South West Marine Ecosystems 2019

April 12th Roland Levinsky Building, Plymouth University

Delegate Notes

The 2019 South West Marine Ecosystems Meeting (SWME) meeting will take place in the Roland Levinsky Building at the heart of Plymouth University's campus on Friday April 12th 2019. Full details are available on the SWME website.

In 2018 200+ delegates attended representing 90+ organisations. The format and content for 2019 is similar to previous years with a mix of long and short presentations, poster displays and good time for discussion and networking.

The objectives of SWME remain the same 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 observations 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 throughout 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 the south west marine ecosystem.

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.

Please see the SWME for our data policy: https://swmecosystems.co.uk/data-protection-policy

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Programme

09.00 – 09.30 Refreshments

Session 1 Events & Observations

9.30 Welcome

Chair: Martin Attrill Plymouth University

9.35 Capturing Casual Observations: The SWME Annual Report (2017)
Keith Hiscock Marine Biological Association (MBA)

10.00 Events & Observations in 2018 **Richard White/ Natasha Bradshaw** SWME
Comment on events and bring along your observations of 2018.

10.25 Climate Linked Atlantic Sector Science **Clare Ostle** MBA

10.40 Transatlantic Plastic and Western Atlantic Rafters **Andy Dinsdale**

10.55 Trends in Fish Records **Doug Herdson**

11.10 Thunnus UK: Findings from the first year of research into Atlantic Bluefin tuna ecology off southwest Egland **Tom Horton** Exeter University

Short Updates

11.25 **Coastal Flood Forecasting: validation against winter storms 2018-2019**
Christopher Stokes Plymouth University (SWEEP project).
11.30 **Sediment Veneers** **Nick Owen**
11.35 **Increase in crawfish and management solutions** **Sarah Clark** Devon & Severn IFCA

11.40 – 12.30 First break: Buffet and refreshments

Session 2 Seabirds & Mammals

Chair: Ruth Williams Cornwall Wildlife Trust

12.30 Seabird Tracking and Trends **Mark Grantham** West Cornwall Ringing Group
12.45 South West Seabirds: Isles of Scilly SPA extension **Alex Banks** Natural England
13.00 Basking Sharks **Matthew Witt** Exeter University
13.15 Dolphin Strandings **Niki Clear** Cornwall Wildlife Trust
13.30 Human and Wildlife Activity Interactions – Cetaceans and Seals
Katie Bellman Cornwall Seal Group Research Trust

Short updates

13.45 **The Cornwall Coastal Otter Project** **David Groves** Cornwall Mammal Group
13.50 **European Bass: movement within estuaries** **Thomas Stamp** Plymouth University
13.55 **Survivorship in recreational shark angling** **Chris Kerry** Exeter University

14.00 - 14.40 Second break: Cakes and refreshments

Session 3 Using Science to Inform Marine Management

Chair: Matthew Witt University of Exeter

14.40 **Natural Capital Approach for the Marine Environment** **Tara Hooper**
Plymouth Marine Laboratory

15.00 **Plymouth Sound: UK's first National Marine Park!**
Kaja Curry Tamar Estuaries Consultative Forum & **Josh McCarty** Blue Marine Foundation

15.20 **Somerset's Brilliant Coast Initiative**
Mark Ward & **Rebecca McDonald** Somerset Wildlife Trust

Short updates

15.40 **An Ocean Health Index assessment for southwest England** **Owen Exeter** Exeter University

15.45 **Assessing the ecological effects of increasing potting density inside the Lyme Bay MPA**
Adam Rees Plymouth University/Blue Marine Foundation

15.50 **Ocean Literacy** **John Hepburn** The Island Trust

16.00 **Closing Remarks**

The organisers would like to thank the Chairs, Speakers and Volunteers for providing support on the day.

SWME organising team: Natasha Bradshaw, Ruth Williams and support staff at Cornwall Wildlife Trust, Bob Earll and Jayne O'Nions of CMS Ltd.

Speakers Abstracts

Session 1 Events & Observations

Capturing Casual Observations: The SWME Annual Report

Keith Hiscock
Marine Biological Association (MBA)
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The objectives of this talk are:
1. To describe the SWME Annual Report and what it sets out to do.
2. To explain the objectives of SWME in terms of:
- Observations, recordings and science
- People and networks
- Using these to make a difference
3. To link these elements together.

Why produce an annual report?

1. **Describing 'normal' patterns of events** e.g. the oceanographic and planktonic systems
2. **Marking major events** e.g. the major winter storms of 2014-15 or the PIB incident
3. **Highlighting significant ecological and population changes** – **trends** e.g. the increase in seabirds on islands after rat control and blooms of barrel jellyfish.
4. **Good years & bad years – relative status - trends** For species like basking sharks, tuna
5. **Remarkable sightings** e.g. Bowhead whale, Cornwall in 2016 or the Dalmatian pelican
6. **Acting to focus interest** Publishing provides a focus for further research, year on year
7. **Questions and interactions – making the links** between environmental, species, habitat and management changes
8. **Telling stories about what we know and providing access – education & outreach**
9. **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 SWME annual reports for 2014, 2015, 2016 and 2017 can be accessed from the SWME website http://swmecosystems.co.uk/annual-reports

Events & Observations in 2018

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Natasha Bradshaw SWME Programme Convenor
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Richard and Natasha will be facilitating this session to encourage delegates to comment on events and record observations from 2018 which will feed into the next annual report.

Observation forms are provided by email before the event and in paper-copy on the day.

Climate Linked Atlantic Sector Science (CLASS)

An over-view of Climate Linked Atlantic Sector Science (CLASS) and The use of the Continuous Plankton Recorder for monitoring open ocean plastics.

Dr. Clare Ostle
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The Laboratory, Citadel Hill, Plymouth, Devon, PL1 2PB, UK
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- Overview of the (Climate Linked Atlantic Sector Science, NERC National Capability, 2018-2023)
- The potential opportunities provided through CLASS - for example the Early Career Researcher Fellowship scheme
- The use of the Continuous Plankton Recorder (CPR) for monitoring plastics in the open oceans
- CPR useful historical snapshot
- New techniques and technologies emerging can be applied to CPR

CLASS contact: Penny Holliday - NOC Southampton
Plastics Co-authors: Richard Thompson, Derek Broughton, Lance Gregory, and Marianne Wootton, and David Johns.

Transatlantic Plastic and Western Atlantic Rafters

Andy Dinsdale Director, Strandliners CIC
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- 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, we show plastic identified as American in origin is washing up on the U.K coastline.
- This plastic follows historically natural marine debris pathways and is also being used as rafting media for Western Atlantic marine species.
- These U.K non-native species may be washing up on the south and west U.K coastline more than is acknowledged.
- Using the exceptional winter storms of 2015/2016 we look at the species that have been identified and their rafting methods.
- Focusing on the main Gulf Stream transatlantic currents, is the arrival of new species a problem?
- How can we record these rafting non-natives?
- Do we need to change our attitude to removing items from the beach?

Trends in Fish Records

Douglas Herdson
Marine Fish Information Services
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In recent years several species previously unknown in Britain have been recorded in south west England. However, it is long-term trends in populations and distribution that are more significant. The drivers are considered to be climate change and fishing pressures.

The UK Marine Fish Recording Scheme started in 1998 to record such changes, and since 2002, I have been carrying out a regular qualitative survey of Plymouth Fish Market in order to monitor some of these changes. It was expected that boreal species would decrease, whilst range extension would bring in warm temperate species. Some of these have shown increases in abundance, but there has not been any obvious depletion of northern species.

There has been a fall in the records of grey triggerfish in recent years, but is this a decline in the population or in reports?

Anchovies occur in local waters every year but the quantities are variable; some years producing a fishing bonanza in late autumn. It had been assumed that this was a northward extension of the range of the Biscay population, but in 2012 genetic studies showed that our local fish are from the North Sea stock. MBA studies of anchovies on the south coast of England in 1890 concluded that these fish were spawned in the warm shallow waters of the Zuider Zee. These stocks largely disappeared when the Zuider Zee was reclaimed. It appears that a remnant stock survived in the adjacent waters of the Waddenzee, and that recent warming in that area has now once more produced successful spawning of the North Sea population. This is now the source of the main English stock which spreads from Portland in October to Mount's Bay in December and January; providing, in good years, profitable fisheries in Torbay and off Plymouth.

Thunnus UK: Findings from the first year of research into Atlantic Bluefin tuna ecology off southwest England

Tom Horton*

The University of Exeter
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Project email bluefin@exeter.ac.uk / www.thunnusuk.org

- Atlantic bluefin tuna (*Thunnus thynnus*) are large, endothermic predators that range widely in the North Atlantic.
- Historically, Atlantic bluefin tuna would occupy shelf waters off the coast of England, Ireland, and Scotland, arriving in the autumn to feed on a variety of lipid-rich pelagic fish.
- By the early 2000's Atlantic bluefin tuna had become regionally sparse and were seldom seen in these waters.
- Recent years have seen a marked rise in anecdotal sightings and incidental captures of Atlantic bluefin tuna off the British Isles.
- "Thunnus UK" is a collaborative research project between The University of Exeter, Cefas and the Tuna Research and Conservation Centre of Stanford University, USA and aims to provide a baseline understanding of the ecology of Atlantic bluefin tuna in waters of the British Isles. The project is supported by Defra and the European Maritime and Fisheries Fund (EMFF).
- Project aims:
    1. To collate information on the presence and abundance of Atlantic bluefin tuna in UK waters using scientific and citizen science methods
    2. To undertake a tagging programme with state-of-the-art electronic tags to collect evidence on the seasonal migrations and behaviour of bluefin tuna caught in UK waters
    3. To provide information and advice to stakeholders.

*Block, Barbara A.[3], Davies, Rachel[4], Hawkes, Lucy[2,5], Hyder, Kieran[6,7], van der Kooij, Jeroen[6], Jones, Duncan[8], Jones, Hannah[8], Leeves, Keith[9], O'Donnell, Ciaran[10], Righton, David[6,7], Scougal, Callum[6], Wall, Dave[11] Witt, Matthew[1,2,5]
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Development and validation of a real-time, regional coastal flood warning system for southwest england

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- An operational, real-time coastal flood warning system for southwest England has been developed that is capable of predicting wave runup elevation and overtopping volumes along the coastline of southwest England, which features embayed, sandy, gravel, and engineered profiles.
- The model has a 1-km Delft3D wave and hydrodynamic model at its core and uses empirical equations to predict wave runup on beaches, and overwash volumes on beaches with coastal structures.
- Although the model was developed as an operational forecast, it can also be used for strategic purposes, for example to investigate the effects of climate change on coastal flooding hazard into the future.
- In collaboration with the Environment Agency, the model's predictions of coastal flooding hazard have been validated against observed conditions over the 2018/2019 winter around the SW coast.

Relevant websites:
https://sweep.ac.uk/ - SWEEP homepage
http://www.channelcoast.org/ccoresources/sweep/ - live 3-day SWEEP forecast of waves and water levels around the south west coast (updated daily).

Sediment Veneers

Nick Owen
Nick Owen, BSc, MCIEEM, Wool, Dorset.
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Freelance ecologist and Seasearch volunteer Nick Owen will use his five minute presentation to flag up the existence of sediment veneers and indicate why they are important but seem to be difficult to record.

A sediment veneer habitat can develop when the composition of a community of sessile species on a hard surface is modified by an overlay of mobile sediment. Observations in the Dorset sublittoral in recent years indicate that sediment veneers are widespread and an important part of habitat mosaics based upon hard surfaces such as bedrock reefs and stony reefs. Indications from Lyme Bay (especially) are that veneer habitats accumulate biodiversity over time and that this biodiversity includes species which appear to be specialists.

Veneer habitats are very difficult to find in the literature. However Dorset Seasearch released 'A Divers' Guide to Sediment Veneers' for trial in Dorset and to wider consultation, which seemed to be well-received. Copies of an updated 'Divers' Guide' can be made available at the meeting.

Increase in crawfish and management solutions

Sarah Clark
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Session 2 Seabirds & Mammals

Seabird tracking and trends

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Seabirds in the Southwest are facing a wide variety of threats, with causal factors at a local, national and global scale. With many species being squeezed northwards by global climate change, further pressure from predation and disturbance can push species to local extinction. The global range of Kittiwake is contracting and >50% of colonies from Kent to Isles of Scilly have been abandoned since the 1980s. These global issues are compounded locally by increased predation from Raven and Peregrine and also disturbance from human activities. Changes at lower trophic levels may also be food-stressing species such as Great Black-backed and Herring Gull, forcing changes in behaviour and diet. These changes may have indirect impacts on productivity and also bring birds into conflict with people. But all is not lost, with concerted local initiatives bringing some species back to previously occupied sites.

South West Seabirds: Isles of Scilly SPA extension

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- The Isles of Scilly contain the most abundant and diverse seabird colony in the south west, rivalled only by Lundy.
- Natural England has investigated the feasibility of extending the existing Special Protection Area, which covers terrestrial breeding sites, into key marine areas used by seabirds.
- European shags (*Phalacrocorax aristotelis*) were identified as the focal species for data collection, given their relative ease of detection, preference for particular habitats and importance within the assemblage of seabirds breeding on the islands.
- A programme of very high resolution digital aerial surveys captured imagery detailing shag distribution at sea, also revealing locations of other seabirds and marine life.
- These sample data informed spatial 'density surface' models predicting the distribution of shags across the study area.
- Boundaries for potential SPA extension were then selected using a mathematical 'diminishing returns' threshold, balancing protected site area with bird density.
- Proposed boundaries were validated against boundaries selected using locational information obtained from miniature GPS loggers fitted to shags, with good agreement.
- The proposed extension is undergoing public consultation. If the designation progresses, seabirds breeding at the Isles of Scilly will be offered protection at sea in addition to existing protection at their breeding colonies.

Where have all the basking sharks gone?

Authors: Matthew Witt, Emma Bagnall, Anthony Bicknell, Niki Clear, Haley Dolton, Owen Exeter, Cat Gordon, Tom Horton, Louise Johnson, Peter Miller, Peter Richardson, Jean-Luc Solandt, Jessica Rudd, Christopher Kerry, Stephen Pikesley, Colin Speedie, Eric Stephan, Ruth Williams and Lucy Hawkes.

Organisation(s): University of Exeter, Wave Action, Marine Conservation Society, Shark Trust, Cornwall Wildlife Trust, Plymouth Marine Laboratory.

Matthew Witt
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Basking sharks were once commonly sighted in coastal waters of Devon and Cornwall during spring and summer but in recent years there has been a decline in surface sightings of these large planktivorous sharks. But why? Is this decline related to regional and/or large-scale oceanographic influences, or perhaps anthropogenic climate change has stimulated a long-term change in the seasonal distribution of the species. It is possible that marine reporting schemes have failed to capture the seasonal appearance of basking sharks in our coastal waters, but while sightings databases may tell this tale over recent decades, changes occur in the ocean over a far greater time-frame. Multiple factors have likely acted in concert to bring upon this change, highlighting the need for collaborative efforts across the region. This talk seeks to engage the marine community to help to discover the reasons underlying the apparent decline of these enigmatic sharks in our coastal seas.

Unravelling the tangle – investigating cetacean strandings in the southwest

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Cornwall has one of the highest rates of cetacean bycatch of any county in the UK, which not only impacts the dolphin population but is a serious welfare issue. The Marine Strandings Network has been investigating and monitoring causes of death of marine mammals in Cornwall for over 27 years. MSN has developed some ground breaking techniques in identifying bycatch in cetaceans without taking the carcass for post mortem, and has been campaigning for mitigation against bycatch.

Cornwall Wildlife Trust Marine Strandings Network
https://www.cornwallwildlifetrust.org.uk/strandings
Strandings Hotline for Cornwall and Scilly – 0345 201 2626

Human and Wildlife Activity Interactions – Disturbance of marine mammals in the southwest

Katie Belman
Cornwall Seal Group Research Trust

As the tourism industry continually grows in the southwest, there is increasing use of the marine environment from commercial operators and recreational activities. Marine life is particularly vulnerable to suffering negative impacts from disturbance incidents involving interactions with these human activities. Disturbance refers to an interaction between people and wildlife that results in a change of behaviour or it's environment, affecting it's well-being and survival prospects. Since 2013, the Cornwall Marine and Coastal Code Group (CMCCG) have been monitoring and undertaking prevention of disturbance in the southwest. Through reports submitted to their emergency hotline alongside incidents reported to Cornwall Seal Group Research Trust (CSGRT), we are able to observe the trends in human interactions with wildlife and develop management plans to reduce the frequency and severity of disturbance occurring in the coastal environment. Development of systematic survey protocols by CSGRT in 2018 has provided a strong scientifically robust disturbance monitoring system to support the ad-hoc data collected by CMCCG.

Cornwall Coastal Otter Project

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The Cornwall Coastal Otter Project (CCOP) aims to improve understanding of the importance of marine prey, and coastal habitats, for one of our most charismatic terrestrial mammals. Cornwall remained a stronghold for the Eurasian otter (*Lutra lutra*) in the UK and Western Europe during the declines of the last century and recovery of otters has been a conservation success in the UK. Eurasian otters are often recorded in coastal habitats around Scotland and the Scottish islands. Increasingly otters have been seen off the coasts of West Wales, East Anglia and Cornwall. This may be a return to natural behaviour as terrestrial habitats become fully occupied.

CCOP volunteers search for and collect otter droppings (spraint) from sites within 1 km of the coast and return samples to the Project for preparation and analysis. We then attempt to identify prey species from key remains – mainly vertebrae. The records provide evidence of otter use of the coastal fringe and our ability to identify prey remains of marine species will help us to understand if otters are using marine prey resources and provide evidence to support habitat management decisions around our coastline.

Project link: https://www.cornwallmammalgroup.org/coastalotterprojectdetails

Project I-BASS (preliminary results): Using acoustic telemetry to monitor European Seabass (*Dicentrarchus labrax*) movement within Devon's estuaries

Mr Thomas Stamp, Dr Shaun Plenty, Mr Tim Robbins, Dr Libby Ross, Dr Emma Sheehan
University of Plymouth
W: https://sheehanresearchgroup.com/i-bass/

European Seabass (*Dicentrarchus labrax*) is a commercially and recreationally important finfish native to the northeast Atlantic and Mediterranean Sea. Recent severe declines in North Atlantic stocks have called for increased understanding of adult and juvenile movements and habitat use patterns, as well as the efficacy of existing management strategies.

In the UK, 34 Bass Nursery Areas (BNA) have been designated, within which targeted commercial fishing for Seabass is prohibited for all or part of the year. Through acoustic telemetry the project has tracked 146 Seabass across 3 estuarine BNAs in Devon. The project is successfully documenting how juvenile Seabass move within BNAs, as well as how often they move outside their boundaries. Results from this study will help inform local management of Seabass in the South West UK, and will have wider relevance to UK and European management of inshore Seabass fisheries.

This presentation will provide preliminary results from project I-BASS, describing observations from the first summer of acoustic transmitter deployment.

Shark Survivorship Project

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The widescale exploitation of the marine environment has seen a precipitous decline in shark populations, with the northeast Atlantic experiencing some of the most notable reductions. There are an estimated 884,000 recreational fishers in England expending more than 4,000,000 fishing days effort (in 2012), with £831 million direct spend. A portion of this effort is directed towards the burgeoning catch-and-release shark fishing industry. There is however limited knowledge of survivorship of sharks caught in these fisheries. Gaining a better understanding of survivorship and providing a robust evidence-base on best handling practices is particularly important as catch and release is often promoted as a sustainable approach, yet in UK waters the impact of this practice is largely unknown. The University of Exeter, in collaboration with Cefas and the Shark Trust and with funding from EMFF, will deploy state or the art electronic tags on sharks across southwest England during 2019 and 2020 by working with recreational

fisheries. Building a strong evidence base on the effects of recreational shark fishing will be strategic in developing and improving conservation measures for these animals, promoting the rebuilding of healthy populations, and developing the sustainability of recreational fishing.

Session 3 Using science to inform marine management

The Natural Capital Approach for the Marine Environment

Tara Hooper
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The UK has a receptive policy landscape for the adoption of a natural capital approach. It was the first country globally to attempt a national-scale assessment of the benefits provided by nature to society and the economy[1]. The Environment White Paper[2] further enshrined natural capital thinking, with commitments to include natural capital within the UK Environmental Accounts and to establish a Natural Capital Committee to advise government. Most recently, the 25 Year Environment Plan[3] explicitly stated that "over the coming years the UK intends to use a 'natural capital' approach as a tool to help us make key choices and long-term decisions". However, there remains a lack of clarity around exactly is meant by the natural capital approach and how it can be applied in practice, particularly in the marine environment. The main objectives, the different elements of, and the concept of value within, the natural capital approach will be reviewed, including marine-specific examples of individual methods. The limitations of existing techniques, which were developed for terrestrial systems and are based on land cover assessment approaches, will be discussed. Data gaps remain a significant impediment to progress, so alternative methods that use proxies for quality information will be explored.

[1] UK NEA. (2011). *The UK National Ecosystem Assessment: Technical Report*. Cambridge: UNEP-WCMC. http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx

[2] HM Government. (2011). *The natural choice: securing the value of nature. HM Government Natural Environment White Paper. Presented to Parliament by the Secretary of State for Environment, Food and Rural Affairs by Command of Her Majesty*. https://www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature

[3] HM Government. (2018). *A green future: our 25 year plan to improve the environment*. London: Department for the Environment Food and Rural Affairs. https://www.gov.uk/government/publications/25-year-environment-plan

Plymouth Sound: UK's first National Marine Park!

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Josh McCarty
National Marine Park Advisor, Plymouth City Council
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Plymouth would like to be the country's first National Marine Park. The City already has Dartmoor National Park to the north, Saltram House and Mt Edgecumbe Estate to the east and west respectively.

With this in mind, to the south, the fantastic marine environment that has shaped our past, and could continue to have a hugely positive influence on our future, remains widely overlooked by the public: As a maritime city, Plymouth is disconnected from the sea, and in many deprived communities there are children that have never visited the ocean.
A marine park in Plymouth has the opportunity to make the environments better than the sum of the parts, in a way that resonates with the public. Working with partners, and regulatory bodies, Plymouth City Council has been engaging with stakeholders and developing the conversation further, and there is now a growing consensus that a National Marine Park could deliver wider economic, environmental and social benefits for the city and adjacent communities.

Over the coming months, a feasibility study will be undertaken to further shape the objectives of the emerging Park and to define how it could enhance or support the good work undertaken by partners.

Further info: www.plymouth.gov.uk/marinepark

'Somerset's Brilliant Coast' Initiative

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Somerset's 73km of dynamic coastline is under increasing pressure from new developments with concerns that poor decision making could irreversibly impact locally and nationally important coastal ecosystems. This has been compounded by the lack of baseline ecological data and by peoples' perceptions of, and levels of engagement with, the maritime environment, especially in comparison to neighbouring counties. In response to this, in 2017 Somerset Wildlife Trust embarked on a detailed intertidal survey. The rocky shore data collected is already expanding our understanding of species and habitats and an online biotope map is now being developed.

Last year, SWT also launched the 'Somerset's Brilliant Coast' project - funded by the Hinkley 'C' Community Impact Mitigation Fund. The project is delivering exciting community engagement, education and volunteering initiatives that celebrate Somerset's fabulous coastal wildlife and landscapes, encourage exploration and support local communities to help look after and value it. The project has three strands: running coastal events for local people, working on long-term projects with 6 local parishes and offering 'Wild Beach' sessions to local schools. The initial level of interest and enthusiasm has already exceeded expectations. The project is looking to benefit both the local environment and people's health and wellbeing.

An Ocean Health Index assessment for South West England.

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In English waters the Marine Management Organisation are currently implementing marine spatial planning (MSP) through the creation of 6 distinct marine plans. Plans are subject to a three-year review however, independent, quantitative assessments are required to monitor progress toward their objectives.

The Ocean Health Index (OHI) is a tailorable indicator assessment framework measuring the benefits healthy oceans provide. Assessing a suite of goals, including fisheries, coastal protection, livelihoods and biodiversity, the framework generates an evidence-based indicator of the state of our oceans. Both neutral and scientific, the OHI is applicable at large spatial scales and combines social, economic, and environmental data. This study tailors the OHI framework to the UK for the first time. Applied to the SW Marine Plan Area, the primary goal is to assist MSP in the delivery of healthy ecosystems supporting both biodiversity and livelihoods. Calculated at a sub-regional level, the OHI will allow spatial identification of priority areas across the SW. Results will provide a quantitative baseline that MSP and other management measures can be tracked against. The study will rely upon open source coding and data to facilitate transparency and replication.

Project website - http://ohi-science.org/esw/index.html

Assessment of the ecological effects of increasing potting density within an MPA

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Whilst fishing methods considered to have the greatest ecological impact are being increasingly managed within many English Marine Protected Areas (MPAs) most other types of fishing, considered to have lesser ecological impacts, are permitted to continue. In Lyme Bay, South West England, an MPA was established in 2008 to recover temperate reef habitats by excluding bottom towed fishing. As a consequence static gear fishing effort, namely commercial potting, has increased inside the MPA. This commercial fishing method targets non-quota species and effort in this sector remains largely unregulated. The ecological effects of potting on temperate reef ecosystems and target populations are not currently not well understood. An experimental study was undertaken to assess the ecological effects of increasing potting density. Experimental treatments, within which density of pots were manipulated, were replicated and distributed throughout the MPA. Densities ranged from low to high to create a gradient of potting density. This gradient enabled a density threshold to be defined at which ecological impacts occur. Video sampling monitored changes over time in macro sessile and mobile benthic assemblages in areas exposed to differing potting densities while experimental fishing quantified the impact of increasing potting density on commercially targeted species. Data showed impacts on the abundance of key sessile reef associated species and on the condition of commercially targeted species after three years exposure to a high density of potting. These results suggest for MPA management, all activities should be well managed to ensure site based protection is effectively delivering ecosystem services.

Sail Training – an opportunity to advance Ocean Literacy - Progress Report

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- ST and OL should be natural bedfellows, but not happening in UK.
- Workshop at Association of Sail Training Organisations Conference.
    - SWOT Analysis of:
        - Giving existing sail training staff OL skills
        - Creating a group of volunteer “third hands” with OL skills
        - Other uses for the additional capacity
    - Toolkit: techniques and tales – what does good look like?
    - Money: funding and income generation
- One day "OL for Sail Trainers" course by MBA at Mount Batten Centre 30 March
- Using Cornwall Wildlife Trust's Your Shore Beach Rangers as onboard ocean educators

www.theislandtrust.org.uk/the-island-trust/ocean-discoverability/
https://uksailtraining.org.uk/2-uncategorised/1000-conference-presentations

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