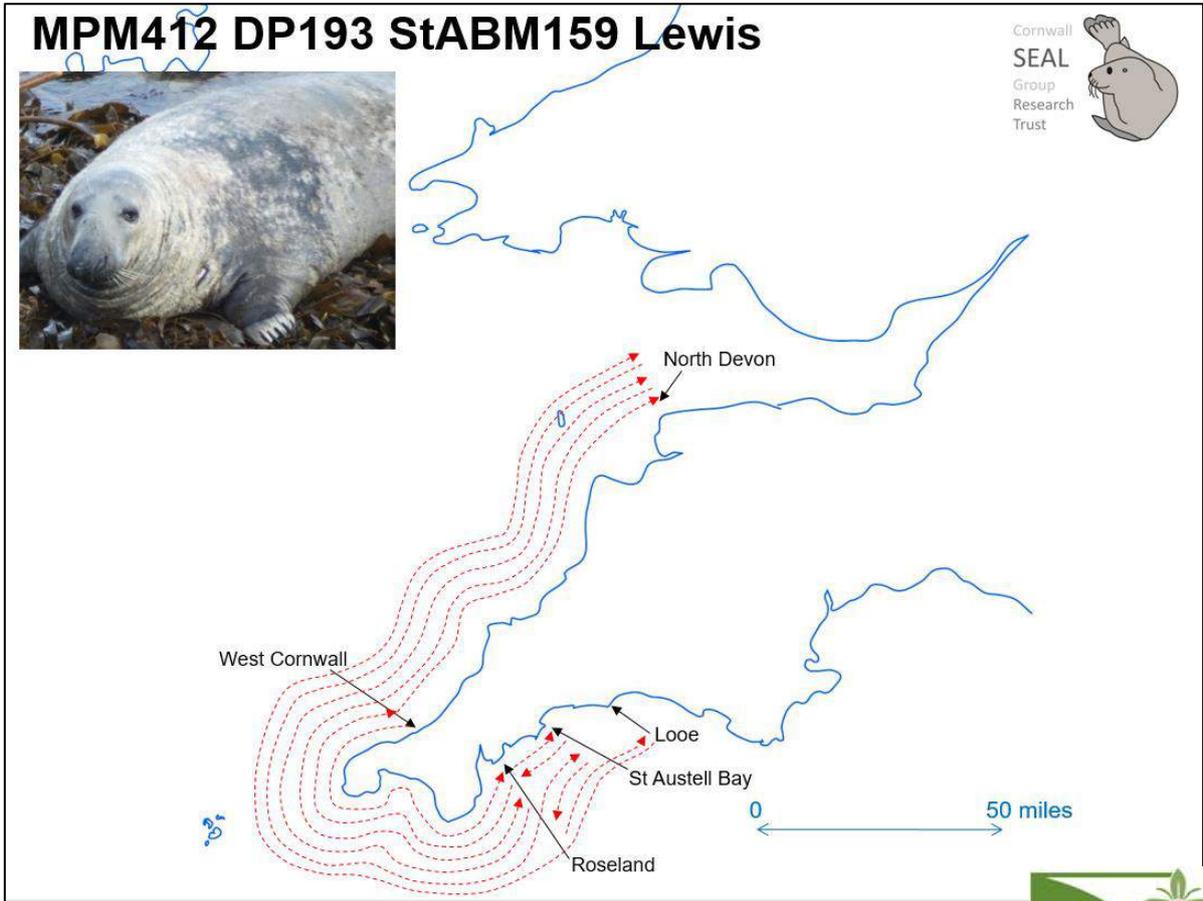
The site is predominately used by adult female seals who are pregnant during the summer months and so vitally important that they are allowed to rest undisturbed.

Disturbing seals back into the sea creates a double energy loss, exhausting and stressing them so minimising the disturbance at the site is very important. It is in the best interest of tripper boats not to disturb the seals so that their customers get the best experience of seeing them. Other coastal users could be made more aware of the risks to seals through education via signage or local leaflets.

More work is needed to expand the links to other areas and this will be helped by the continuing expansion of the Cornwall Seal Group's network of photo identification hubs around the county and into North and South Devon and also by the work of the team on Lundy Island.

Notable sighting: MPM412 'Lewis'

This is the third year **MPM412** (DP193, ROM142) has been recorded in North Devon. Each winter he has returned to the Roseland and St Austell Bay areas of South Cornwall for the winter. This year he was only seen on one day, 31st July but had been recorded at Looe in South Cornwall on the 6th and 14th June on his way round the coast.



Dorset - report submitted by Sarah Hodgson of Dorset Wildlife Trust

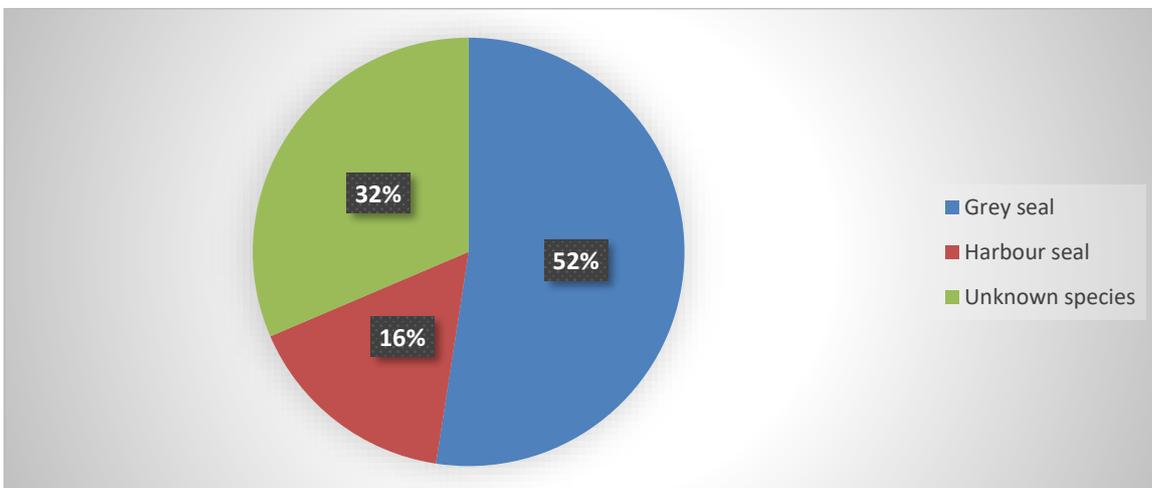


Seal sightings and notable highlights

In 2018, a total of 124 casual seal sightings were recorded. This figure has gone down from 170 sightings during 2017, a decrease of 27%. It's impossible to know whether this is indicative of a decrease in seals in the area as these are just casual sightings and no effort-based surveys have been conducted.

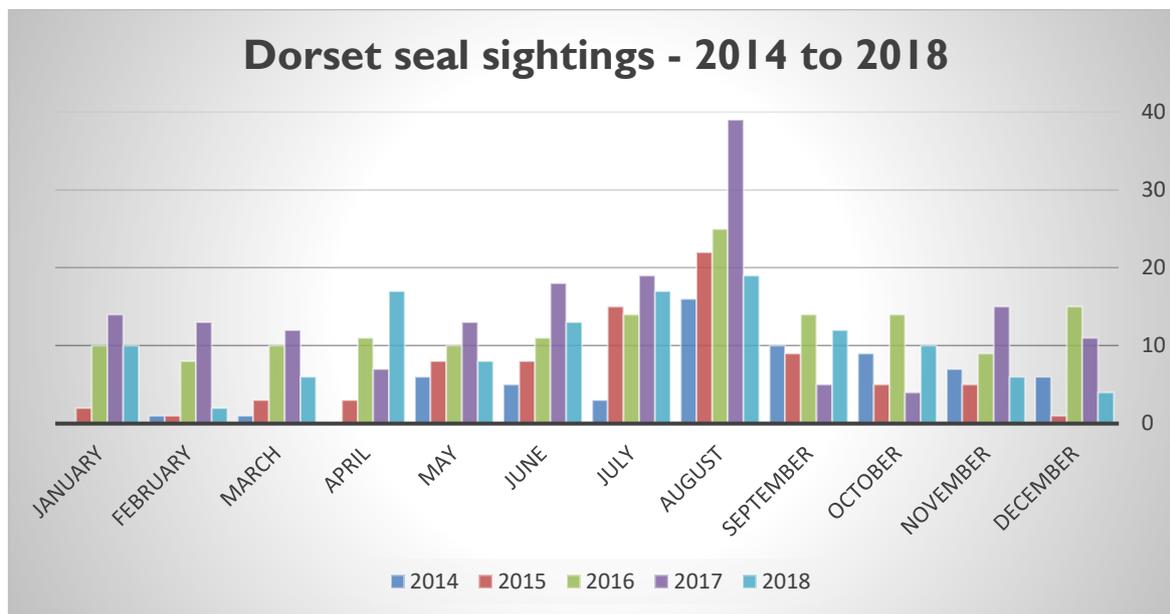
Grey seals were spotted most frequently, 65 times. Common seals were recorded on 20 occasions and the remaining 39 sightings were unconfirmed species.

(i) Sightings by species 2018



Seals were recorded from the Dorset coast throughout the year, although more were spotted in August (15%) than any other month of the year. DWT receive the highest number of seal sightings between the months of June to September, although in 2018, there was an increase of sightings during April.

(ii) *Dorset Seal Sightings 2014-2018 (monthly)*



The Dorset Seal photo ID catalogue increased to 50 individuals and includes both grey and common seals.

The first seal to be added to the Dorset seal photo ID catalogue in 2014, ‘Fiver’, was positively matched a further 5 times during 2018 and has now been recorded 29 times over 5 consecutive years.

In 2018 a dedicated online reporting form was developed and launched, see: <http://seals.dorsetwildlifetrust.net/>

As we are reliant on members of the public letting us know about their seal sightings this online form is designed to make it easier to report a sighting and enable us to get good quality, accurate information, in a standardised format. This was achieved thanks to funding received from a Sea Changers grant.

Rescues and rehabilitation

In November 2018, 3 grey seal pups were picked up from Dorset beaches and taken to RSPCA West Hatch for rehabilitation.

Strandings and Post Mortem Examinations (PME)

A common seal was discovered dead in Poole Harbour in February. The seal was identified as one that has been rehabilitated by the RSPCA at West Hatch and released in November 2016. A PME was not carried out so the cause of death remains unknown. The seal appeared to have sustained a significant injury, though we can’t be sure whether this occurred before or after death.

Research reports and projects

Thanks to some funding received from Bournemouth Oceanarium, 2 trail cameras were purchased to continue monitoring a common seal haul out in Poole Harbour. Data and images collected from the cameras over the previous two years have been passed to undergraduate students at Portsmouth University to further examine the haul-out behaviour of these seals.

Channel Isles

Authors: Dr Mel Broadhurst-Allen and Hannah Webster, Alderney Wildlife Trust **Date:** 16/06/2019



Seal haulout on Alderney. Alderney Wildlife Trust

Research reports and projects

The Alderney Wildlife Trust (AWT) completes monthly land and vessel based observation surveys for marine mammals across Alderney (Channel Islands). In addition, a grey seal population assessment is completed during the breeding season (approximately October-November), each year. Photographs of seals are taken during these surveys, to help develop a photograph identification catalogue.

Land based surveys are completed from April – October, each year, with the aim to record seal and cetacean presence and abundance. Little marine mammal activity during this survey has been recorded this year.

The boat based surveys are undertaken with other groups from the Channel Islands (Guernsey and Jersey) and France, with the aim to assess grey seal temporal presence and abundance across the channel. On Alderney, surveys have recently identified a total of 12 grey seals on offshore islets (behind Burhou, the Nannals and Renoquet Reefs) and round the East of Alderney. Information from the other islands is pending.



Adult male and adult female seals. Alderney Wildlife Trust

Seal sightings and highlights

Alderney hosts a very charismatic (very) large male grey seal, whom appears during the summer and breeding season (we lose sight of him during winter and spring). He appeared recently during one of the boat surveys and also from opportunistic sightings from the public. In addition, a new seal has been spotted with a beautiful heart shaped front.

Management actions

Little legislation exists for marine species and habitats on Alderney. This year, however, the AWT and the Alderney Marine Forum (for marine stakeholders to meet and discuss issues) are looking to update protection legislation for marine mammals, including seals.

Observations by delegates to the conference

Nikki Banfield Isles of Scilly Wildlife Trust

20.8.2018 First reported seal pup on Samson Isle of Scilly unverified.

Katie Bellman Cornwall Seal Group Research Trust Newquay area.

Larger influence of social media attracting higher numbers of visitors to seal haul outs causing more disturbance in some areas e.g. D – management recreation

Katie Bellman BDMLR callouts

Record numbers of seal callouts to BDMLR in first part of the year – post pupping season

Daniel Jarvis BDMLR callouts

Seals/ weather. Continued from late 2017 – the number of seal pups being dealt with by BDMLR+CSS +RSPCA reached levels 3 times higher than average – Jan –Feb 2018 as a direct result of frequent severe storms - D – weather.

12. Cetaceans

[Separate reports were submitted by Duncan Jones and by Dan Jarvis. Both are used here.]

Odontocetes (toothed whales) and Mysticetes (baleen whales)

Edited and compiled by Duncan Jones, Jennifer Simpson, Dave Williams, Abby Crosby & Nikki Clear

Sightings report

Reports are submitted by a variety of observers who have not, for 2018, been specifically identified.

Devon

North Devon

Odontocetes

Harbour porpoise *Phocoena phocoena* appear to have a year round presence. No detailed information has been submitted for 2018.

Common dolphin *Delphinus delphis* are sighted regularly in the waters off the North Devon coast. However, no detailed information has been submitted for 2018.

Mysticetes

Common minke whale *Balaenoptera acutorostrata* are recorded off the North Devon coast. However, no detailed information has been submitted for 2018.

South Devon

Odontocetes

Harbour porpoise *Phocoena phocoena* 28th December: Spent an hour at Berry Head, Brixham happily watching a few harbour porpoise catching fish. Harbour porpoises are present year round off the South Devon Coast.

Common dolphin *Delphinus delphis* 28th December: Spent an hour at Berry Head, Brixham happily watching a large number of Common dolphin. Smaller pods of dolphin seemed to have come from Lyme direction and came together off Berry Head.

30th December – small (poss. only three) pod of common dolphins in Plymouth Sound (mainly entrance to the Tamar) – probably feeding on the reported high abundance of mackerel.

Common Dolphins are present year round off the South Devon Coast.

Risso's dolphin *Grampus griseus*. Unusually regular sightings of Risso's dolphins on SE Cornwall and Plymouth Sound in early July – August.

Long finned pilot whale *Globicephala melas*. 20th Oct. Pilot whales south of the Eddystone. Position: 49°59'N 04°18'W.

Orca *Orcinus orca*. Unconfirmed sighting in Plymouth Sound in June. Shaky footage was debated widely. There is a possibility that it was silhouetted Risso's dolphin.

Mysticetes

Common minke whale *Balaenoptera acutorostrata*. There was a sighting of a 6 metre animal off Torbay in July.

Cornwall

Seaquest South West Report (Cornwall Wildlife Trust and ERCCIS)

The Living Seas marine team at Cornwall Wildlife Trust coordinates Seaquest Southwest, a citizen science marine recording project recording the distribution and abundance of our most charismatic marine megafauna. The Project incorporates sighting records sent in by the public with structured surveys conducted by trained volunteers to better understand and monitor these species around the South West. Seaquest works in partnership with the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS), who collate and manage Seaquest data, and in collaboration a Seaquest Southwest summary report is produced. Please follow this link to the 2018 Seaquest Southwest Annual Report (https://www.cornwallwildlifetrust.org.uk/sites/default/files/2019-06/Seaquest%20annual%20report%202018%20FINAL_0.pdf)

Padstow (data supplied by Padstow Sealife Safaris)

Odontocetes

Harbour porpoise *Phocoena phocoena* were sighted in every month of operation (April to October) but only 3-4 times per month on average. The most frequent sightings were in October. Most sightings were of small pods of 2-5 individuals but they were occasionally encountered on their own.

Common dolphin *Delphinus delphis* were sighted regularly throughout the year. The highest concentration of sightings were in April, July and August with sightings on an almost daily basis. Sightings were less frequent in May, September and October but still regular. Sightings in April and May tended to be closer inshore, with sightings in July and August occurring further offshore.

Bottlenose dolphin *Tursiops truncatus* were sighted just once on the 9th June. Ten individuals were sighted and photo ID of fins confirmed this was the resident Southwest pod.

Risso's dolphin *Grampus griseus* were sighted once on the 28th May. Three individuals were sighted before they were lost from sight.

Mysticetes

Common minke whale *Balaenoptera acutorostrata* were sighted eight times throughout April, each occasion being a solitary animal. There was one sighting on 4th May, involving three individuals feeding in the same area, one sighted breaching. There were no further sightings the rest of the year.

Newquay

Humpback whale *Megaptera novaeangliae*. A single animal was filmed off Towan head in February of 2018.

St Agnes

Odontocetes

Harbour porpoise *Phocoena phocoena* were sighted on 116 occasions, with a total of 209 animals recorded during 142 hours of surveying. There were sightings in all months except June, July September and December. Most

sightings were of only of one to three animals, with exceptions of a sighting of seven in August, five in October and six in November.

Common dolphin *Delphinus delphis* were sighted on 12 occasions, with a total of 168 animals recorded during 142 hours of surveying. The first sighting of the year was in July and then in every month until November. Pod size varied from two to >47 with 5 double figure sightings.

Bottlenose dolphin *Tursiops truncatus* were not sighted during 142 hours of surveying. This was unusual with two and five sightings respectively in 2017 and 2016. There were two sightings outside of surveying, compared to seven in 2017.

St Ives Bay

Common dolphin *Delphinus delphis*. In Sept 2018 up to 20 common dolphins mass stranded at Godrevy Cornwall, most of which were rescued and 3 (including 1 calf died). The incident is being investigated by BDMLR/CWTMSN/CSIP There was no obvious cause identified in the aftermath. Also it was a maternal pod with several calves present.

Mount's Bay (data supplied by Marine Discovery Penzance)

Odontocetes

Harbour porpoise *Phocoena phocoena* were sighted on 347 occasions and a total of 1846 animals were recorded. They maintained a year round presence in Mount's Bay. Sighting rates were at their lowest in May and June (this is fairly typical). They were sighted on 25 occasions in May and 20 in June. After this period sighting occurrences increased and peaked in Autumn. The mean pod size encountered was 5.3 animals with the minimum being one and maximum 50. The largest pods were encountered in August and September and always associated with foraging gannets. Calf numbers were high. In June, July and August more than 21% of the animals recorded were calves. Mating behaviour was witnessed on a number of occasions in late summer and autumn. A leucistic female was sighted with a new born calf on 14th August.

Common dolphin *Delphinus delphis* were sighted on 260 occasions and a total of 4 837 animals were recorded. They maintained a year round presence in the bay. Sighting occurrences were lowest in May and June. They were sighted on six occasions in May and only four occasions in June. Sighting occurrences increased to 38 in July and peaked in August. In August common dolphins were recorded on 115 occasions. Sighting rates continued to be high through the late summer and in to autumn. The average pod size encountered included 19 animals with the minimum being one and the maximum being 200. The largest pods were encountered in July and August. High numbers of calves were recorded in late summer. 16% of the animals recorded in July and August were calves. Mating behaviour was witnessed regularly in the late summer and autumn.

Bottlenose dolphin *Tursiops truncatus* were sighted on 16 occasions in Mount's Bay and a total of 281 animals were recorded. They did not appear to show a year round presence and were only recorded in March, May, June, July, August and September. The mean pod size was 17.6 animals with the minimum being one and the maximum being 50. The individual encountered was a lone bottlenose dolphin who was sighted all around the Cornish and South Devon coast. He had a number of nicknames, Pierre or Splashy being the most widely used. The large pod of 50 was almost certainly an offshore pod. There were no fin matches between this large pod and the South West's resident inshore pod. The location they were encountered and the number recorded also suggested this to be the case. When the inshore animals were encountered, pod sizes seemed to be typically between 15 and 17 in the first half of the year up until the end of June. In July and August when they were encountered there were up to 26 animals recorded,

with the second half of the year seeing pod sizes of consistently between 20 and 26. The maximum number of calves recorded with the resident pod was four.

Risso's dolphin *Grampus griseus* were sighted on 10 occasions and all of these records were in June. A total of 71 animals were recorded with the maximum pod size consisting of 20 animals and the minimum being two. The mean pod size was 7.1. Calves were present during all of the encounters and 20% of the animals recorded were calves. Photos are being processed to assess whether any of the animals can be identified as having visited Mount's Bay before.

Long finned pilot whale *Globicephala melas* were sighted on one occasion by this operator but were recorded on two occasions by an angling boat. All of these sightings occurred on 20th and 21st August. There were nine animals present in the pod and they were close to the Epsom Shoal, 6 miles south of Porthcurno.

Mysticetes

Common minke whale *Balaenoptera acutorostrata* were sighted on 29 occasions. 21 of these records occurred in August and September but they were also recorded in May, June, July and October. Typically, the whales encountered were solitary but on two occasions in August two animals were recorded at the same time. Four of the animals recorded were juveniles and one was a calf. Minke whale calves separate from their mothers upon reaching their northern feeding grounds so encountering a solitary calf is not unusual.

Fin whale *Balaenoptera physalus*. One juvenile was sighted foraging on 23rd August.

Sei whale *Balaenoptera borealis*. One animal was sighted foraging on 21st August.

Falmouth Bay

Odontocetes

Harbour porpoise *Phocoena phocoena* present year round with peaks in the late summer and autumn. However, no detailed information has been submitted for 2018.

Common dolphin *Delphinus delphis* suspected year round presence. Sightings peak in the late summer. However, no detailed information has been submitted for 2018.

Risso's dolphin *Grampus griseus* sighted on several occasions in May and June.

Celtic Deeps

Marine life observer on the 2018 PELTIC Cefas Cruise reports several sightings of fin whales in groups in the Celtic sea (near Celtic deep) during the October PELTIC survey.

Marine life observer on the 2018 PELTIC Cefas Cruise reports Fin/blue whale hybrid whale (large rorqual with blue and fin whale features and blue size blow – both features confirmed in a series of photographs Celtic Deep).

Strandings

Cornish Strandings For information regarding Cornish strandings please consult the Wildlife Trust's comprehensive [strandings report](https://www.cornwallwildlifetrust.org.uk/sites/default/files/2019-09/2018%20Summary%20Report%20-%20Marine%20Strandings%20in%20Cornwall%20and%20the%20Isles%20of%20Scilly.pdf) (<https://www.cornwallwildlifetrust.org.uk/sites/default/files/2019-09/2018%20Summary%20Report%20-%20Marine%20Strandings%20in%20Cornwall%20and%20the%20Isles%20of%20Scilly.pdf>)

French strandings On 16th October 2019 France Nature Environment tweeted: Last winter, 1,233 dolphins were found dead on French beaches during the pelagic trawl season. 10,000 dolphins were reportedly killed in their nets.

Baleen whales (Mysticetes)

Compiled and edited by Dan Jarvis

Data contributed by Niki Clear (Environmental Records Centre for Cornwall and the Isles of Scilly/Cornwall Wildlife Trust); Nikki Banfield (Isles of Scilly Wildlife Trust); Ellie Knott (Devon Biological Records Centre); Sarah Hodgson (Dorset Wildlife Trust); and observations sent in by 2019 conference delegates.

Minke whale (*Balaenoptera acutorostrata*).

There were 29 sightings in total of this species during 2018 in South West England. In the previous couple of years, minke whale sightings have usually commenced and peaked in April, however in 2018 the first sighting did not happen until May, and only a small number of sightings were made during this period of the year. Summer was a far better period, with the large majority of sightings occurring in August and September, which has been the second peak in sightings in the previous two years too. Does the poor start to the year reflect poorer productivity in the region compared with 2016 and 2017? It is possible that the significant heatwave that followed during the Summer months led to higher than average productivity later on, particularly around the South coast of West Cornwall, that encouraged them to remain for longer than they usually do.

Notable sightings include a pair of animals together on the 22nd and 23rd August that were actively feeding with a mixed group of gannets and shearwaters off Lamorna. Meanwhile, on the 11th August, a single whale was seen to breach fully twice in a choppy sea state 5 with moderate swell from the Scillonian III ferry between Land's End and Wolf Rock.

There were no recorded strandings of this species in 2018 in South West England.



Fin whale. Peter Howlett



A possible fin/blue whale hybrid. Peter Howlett

Fin whale (*Balaenoptera physalus*).

During the 2018 PELTIC Cefas cruise in October, a number of fin whales were spotted far offshore in the Celtic Sea, near to the Celtic Deep. Some of these involved groups of animals together, while there was also a sighting of a probable fin/blue whale hybrid. The animal was photographed and appeared to show features common to both animals, as well as a larger than usual blow for a fin whale.

There were no recorded strandings of this species in 2018 in South West England.

Humpback whale (*Megaptera novaeangliae*). There were only two sightings of this species in the region during 2018. The first was seen in January from Portland, Dorset, in rough conditions some way from the shore. It was difficult to observe, but was suspected to have been entangled as it appeared to be dragging a buoy behind it. There were no further sightings however, so this could not be confirmed.

The second sighting was made on the 24th February from Towan Head, Newquay, Cornwall. The animal was filmed by a Seaquest Southwest observer and received local news coverage. This also happened to be the same day as the Cornwall Wildlife Trust Your Shore conference a few miles up the coast at Mawgan Porth, however the whale declined to put in an appearance for the delegates!

There were no recorded strandings of this species in 2018 in South West England.

Management

13. Fisheries, MPAs and Management

Sarah Clark s.clark@devonandsevernifca.gov.uk 01803 854648

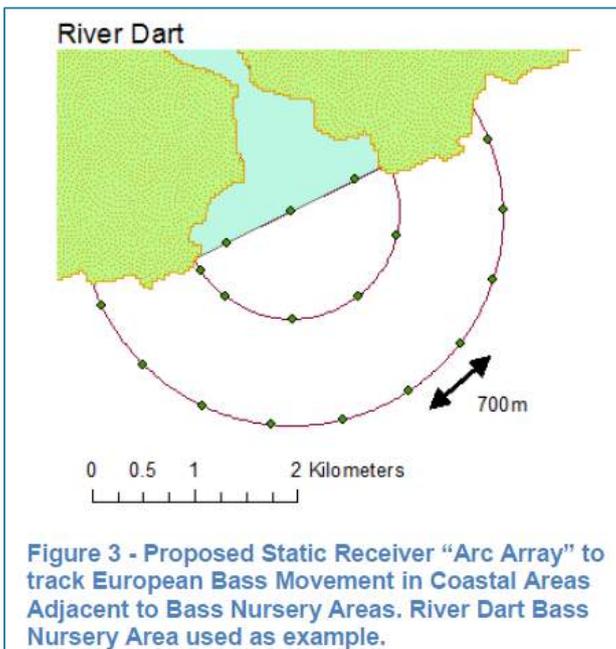
Fisheries and MPAs

Bass

The Annual Steering Group meeting for the Cefas led project C-BASS took place in Norwich and included an update on the most recent findings of the bass Data Storage Tagging work conducted by Cefas in the southern North Sea and western English Channel. The findings indicate that adult bass display a range of migratory behaviours during the spawning season, with some individuals migrating long distances and others staying inshore. C-BASS has partnered with Bass Conservation UK, which is a new EMFF-Defra funded project which D&S IFCA is part of. The Cefas-led Bass Fisheries and Conservation UK project has been launched, with D&S IFCA assisting with workshop planning. This project aims to use local stakeholder knowledge to identify local issues with current bass management, and to plan and carry out research to address these issues.

Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 1:50 pm on Sun, Sep 23, 2018:

Sea #Bass #Fisheries Conservation UK has 4 collaborative workshops coming up between the 25th Sept - 2nd Oct help gather regional data on seasonal movements and distribution of bass. To confirm your place, email: sbfc@cefass.co.uk <https://t.co/pfMIIQzVyz> (<https://twitter.com/DevonSevernIFCA/status/1043844935357779968?s=03>)



Attendees included commercial fishermen, recreational anglers, managers and scientists. Cefas is currently preparing to release 100 Data Storage Tags from the D&S IFCA District (50 in South Devon, 50 in North Devon) as part of the project.

The D&S IFCA's PhD project co-funded with Plymouth University continued throughout 2018. Thomas Stamp, the PhD student, has progressed the work on bass. Good news was received in early May that the Home Office Licence (necessary to allow the tagging work to take place) had been received and that the Immature Bass Acoustic Stock Surveillance (I-BASS) project commenced. Thomas Stamp has focussed on arranging for the acoustic receivers to be deployed and applying for the remaining permissions to conduct the survey work. D&S IFCA assisted in the deployment the acoustic receivers from the D&S IFCA's RIB

Bass tagging took place in the first half of 2018. D&S IFCA helped with emptying nets and transporting fish between capture sites and tagging sites at Salcombe and the Taw-Torridge. A total of 146 fish were tagged and released by the Plymouth University team in the Taw-Torridge, Dart and Salcombe estuaries.



Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 8:25 pm on Fri, Dec 07, 2018:

Interesting developments with the iBass project #fishing #southwest #severn <https://t.co/YuWO6Ubc5v>
(<https://twitter.com/DevonSevernIFCA/status/1071138536349409281?s=03>)

Recreational Fishing for Bass

Bob Earll reported that a paper has been published on the impact of marine recreational fisheries on fish stocks: Radford Z, Hyder K, Zarauz L, Mugerza E, Ferter K, Prellezo R, et al. (2018) The impact of marine recreational fishing on key fish stocks in European Waters. PLoS ONE 13(9): e0201666. <https://doi.org/10.1371/journal.pone.0201666>. From this report it can be interpreted that removal by Marine Recreational Fishing (MRF) for seabass in stocks 4-7 Central and southern North Sea, Irish Sea, English Channel, Bristol Channel, and Celtic Sea was 6%

MMO issued a notice on 28/09/18 regarding recreational fishing for bass. The 2018 Bass guidance is as follows:

For recreational fishers, from 1 October to 31 December 2018, not more than one specimen of European seabass may be retained and landed per fisherman per day. Any additional bass caught during 2018 must be returned immediately. This applies if you are fishing from a boat or from the shore.

It can be found here: <https://bit.ly/2ojjtyf>

Nigel Mortimer, Estuaries Officer for the South Hams AONB, highlighted that the AONB's sea bass angling information on their slipway estuary information panels was out-of-date and that they were planning to update the information as soon as possible in partnership with the D&S IFCA. This guidance does change each year depending on the state of the Bass stocks and D&SIFCA has set up a new webpage that will contain the latest guidance that our information will now signpost to. <https://www.devonandsevernifca.gov.uk/Enforcement/Bass-Compliance-Direction>

Wrasse

D&S IFCA Wrasse Research and Management

A literature review of the potential ecological role and benefits of voluntary closed areas to wrasse fishing was undertaken to assist the Byelaw Subcommittee's decision making. Meetings were held at the beginning of the year with the fishermen involved in the wrasse fishery and results from 2017's survey work were presented, and management changes were discussed. The D&S IFCA Byelaw and Permitting Sub-Committee agreed that changes to management of the fishery needed to be implemented for the 2018 Live Wrasse Fishery, which takes place within the Plymouth Sounds MPA. These included a change in the slot size for corkwing wrasse where the Minimum Conservation Reference Size (MCRS) was raised to 140mm and Maximum Conservation Reference Size was reduced to 180mm to allow juveniles and larger adult fish to be returned to sea. There was a decision to shift in the spawning closure for 2018 from 1st May to 15th July. A few changes were made to the voluntary closed areas and an eastern extent to which the fishery could operate was set. D&S IFCA's Policy for the Live Wrasse Fishery can be read [here](#).



An MSc student, Sarah Curtin from Plymouth University working with D&S IFCA officers, undertook a Wrasse Pot Saturation Study. Survey work for the pot saturation experiments was carried out in collaboration with one of the Wrasse fishermen. Part of this work involved positioning GoPro cameras on certain pots along the string of pots to film wrasse entering and leaving the pots, and in the area of the fishery. This work was coupled with gathering data as part of the D&S IFCA's on-board observer surveys which will continue until the autumn. The aim of the pot saturation experiments is to establish if saturation is occurring in the fishery as this can invalidate catch as an index of abundance. Unfortunately, due to limited video capture of entries and exits of wrasse into and out of the traps, it was not possible to establish if saturation had occurred. Additional data captured were used to calculate the total number of species and abundance of wrasse around the traps to assess whether this relates to catch. Catch per unit effort was also compared between 2017-2018 and between the months of May to August. Comparing these data will help the IFCA monitor the fishery to aid future management decisions and determine whether it is sustainable.

Wrasse fishing in the D&S IFCA's District in 2018 had a slow start with fishermen either concentrating efforts on the Cornish side, or not fishing for a number of reasons. Later on in the season normal effort resumed and a number of onboard observer surveys for the wrasse fishery were conducted, in addition to the surveys carried out during the pot saturation sampling. These surveys were undertaken to gather more detailed information on the catch composition, size distribution and breeding season. Analysis of the Live Wrasse Fishery data collected from on-board observer surveys and landings forms was completed to assess changes in catch and landings between 2017 and 2018. A [report](#) has been produced for the Byelaw and Permitting Sub-Committee meeting in which the results, main findings and conclusions have been presented and discussed.

A meeting with a PhD student looking at the Live Wrasse Fishery was held to obtain an update regarding progress and specifically what aspects of the fishery will be investigated. A report on Wrasse Research being undertaken in the South West was produced and has been submitted to the Byelaw and Permitting Sub-Committee.

Cornwall IFCA Wrasse Research and Management

Cornwall IFCA (CIFCA) undertook wrasse [data collection and tagging surveys during 2018](#). For the Falmouth Bay area a total of 1,066 wrasse were tagged at six different locations in the CIFCA's District to assess the movement and site fidelity of the wrasse tagged and to gather catch data comparing hauls and locations. CIFCA also produced a [report](#) on the Live Wrasse Fishery Investigations for 2018.



CIFCA developed its [Live Wrasse Fishing \(Limited Permit\) Byelaw](#) in 2018 which came into force in early 2019. This Byelaw introduces restrictions on the number of permits issued, closed seasons for the different species, minimum lengths, closed areas and escape gaps fitted to pots.

Whelk

The D&S IFCA Byelaw and Permitting Sub-committee considered evidence from the analysis of the Size of Sexual Maturity Studies undertaken by D&S IFCA Officers. The research involved the collection of samples in 2016 and 2017 from North and South Devon and the size of the gonads of the male and female whelks were measured to assess their maturity and determine the size of sexual maturity for the whelks across the district. The results indicated that the EU MCRS for Whelks of 45mm was insufficient to protect the spawning population and that whelks were being removed from the fishery before they had reached maturity. The results of this work determined that the MCRS should be increased. The Byelaw and Permitting sub-committee decided that an increase to 55mm would be implemented on 1st November 2018 and a further increase to 65mm on 1st November 2020. In order to gather further evidence to inform the management of the whelk fishery in the D&S IFCA's District, additional whelk samples collected from Ilfracombe and Exmouth in December 2017 and January 2018. These were analysed to determine the breeding/spawning season of whelks in the D&S IFCA's District.

Additional analysis was conducted on the data from the 2015 & 2016 whelk studies to look further into the relationship between shell height and shell width. This has been used to develop guidance for the industry on how to determine suitable riddle spacing for the new MCRS.

- Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 6:30 pm on Thu, Sep 27, 2018: Minimum Conservation Size (MCRS) for whelk will increase from 1st November in @DevonSevernIFCA district: <https://t.co/qlscAnXEXG> #fishing #shellfish #Devon <https://t.co/ZaBzKk1zxu> (<https://twitter.com/DevonSevernIFCA/status/1045365001920241664?s=03>)

Cuttlefish

D&S IFCA undertook a trial to investigate two different research topics on potting for cuttlefish. One is to look at how cuttlefish pots interact with seagrass in the Torbay MCZ, and the other will investigate ways to increase the survivability of cuttlefish eggs on the pots. This work was undertaken in collaboration with fishermen from the Torbay area and who provided two cuttlefish pots for use in the trials. One of the two cuttlefish pots was deployed with GoPro cameras attached, to investigate how the pots interact with the seagrass and whether any significant impact of the pots on the seagrass beds could be identified. Artificial egg-laying media were attached to both pots to investigate whether or not the cuttlefish will lay their eggs on the media rather than the pots. One pot had bungy cords tied across the pots and the other has net attached, both acting as the egg-laying media. The media will then be removed, if eggs are attached, and kept in the water over the summer months so that the eggs have a chance to hatch. It is hoped that if the trial is successful then the IFCA will engage with the cuttle fishermen to potentially encourage the use of egg-laying media on cuttlefish pots for the 2019 season.



Mussels

Stephanie Harper-Chung of the Exe Estuary Partnership reported a massive decrease in mussel stocks on the Exe estuary and raised concerns about the potential loss of food source for birds – for which the Exe Estuary SPA is designated. She also reported that there are similar issues for other South Devon estuaries. Mussel stock assessments were carried out by D&S IFCA for the Exe Estuary, Teign Estuary and Taw Torridge Estuary in 2018.

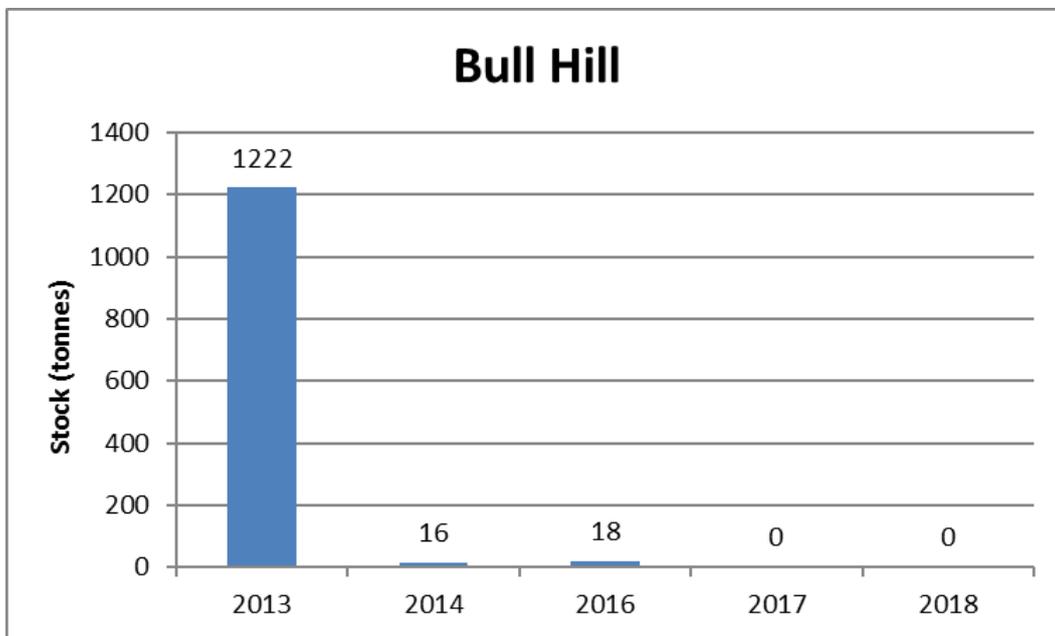


Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 7:52 pm on Wed, Sep 26, 2018: Recent #mussel stock assessments by Devon & Severn IFCA to determine the stock tonnage and map the area of the mussel beds <https://t.co/2o9sYjY8mM> #devon <https://t.co/oFgmCvx99s> (<https://twitter.com/DevonSevernIFCA/status/1045023200944541696?s=03>)

Reports for the mussel stock assessments undertaken in 2018 can be found with these links:

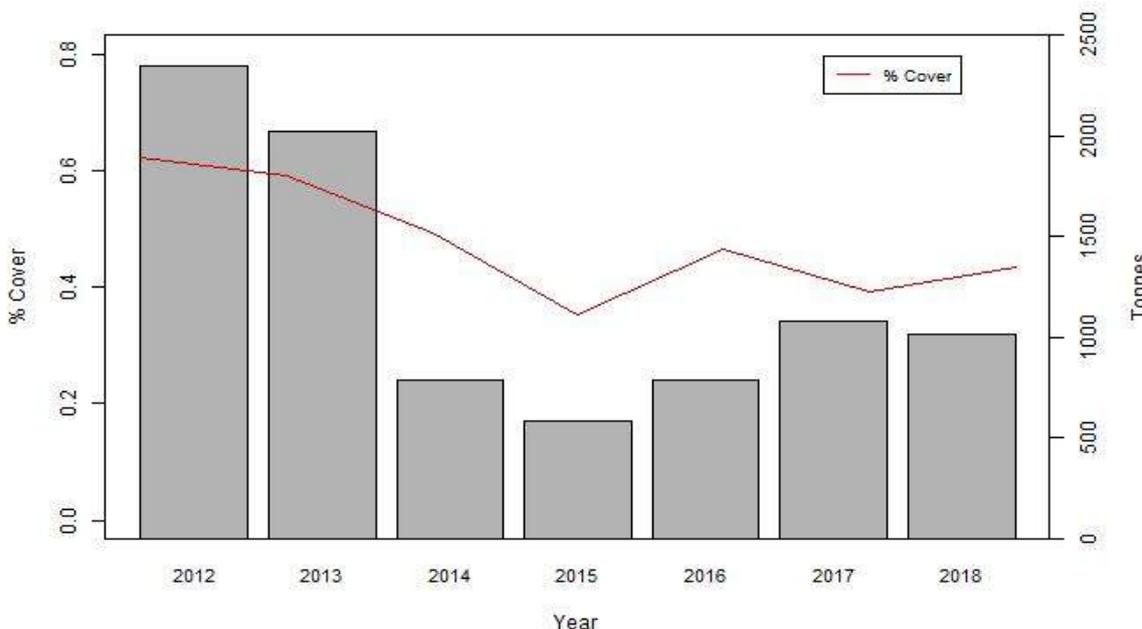
- [Exe Estuary](#)
- [Teign Estuary](#)
- [Taw Torridge Estuary](#)

For the Exe Estuary SPA and Teign Estuary, the stock assessments show a total loss of mussels from the public beds. D&S IFCA's Byelaw and Permitting Sub-Committee discussed the concern relating to this loss, in particular for the bird populations over-wintering on both these estuaries (and for which the Exe Estuary is designated as a Special Protection Area (SPA), and temporary closure notices for the removal mussels from these beds, by any person, will be introduced in 2019.



Tonnage of mussels on Bull Hill Bank, Exe Estuary 2013-2018

For the Taw Torridge Estuary, the state of the mussel stocks is quite different than for the south Devon Estuaries. The results of the survey done in 2018 were compared to previous years. The total stock across all beds showed a decline in 2014/2015 likely as result of the severe winter experienced then, but since 2016 the tonnage of mussels in the estuary has increases to over 1000 tonnes.



Fish Survey Work– Somerset and the Severn Estuary

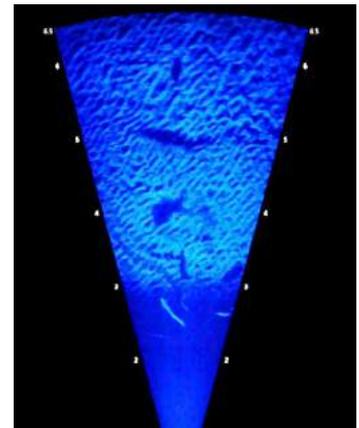
Flatfish surveys using a riley trawl (two-person push net) have taken place on a monthly basis at Burnham-on-Sea and Weston-Super-Mare with a Plymouth University undergraduate, working under Dr Ben Ciotti. Initial results saw 1-year old sole present at both sites in June, followed by an influx of this year’s sole in July, concentrated at Burnham-on-Sea. The surveys aim to improve our understanding of the distribution of the sole nursery area in the Bristol Channel in relation to various environmental factors. This will improve the evidence base for D&S IFCA in replying to consultations for developments in the Severn Estuary. It is likely that this nursery area is significant in terms of commercial Dover sole abundance in the Bristol Channel.



Spring-summer sampling of fish was completed at Steart managed realignment with Plymouth University. An MSc project is now working alongside the PhD student to look at the abundance, feeding and growth of sand gobies inside the managed realignment compared to the adjacent natural saltmarsh.

Local fishermen at Minehead invited D&S IFCA officers to observe the fishing of the fish weirs at Minehead which are registered ancient monuments and are fished only every few years and for purely heritage reasons. A wide range of species were called including at least four species of juvenile flatfish, bass, codling, conger eel and pipefish.

Survey work for a partnership project with Swansea University, Natural Resources Wales (NRW) and Natural England (NE) took place in September (Swansea Bay) and October (Severn Estuary). The ARIS sonar was trialled as a baited camera, first in Swansea Bay and then in the Severn Estuary. Early results look promising with the camera clearly capturing schooling fish and dogfish in water too turbid for traditional cameras. Additional work with NRW and NE used the camera to map *Sabellaria* – a reef-building worm- that is a protected habitat in the Severn Estuary European Marine Site and may be an important habitat for fish. This work will help improve knowledge of fish ecology in the Bristol Channel, essential for an Ecosystem Approach to management as described in D&S IFCA’s Annual Plan.



Crawfish/spiny lobster



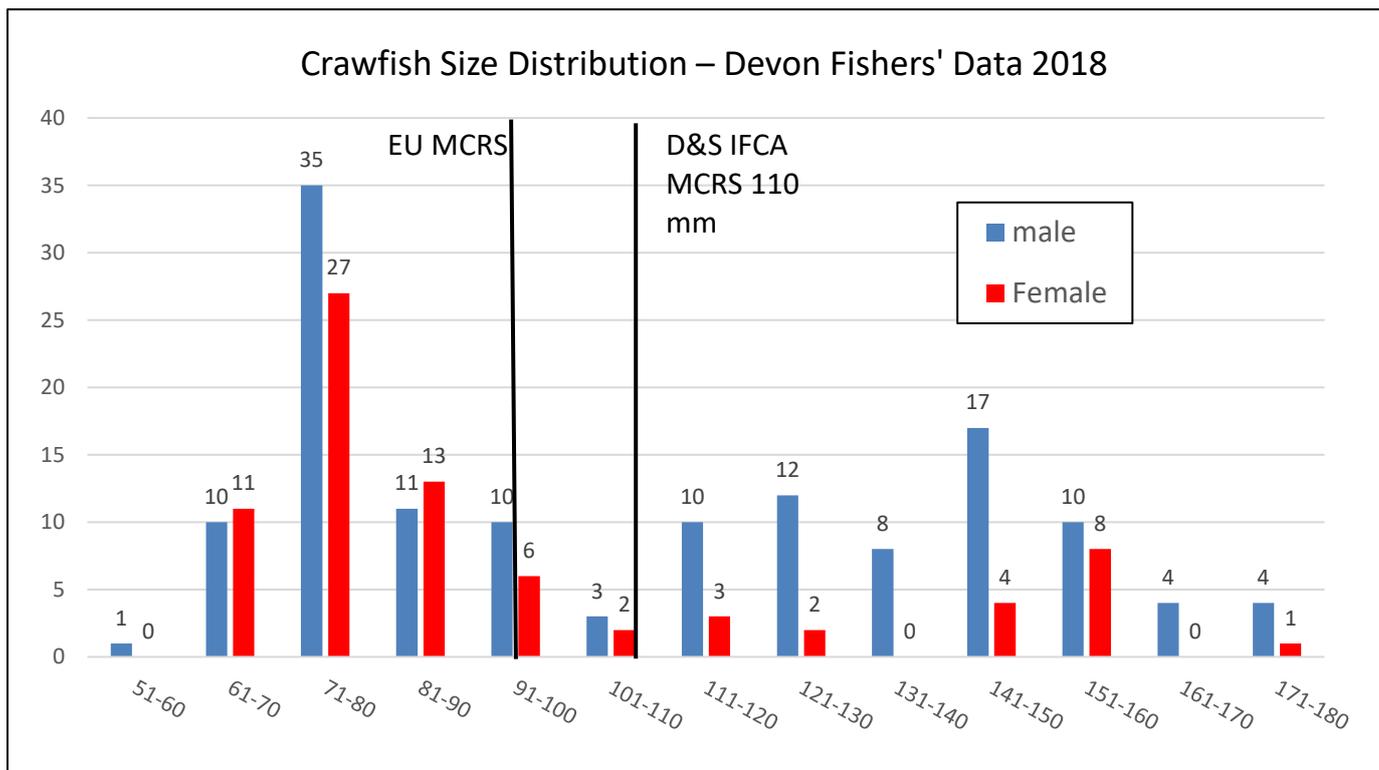
There have been further sightings of spiny lobsters /crawfish (*Palinurus elephas*) in the South West. Matt Slater of Cornwall Wildlife Trust reported sightings of numerous crawfish on the Falmouth Bay wrecks and reefs. He noticed that those seen are larger in size than seen previously and are now near MLS 110mm carapace length.

Charlotte Bolton (Seasearch) reported sightings of crawfish on the eastern side of Lyme Bay & even off Portland . These were mostly juveniles. Concern was raised about the lack of management of the species.

There was a report, in December 2018, of approximately 300 spiny lobsters caught in a trawl south of Wolf Rock.



Keith Hiscock reported that crawfish/spiny lobster (*Palinurus elephas*) recruitment appeared to be continuing in 2018. He took the image left at Eastern King Point in Plymouth Sound on 28th June 2018 and estimated the image to be 12 cm across. (See: Hiscock, K. 2019. The European spiny lobster in south-west Britain – back from the brink? *British Wildlife*: 31 (2), 79-85.)



The South West IFCA's commenced data gathering on crawfish during 2018. Crawfish appear to be having a comeback in recent years. Divers and commercial fishermen have reported an increase in sightings of juvenile crawfish of different age classes, which may indicate a recovery of the species. In the next few years these juveniles are likely to enter the fishery and be of a landable size (110mm in D&S IFCA's District). Many fishermen have raised concerns that an emerging fishery may be over exploited leading to a boom and bust scenario and a repeat of the

decline of the fishery that was seen in the 1970s. Within D&S IFCA's District survey work commenced with fishermen collecting data on the size, sex and location of any crawfish caught in their potting gear. The data collected have given an insight into the location and size cohorts that exist in 2018 and will be used to plan further survey work in 2019 and inform management. In Devon waters crawfish are not predominantly targeted by nets or pots. D&S IFCA contacted all Permit Holders from commercial fishing sectors for their input and ideas to help design the management measures they feel are appropriate and viable to ensure the longevity of any fishery and sustainability of the stock in the D&S IFCA's District. This provided the industry with an opportunity to have their say and lead the development of management measures, which may include restrictions relating to the four categories of management that already exist in permit conditions – those being gear restrictions; spatial restrictions; time/seasonal restrictions and catch/landing restrictions.

D&S IFCA hosted surgery sessions at its offices in Brixham where officers were able to meet and chat with permit holders about their thoughts. The four sessions were:

- Thursday 1st November 2018 - 4pm to 8pm
- Saturday 10th November 2018 - 9am to 12pm
- Wednesday 14th November 2018 - 4pm to 8pm
- Monday 19th November 2018 - 4pm to 8pm

Pacific Oysters

A detailed report from Matt Slater is included in 'Benthos'.

Several observations were made throughout 2018 regarding the sighting and location of Pacific oyster in the South West. Maxine Chavner highlighted the management issues relating to Pacific oysters and reported that the non-native Pacific oyster has colonised many places in Torbay, including Torre Sands, Preston / Paignton Beach and Ladybird Cove & Shoalstone beach in Brixham.

Matt Slater of Cornwall Wildlife Trust also reported huge densities of Pacific oysters in some areas surveyed by CWT volunteers as part of NE/CWT/South Devon ANOB survey week. The survey locations were: Shoresearch Falestry, Helford, Love, Fowey, Tamar, Whitsand Bay, Mounts Bay, Carbis Bay and Par beach

The Tamar Estuaries have published a Biosecurity Plan to establish a guiding framework to reduce the risk of the introduction of new non-native species (NNS) to the Tamar Estuaries area and to effectively manage existing NNS including invasive non-native species. See: <http://www.plymouth-mpa.uk/home/managing-the-mpa/projects-research/>.

Mackerel

The mackerel season appeared to be late in 2018 which was noted by Bob Earll. At the seawatching Yealm BioBlitz discussions were had about the lateness of the mackerel coming into coastal waters this year. Later in the month, mackerel were being caught in large numbers and may have been the cause of the observations of large number of cetaceans chasing the fish.

Otters

D&S IFCA introduced management measures through its Potting Permit Byelaw to protect otters in estuaries within its District. The Permit Conditions specify that within estuaries no pot can be used for the purpose of fishing with an entrance at its narrowest point of 85mm or less, unless the entrance is fitted with a rigid ring.

Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 7:16 am on Fri, Sep 28, 2018:

New measures introduced to protect #otters by @DevonSevernIFCA <https://t.co/IRzvXr1eAj> #devon #fishing

<https://t.co/cfO9XJ838F>

(<https://twitter.com/DevonSevernIFCA/status/1045557721246945280?s=03>)

Seagrass

Andrew Knights of Natural England reported that sea grass had been washed up on beaches between St Ives and Porthtowan and wondered if it might be coming from Isles of Scilly.

Seagrass is an important habitat in areas in the South West and is a feature of several MPAs.

In D&S IFCA's District there are seagrass beds in the Plymouth Sound and Estuaries EMS and Torbay MCZ. These beds have been surveyed every two years and reports are available [here](#).

Marine Conservation Zones

Richard White reported that on 8th June 2018 Defra launched a six-week consultation on 41 new MCZs and additional features for 13 sites. Decisions on designation would be made within 12 months after closing date which was 20th July 2019. The proposed sites in the South West are:

- Axe Estuary
- Camel Estuary
- Cape Bank
- Dart Estuary
- Devon Avon Estuary
- East of Start Point
- Erme Estuary
- Helford Estuary
- Morte Platform
- North East of Haig Fras
- North West of Lundy
- Otter Estuary
- South of Celtic Deep
- South of Isles of Scilly
- South West Approaches to the Bristol Channel
- South West Deeps (East)

Within D&S IFCA, Tranche 2 MCZ planning meetings were held with NE and EA to discuss upcoming surveys in the two North Devon sites. This was to ensure IFCA needs are met during these surveys and data would be available to inform management. The second stage of the Torbay MCZ BACI survey to investigate recovery and natural environment impacts, such as storms, on the designated sub-tidal mud habitat was carried out by Ocean Ecology on behalf of the IFCA. The results from these surveys should be available in 2019 and this will allow the IFCA to finalise its draft Monitoring and Control Plan.

Marine Pioneer Programme

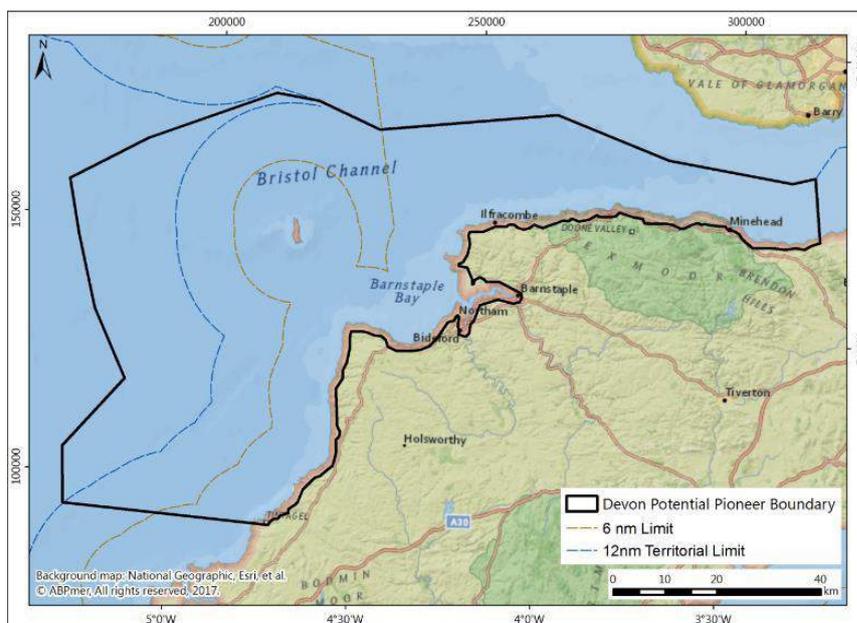
As part of D&S IFCA's work under the Marine Pioneer Programme, two project outlines have been developed. The first project will develop Research and Management Plans for fish in the Pioneer area. These plans will draw together existing research, policy and management and review any gaps in these areas, which may allow D&S IFCA to improve the sustainability of a local stock by filling these gaps. These will form the foundation on which to develop regional management within the Pioneer area and be explicit in what potentially is achievable. The second is a project looking at Ecosystem Based Fisheries Management focused on herring in the Severn Estuary and Bristol Channel. This project would include a scientific element looking at genetics and morphometrics to investigate

whether this area has a separate stock of herring and habitat mapping to look at the occurrence of potential herring spawning habitat.

It would also include an element looking at improving the shoreside facilities to improve the value of herring locally – such as a smoker.

D&S IFCA is working with the Blue Marine Foundation and Plymouth University on the latter project and is hoping to receive EMFF funding to recruit a short-term candidate to assist on the first project. The output and achievement from the North Devon Marine Pioneer will help fulfil some of the aims set out within the 25 Year Environment Plan and the Pioneer offers an opportunity to test the delivery of the Plan at a local level.

A workshop was held by the Pioneer programme in North Devon and an afternoon session on sustainable fisheries was run jointly between D&S IFCA and the Blue Marine Foundation. This included an exercise with fishermen to identify the main barriers to viable sustainable fisheries in North Devon and their vision for regional management. This was then followed up by a meeting between Pioneer programme team, D&S IFCA officers and Defra to discuss regional management and how the Pioneer programme can help Defra to deliver the 25 Year Environment Plan.



D&S IFCA Autumn News <https://mailchi.mp/e2f899ceb630/springnews-526027?e=f0775563f3>

Seals

D&S IFCA started working with ABPmer on seal deterrent work in Torbay. ABPmer reviewed existing literature and data on the interaction of seals with fishing and the fishing industry and then went on to produce an on-line survey for commercial fishermen to complete. This survey allowed fishermen to supply information on the effects of seal on commercial fishing and highlight the extent of the problem and explore options for non-lethal deterrents. The results of this and further workshops have fed into a trial of acoustic deterrents which will take place in 2019.

Katie Bellman reported that the influence of social media had attracted higher numbers of visitors to seal haul outs causing more disturbance in some areas e.g. Newquay area.

Angling Trust & Netting

The Angling Trust posted news on its website on 23rd October 2018 relating to nets in Southern Estuaries. The article can be read here:

<https://www.anglingtrust.net/news.asp?itemid=4674&itemTitle=Get+the+nets+out+of+the+Southern+estuaries+-+save+our+salmon%2C+seatrout%2C+mullet+and+bass§ion=29§ionTitle=Angling+Trust+News>

Ghost Fishing

A Rame Peninsula Beach Care cleanup took place on 22nd December 2018 and reported that 772 pieces of ghost gear (lost or discarded fishing gear) were picked up in just 100m of beach at Tregonhawke. They reported that many items were too big or too tangled to be retrieved and that fishing gear made up a good 80 to 90% of all the plastics on the beach. Their report stated that degrading rope and net is recognised as a significant source of microplastics in the marine environment, and also poses a serious threat to seals and seabirds. Over 300 Cornish seals have been observed with plastics, often fishing net, entangled around their necks, and many seabird chicks die each year through entanglement as a result of fishing gear being used as nesting materials.

Management and Policy

D&S IFCA Netting Permit Byelaw

On 1st March 2018 D&S IFCA implemented the long-awaited Netting Permit Byelaw. Officers have been involved in the production of annexes for the spatial restrictions and literature for delivery to tackle shops and notice boards throughout the D&S IFCA's District in order to engage with stakeholders to ensure they are fully informed. The information has also been highly publicised through the D&S IFCA website, social media and other media outlets. The Netting Permit Byelaw has introduced permits to all commercial and recreational netters in the District. The Permit Conditions include catch restrictions, size restrictions, gear restrictions and spatial restriction which include closures of estuaries to netting (apart from small seine nets). Within three MCZs – Lundy, Skerries Bank and Surrounds, and Bideford to Foreland Point - there is a prohibition on the removal of spiny lobsters under all the IFCA Activity Byelaws: Potting; Mobile Fishing; Diving; Netting.

D&S IFCA Mobile Fishing Permit Byelaw

Devon & Severn IFCA (@DevonSevernIFCA) tweeted at 8:53 am on Sun, Sep 30, 2018:

D&S IFCA introduces requirements for VMS systems on the mobile #fishing fleet <https://t.co/6nQkPzHEqd> #Devon <https://t.co/zLr2N1w8fB> (<https://twitter.com/DevonSevernIFCA/status/1046306910272663553?s=03>)

Under the Mobile Fishing Permit Byelaw D&S IFCA introduced changes to the Permit Conditions on 1st August 2018. These require that all mobile fishing vessels between 6.99 and 15.25m in length must have a fully functioning, remotely accessed electronic reporting device on board at all time. There is a requirement that the positional data are reported every 10 minutes unless the vessel is in a restricted area, as set out in the Permit annexes, when it must report every three minutes.

D&S IFCA Potting Permit Byelaw

In 2018 new measures were introduced under the permit conditions of the Potting permit Byelaw which included increases in the MCRS for whelks; prohibition on the removal of spiny lobsters from three MCZs in the District; gear restrictions to protect otters, changes to the closed season for the wrasse fishery and changes to slot size for corkwing wrasse.

D&S IFCA Hand Working Byelaw Development

D&S IFCA completed a number of bait digging surveys on the Exe Estuary in 2018. These observation surveys were focussed on the 'Duck Pond' area of the estuary, where there is intertidal seagrass. The main focus is to determine if, and to what extent, digging occurs on the seagrass (as has been reported in the past), to inform the development of a hand-working byelaw. Analysis of all D&S IFCA's data on bait digging effort in EMS has begun. This information will be used to inform HRAs on bait digging activities. Further surveys in 2018 and 2019 will feed into the development of a hand working permit byelaw and will include activities such as crab tiling, bait digging and hand gathering.

Fisheries White Paper

Government published Sustainable fisheries for future generations, command paper setting out high-level details for forthcoming Fisheries Bill and longer-term fisheries and marine conservation management.

<https://www.gov.uk/government/consultations/fisheries-white-paper-sustainable-fisheries-for-future-generations>

The Fisheries Bill was presented to Parliament but was not passed in 2018.

<https://www.gov.uk/government/news/gove-launches-fisheries-bill-to-take-back-control-of-uk-waters>

<https://services.parliament.uk/Bills/2017-19/fisheries.html>

Plymouth Marine Park

Melanie Austen (@Mel_Austen) tweeted at 11:16 am on Fri, Dec 07, 2018:

At #MarineParkPlym prospectus launch, great intro from @LukePollard and inspirational talk from @mjattrill and @CouncillorTudor. Wide support across #marinescience in Plymouth @PlymouthMarine @thembauk @PlymUni

<https://t.co/1As68MY2Vh>

(https://twitter.com/Mel_Austen/status/1071000572571062272?s=03)

Marine Developments

Plan's to build the world's first tidal power lagoon at Swansea Bay were not taken forward by the UK Government. CMS News <http://www.cmscoms.com/?p=14250>

This has major implications in relation to the development of Dean Quarry and the adjacent MCZ. [Cornwall Live News](#) reported that the future of Dean Quarry is on hold due to the Government turning-down plans for the tidal lagoon in Swansea Bay. It had been proposed that 5 million tons of rock would be extracted from Dean Quarry to create 6.5 miles of breakwaters for the lagoon.

14. Litter, Plastics and Microplastics

Claire Wallerstein & Delia Webb

Contact: Cornish Plastic Pollution Coalition

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Marine Plastics

Marine Litter General

This was a steady but not significant year for marine plastics, although there were certain items of interest found washed up on South West beaches.

Otrivin bottles



Empty bottles of Otrivin nasal decongestant started to appear on beaches around the Whitsand Bay area in November 2018. Over subsequent weeks many hundreds of these small bottles were found across a large stretch of coast of south east Cornwall and south Devon.

It is considered most likely that these came from a container ship spill – especially as this product is only marketed as Otrivin in the United States (in the UK the product is called Otrivine and is sold in a different shaped container). Efforts to obtain more information from the manufacturer, Glaxo Smith Kline, about how the bottles could have ended up in the sea in such numbers were unsuccessful.

Image: Karl Greenland

Shark tags, Kajagoogoo and antique crisps

The find of several items, decades old, gave good evidence of the longevity of plastic in the sea.



Image: Lisa Woollett



Image: Delia Webb

Firstly, two shark tags, found several months apart on Polhawn beach on Whitsand Bay, were dated back to research done in the early 1970s by the Marine Biological Association. These tags were fitted to blue, mako, porbeagle and tope sharks to gain an understanding of the sharks' prevalence and movements. (Similar research done much more recently has apparently revealed a dramatic decline in the number of sharks caught in the same areas for tagging - and shown that the sharks spend a large amount of time in areas of the Atlantic where they are frequently likely to encounter longline fishing vessels, which may result in them being caught either as accidental bycatch or deliberately for the shark fin trade.)



Other finds highlighting the durability of plastics in the environment included a badge of 1980s pop band Kajagoogoo, found during a beach clean at Portwrinkle beach, a 33-year-old 'Mini Cheddars' pack (best before Jan 1986) and Monster Munch pack (best before May 1986) both found at Mount's Bay.

It is postulated that these old but well-preserved plastics have spent many years buried in dunes or sediments, and are only rarely released, for example during storms. Certainly many very old plastics (including some priced in pre-decimal currency) were discovered in the wake of the huge 2014 storms.

Image: Claire Wallerstein

Biofilters



During February and March 2019 large numbers of strange black objects washed up on south coast beaches around western Cornwall, and within a few weeks were picked up in their thousands. They were quickly recognised as floating plastic biofilters, used as a substrate for the growth of bacteria used to digest unwanted compounds in wastewater treatment.

These were identified as a type known as Hel-X and South West Water was quickly ruled out as the source (the only plastic biomedica it uses are tiny bio-beads – themselves already the source of significant plastic pollution).

Image: Delia Webb

Hel-X biomedica are often advertised for sale as filters for ponds, as well as being used as filters in private wastewater systems.

By late summer the filters had been spread even further with samples being found on North coast Cornish beaches as far up as Bude.

Pinpointing where spilled biomedica come from is extremely difficult (unless they are seen exiting a particular property). Around 40% of households in Cornwall are not connected to the mains sewage network, and around 10% of those are thought to be using some form of floating plastic biomedica. With the introduction of tighter legislation on septic tanks and protection of groundwater, the use of systems like this is set to grow further – as is the potential for more spills.

Bio-beads

These are small ridged pellets, used in their billions as biofilters at nine of South West Water's wastewater treatment



stations. Many of these plants have been shown to have suffered significant one-off and/ or ongoing spills of bio-beads, which are a significant source of microplastic pollution on many South West beaches.

A herring gull regurgitation pellet, retrieved from a fishing boat on the Fal, downstream of a major spill near Truro in 2010, was dissected and found to contain 70 individual pieces of plastic. Of these, up to half were bio-beads, showing how these pellets are particularly attractive to such birds – possibly because they resemble fish eggs – and the evident availability of bio-beads in the environment nearly 10 years after the spill, which SWW had claimed had been completely cleaned up.

Image: Claire Wallerstein

Following on from the Cornish Plastic Pollution Coalition's report into bio-bead pollution, South West Water is now installing secondary containment mechanisms at all its bio-bead plants, which should hopefully prevent any further spills.

Pyroplastics



Image: Rob Arnold

Work continued to research pyroplastics or 'plastic pebbles', a type of plastic pollution that few people would even notice as they so closely mimic natural rocks and pebbles. The Cornish Plastic Pollution Coalition has received reports, samples and photographs of this sinister form of marine plastic found on beaches in Cornwall (North and South Coasts), Devon, Dorset, Guernsey, Wales, Scotland, SW Ireland, Portugal, Canada and the Azores.

Pyroplastics are presumed to originate from people burning or incinerating plastic debris on beaches, coastal areas, or at sea, possibly in the misguided belief that this is an effective way of getting rid of rubbish and marine plastic. Sometimes they are true plastiglomerates – i.e. plastic that has mixed with beach sediments and organic matter while melted, sometimes forming large agglomerations that often attach to bedrock or boulders before being weathered by the action of the wind and waves.

Research conducted by Dr Andrew Turner at Plymouth University has revealed variable quantities of lead within the pyroplastics, suggesting that the material in many samples pre-dates restrictions on the use of lead chromate. Calcareous worm tubes on the surfaces of pyroplastics dense enough to be temporarily submerged in seawater were

found to be enriched in lead, suggesting that at least some of the constituents of the pyroplastics are bioavailable – with a potentially serious impact on marine wildlife.

The difficulty of detecting pyroplastics (due to their striking similarity to natural stones), means these items could form a much more significant source of marine plastic overall than currently recognised.

Ghost gear



Against a backdrop of relatively low levels of marine plastic washing up over the winter, the amount of ghost fishing gear (lost or discarded fishing waste) remained very high. On many beaches fishing waste accounts for around 70% of all the plastics retrieved, with small offcuts of trawl net (pieces around 10 to 20 cm long, resulting from net mending) accounting for 80 to 90% of this fishing related waste. Over 10,000 pieces were picked up in just a few weeks from Whitsand Bay alone. It is hoped to use a display made from these 10,000 pieces as evidence of the scale of the problem in discussions with the fishing industry to lobby for greater focus on good practice in net mending.

Image: Claire Wallerstein

Degrading rope and net is recognised as a significant source of microplastics in the marine environment, and also poses a serious threat to seals and seabirds. Over 300 Cornish seals have been observed with plastics, often fishing net, entangled around their necks, and many seabird chicks die each year through entanglement as a result of fishing gear being used as nesting materials. More than one-third of fish landed at Plymouth fish market have been found with microplastics in their digestive tracts.

Transatlantic plastic

Strandliners (strandliners.org) has been using existing historical and current data of natural transatlantic drifting seminules, recent recordings from south east and south west England and observations from social media to show how plastic identified as American in origin is washing up on the UK coastline. Over 300 identifiable plastic items of this kind were recorded between 2013 and 2018 on the Sussex/Kent coast (US fishing tags, buoys, bait pots etc). So how much more will there be along the whole south west coastline of the UK? And how much unidentifiable plastic is transatlantic in origin?

This plastic follows historically natural marine debris pathways and is also being used as rafting media for Western Atlantic marine species. These non-native species may be washing up on the south and west U.K coastline more than is acknowledged.

The exceptional winter storms of 2015/2016 were used by David Fenwick to provide much information on the species identified and their rafting methods: http://www.aphotomarine.com/trans_atlantic_rafting_species.html.

Is the arrival of new species via the main Gulf Stream transatlantic currents a problem? How can we record these rafting non-natives? And do we need to change our attitude to removing items from the beach? Strandliners is conducting research to find appropriate methods.

15. Development and Planning

Editor: Richard White

Contact:

Update from items in 2017 report

Things appear to have gone quiet on the issue of dredging of **Falmouth Harbour**. It appears that no new, formal marine licence application has been made to the Marine Management Organisation (MMO) by Falmouth Harbour Commissioners (FHC) so the proposals are in abeyance:

- <https://www.gov.uk/government/publications/falmouth-habour--2#history>

In June, the then Business and Energy Secretary, Greg Clark, announced that the UK Government had decided against supporting plans for a **tidal lagoon in Swansea Bay** as it did not believe that value for money requirements would be met. While generally welcomed by those who had continued to express concerns about marine environmental impacts, the news did not go down so well with local authorities or the Welsh Government. It seems unlikely that the project has gone away for good, as other funding options are being sought.

- <https://www.gov.uk/government/speeches/proposed-swanea-bay-tidal-lagoon>
- <https://www.swansea.gov.uk/LagoonRefusalResponse>
- <https://marineenergy.biz/2018/12/19/eleven-companies-in-line-for-swanea-bay-lagoon-development/>

Related to the Swansea Tidal Lagoon proposals are plans for the development of **Dean Quarry**, which was proposed as a source of stone for the development. It seems unlikely that this proposal will be progressed soon. Members of the local community campaigning against the development, which would impact on the newly designated Manacles Marine Conservation Zone, welcomed the news.

- <http://www.cads2015.com/wp-content/uploads/2018/06/CADS-PRESS-STATEMENT-ON-26.6.18-IN-RESPONSE-TO-GOVERNMENT-DECISION-ON-TIDAL-LAGOONS.pdf>

Monitoring of potential ecological impacts of **Lyme Bay mussel farm** continues to be carried out as part of the University of Plymouth's ongoing research programme. The owners, Offshore Shellfish, have received Best Aquaculture Practice certification from the Global Aquaculture Alliance, the first mussel farm in Europe to do so.

- <https://sheehanresearchgroup.com/offshore-mussels/>
- <https://bapcertification.org/blog/offshore-shellfish/>

The MMO marine planning process continues. The south-west of England falls into two marine plan areas, South and South-west. The South Marine Plan has been adopted by Government, while evidence and issues have been gathered for the South-west Marine Plan.

- <https://www.gov.uk/government/publications/the-south-marine-plans-documents>
- <https://www.gov.uk/government/publications/marine-planning-issues-and-evidence-database>

A dedicated website allows interested parties to examine activity maps along with marine plan policies that have been agreed or are being considered.

- <https://explore-marine-plans.marineservices.org.uk/>

New items

Following the publication of the Government's 25-year Environment Plan, five Pioneer Projects have been established to inform delivery, to test the application of a natural capital approach and to investigate how to integrate planning and delivery further, how to apply better funding mechanisms and to share lessons.

Linked to the North Devon Landscape Pioneer, the **North Devon Marine Pioneer** aims to explore how marine natural capital can best be managed for the benefit of the environment, economy and people and to test how local interests (environmental, social, business) can play their part in managing, monitoring and communicating the benefits of a location's marine area and related coastal and terrestrial zones.

- <https://www.northdevonbiosphere.org.uk/marinepioneer.html>

Having received planning permission for the development of a luxury hotel and spa, the current owners have put the island **Drake's Island**, in Plymouth Sound, up for sale with a guide price of £6 million. Sitting in Plymouth Sound and Estuaries SAC, the island is home to a variety of seabirds and boast rich sea grass beds just offshore. Any building work will be a test of how development can be carried out alongside nature conservation designations.

- <https://www.bbc.co.uk/news/uk-england-devon-45856719>

2019 update – Drake's Island was sold in April 2019 for an undisclosed amount. The new owner wants to preserve the island's original features and is considering development of a water sports centre.

- <https://www.bbc.co.uk/news/uk-england-devon-49346722>