

OTHER BIOLOGICAL RECORDS FROM LUNDY

The following reports have been compiled by the recorders for each group of organisms. Most of the records have been taken from the pages of the LFS Logbook not devoted to birds and we thank all those who have taken the time and trouble to enter their observations of animals, plants, bryophytes, lichens and fungi whilst on Lundy. We have not attempted to verify all the records, but unusual or interesting observations will have been checked with the originators. Most of the information will also eventually appear on the LFS website and on the various national databases.

Please keep entering your 2023 sightings in the Logbook and sending us photographs which can be used to illustrate the 2023 AR!

MARINE RECORDS

Compiled by Keith Hiscock

Most records entered to the LFS logbook in 2022 were of cetaceans. The majority of records of seashore and seabed species listed in this report are from Porcupine Marine Natural History Society (PMNHS) members and made during the marine bioblitz on Lundy on 14-19 July. A full list of species recorded is given in PMNHS Bulletin 19 (Moore, 2023; Brazier, 2023; Bunker & Harries, 2023; Darbyshire, 2023; Hiscock, 2023). Many of the recorded species are well-known from Lundy shores but some records (the ones included here) are of species not previously recorded from Lundy, some that show increases or decreases in abundance or some that are non-native species whose abundance from year-to-year is significant to track. There were 478 taxa of marine species recorded during the PMNHS surveys.

Names of taxa given here are the most recent (at May 2023). For authorities for each species and to check against changes to names, go to www.marinespecies.org.

ALGAE

RHODOPHYTA

Pale Patch Laver *Pyropia leucosticta*

Noted during PMNHS surveys and recorded here as it is now known to be a non-native species. The species was recorded by Leslie and Clare Harvey in the 1940s.

Sea Noodle *Nemalion elminthoides*

(was *N. helminthoides*)

Noted as abundant on the mid to upper shore at Devil's Kitchen in Brazier (2023). Described as generally distributed around Britain but mostly as small plants. Described as 'locally abundant' in Irvine (1973) at locations all around the island and likely that it is a 'Lundy speciality'.

► *Rocks dominated by the non-native Harpoon Weed* *Asparagopsis armata* *with separated plants of non-native Wireweed* *Sargassum muticum* *under the Jetty on 17th July (photo: Keith Hiscock).*



Harpoon Weed *Asparagopsis armata*

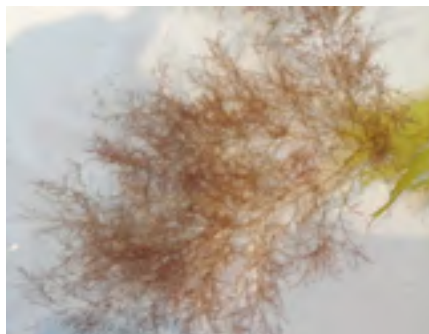
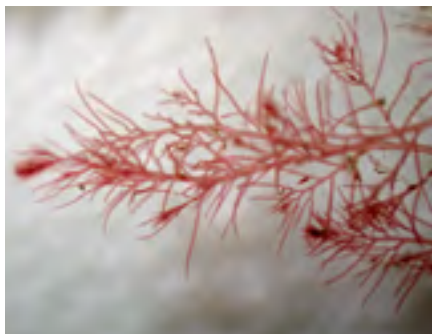
Only small amounts in pools in Devil's Kitchen in 2022 but abundant under the Jetty (including patches of the *Falkenbergia* stage) and on the adjacent lower shore.



Okamura's Pom-Pom Weed *Caulacanthus okamurae*

Observed and reported for the first time at Lundy in 2021 (see the LFS Annual Report for 2021) and was present again in Devil's Kitchen but also at Gannets' Bay. The species is variable in abundance from year-to-year.

◀ *Iridescence in Gastroclonium ovatum at Devil's Kitchen (photo: Anne Bunker).*



▲ *Dasysiphonia japonica* (photo: Paul Brazier) from the Knoll Pins and *Melanothamnus harveyi* from Ladies Beach (photo: Keith Hiscock): both non-native species not previously recorded from Lundy.

Red Grape Weed *Gastroclonium ovatum*

A widely distributed algae but notable here for the observation of a very few individuals with iridescent longitudinal lines down the grape-shaped ends of the fronds at Devil's Kitchen. There appear to be no records in the literature of the species being iridescent (Bunker & Harries, 2023).

Siphoned Japan Weed *Dasysiphonia japonica*

Collected from the Knoll Pins on 26 July where it was entwined as drift material in the hydroid *Hydrallmania falcata* and in shallow water at Brazen Ward. Identified by Paul Brazier. A non-native species not previously recorded from Lundy.

Harvey's Siphon Weed *Melanothamnus harveyi*

Collected from Ladies Beach by Joanna Harley attached to *Callophyllis laciniata* and identified by Paul Brazier. A non-native species not previously recorded from Lundy.

OCHROPHYTA

Brown Tuning Fork Weed *Bifurcaria bifurcata*

Notable here because it was not recorded at Lundy in the late 1940s and early 1950s by Leslie and Clare Harvey (Harvey, 1952) or by Tregelles (1937) but was by Irvine *et al.* (1972). It is a

warmer water species that has possibly extended its range since the 1940s. The PMNHS team visited the upper midshore rockpool on the offshore rock south of the Lametor peninsula and observed that the percentage cover of the species (mean of three estimates) was 28%, about that measured in 1984 of 27% (Hiscock, 1984).

Bushy Rainbow Wrack *Ericaria selaginoides* (was *Cystoseira tamariscifolia*)

There has been one clump in a pool at Devil's Kitchen for many years but no others in the Landing Bay and Rat Island area despite apparently suitable habitats being present. The Devil's Kitchen plant was 'infested' with a *Ceramium* species in July. The species was found to be more abundant in pools south of the Lametor Peninsula during 2022. In discussion with phycologists on the Marine Festival surveys, it was wondered if, for a likely long-lived species, there may have been collecting in the distant past and lack of recruitment.



▲ Wireweed, *Sargassum muticum* - the light brown plants - photographed from a viewpoint on the jetty at low water on 15th July (photo: Keith Hiscock).

Wireweed *Sargassum muticum*

A non-native species recorded at Lundy for the first time in 1999. Recorded in 2022 around Rat Island and in the Landing Bay and in pools south of the Lametor peninsula. Generally sparse plants but could be visually dominant. Viewpoint photographs and rough counts of the number of plants visible floating at low water on either side of the jetty on 15 July revealed about 95 on each side.

CHLOROPHYTA

Green Sponge Fingers *Codium fragile* subsp. *fragile*.

A non-native subspecies not previously recorded from Lundy but recorded in PMNHS surveys.

Cherry Leung (Exeter University) undertook a study during 2022 of the possible Impact of non-native algae on native species focussing on the Devil's Kitchen, Victoria Beach and Quarry Beach. No non-native algae were recorded at Quarry Beach. Only one pool studied at Devil's Kitchen had Harpoon Weed *Asparagopsis armata* present and so the variety of species that could be studied was limited. Cherry Leung reports: "Statistical analysis has revealed the presence of *Sargassum muticum* and *Caulacanthus okamurae* had no effect on species richness, diversity and community composition of the native intertidal algal community" (pers. comm. to Keith Hiscock).

MARINE INVERTEBRATES

GELATINOUS PLANKTON

Planktonic invertebrate species that are gelatinous are described colloquially as 'jellyfish'. They include species from the Classes Hydrozoa and Scyphozoa in the Phylum Cnidaria and from the Phylum Ctenophora. There were very few observations of 'jellyfish' entered to the logbook in 2022 but that is, in part, because Dean Jones (Lundy Warden until 2021) was particularly interested in the group.

CNIDARIA: HYDROZOA

A hydrozoan *Neoturris* sp.

Example of one of the gelatinous plankton species to look-out for and record. Photographed adjacent to the Jetty on 2 June by Patrick Davies.

It seems from anecdotal information that there were the usual (see the Annual Report for 2021) gelatinous plankton seen in the Landing Bay in 2022 but there were notably no records of Barrel Jellyfish (*Rhizostoma octopus*) in the logbook: a species that occurs in high numbers in some years.

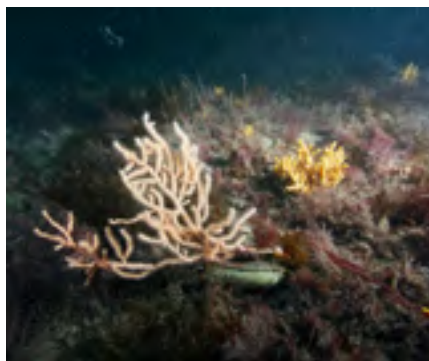
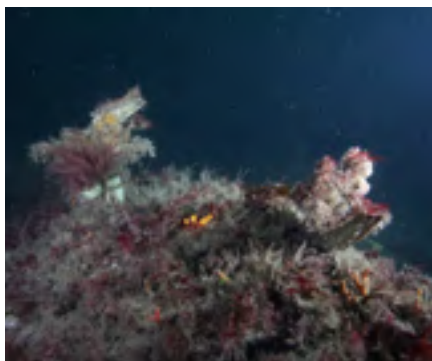


▲ One of the gelatinous plankton species frequently seen in the Landing Bay: *Neoturris* sp. (photo: Patrick Davies).

CNIDARIA: ANTHOZOA

Pink Sea Fan *Eunicella verrucosa*

Although once common around Lundy, numbers are now much reduced. Bullimore (2023) noted "... it was quite a shock to see quite how degraded the overwhelming majority of fans were. I only saw and photographed a small handful of healthy unfouled fans across the four sites we dived."



▲ Pink sea fans, *Eunicella verrucosa* continue to be in much lower numbers than in the 1970s to 1990s. Both images are from Brazen Ward on 16th July. On the left, still-attached skeletons probably from the disease event in the early 2000s now fouled with bryozoans and hydroids etc. and providing an attachment point for the egg cases of Bull Huss *Scyliorhinus stellaris*. On the right, a healthy sea fan but with entangled drift algae and Bull Huss egg case (photos: Keith Hiscock).



Sunset Cup Coral *Leptopsammia pruvoti*
Colonies of this Nationally Rare species at the Knoll Pins were re-surveyed using photographic quadrats on 26 June. Numbers appeared relatively stable compared to the last few years and there were significant numbers of small individual present. A report has been prepared (Irving, 2023).

◀ One of the photographic quadrats used to create a mosaic of images of colonies on the Sunset Cup Coral *Leptopsammia pruvoti* at the Knoll Pins. The quadrat is 36 x 24 cm (photo: Keith Hiscock).

NEMERTEA

Nemerteans were especially recorded by Patrick Adkins during the PMNHS surveys and all records are listed below.

Siphonenteron bilineatum. Ladies' Beach.

Lineus viridis. Ladies' Beach.

Micrura purpurea. Gannets' Bay.

*Emplectonema gracile**. Gannets' Bay.

Riseriellus occultus. Devil's Kitchen.

Cephalothrix linearis. Jetty Beach.

Lineus viridis. Jetty Beach

*Lineus ruber**. Lametry Bay (High shore under shale and rocks). Notable as, although a widespread species, it was present in high abundance in shale at the top of the beach in Lametry Bay.

*Oerstedtia dorsalis**. A very common species noted from several shore sites aespically Devil's Kitchen.

*Recorded by Leslie Harvey in Anon. (1951).

POLYCHAETA

Darbyshire (2023) gives a historical overview of polychaete studies at Lundy and reports that, during the PMNHS surveys, 53 species were recorded from intertidal sites with another 10 species recorded exclusively from subtidal samples. That number was considered to be 'not bad for a few days' work' when compared to previous listings. Although the number of locations that could be visited was restricted by access issues, 15 new taxa (22% of the PMNHS trip's list of polychaetes) were added to the lists of intertidal taxa known from Lundy as well as nine taxa (14% of the total list) that had not been recorded anywhere around Lundy before. An account is given in Darbyshire (2023) and a summary list is given below.

Polychaete species newly recorded from Lundy during the PMNHS surveys in July 2022 (from Darbyshire, 2023)

New records for intertidal areas (recorded elsewhere around Lundy). *Harmothoe clavigera*, *H. fragilis*, *H. impar*, *Malmgrenia mcintoshi*, *Pholoe inornata*, *Sthenelais boa*, *Mysta picta*, *Syllis gracilis*, *Nudisyllis ?pulligera*, *Marphysa sanguinea*, *Ophryotrocha* sp., *Dipolydora flava*, *Mediomastus fragilis*, *Sabellaria spinulosa*, *Bispira volutacornis*, *Circeis spirillum*.

New records for Lundy. *Phyllodoce mucosa*, *Glycera fallax*, *Schistomeringos neglecta*, *Boccardia polybranchia*, *B. proboscidea*, *Oesterdia dorsalis*, *Malacoceros vulgaris*, *Dipolydora saintjosephi*, *Pseudofabricia aberrans*, *Parasabella langerhansi*.

Darbyshire observes that the muddy shale gravel in areas of The Gates was a particularly diverse habitat for polychaetes. The silty shale crevices there also yielded the Rock Worm *Marphysa sanguinea*: a large worm not previously recorded from the intertidal at Lundy but likely present previously and not found because of its cryptic habitat. The observation of the fan worm *Bispira volutacornis* is notable as it is a conspicuous species (even when only visible as the muddy tubes) and not previously reported from intertidal habitats at Lundy. Another 'not rare' species that was recorded for the first time at Lundy was *Phyllodoce mucosa* which is commonly recorded on sandy shores, a very restricted habitat at Lundy. The two *Boccardia* species recorded for the first time at Lundy are notable. They occurred together in the same crevices in Devil's Kitchen. *B. proboscidea* is a non-native species present in Britain since at least 1998 and that can become quite dominant in some habitats, displacing some native species.



▲ Rock Worm *Marphysa sanguinea* photographed here in south Devon but found in similar habitats (silty crevices) in shale rocks at Lundy (photo: Teresa Darbyshire).

Filigree Worm *Filograna implexa* was noted as heavily fouling many colonies of the bryozoan *Pentapora foliacea*.



▲ The Filigree Worm *Filograna implexa* fouling a colony of *Ross Pentapora foliacea* off Battery Point (photo: Blaise Bullimore).

MOLLUSCA: GASTROPODA

Celtic Sea Slug *Onchidella celtica*. On ridges at the middle of the shore at Devil's Kitchen (Jon Moore). Particularly notable that the population originally found in 2020 by Rosie Ellis is still present in large numbers. The shore habitat at Lundy is unusual for this species which is nationally scarce and usually found on 'surf beaches'.

MOLLUSCA: BIVALVIA

[No notable records but extensive searches found no Pacific Oysters *Magallana gigas* first recorded at Lundy in 2020.]

MOLLUSCA: GASTROPODA: NUDIBRANCHIA

Moore (2023) observed that, during the PMNHS surveys in July, "only 14 species of nudibranch were recorded, which is not a lot for such a popular group". Brown & Hunnam (1977) record 43 nudibranch taxa from Lundy. Nevertheless, one record (of *Discodoris rosi*) is particularly notable). It was found off Battery Point making it the northernmost sighting of this species in Britain as well as a new record for Lundy (Sarah Bowen, David Kipling). *It also features as the cover picture on this annual report (ed.)*.

BRYOZOA

A branching bryozoan

Filicrisia geniculata

This small cryptic bryozoan was found tangled amongst kelp holdfasts at Devil's Kitchen. It is a new record for Lundy (Paul Brazier).

Red Ripple Bryozoan

Watersipora subatra

A non-native species first found at Lundy in May 2021 in the cave behind the arch on the north side of Rat Island. In 2022, it was found in extensive patches at 'Anemone Cave' about 20 m west of the 2021 location and under boulders on the north side of Rat Island.



▲ An extensive patch of non-native Red Ripple Bryozoan *Watersipora subatra* outside of 'Anemone Cave' on 15th July – a significant spread in extent and cover since 2021 (photo: Keith Hiscock).

CRUSTACEA: CIRRIPIEDIA

Australasian or Darwin's Barnacle *Austrominius modestus*

Although recorded since at least 1977 at Lundy, this non-native species has been difficult to relocate in recent years. Recorded in the region of the Landing Bay and at Quarry Bay during PMNHS surveys.

CRUSTACEA: DECAPODA

Montagu's or Furrowed Crab *Xantho hydrophilus*

Although noted by Leslie Harvey in Anon. (1951), this species seems to be becoming much more abundant at Lundy and more generally throughout south-west Britain.

CHORDATA: ASCIDIACEA

A Pinhead Sea Squirt

Pycnoclavella producta

Not previously recorded from Lundy and ranks as 'nationally scarce' in Britain. Reported as commonly seen by ascidian specialists David Kipling and Sarah Bowen during PMNHS diving surveys.

[Yellow-Tipped Sea Squirt *Corella eumyota*

This species is a non-native that was especially looked for but not recorded during the PMNHS surveys. It was noted in the logbook from early August in an anonymous but extensive list of shore species. Confirmation of the record is needed before it can be accepted.]



▲ *Pycnoclavella producta*: an inconspicuous sea squirt but commonly seen during PMNHS diving surveys (Sarah Bowen and David Kipling) (photo: David Kipling).

Moore (2023) noted in the report of the PMNHS surveys that sea squirts were generally infrequent around the island with only 17 taxa recorded from the west coast dives (there were 19 in total recorded) which was described as a 'moderate haul' with more being expected in the presence of ascidian specialists (Sarah Bowen and David Kipling). Most species were Rare and only two were recorded as more than Occasional. However, *Pycnoclavella producta* (a new record for Lundy) was described as Common whilst *Perophora listeri* was Frequent. A particular observation was that no species of *Polycarpa* (a widespread genus) were observed. The Marine Recorder database suggests a similar paucity of sea squirts from previous Lundy surveys. Furthermore, Lane (1977), in the 'Lundy Marine Fauna' series, recorded (including the records from Harvey, 1952) 25 species of ascidians from 20 locations between 1970 and 1975. He noted "The ascidians of Lundy form a diverse component of the marine fauna in terms of numbers of species and the habitats they occupy, but only rarely can certain species be considered abundant. Records for many species consist of single specimens only." It seems that Lundy is not a very favourable location for sea squirts.

CHORDATA: PISCES

Sunfish *Mola mola*

One seen approximately 20 m offshore from Quarry Beach on 10 November (J. Morgan).

Atlantic Bluefin Tuna *Thunnus thynnus*

One observed leaping out of the water off Battery Point on 22 August (Anon.). (Atlantic Bluefin Tuna have steadily returned to south-west waters and in large numbers in some areas since about 2015.)

[European eel *Anguilla anguilla*

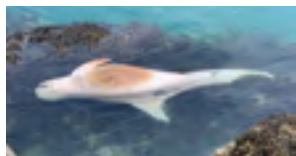
Reported from Three Quarter Wall Bay on 8 July and suggested to be about 1 m long. This was an anonymous entry to the logbook and needs validation but eels are occasionally found at Lundy.]

CHORDATA: MAMMALIA WHALES, DOLPHINS AND PORPOISES (CETACEANS)

The most frequently seen cetaceans were Harbour Porpoise and Short-beaked Common Dolphin. Both species were seen throughout the year. Favoured locations for porpoise were the tide races off the south and north coasts and, for dolphins, open water off the east coast – although there may be bias because of where observers go. About a 100 were seen travelling northwards off the east coast on 19 September (Anon.), matching the size of a similar pod seen in July 2020, but overall, numbers reported were smaller than in 2020. There was one sighting of a Bottle Nose Dolphin (none in 2021 and one in 2020). The one sighting of a Minke Whale on the passage to/ from the island compares with two seen in 2021 and one in 2020.

MARINELife record sightings of cetaceans on ferry trips between Ilfracombe/Bideford and Lundy. The number of sightings are reported on their website - <https://www.marine-life.org.uk/survey-reports/categories/ilfracombe-bideford-lundy>.

Minke whale *Balaenoptera acutorostrata* MARINELife sighting from the *Oldenburg* on 14 May.



▲ The carcass of a Risso's Dolphin in the Landing Bay on 23rd June (photo: Rosie Ellis).

Risso's Dolphin *Grampus griseus*

On 23 June, report of a dead Risso's dolphin washed-up in the Landing Bay (Anon.). Further investigations and measurements by Lundy Warden Rosie Ellis confirmed the identification. The carcass was just under 3m long and most of the skin was gone/sun-bleached.

Short-beaked Common Dolphin *Delphinus delphis*

There were seven days on which there were logbook entries for Common Dolphin. Most records were for less than five together but 20 off the SW Point on 13 September and a maximum count of about 100 off the east coast travelling north on 19 September (Anon.). 50-100 common dolphins observed from the *Oldenburg* returning to Ilfracombe on 24 May (Emma Sheehan). MARINELife report up to 10+ (including sightings of 'dolphin') on 11 of 25 crossings where observations were made.

Bottlenose Dolphin *Tursiops truncatus*

One about 100m off the Jetty on 9 August (Stuart Crossey). MARINELife report five seen on the crossing on 7 May.

Harbour Porpoise *Phocoena phocoena*

There were 19 days on which there were logbook entries for Harbour Porpoise, mostly single or two individuals. On 11 May, four were reported off the castle (Tim Jones). Chris and Sharron Blackmore made timed observations mainly from Castle Parade from 11-16 July with a highest count of four. MARINELife report porpoise on 19 of 25 crossings where observations were made.

Thanks to all of those that reported sightings.

Atlantic Grey Seals *Halichoerus grypus*

A full account is given in the article by Rosie Ellis, Angus Croudace, Daisy Laing, Tara McEnvoy Wilding and Zach Wait in this Report.

[Common Seal *Phoca vitulina*

Two common seals were reported at the jetty on 31 December. The record was anonymous. (Young grey seals can look like Common Seals and, without verification, this observation remains uncertain.)]

GENERAL NOTE

Observations of subtidal species by Keith Hiscock suggest a continued reduced abundance of many anthozoan (sea anemones, corals, soft corals) compared to the period from 1970 to the mid-1980s. Only Sunset Cup-corals *Leptopsammia pruvoti* and Pink Sea Fans *Eunicella verrucosa* have been regularly monitored since the early 1990s (and have declined in abundance) but other species such as the Southern Cup Coral *Caryophyllia inornata*, the Weymouth Carpet Coral *Hoplania durotrix* and the Red Sea Fingers *Alcyonium glomeratum* appeared to have also declined in abundance. However, long-lived and slow growing branching sponges appear to be present in similar abundance since early surveys. An accurate account of the status of often rare or scarce and long-lived species requires more targeted monitoring.

One notable difference in the appearance and likely health of many branching species is the great increase in the abundance of egg cases of Bull Huss, *Scyliorhinus stellatus*, entangled around those species (Observations over the past approximately five years and Bullimore, 2023).

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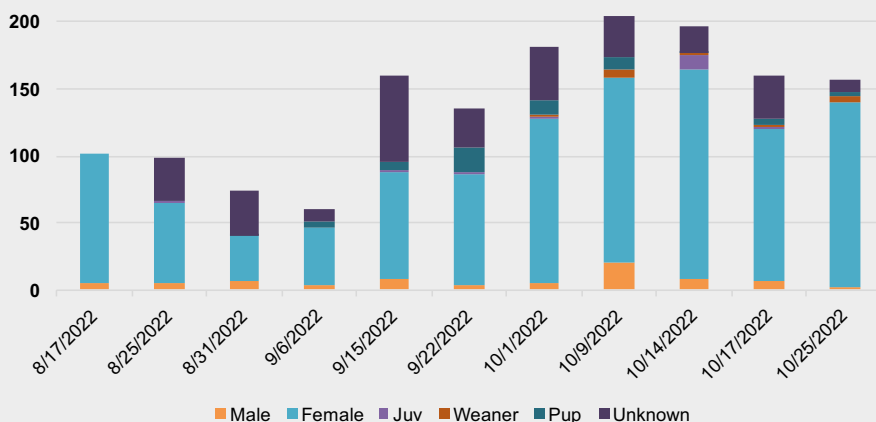
ATLANTIC GREY SEAL *HALICHOERUS GRYPUS* POPULATION AND PRODUCTIVITY STUDIES IN 2022

Rosie Ellis (Warden, Lundy Island).

The Atlantic Grey seal population has been monitored annually on Lundy since 2011, and to a varying degree beforehand. Previously, the surveys were carried out by the Conservation Team throughout the breeding season 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. 2022 saw a return to 2020 seal numbers, after a record-breaking year in 2021, with the highest count of 206 individuals and 54 pups. Although reports of disturbance documented during surveys were lower than in 2021, research commissioned by Natural England did document many instances in the Gannet's Bay area.

The highest count of seals within the survey period (mid-August to late October; Figure 1) was from a full island survey on the 9th of October, 206 (137 females, 21 males, 6 weaners, 9 pups and 31 animals of undetermined sex). This is reduced from the record high count in 2021 of 244 despite including the west coast of the island, rather than just the usual east coast observation points (shown on the map of the island). This year's survey did not include the caves where many seals pup at this time of year, for example the boat survey of 2020 which found 4 pups in one cave alone.

Although the 16% drop from the highest count of 2021 was considerable, conclusions on actual population abundance changes should be made cautiously because the wind and sea state heavily affected the location and detectability of individuals in 2022. As in previous surveys, most animals around the island within each survey were assessed as females. The distinction between male/female/juvenile and unknown can be highly subjective and varies between recorders. This may be one reason why male numbers appeared to be considerably lower than in 2021. As stated in previous reports, the distribution of seals around Lundy is heavily influenced by both weather



▲ Figure 1. Numbers of Grey Seals seen on each survey date.



▲ Female Atlantic Grey Seal at the North Light landing platform, September (photo: Paul Dean).



▲ Atlantic Grey Seal entangled in rope, September (photo: Paul Dean).

and sea state. The lowest count of 60 this year (6th September) coincided with a low tide of only 2.75m with the sea reported as choppy despite the SW wind direction. The highest number of animals hauled out in the 46 sub-sections within the survey period was again from Three-quarter Wall Bay-where 52 individuals were counted on two occasions. There was a reports of a Seal entangled in rope in September (pictured).

Approximately 54 pups were recorded on Lundy this year. This is down from last year's record breaking 62 but still above the 2020 figure of 50. The first report of a pup was on the west coast near the Battery, in section BAT (see the map) by Islanders Rob and Sue Waterfield, who were kayaking on the 14th of August 2022. In 2021 the first sighting was on the 21st of August. The first mother and pup photographs in 2022 were taken on the 23rd of August on Ladies Beach by Rosie Ellis. The size of the photographed pup together with the west coast sighting makes it probable that the first pupping

on the island was around the 10th of August. Easterlies during the pupping season and rough seas (see the photo) caused shifts of white coat pups and deaths, with 10 sightings of dead pups. In some instances this may have been the same dead pup being shifted by tides, so caution should be used before suggesting a rise in mortality rates. Nevertheless, reported pup fatalities were up from last year despite fewer pup sightings and closer to 18% than last year's 10%. The last live white-coat pup sighting was on the 25th of October in Devil's Kitchen, giving a pupping season comparable to last year's (21st August-October 21st).



▲ Easterly winds and high tides in Landing Bay on the 13th of September (Photo: Rosie Ellis).

Many thanks to all the volunteers for their hard work and dedication: Tara McEnvoy Wilding, Daisy Laing Angus Croudace and Tom Wright (pictured).



▲ The Grey Seal count volunteers, Tara McEnvoy Wilding, Daisy Laing (left), Angus Croudace and Tom Wright (right) (Photo: Rosie Ellis).

Entanglement

Three records of entanglement were recorded in 2022 (3 in 2021, 8 in 2020, 3 in 2019, and 6 in 2018), although none were detected during the surveys themselves. Unfortunately, despite the distress caused to the seal, there is nothing the conservation team can do to free seals in these circumstances. The team does do regular beach cleans on accessible beaches to attempt to prevent entanglement in the first place. The island has also gained plastic free status, is balloon free and does not sell the open flying ring toys which often cause of entanglement.

Disturbance

Of the 11 surveys, two recorded dive boats present and no documented disturbance on the 11 surveys themselves. The easterlies did push a number of pups and weaners into the Landing Bay, the designated "recreational zone" of the MCZ, bringing increased chances of disturbance.

The marine festival has generated connections with Natural England, the University of Plymouth and the University of Exeter with the island supporting four Masters students this summer.

One researcher focused on disturbance comparison around dive boat site Gannets Bay (GB) and the quieter bay of Mouse Hole and Trap (MHT) (Appendix 1). Throughout 52 hours of surveying, mostly targeted for when snorkel boats were in the area, 259 individuals were flushed. Flushing was also observed by seal watching boats (Kendall, 2022). The report clearly shows seals shifting away from GB in favour of MHT when dive boats are present. It also shows that our snapshot of each bay during the seal survey undertaken by the conservation team is not sufficient to determine the level of disturbance. Kendall's report focused on snorkel trips and did not cover seal boat trips and dive trips. The snorkel safaris run by the conservation team in the Landing Bay did not flush any individuals, but one September session was stopped when a male in the sea was exhibiting snorting behaviour. The snorkelers left the water and were all given refunds; the male and a female seal went on to mate.

The new North Devon Marine Wildlife Aware Accreditation scheme is now live. Certification can be gained by completing training modules and associated quizzes on a Google Classroom (see www.northdevonbiosphere.org.uk/accreditation-scheme to enrol). On the 9th March 2023 two in person courses were held (one in Bideford, one in Ilfracombe) for North Devon Marine Wildlife Aware Accreditation with funding from UNESCO Biosphere. project.

Engagement

During the three times a week "Above and below the waves" wildlife talk and guided walks, the public were educated about our marine wildlife and issues of disturbance. As a part of our Marine Festival, we were also joined by Rob Wells for a talk about the seals of the southwest as a whole. Many thanks to Rob and all our Ambassador volunteers that help with our walks and talks.

A huge thank you to all who submitted seal counts and disturbance records in 2022. Special thanks to Angus Croudace for his hard work, determination and skill to find every last pup.

Finally, a massive thank you to Sue Sayer, Kate Williams, Rob Wells and all of the volunteers from the Cornwall Seal Group and Research Trust for all their amazing work with regards to training volunteers, taking and processing masses of photographs for the island's identification catalogue, and for their endless kindness and passion for these wonderful marine mammals. Further congratulations to Sue Sayer for her well-deserved MBE, announced in 2023's New Year's Honours List.

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