Devon and Severn IFCA
Who we are and what we do?

Sarah Clark
Deputy Chief Officer

Dr Libby West
Senior Environment Officer

Lauren Parkhouse
Environment Officer

Today's Agenda

Approximate Timings

1000- 1115	Presentations on the IFCA, byelaw making, enforcement work and an introduction to the work of the environment team
1100-1115	*Break*
1115-1230	Presentations on the detailed work of the D&S IFCA environment team
1230-1300	*Lunch*
1300-1500	Mock Authority Meeting on the Live Wrasse Fishery
1500-1600	Presentation on Fishing Into the Future

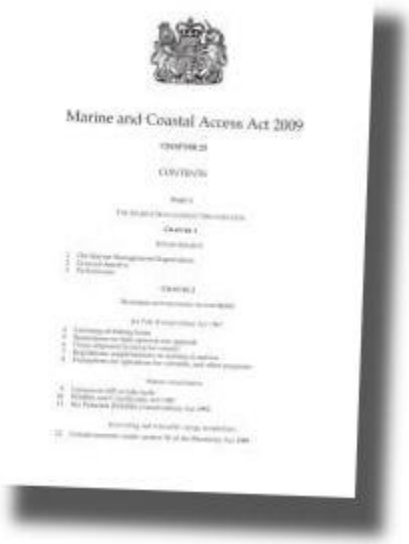
Devon & Severn IFCA Inshore Fisheries and Conservation Authority

D&SIFCA An Overview

IFCAs – their creation….

- Marine and Coastal Access Act 2009
- Created IFCAs - fully vested 1st April 2011
- D&SIFCA's District covers all tidal waters (out to six nautical miles from the 1983 baselines) within Devon County Council borders in the south and from the Devon and Cornwall County Council boundary up to the Gloucestershire County Council border and Wales in the north.

Inshore Fisheries and Conservation Authorities will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry.



Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Marine management: Where do IFCAs fit?

- Marine Management Organisation (MMO)
  - Statutory fisheries managers 6nm -200nm
  - Manage quota and are primary managers and enforcers of European fisheries legislation
  - Manage fishing activities in MPAs outside 6nm
- Environment Agency (EA)
  - statutory managers for freshwater and migratory (diadromous) fish
- Natural England
  - Statutory nature conservation advisors
  - MPA advice – location of feature, condition of features, sign off MPA assessment

- **IFCAs**
  - Make and enforce local fisheries byelaws
  - Manage fishing activities in MPAs 0-6nm
- IFCA, MMO & EA officers are cross-warranted

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

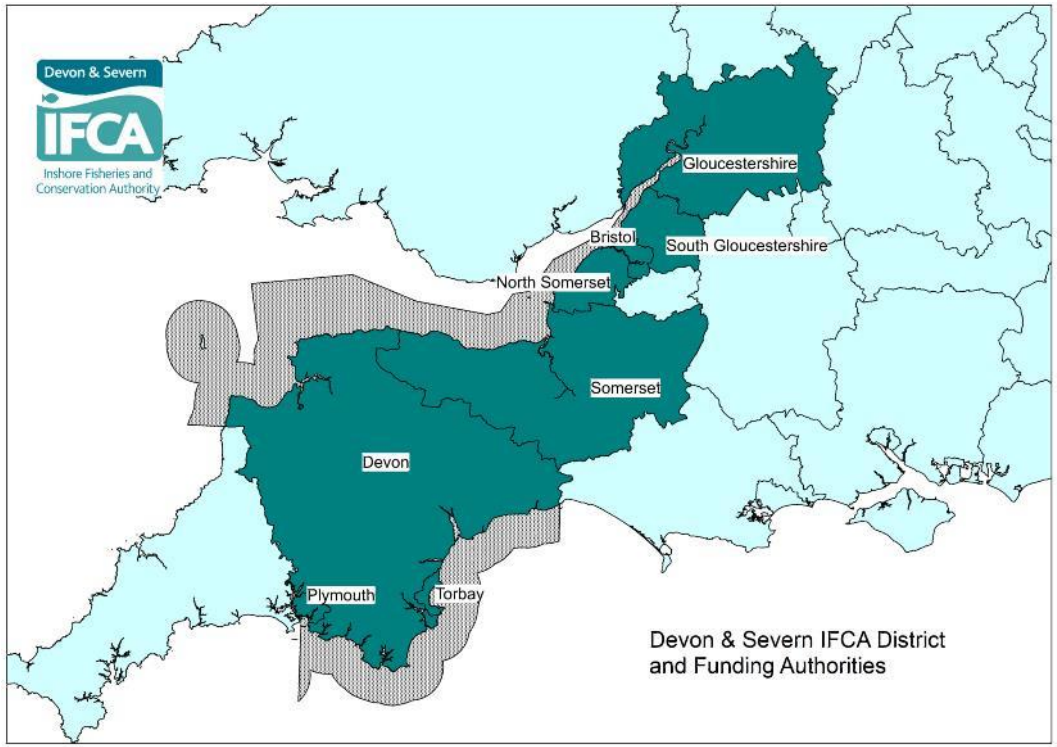
IFCA Duties

The authority for an IFC district must manage the exploitation of sea fisheries resources in that district.

In performing its duty, the authority for an IFC district must –

- Seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way.
- Seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation.
- Seek to balance the different needs of persons engaged in exploitation of sea fisheries resources in the district.
- Further the conservation objectives of marine conservation zones
- may take steps as it considers necessary or expedient or in connection with the development of any fishery for any sea fisheries resources.

Devon & Severn IFCA – Metrics



- **4,522 km² of sea**
- **1,314 km² of coastline**
- **9,141 km² of land**
- The largest IFCA district, with two coasts. Shared boundaries with CIFCA, SIFCA & Welsh Government

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

The Authority:

- is funded by 8 Local Authorities
- Local Authorities Representatives (12 members),
- Statutory Agencies (3 members)
- General Members -MMO appointees (15 members) - commercial fishing, recreational fishing, academic and conservation interests

The Officers:

- Acting Chief Officer
- Deputy Chief Officer
- Principal Policy Officer
- Enforcement Team – 1 Senior Officer & 3 IFCO officers
- Environment Team – I Senior Officer & 2 FTE Environment Officers
- Office Manager
- Permitting Officer

Budget

- D&S IFCA has the smallest of main land IFCA budget – funded by LAs and new burdens money from Defra
- D&S IFCA has the smallest number of staff for mainland IFCAs
- D&S IFCA has the largest sea area of all the IFCAs and two coasts
- D&S IFCA has the second longest coastline and the second largest number of registered fishing vessels
- The value of fisheries (2017/2018) is the largest in the country reaching £59.9million and has 20 registered ports in its District

	2018/19 Base Budget **£**	**Base Budget Adjustments** **£**	**Inflation** **£**	**2019/20 Budget** **£**
Employees	544,400	15,700	10,600	570,700
Premises	35,300	2,600	0	37,900
Transport	32,500	(2,300)	800	31,000
Supplies & Services	101,100	2,900	1,400	105,400
Boat Costs	29,700	5,000	700	35,400
Environmental Research	13,800	3,000	0	16,800
Support	29,400	8,000	0	37,400
Fees & Charges	(21,200)	(5,000)	0	(26,200)
	765,000	**29,900**	**13,500**	**808,400**
DEFRA Refund	0	(73,600)	0	(73,600)
Transfer from General Fund	(31,400)	11,600	0	(19,800)
Total	**733,600**	**(32,100)**	**13,500**	**715,000**

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

IFCA Powers

- MaCCA gives details of the IFCA powers to make byelaws to fulfil its duties and includes:
  - prohibition & restriction of exploitation of sea fisheries resources; vessels & vessel size; methods and gear; protection of shellfish fisheries; byelaws on intertidal areas e.g bait digging
  - Allow for fast track ‘emergency’ byelaws
  - site specific byelaws to protect the marine environment rather than fisheries
- Charging for, setting conditions and limiting number of permits
- Power to use administrative penalties for offences

D&S IFCA Management, Enforcement and Compliance Monitoring

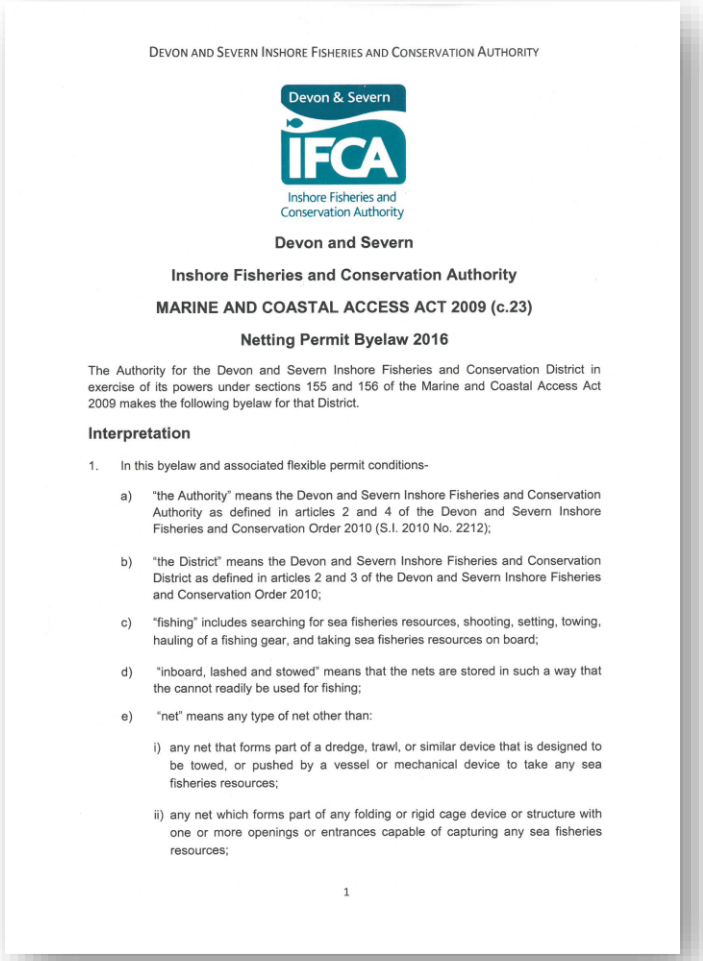
"The sustainability of seafood production depends not on the abundance of a fish stock, but on the ability of a fishery management system to adjust fishing pressure to appropriate levels"

"…any method of management relying on static measures or targets is either eventually irrelevant or at best delayed, both of which ultimately lead to fish stocks in a poor state. **To be successful, the method of management must be dynamic and responsive, a process not an end result.**"

Hilborn et al. 2015

Managing Fisheries and Conservation
Permitting Byelaws & Review Process

- DSFC inherited byelaws and byelaw review process
- Introduce activity based Permit Byelaws
- Section 156 (4) of Marine and Coastal Access Act 2009
- Four Permit Byelaws already introduced;
- Mobile Fishing Permit Byelaw (2014)
  - Towed Gear Permits: 134 Commercial (84 between 7-12m)
- Potting Permit Byelaw (2015)
  - Potting Permits: 178 Commercial 333 Recreational
- Diving Permit Byelaw (2015)
  - Diving Permits: 25 Commercial 191 Recreational
- Netting Permit Byelaw (2017)
  - Netting Permits: 151 Commercial 47 Recreational



DEVON AND SEVERN INSHORE FISHERIES AND CONSERVATION AUTHORITY

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Devon and Severn

Inshore Fisheries and Conservation Authority

MARINE AND COASTAL ACCESS ACT 2009 (c.23)

Netting Permit Byelaw 2016

The Authority for the Devon and Severn Inshore Fisheries and Conservation District in exercise of its powers under sections 155 and 156 of the Marine and Coastal Access Act 2009 makes the following byelaw for that District.

Interpretation

1. In this byelaw and associated flexible permit conditions-

a) "the Authority" means the Devon and Severn Inshore Fisheries and Conservation Authority as defined in articles 2 and 4 of the Devon and Severn Inshore Fisheries and Conservation Order 2010 (S.I. 2010 No. 2212);

b) "the District" means the Devon and Severn Inshore Fisheries and Conservation District as defined in articles 2 and 3 of the Devon and Severn Inshore Fisheries and Conservation Order 2010;

c) "fishing" includes searching for sea fisheries resources, shooting, setting, towing, hauling of a fishing gear, and taking sea fisheries resources on board;

d) "inboard, lashed and stowed" means that the nets are stored in such a way that the cannot readily be used for fishing;

e) "net" means any type of net other than:

i) any net that forms part of a dredge, trawl, or similar device that is designed to be towed, or pushed by a vessel or mechanical device to take any sea fisheries resources;

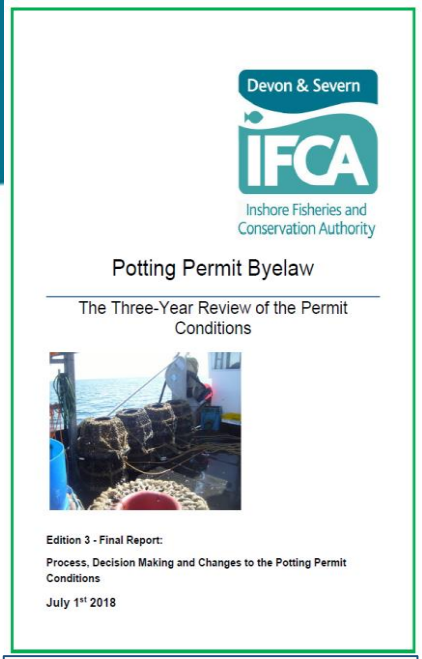
ii) any net which forms part of any folding or rigid cage device or structure with one or more openings or entrances capable of capturing any sea fisheries resources;

1

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Permitting Byelaws & Review Process

- Activity based Permit Byelaws – Mobile Gear, Potting, Diving, Netting – developing Hand Working management
- Adaptive & flexible Management
- Permits issued to Commercial & Recreation fishers
- Allows for monitoring levels of fishing effort
- Technical measures e.g. spatial and temporal closures, gear specifications, minimum conservation reference sizes sit within permit conditions
- Permit conditions can be changed after a formal consultation process
- Allows for quick response to evolving guidance for management of MPAs, new/emerging fisheries, environmental change, new policy drivers


Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

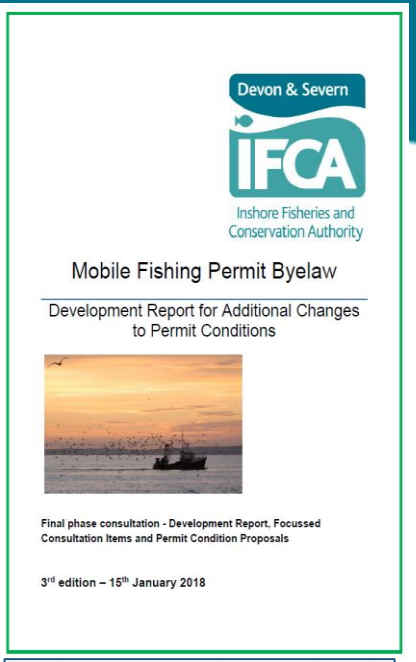
Potting Permit Byelaw

The Three-Year Review of the Permit Conditions

Edition 3 - Final Report:

Process, Decision Making and Changes to the Potting Permit Conditions

July 1st 2018

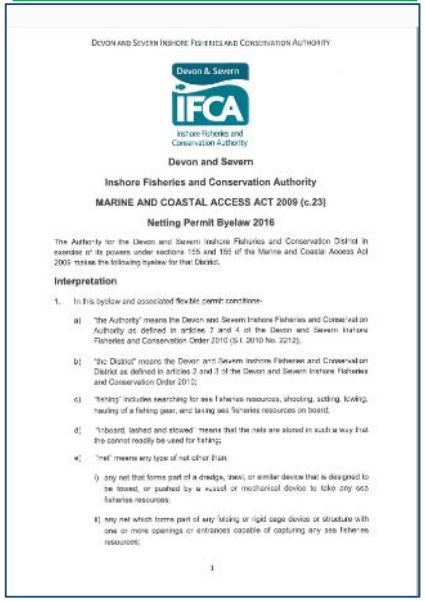

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Mobile Fishing Permit Byelaw

Development Report for Additional Changes to Permit Conditions

Final phase consultation - Development Report, Focussed Consultation Items and Permit Condition Proposals

3rd edition – 15th January 2018


Devon and Severn Inshore Fisheries and Conservation Authority

MARINE AND COASTAL ACCESS ACT 2009 (c.23)

Netting Permit Byelaw 2016

Interpretation


Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Commercial diving permit

Permit issued to
Permit holder's address:
Name of master:
Permit category:
Permit number:
Vessel permitted
Vessel PLN:
Vessel length: 5.4m
Permit start date: 12/02/2018 12:17:00
Permit expiry date: 12/02/2020 23:59:59

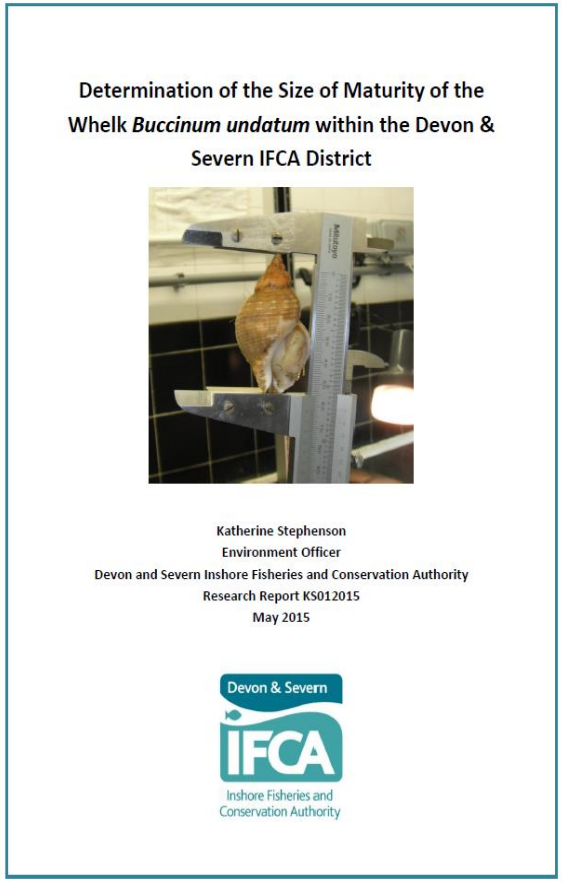
General Provisions

Technical Permit Requirements

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Permitting Byelaws & Review Process

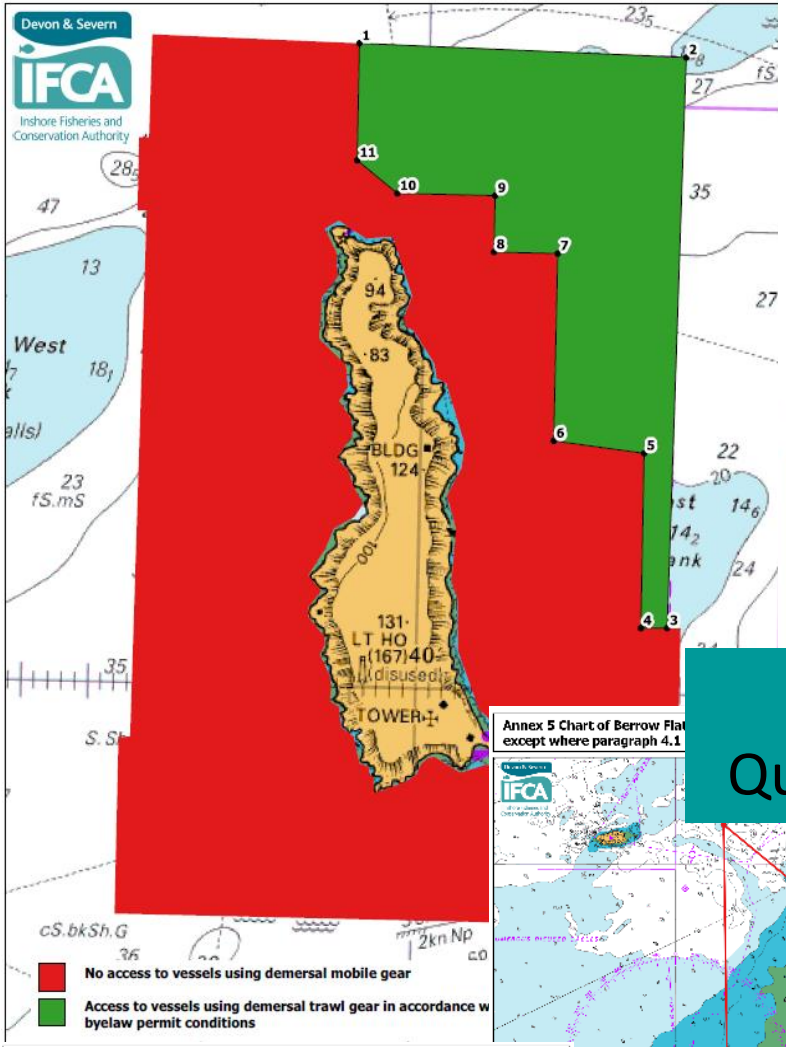
- IFCA Environment Officers undertake evidence gathering and submit reports to Byelaw & Permitting Sub-committee e.g. Whelk size of sexual maturity; wrasse fishery; hand working
- If management changes needed a six week consultation period is undertaken
- All response and evidence considered by Authority
- Changes to permit conditions made and permit holders notified.
- Permit conditions reviewed every 3 years or as needed
- Byelaw reviewed every 5 years


Determination of the Size of Maturity of the Whelk *Buccinum undatum* within the Devon & Severn IFCA District

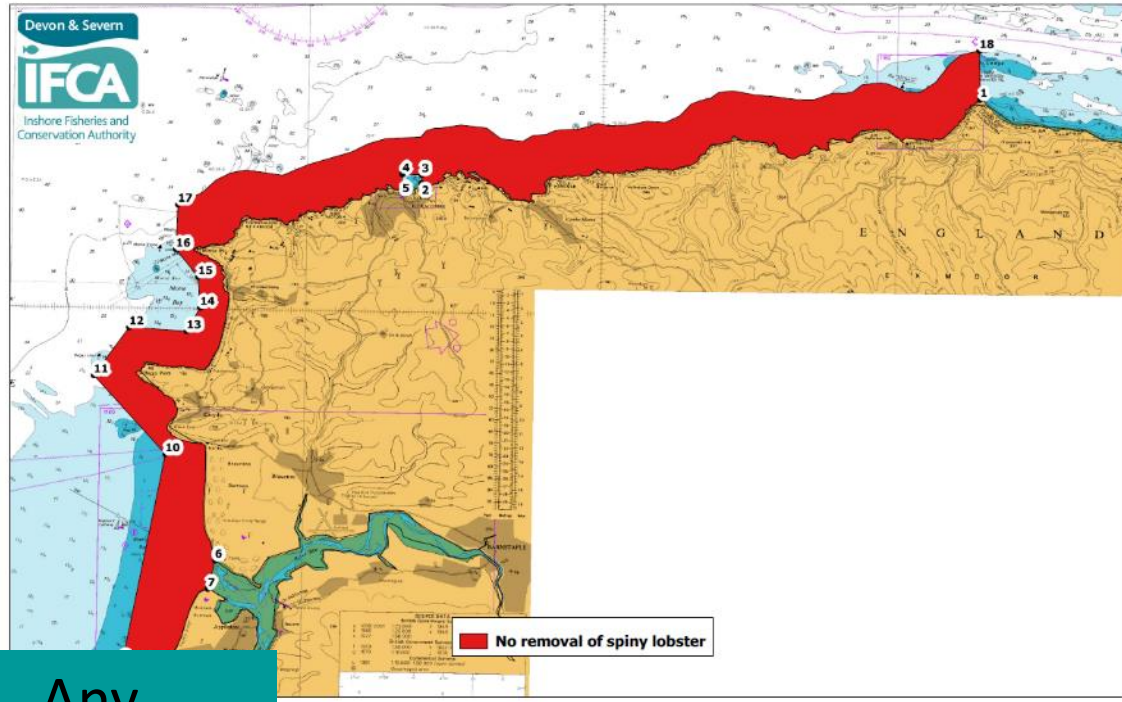
Katherine Stephenson
Environment Officer
Devon and Severn Inshore Fisheries and Conservation Authority
Research Report KS012015
May 2015

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Annex 1a Lundy - Access area for vessels using demersal trawl gear in accordance with paragraph 3.1 of the mobile fishing byelaw permit conditions

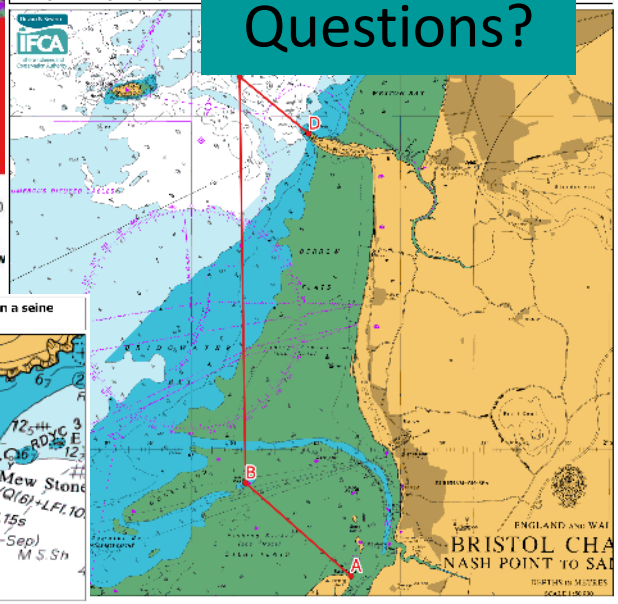


Annex 7 Bideford to Foreland point - No removal of spiny lobster

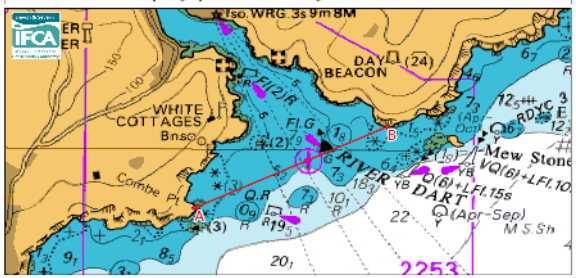


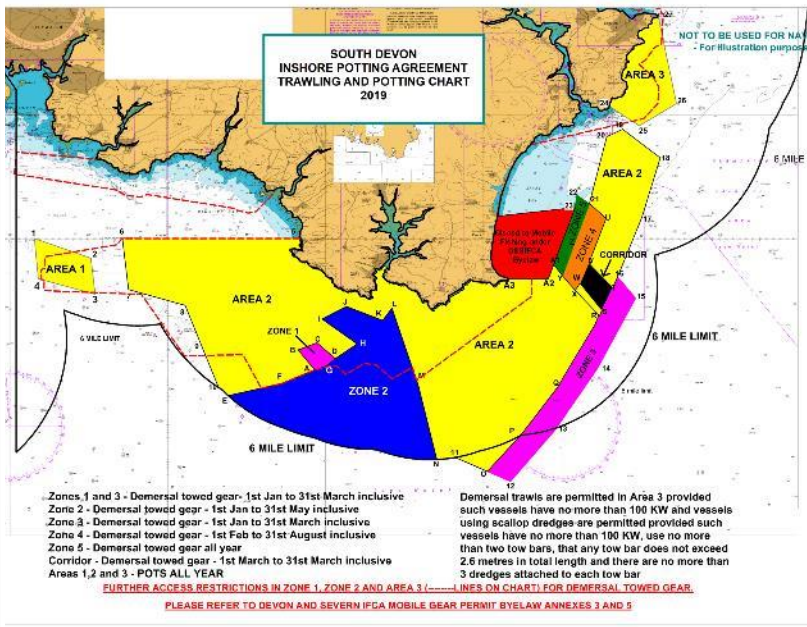
Any Questions?

Annex 5 Chart of Berrow Flat except where paragraph 4.1



Annex 2 Chart of River Dart closing line - No access to the use of nets other than a seine net in accordance with paragraph 3.2 of the Netting Permit Conditions





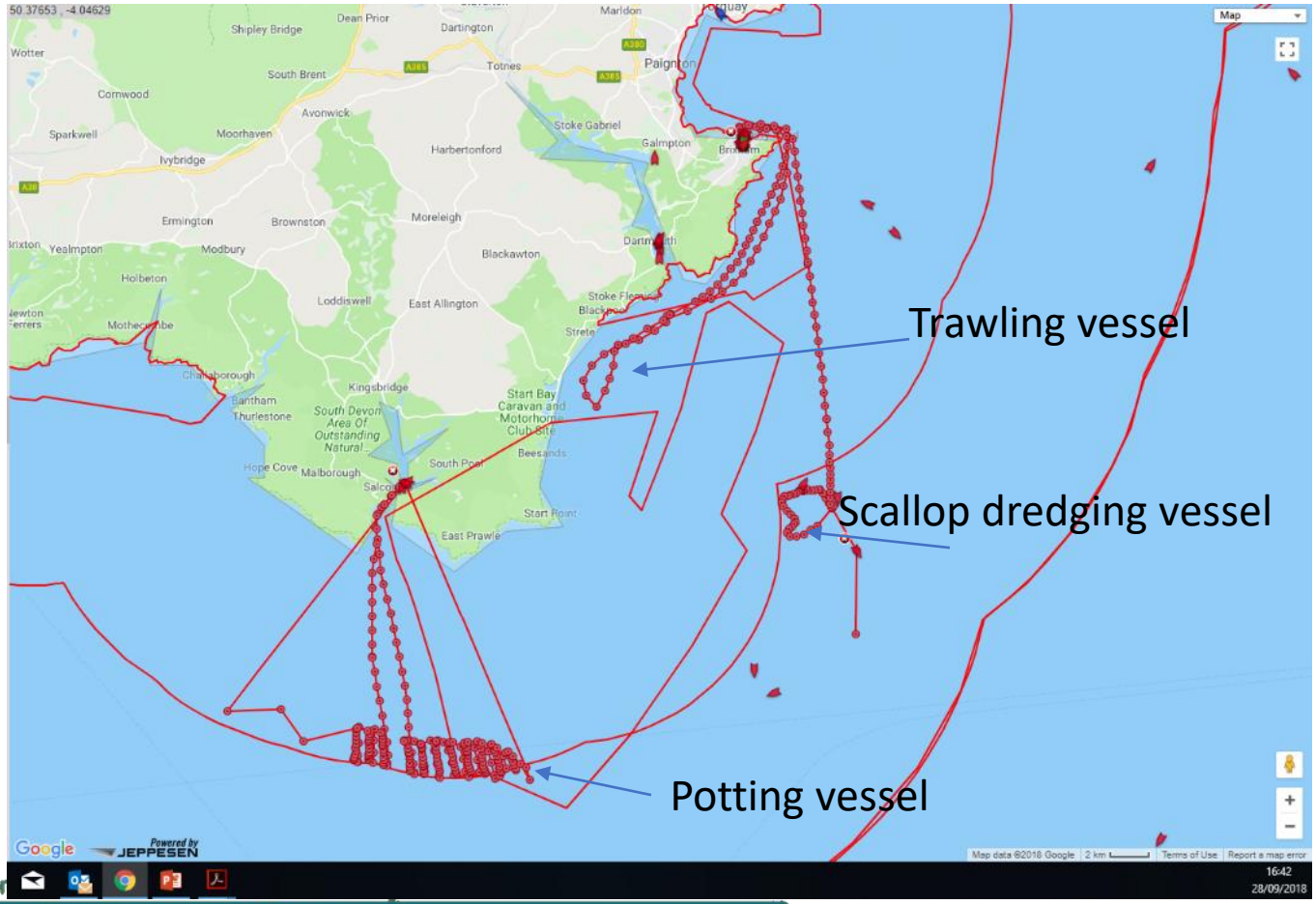
Monitoring of Fishing Activities
Enforcement and Compliance

- Spatial and temporal restrictions were traditionally enforced by deploying surveillance units to monitor activity
- Nationally the Navy is used to undertake fisheries protection work
- D&S IFCA has various assets used for monitoring compliance – possibility of using drones in future?
- Improved enforcement powers for IFCOs under MaCCA to investigate breaches of legislation
- Collaborative approach between enforcement agencies, sharing information, use of vessel and staff resources

IFCA Inshore Fisheries and Conservation Authority

Enforcement and Compliance

- EU legislation requires all commercial fishing vessels over 12 metres LOA to transmit positional data information every two hours. Must be accurate to 500m!



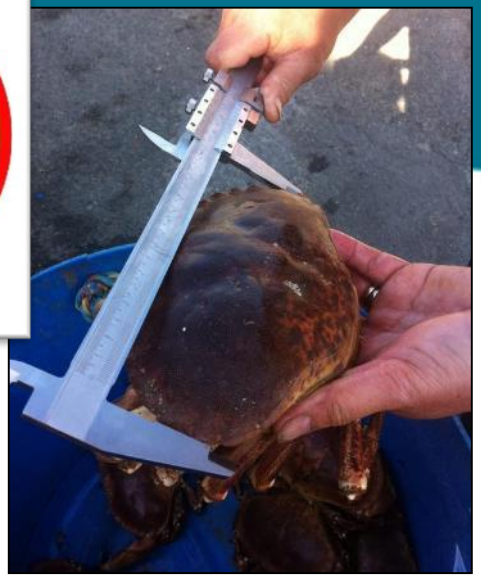
Enforcement and Compliance

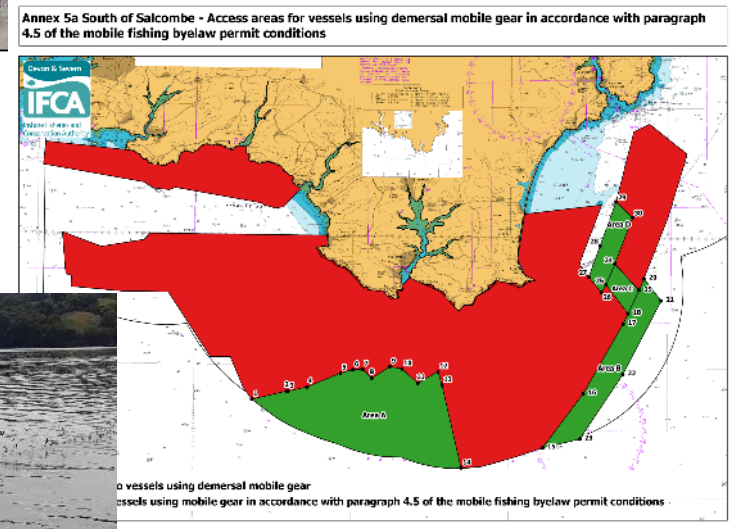
- Mobile Fishing Permit Byelaw – 28/08/18 changes to permit conditions
- Requirement to have IVMS installed and functioning - EMFF grant
- All vessels between 6.99m and 15.25m LOA must transmit positional data every ten minutes (3 minutes in restricted areas/ MPAs) must be accurate to < 10m
- National plans to roll out VMS for all commercial, licensed fishing vessel 2019-2021.

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Enforcement and Compliance

- Permits set the permit condition which D&S IFCA Enforcement Officer enforce
- MCRS
- Spatial restrictions – towed gear, netting
- Temporal restrictions – closed season, curfew
- Ban on berried crustacea
- Gear restrictions – number of scallop dredges, escape gaps, size of mesh
- Recreational fishers have restrictions too – number of pots, catch restrictions, length of net





Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Byelaws, Enforcement and Compliance

Any Questions?

D&S IFCA's Environment and Research Work

An Overview

The A Team:

Libby West – Senior Environment Officer

Lauren Parkhouse –Environment Officer

Sarah Curtin – P/T Environment Officer

Ollie Thomas – P/T Environment Officer (maternity cover)

Fisheries Research and Management Plan Officer – just advertised

Plus:

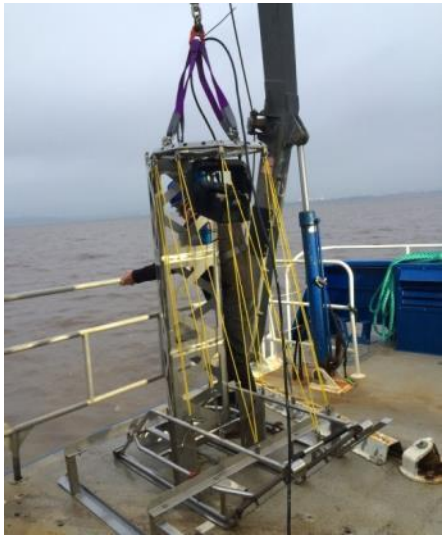
Thomas Stamp – PhD Student Plymouth University

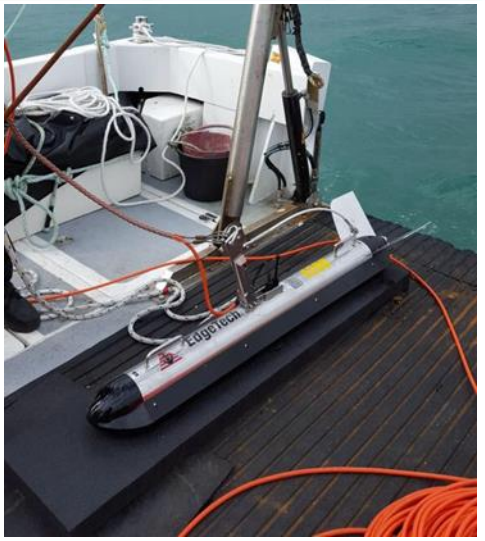
Work experience students & volunteers

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

IFCA Research Capability

- Environment team – expertise in planning and executing surveys, data and statistical analysis , GIS mapping, report writing
- Survey vessel, other IFCA vessels, skipper and crew
- Underwater video equipment e.g. cameras, sleds, Flying Array, dive cams, GoPros
- Shared IFCA assets – ARIS sonar camera, Edgetech sidescan sonar, SeaSpider stills camera array, various grab sampling equipment
- Stock assessments and population studies
- MPA assessments of interaction between fishing gear and designated habitats /species



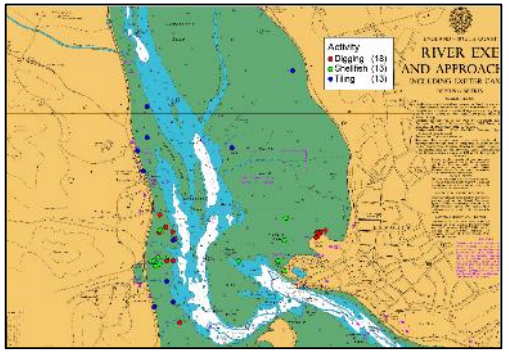


Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Research

- **Habitat Mapping**
  - Seagrass – Torbay, Yealm and Salcombe
  - Underwater filming to ground truth habitat
  - *Lugworm* density & distribution in the Severn Estuary, Exe Estuary and Torbay
  - *Sabellaria* habitat mapping – Severn Estuary

- **Fishing activity monitoring**
  - Bait collection surveys – Severn, Exe and Plymouth Estuaries
  - Recreational sea angling – effort and behaviour interviews
  - Assessing impacts of fishing gear
  - Surveys of location of inshore fishing activity
  - Crab tiles in estuaries - Drones

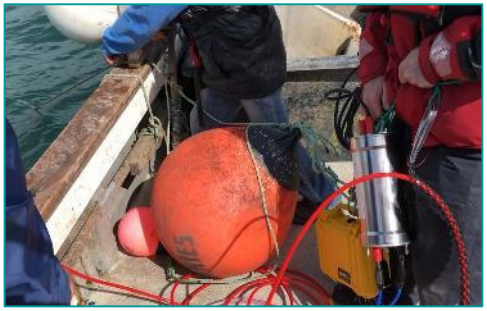


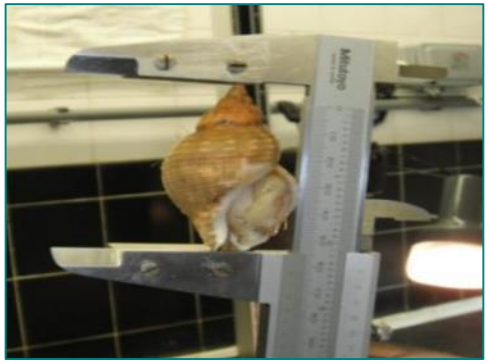
Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Research

- **Finfish research**
  - Ray tagging and movement studies
  - Live Wrasse Pot fishery
  - Small /juvenile fish surveys
  - Bass PhD – Plymouth University
  - Seal Deterrent Device Monitoring

- **Shellfish Research**
  - Mussel and cockles stock assessment surveys - Exe, Teign and Taw Torridge
  - Scallop stock assessment – Salcombe Estuary Fishery; Methodology comparison
  - Whelk size of sexual maturity
  - Monitoring and tagging of lobsters & spiny lobsters
  - Crustacea Landings data
  - Cuttlefish recruitment

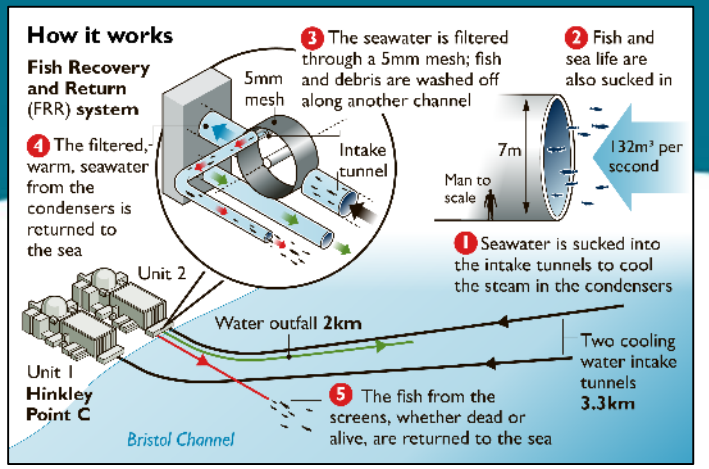


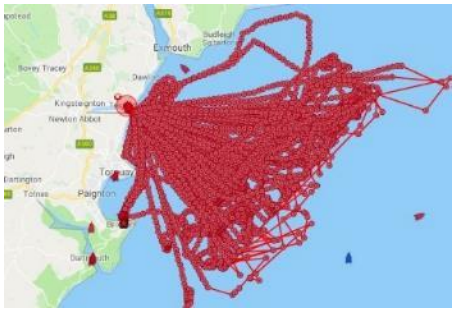


Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Environment Work

- Reactive work – emerging fisheries
  - Literature review
  - Information gathering from stakeholders
  - Additional research to fill gaps
  - Suggest possible management measure
- MPA Assessments of the interaction of fishing gear on designated features – EMS and MCZs
- Marine Licence Applications - Dredging
- Consultations – Hinkley; HPMA
- Marine Pioneer
- Severn Estuary Group -SERF, ASERA, SEP
- Forum meetings
- Defra Groups - Evidence Impact Group; Sustainable Fisheries Group
- IFCA TAG – Chairs; Secretariat
- Fishing Industry Groups
- European Projects





Project Aims

Aim 1 - Building on Local Fishermen's Knowledge

Investigate the stock structure of herring in the Bristol Channel by i) using a range of genetic and morphometric techniques and ii) identifying whether suitable herring spawning habitat exists in the inner Bristol Channel and Severn Estuary and map its distribution.

Aim 2 - Develop Ecosystem-Based Fisheries Management for herring

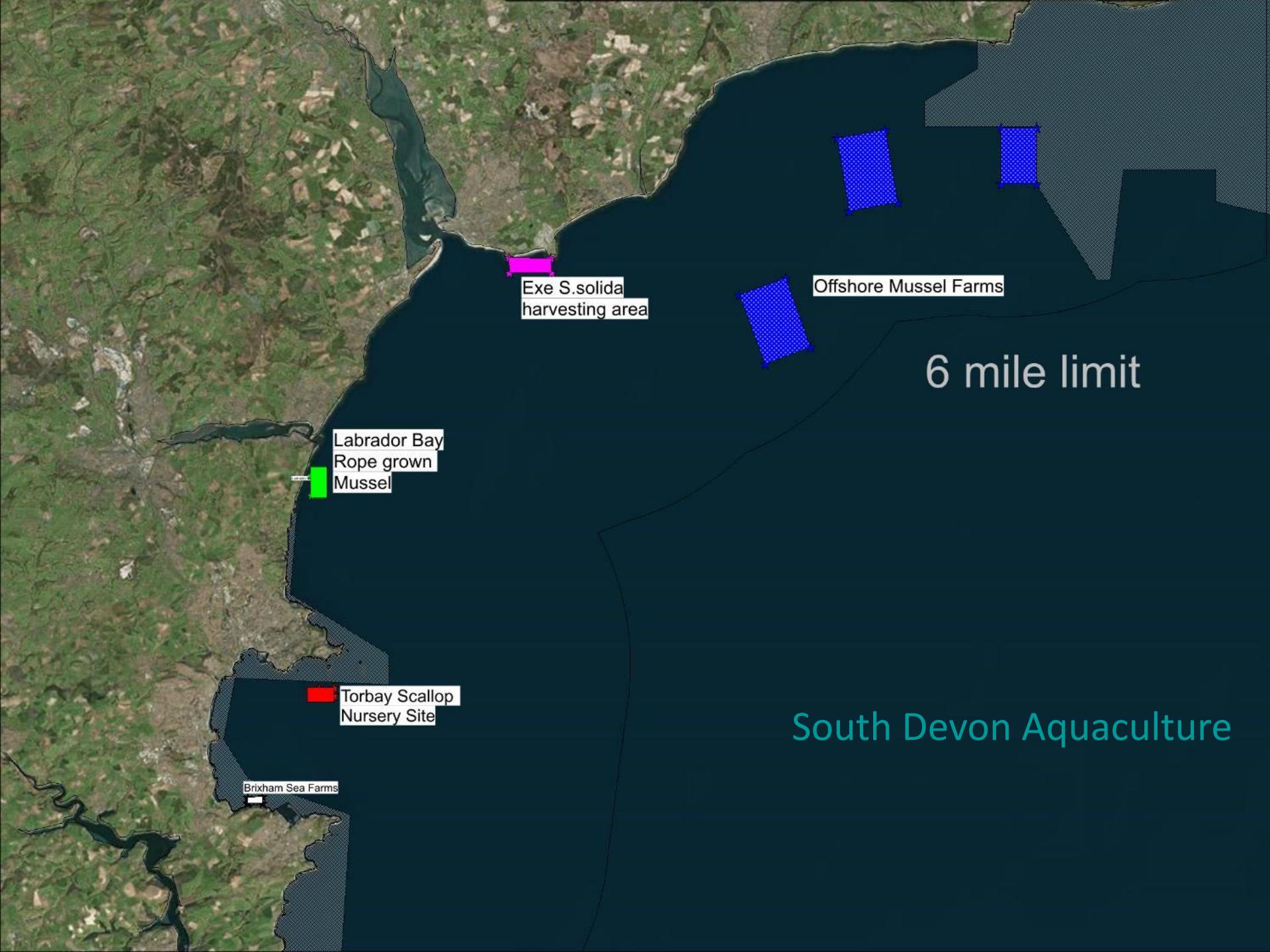
Use the findings from stock structure analysis to develop ecosystem based fisheries management through the iterative Pioneer Programme Research and Management Plan for herring.

Aim 3 - Enhancing the Natural Capital of a Heritage Fishery

Work with local fishermen to improve infrastrucutre (such as smokeries) allowing market diversification and adding value to the end product.

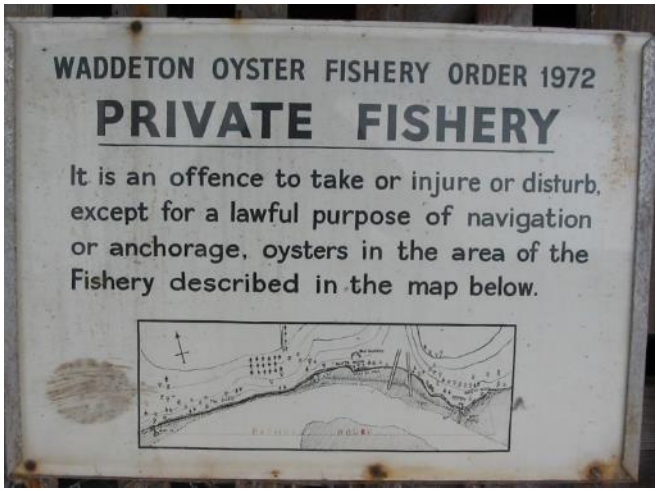
Promote the North Devon herring's provenance and heritage thus maximising the Natural Capital value of herring landed in the Pioneer area.

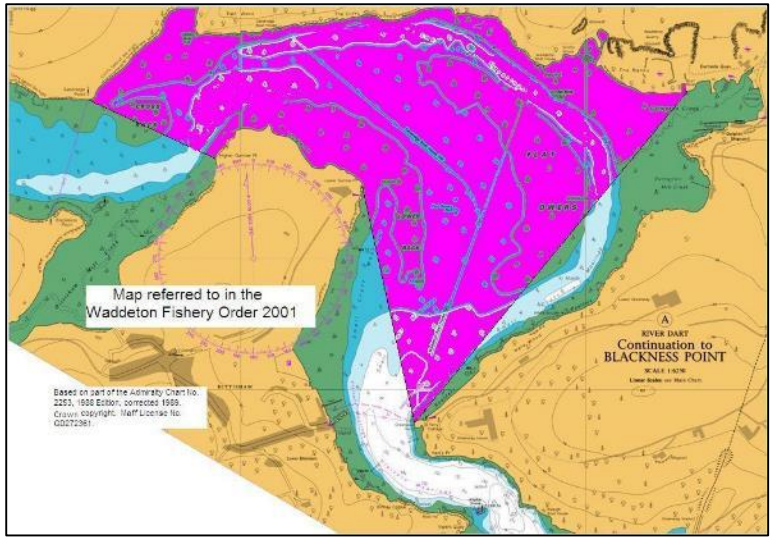
Mariculture


Exe S.solida
harvesting area
Offshore Mussel Farms
6 mile limit
Labrador Bay
Rope grown
Mussel
Torbay Scallop
Nursery Site
Brixham Sea Farms
South Devon Aquaculture

Mariculture
Waddeton Fishery - Dart Estuary

- From 1972 to 2001 a Several Order was operated by one shellfisherman and removed the public right to fish
- IFCA took over management of the fishery under a Regulating Order in 2001
- Diversification / New opportunities for fishermen
- 0.2 hectare plots
- 7 plots leased to 4 shellfishermen





Production Figures in the Dart

2006 -17 tonnes pacific oysters

2010 - 41 tonnes pacific oysters

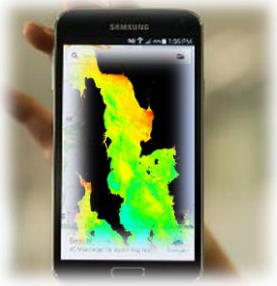
2018 – 2 tonnes pacific oysters

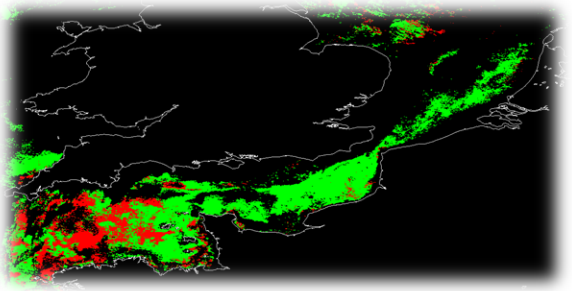
Was one of the largest producers of oysters in Devon – 30% from the Dart –disease and water quality issues

Mariculture Strategy

- Mariculture increasing in the district – rope grown mussel farms; , Scallop ranging trial, seed mussel collection sites; native oyster cultivation; seaweed farms; spiny lobsters?
- D&S IFCA Mariculture Strategy will provide a basis for future opportunities within this sector – developing fisheries remit
- Site location, displacement, seed production, hatchery options, water quality, harmful algal blooms, potential diseases, invasive non-native species and conflict with other fishing sectors
- D&S IFCA will work in collaboration with appropriate stakeholders and organisations in the development of the Mariculture Strategy including Defra, Cefas, MMO, Natural England, Academia Environmental Health, SeaFish, and the fishing industry.
- Waddeton Regulating Order – evaluate its use and benefits

- D&S IFCA is a involved in the EUROHAB project. The project will use satellite imagery to identify harmful algal blooms and develop a web alert system, which industry members can use to help manage their harvesting strategy and protect their markets.

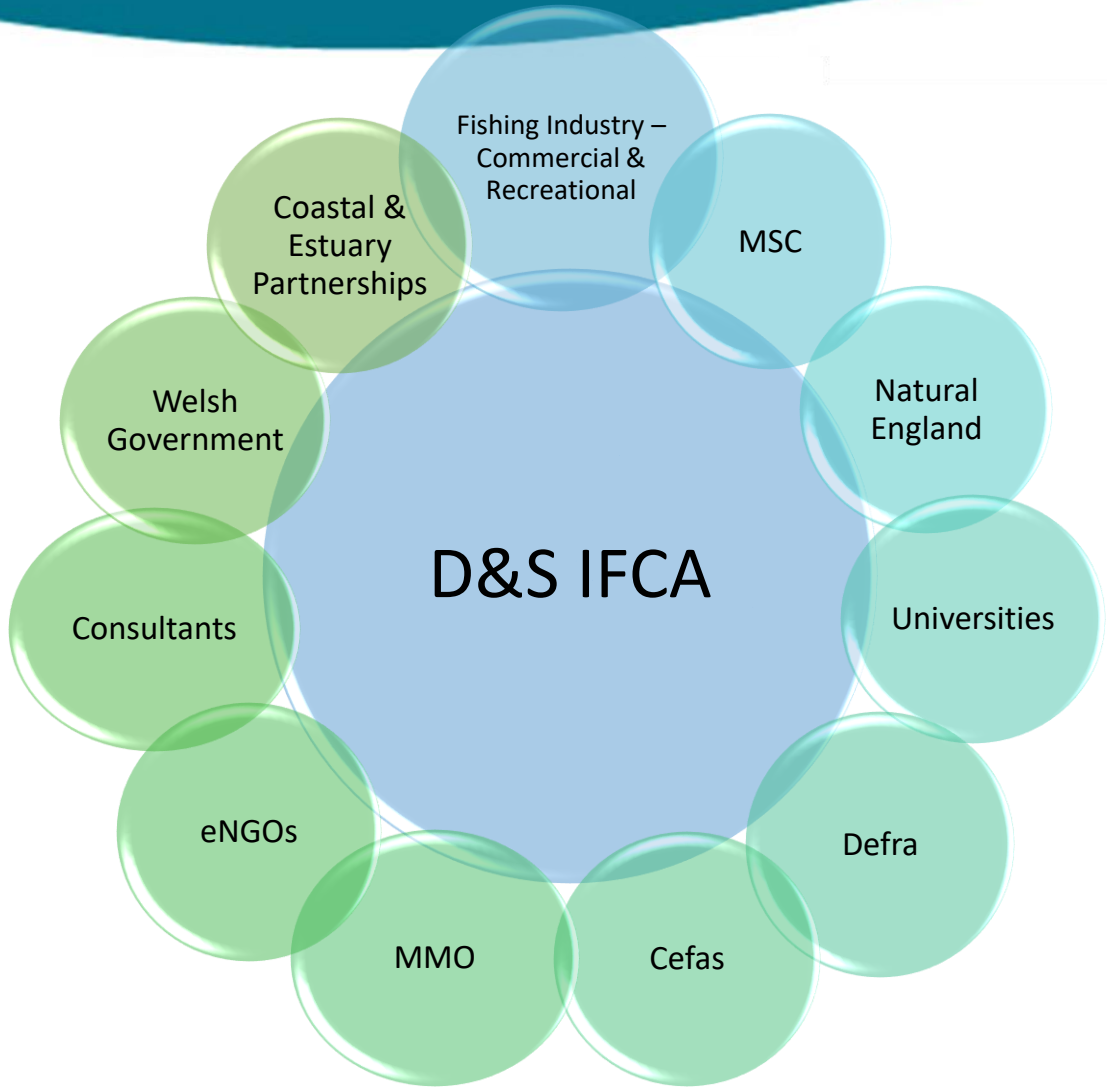




Inshore Fisheries and Conservation Authority

PML GISPortal; web interface to remote sensed, modelled and in-situ data- early detection of harmful algal blooms

Partnerships



Devon & Severn IFCA
Inshore Fisheries and Conservation Authority


010811_2
10:52:36 10 Jul 2013
100811_3
HDO-1
050-HD
1 Channel
10/08/2011 14:43:20
Any questions?
15:30:24
07/2011 11:55:56

Marine Protected Areas Management

Types of MPAs

SPECIAL AREA OF CONSERVATION (SAC)
European designation
(Habitats & species other than birds)

SPECIAL PROTECTION AREA (SPA)
European designation
(Birds and their habitats)

RAMSAR SITE
International designation
(Wetlands of International importance)

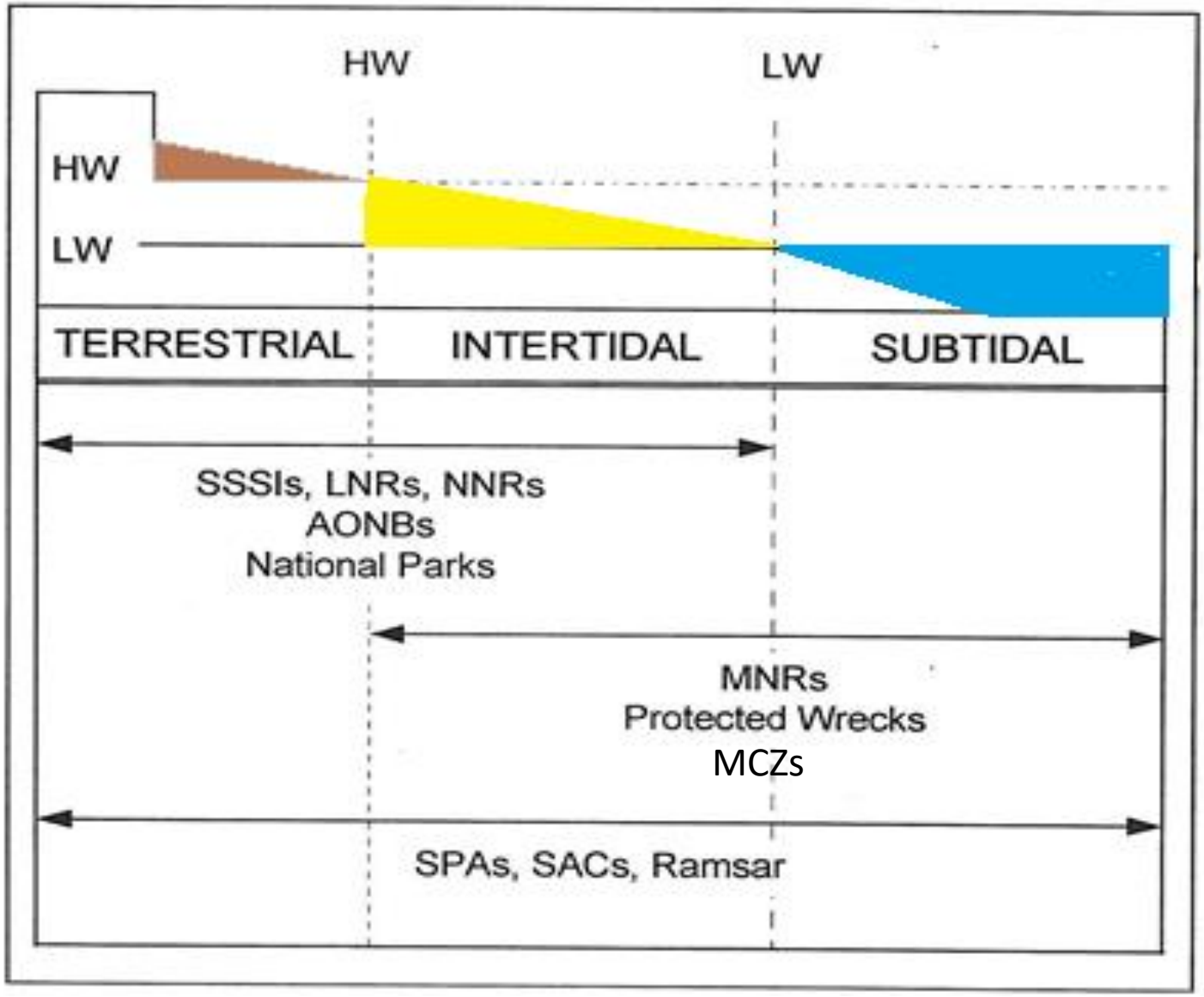
Not EMS but Protected as EMS mostly overlap with SPAs or SSSIs

SITE OF SPECIAL SCIENTIFIC INTEREST
National (UK) designation)
(Habitats, species & geology)

MARINE CONSERVATION ZONE (MCZ)
National (UK) designation)
(Marine habitats, species & geology)

Types of MPA

Areas of the coastal zone covered by Statutory Environmental Protection



Devon & Severn IFCA Inshore Fisheries

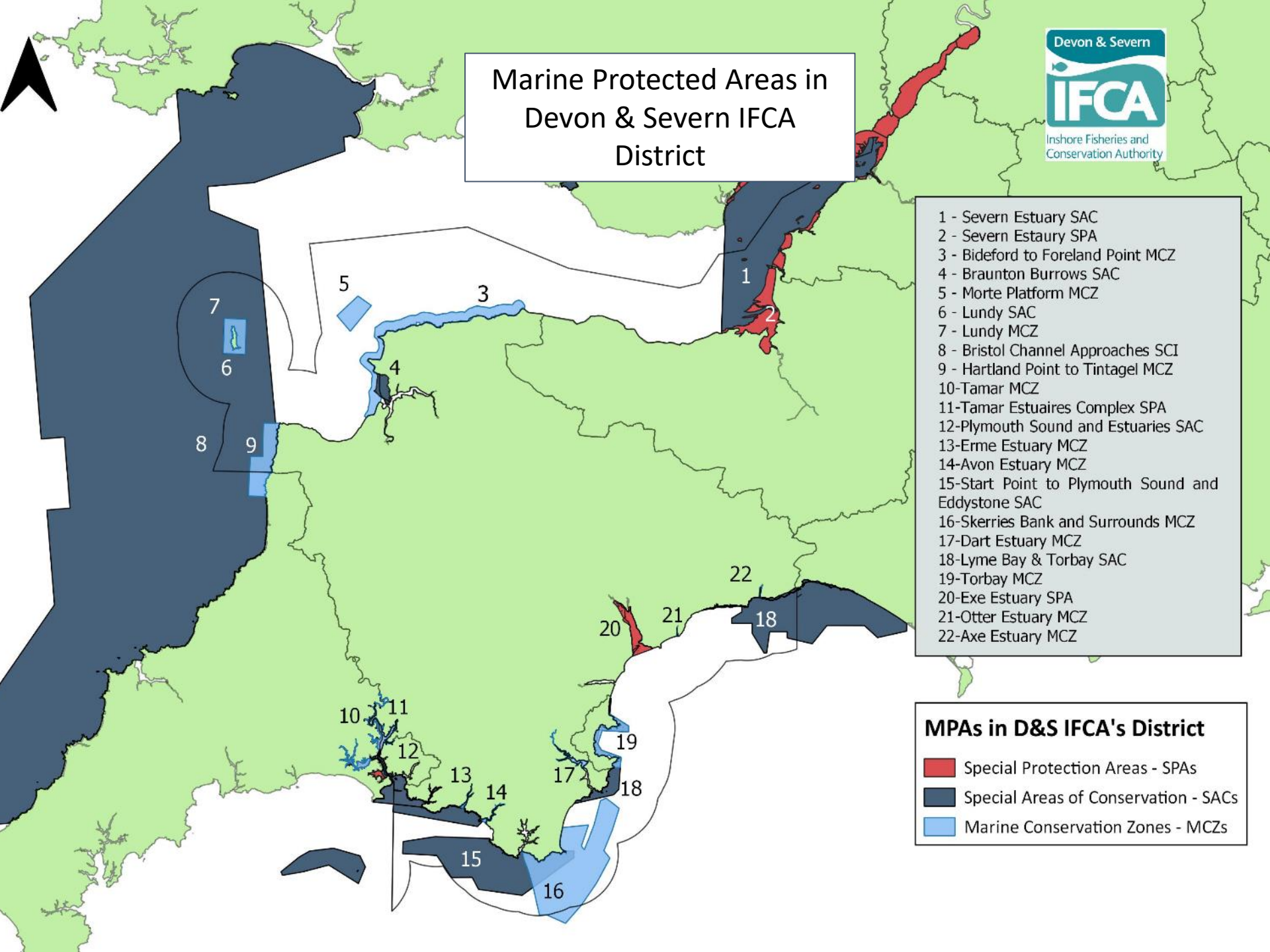
Marine Protected Areas in D&S IFCA's District

- 1914 km^2 (excluding co-location) of MPAs lie within D&S IFCA's District
- 42.33 % D&S IFCA district lies within an MPA
- 25% of D&S IFCA district closed to mobile demersal fishing
- 58 management measures under permit conditions restrict activities in MPAs

- **European Marine Sites - EU Habitats Directive**
  - Severn Estuary SAC & SPA
  - Lyme Bay & Torbay SCI
  - Lundy SAC
  - Exe Estuary SPA
  - Plymouth Sound and Estuaries SAC
  - Tamar Estuaries Complex SPA
  - Start Point to Plymouth Sound and Eddystone SCI
  - Braunton Burrows SAC
  - Bristol Channel Approaches Harbour Porpoise cSAC

- **Designated Marine Conservation Zones – Marine and Coastal Access Act**
  - Skerries Bank and Surrounds
  - Lundy
  - Torbay
  - Tamar
  - Bideford to Foreland Point
  - Hartland Point to Tintagel
  - Morte Platform
  - Avon Estuary
  - Dart Estuary
  - Axe Estuary
  - Otter Estuary
  - Erme Estuary

Marine Protected Areas in Devon & Severn IFCA District



Environment Legislation as it affects IFCAs

A Timeline

- Sea Fisheries (Conservation) Act 1967
- Sea Fisheries (Shellfish) Act 1967
- Protection of Wreck Sites 1973
- EC Birds Directive 1979
- Wildlife & Countryside Act 1981(as amended)
- The Sea Fisheries (Wildlife Conservation) Act 1992
- The Environment Act 1995
- EC Habitats Directive - Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
  - Conservation (Natural Habitats & c) Regulations 1994,
  - The Conservation of Habitats & Species Regulations 2010
  - The Conservation of Habitats & Species Regulations 2012
  - Conservation of Habitats and Species Regulations 2017
- Countryside & Rights of Way Act 2000
- Water Framework Directive 2000
- Natural Environment and Rural Communities Act 2006
- Marine Strategy Framework Directive 2008
- The Marine and Coastal Access Act 2009

European Marine Sites

- EC Birds Directive 1979
- EC Habitats Directive 1992
    - UK Habitats Regulations 1994, 2010, 2012
        - Article 6
- Ramsar – international convention on protection of wetlands at Ramsar, Iran
- Wildlife & Countryside Act 1981 (amended)
- Marine & Coastal Access Act 2009

European Marine Sites

6(1) Take appropriate conservation measures to maintain and restore the habitats and species for which the site has been designated to a favourable conservation status – *NE monitoring and advice*

6(2) Avoid damaging activities that could significantly disturb these species or deteriorate the habitats of the protected species or habitat types. *Authorities must take action to restrain damaging activities*

Article 6

Managing and protecting Natura 2000 sites

6(4) In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest

6(3) Any plan or project likely to have a significant effect on a Natura 2000, either individually or in combination with other plans or projects, shall undergo an **Appropriate Assessment** to determine its implications for the site. The plan or project can only go ahead if it will not adversely affect the integrity of the site concerned - *reactive*

European Marine Sites

Defra Revised Approach:

- On 14th August 2012 Defra announced a new approach to the management of commercial fishing activities in English EMS (MCS/ Client Earth Challenge)
- A more proactive approach, assessing the potential impact of - commercial fishing activities in EMS and, where appropriate, introducing local management measures to prevent damage
- To bring the management of commercial fishery activities in line with the approach taken for other consented activities taking place in EMS
- To promote sustainable fisheries while conserving the marine environment and resources, securing a sustainable future for both
- Similar process applies to MCZ
- All commercial fisheries need to be assessed as to their impact on the onsite features
- The interaction of the damaging fishing activities on sensitive features prohibited –Article 6 (2) –Red Risk

Red Risk interactions

Permitted Mobile Gear Fisheries in EMS Habitats Regulations Assessment for Red Risk Categories

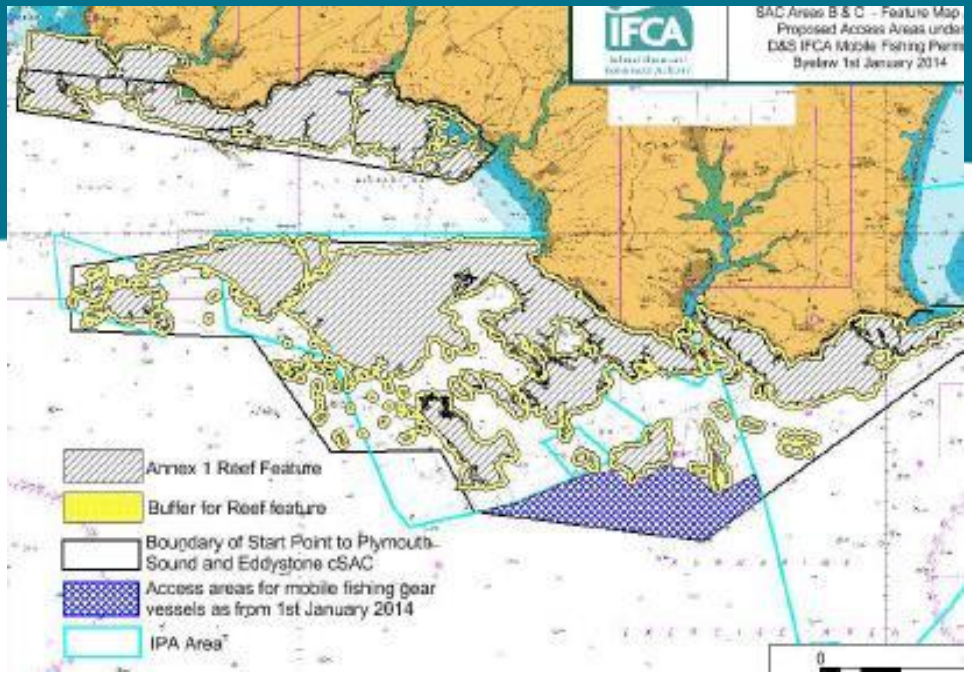
European Marine Site:	**Start Point to Plymouth Sound and Eddystone cSAC**
Qualifying Feature(s):	**Reef**
Generic sub-feature(s):	**Subtidal Bedrock (including chalk) Reef**
Site sub-feature(s):	**Bedrock Reef**

Fishing activities assessed:

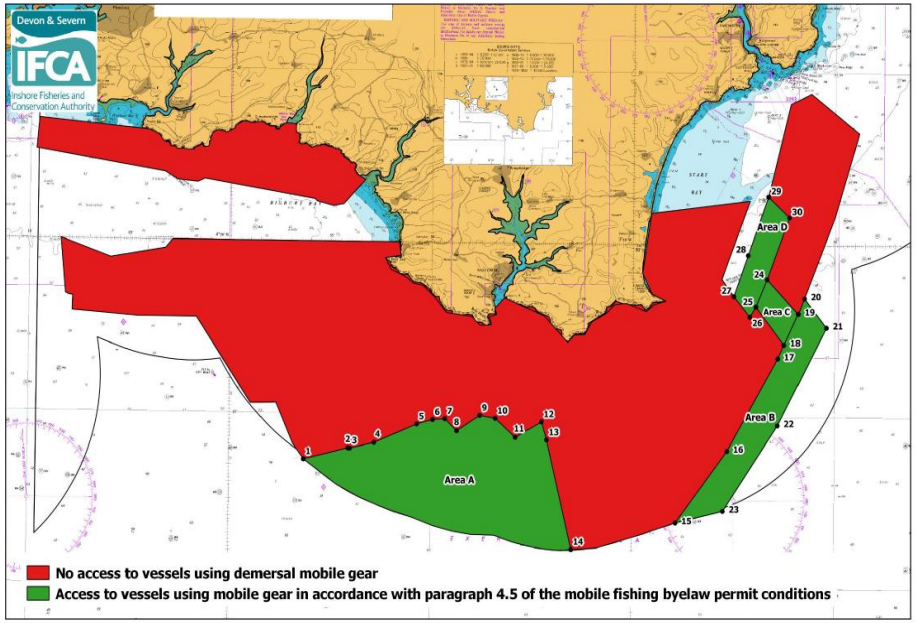
Gear type(s):
1. Towed (demersal) including: Beam trawl (whitefish); Beam trawl (shrimp); Beam trawl (pulse/wing); Heavy otter trawl; Multi-rig trawls; Light otter trawl; Pair trawl; Anchor seine; Scottish fly seine
2. Towed (demersal/pelagic)
3. Dredges (towed) including: Mussels, clams, oysters; Pump scoop (cockles, clams)

IFCA reference
D&SIFCA – 003/A1

Page 1 of 18

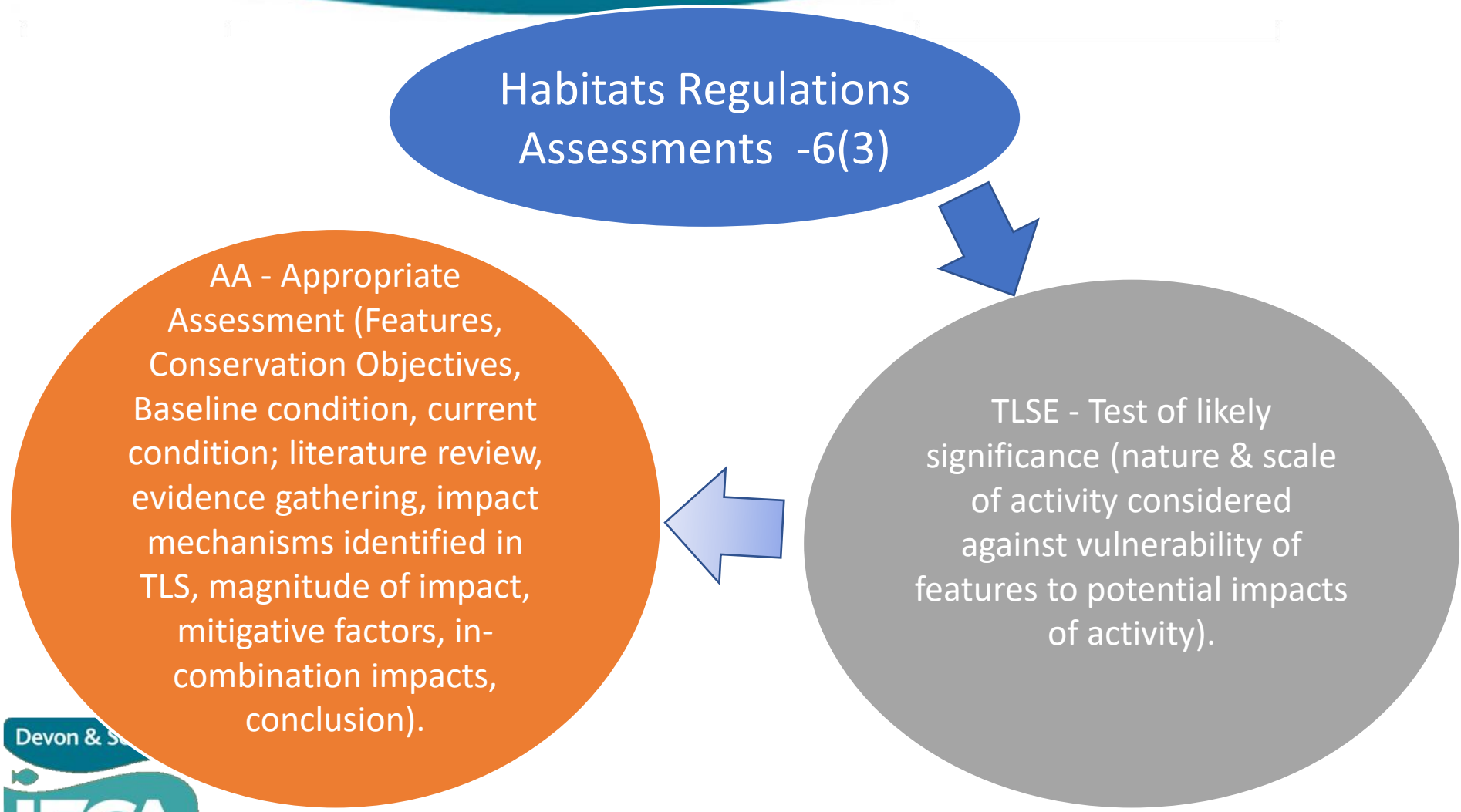


Annex 5a South of Salcombe - Access areas for vessels using demersal mobile gear in accordance with paragraph 4.5 of the mobile fishing byelaw permit conditions



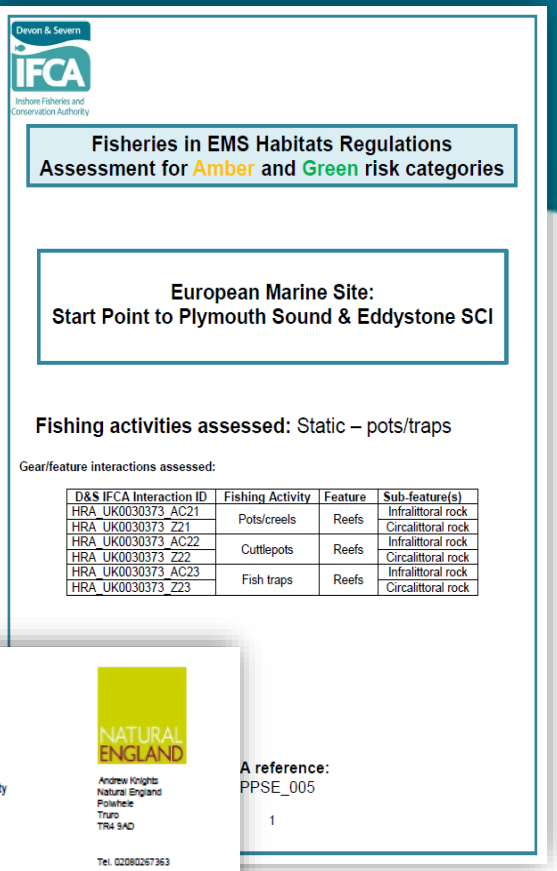
Devon & Severn IFCA Inshore Fisheries and Conservation Authority

HRA Assessment Process



Habitat Regulation Assessments

- With D&S IFCA's EMS - 1264 interactions of fishing gear with features assessed
- 176 completed HRAs and advice received from NE
- Management measures introduced to protect features where the activity is not likely to have a significant effect in view of site's conservation objectives an no adverse effect on the integrity of the EMS
- In some cases Monitoring and Control Plans have been developed, where evidence gaps have been identified



Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Fisheries in EMS Habitats Regulations Assessment for Amber and Green risk categories

European Marine Site:
Start Point to Plymouth Sound & Eddystone SCI

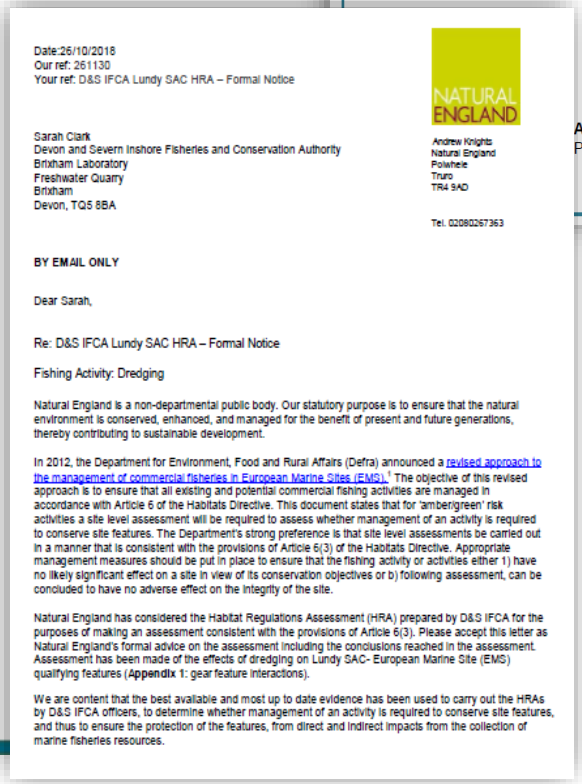
Fishing activities assessed: Static – pots/traps

Gear/feature interactions assessed:

D&S IFCA Interaction ID	Fishing Activity	Feature	Sub-feature(s)
HRA_UK0030373_AC21	Pots/creels	Reefs	Infralittoral rock
HRA_UK0030373_Z21			Circalittoral rock
HRA_UK0030373_AC22	Cuttlepots	Reefs	Infralittoral rock
HRA_UK0030373_Z22			Circalittoral rock
HRA_UK0030373_AC23	Fish traps	Reefs	Infralittoral rock
HRA_UK0030373_Z23			Circalittoral rock

A reference:
PPSE_005

1



Date:26/10/2018
Our ref: 261130
Your ref: D&S IFCA Lundy SAC HRA – Formal Notice

NATURAL ENGLAND

Sarah Clark
Devon and Severn Inshore Fisheries and Conservation Authority
Brixham Laboratory
Freshwater Quarry
Brixham
Devon, TQ5 8BA

Andrew Knights
Natural England
Polwhele
Truro
TR4 9AD

Tel. 02080267363

BY EMAIL ONLY

Dear Sarah,

Re: D&S IFCA Lundy SAC HRA – Formal Notice

Fishing Activity: Dredging

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS).[1] The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive. This document states that for 'amber/green' risk activities a site level assessment will be required to assess whether management of an activity is required to conserve site features. The Department's strong preference is that site level assessments be carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive. Appropriate management measures should be put in place to ensure that the fishing activity or activities either 1) have no likely significant effect on a site in view of its conservation objectives or b) following assessment, can be concluded to have no adverse effect on the integrity of the site.

Natural England has considered the Habitat Regulations Assessment (HRA) prepared by D&S IFCA for the purposes of making an assessment consistent with the provisions of Article 6(3). Please accept this letter as Natural England's formal advice on the assessment including the conclusions reached in the assessment. Assessment has been made of the effects of dredging on Lundy SAC- European Marine Site (EMS) qualifying features (**Appendix 1**: gear feature interactions).

We are content that the best available and most up to date evidence has been used to carry out the HRAs by D&S IFCA officers, to determine whether management of an activity is required to conserve site features, and thus to ensure the protection of the features, from direct and indirect impacts from the collection of marine fisheries resources.

Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Factors to include in HRA/ Sources of Information

Factor/ Type of Information	Source of Information
Site designation & description	Reg 35/ New conservation advice (CA) package NE
Site features/ qualifying features	Reg 35 New CA package NE
Conservation advice	Reg 35 New CA package NE
Feature location and extent	Reg 35 New CA package NE , Cefas, IFCA research, GIS
Feature condition	Condition assessment report - NE
Feature vulnerability/ Sensitivity	Reg 33/35 New draft CA. Condition assessment report - NE
Nature & scale of activity – Exposure Type of fishing effort/ level of fishing effort - Footprint of activity	IFCA local knowledge, sightings, enforcement data, Activity extent & effort surveys, fishers, footprint tools,
Impact of activity on features	NE advice, published literature including Cefas Review, FIED, IFCA research, local knowledge

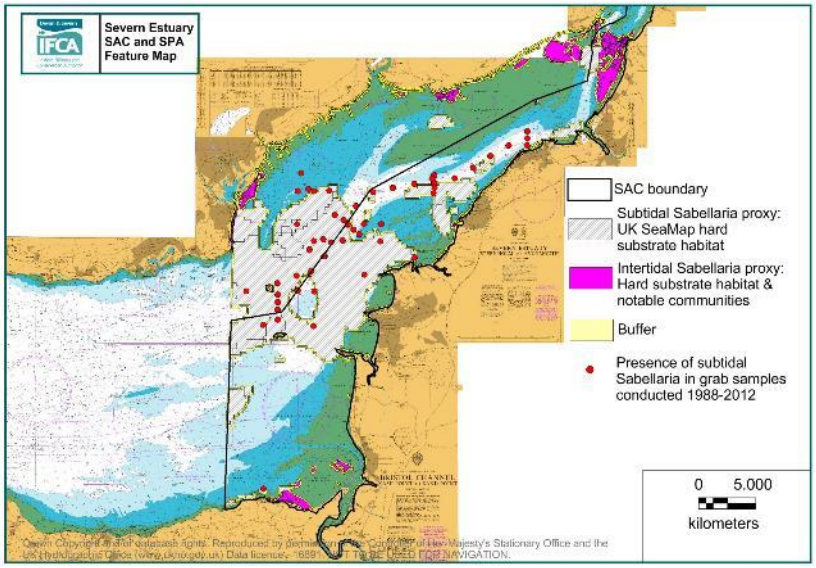
Factors to include in HRA/ Sources of Information

Threshold level of activity?	NE advice
Assessment / significance of impact of activity alone?	IFCA judgement with NE advice, breakdown of pressures, literature review, Precautionary principle?
Assessment / significance of impact in combination with other activities?	IFCA judgement with NE advice, NE provide list of know activities, literature review, Precautionary principle?
Mitigating measures	Management measures - current & future. Byelaws, voluntary agreements. Are measure sufficient/ adaptive? New evidence?
Site integrity test? *Conclusion of adverse effect/non-adverse effect either alone or in-combination. This will be reliant on the consideration of mitigation measure(s) documented in the AA*	IFCA/ NE

Precautionary Principle

- The Precautionary Principle is one of the key elements for policy decisions concerning environmental protection and management.
- It is applied in the circumstances where there are reasonable grounds for concern that an activity is, or could, cause harm but where there is uncertainty about the probability of the risk and the degree of harm.

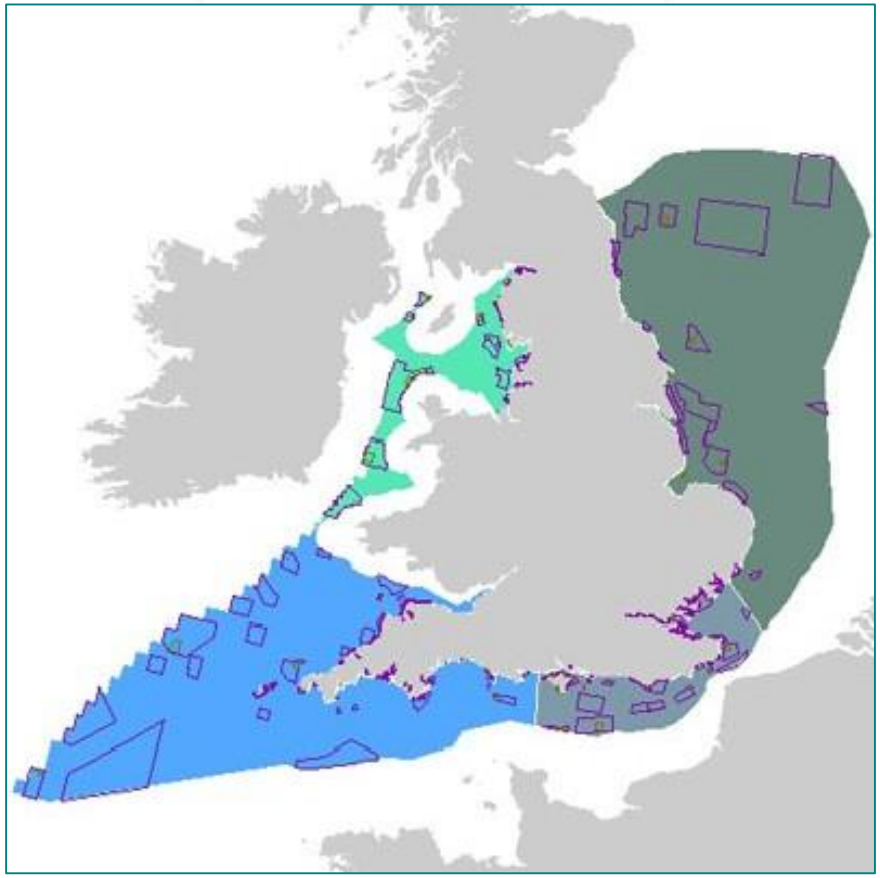
'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.' (Earth Summit 1992 -Agenda 21.Principle 15)



Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Marine Conservation Zones

- MaCCA 2009 – designate MCZs as part of a network of conservation sites
- 4 stakeholder led MCZ projects:
  - Balanced seas
  - Finding Sanctuary
  - Net Gain
  - Irish Sea Conservation Zones
- 27 out of 127 sites designated in first Tranche on 21st November 2013
- 23 Tranche 2 MCZ designated on 17th January 2016
- 41 Tranche 3 MCZ designated 31st May 2019



MCZ Assessments

- Assessment Process similar to HRA process
- Assessing whether the activity hinders the conservation objectives
- 1325 gear feature interaction assessed under 36 MCZ Assessments – 4 still not completed awaiting data
- 6 tranche 3 yet to be assessed – 5 are estuarine sites
- Potential issues with mariculture in 2 sites –Avon and Dart MCZs

Marine Conservation Zone Assessment

Site name:	Lundy MCZ UKMO 20130012
Protected feature(s):	Spiny lobster (*Palinurus elephas*)

Fishing activities assessed at this site:
Screening Assessment
Towed (demersal): Beam trawl (whitefish); Beam trawl (shrimp); Beam trawl (pulse/wing); Heavy otter trawl; Multi-rig trawls; Light otter trawl; Pair trawl; Anchor seine; Scottish/fly

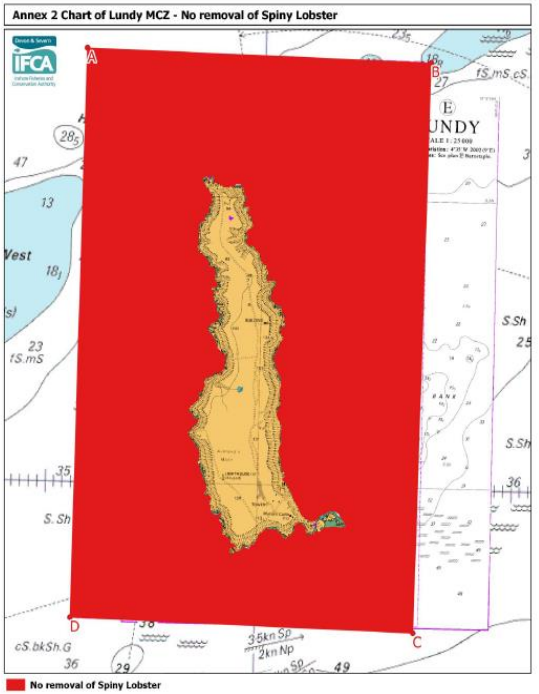
Dredges (towed): Scallops; Mussels, Clams, Oysters

Static – pots/traps: Pots/creels (crustacean/gastropods)

Static – fixed nets: Gill nets, Trammels, Entangling

Passive – nets: Drift nets (demersal)

Miscellaneous: Commercial diving



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MCZ Assessments

Marine Conservation Zone Assessment

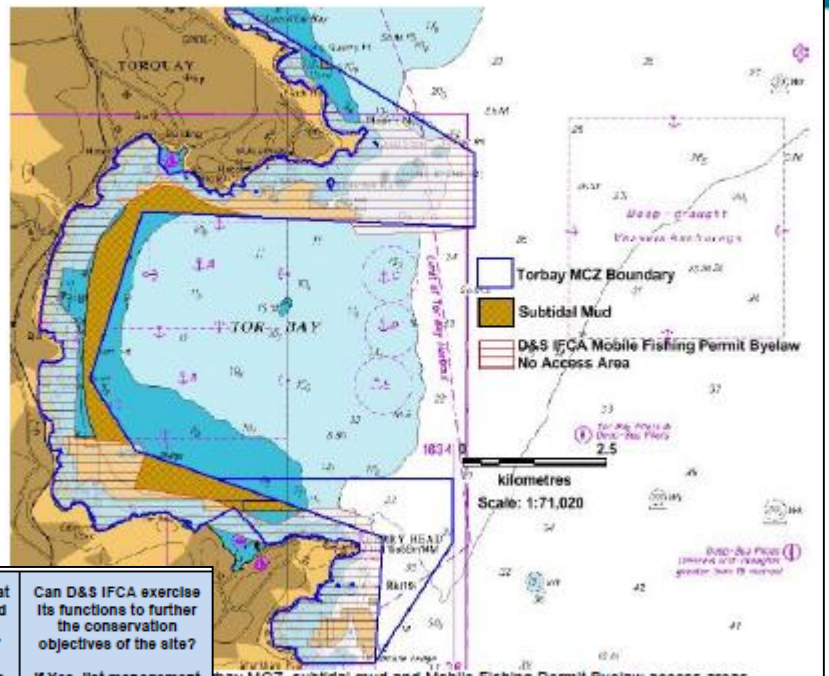
Site name:
Torbay MCZ

Feature(s) / Habitat(s) of conservation interest:
Subtidal Mud

Activities / feature assessed:

Towed (demersal): Beam trawl (whitefish); Beam trawl (shrimp); Beam trawl (pulse/wing); Heavy otter trawl; Multi-rig trawls; Light otter trawl; Pair trawl; Anchor seine; Scottish/fly seine.
Dredges (towed): Scallops; Mussels, clams, oysters.

Annex 1: Site Map(s)

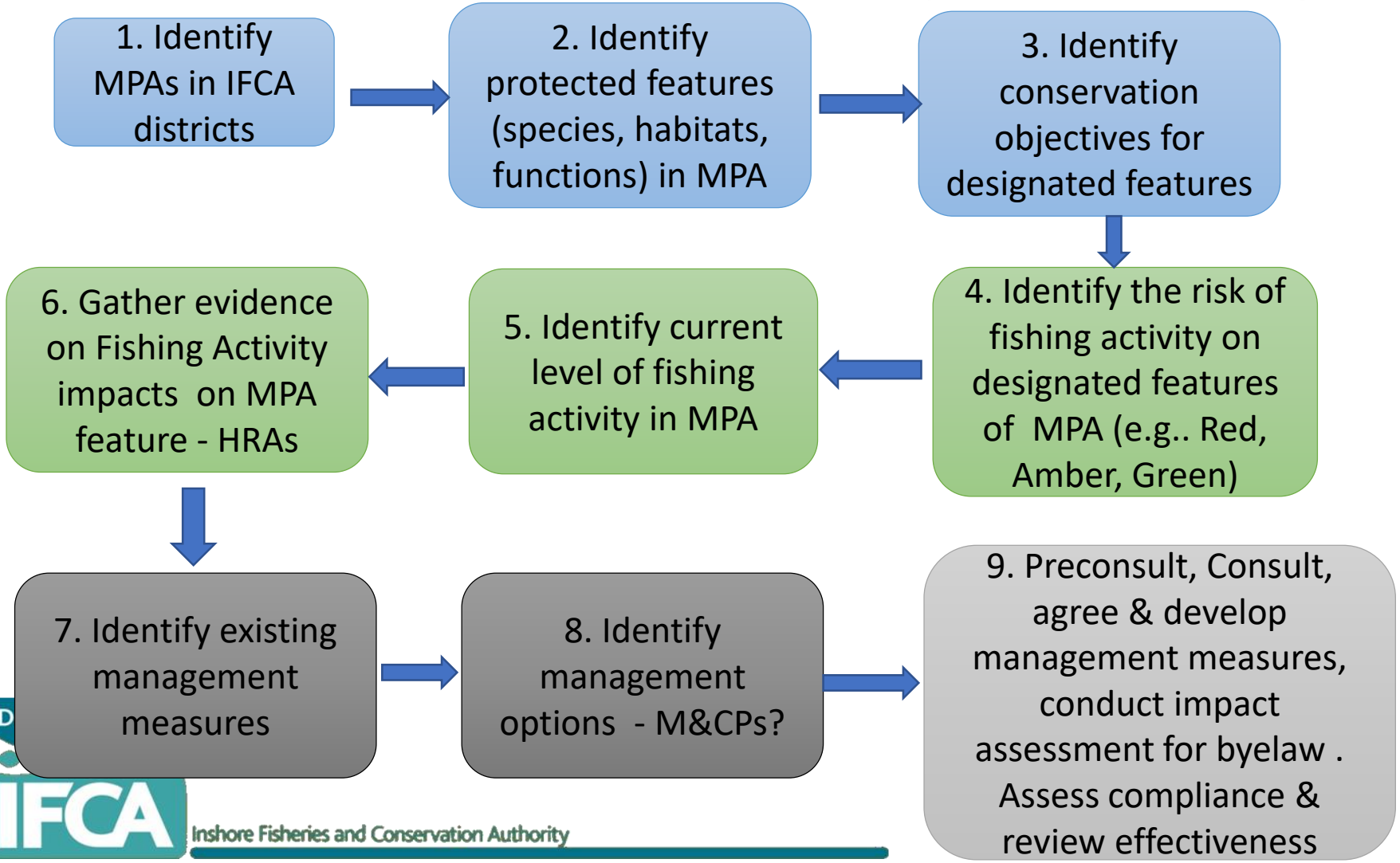


Torbay MCZ, subtidal mud and Mobile Fishing Permit Byelaw access areas

Feature or habitat of Conservation Interest	Conservation objectives (Natural England, 2015)	Activity	Potential pressures from activity and sensitivity of habitats to pressures. (Natural England, 2015)	Potential exposure to pressures and mechanism of impact significance (Refer to evidence – see Section 7 for more information on impact of pressures)	Is there a risk that the activity could hinder the achievement of conservation objectives of the site?	Can D&S IFCA exercise its functions to further the conservation objectives of the site? If Yes, list management options
Subtidal Mud	Distribution: presence and spatial distribution of subtidal mud communities (recover) Structure: presence and abundance of typical species (unknown target) Structure: species composition of component communities (recover) Structure: sediment composition and distribution (maintain) Water quality – turbidity (maintain)	Commercial fishing - bottom-towed gear **(trawls)**	•Abrasion/ disturbance of the substrate on the surface of the seabed (sensitive) •Changes in suspended solids - water clarity (sensitive) •Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion (sensitive) •Removal of non-target species (sensitive)	Otter trawling for cuttlefish occurs annually in the MCZ at springtime. Evidence from section 7 indicated decrease in biomass, diversity and species composition due to trawling activities. Re-suspended sediment could last up to 5 days from otter trawling activities and furrows evident for at least one year. Fishing intensity is a major factor in deterring recovery, which varies between studies and site specific. Low levels of otter trawling may not cause changes in community composition.	Yes, The stable nature of subtidal mud in Torbay makes it susceptible to disturbance. Infaunal Quality Index (IQI) data indicated good to high status, with an average of high (Annex 1; Figure 3). The habitat has a recover objective, and if a significant level of activity occurs, it could pose a risk of physical damage on the feature.	Yes, 53.5% of subtidal mud is already protected under the current byelaw (Annex 1; Figure 1) Additional management measures could include: 1. Enforcement of current closed areas 2. Extension of current byelaw 3. Seasonal closure 4. Gear specific closure 5. Voluntary measure 6. Environmental surveys 7. Monitoring and review Through managed access, if effort reduced some recovery may occur.

Devon & Severn IFCA

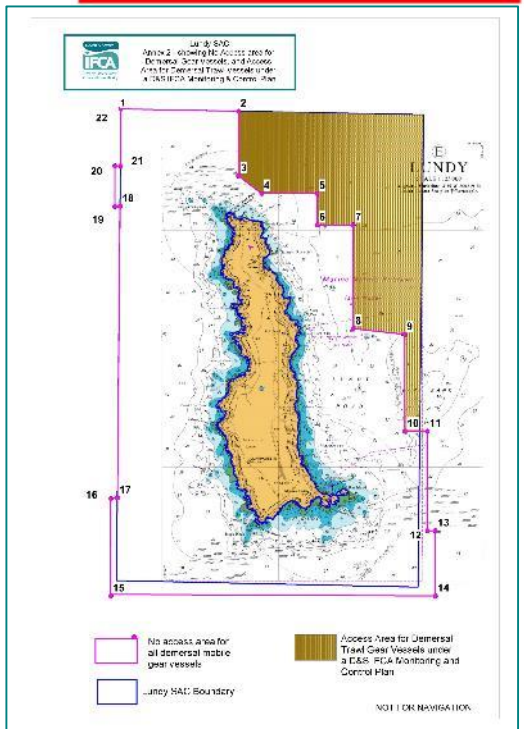
Development of Management Measures for Fishing Activities in Marine Protected Areas



IFCA Inshore Fisheries and Conservation Authority

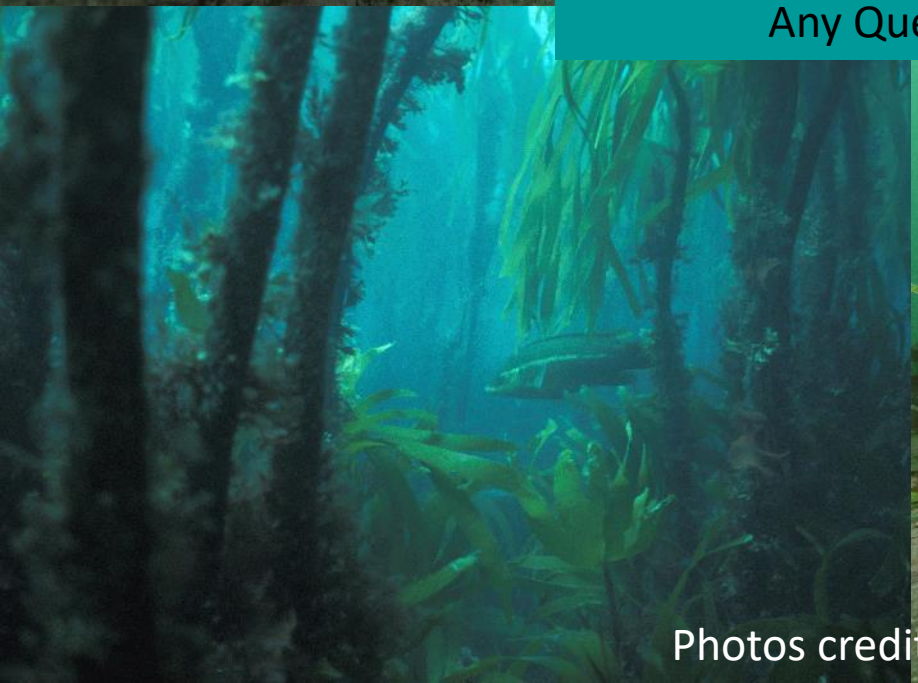
Monitoring & Control Plans

- Adaptive Risk Management – Guidance developed by NE
- Formal Advice from NE regarding a few HRAs and MCZ Assessments highlighted uncertainties
- Need to develop Monitoring and Control Plans (M&CPs) for certain activities taking place with MPAs:
    - Netting bycatch of Shad in Severn Estuary and Plymouth Sound
    - Produce information flyer on importance of these species
    - Otter trawling on mud in Torbay MCZ- fishing effort
    - Pots on seagrass in Torbay MCZ- fishing effort, impact & location
    - Trawling on coarse sediment Lundy SAC – fishing effort
- Sent to Natural England for formal advice – most received.
- Monitoring programmes set up and results will inform any potential changes in management of the fishing activity assessed – surveys, IVMS



Inshore Fisheries and Conservation Authority

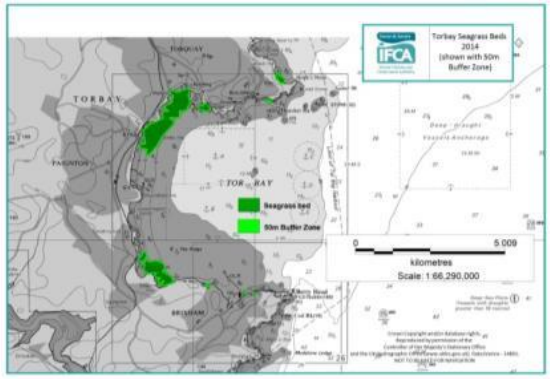
Any Questions?

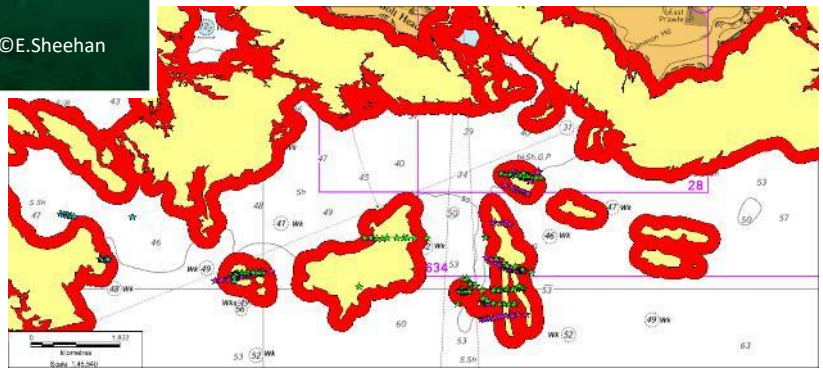


Photos credited to Keith Hiscock

Habitat Mapping

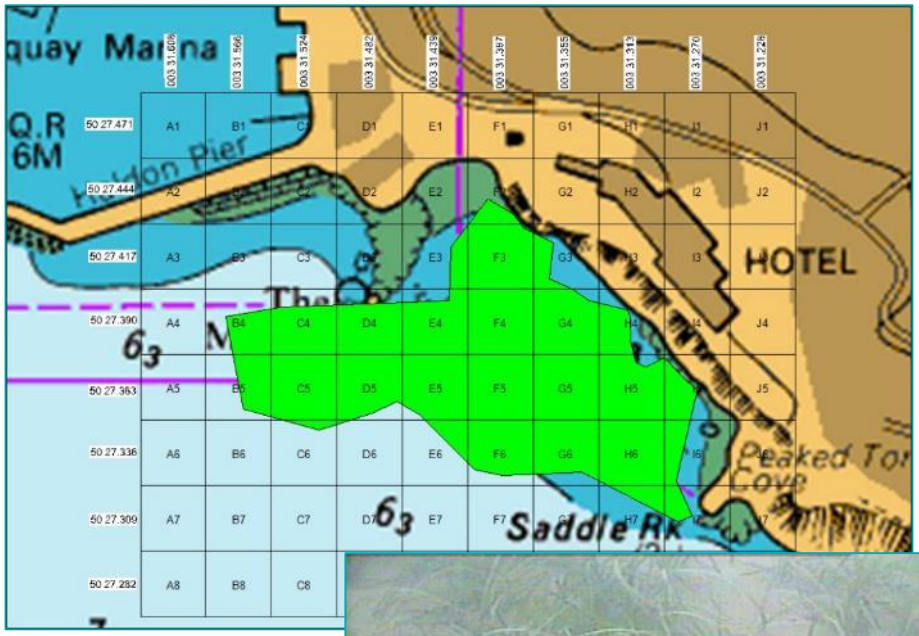
- Seagrass – Torbay, Plymouth and the Yealm, and Salcombe
- Underwater filming to ground truth habitats and assess condition – Skerries MCZ, SPPSE SAC, Lyme Bay, Lundy SAC, Salcombe Estuary
- *Arenicola marina* (lugworm) in the Severn Estuary

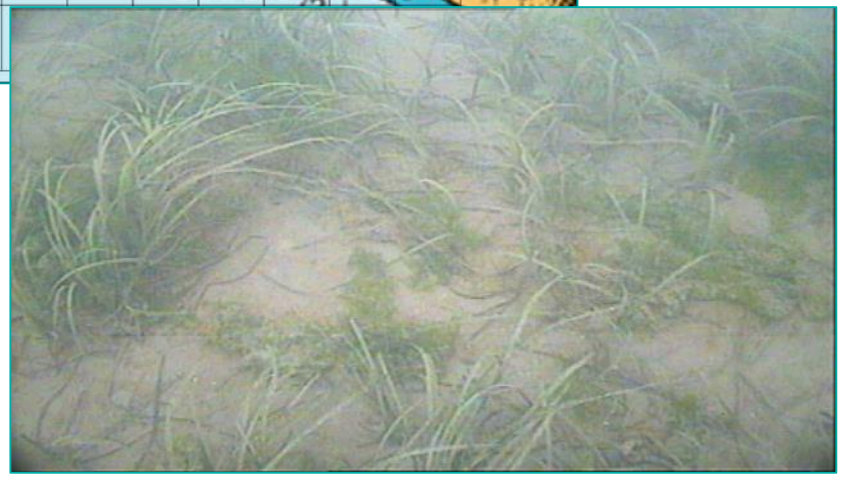




Devon & Severn IFCA

Seagrass Surveys- Torbay MCZ





- Feature of the MCZ
- Protected from towed demersal fishing under Mobile Fishing Permit Byelaw since 2014
- Surveys carried out biennially to look at density and extent
- Increase of 10% overall from 2014-2017
- 2019 surveys carried out by EA

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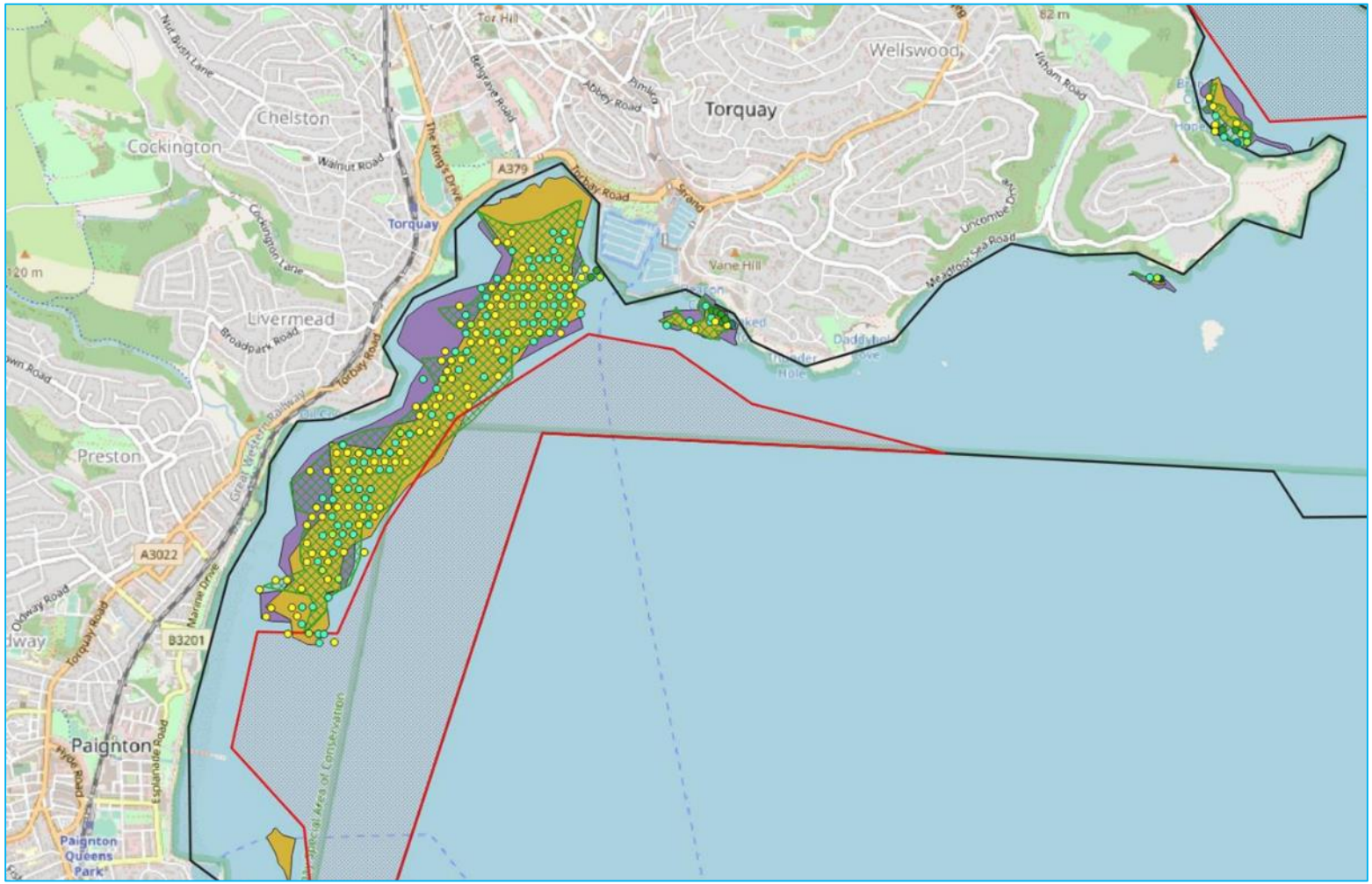
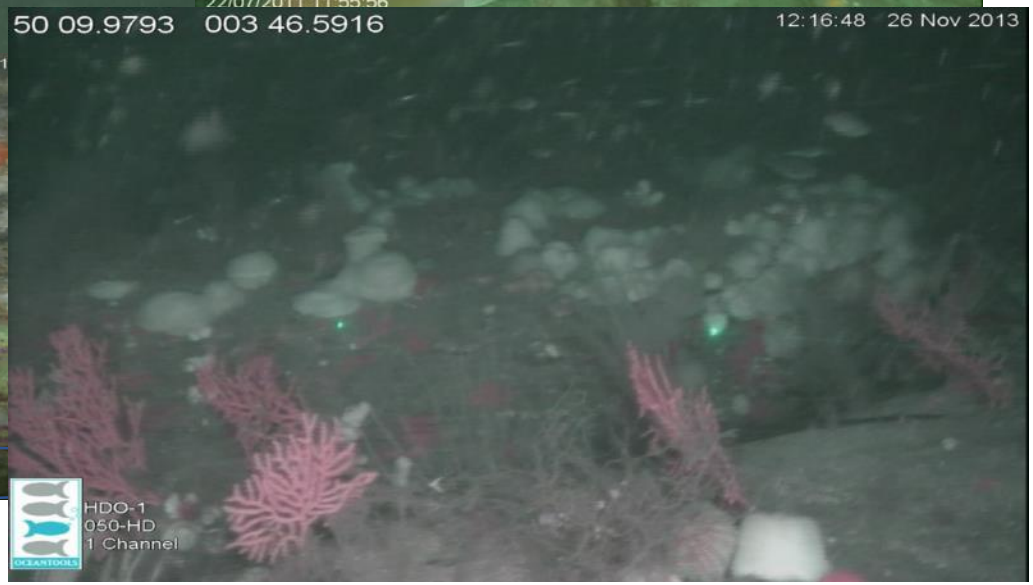
Seagrass Surveys- Torbay MCZ



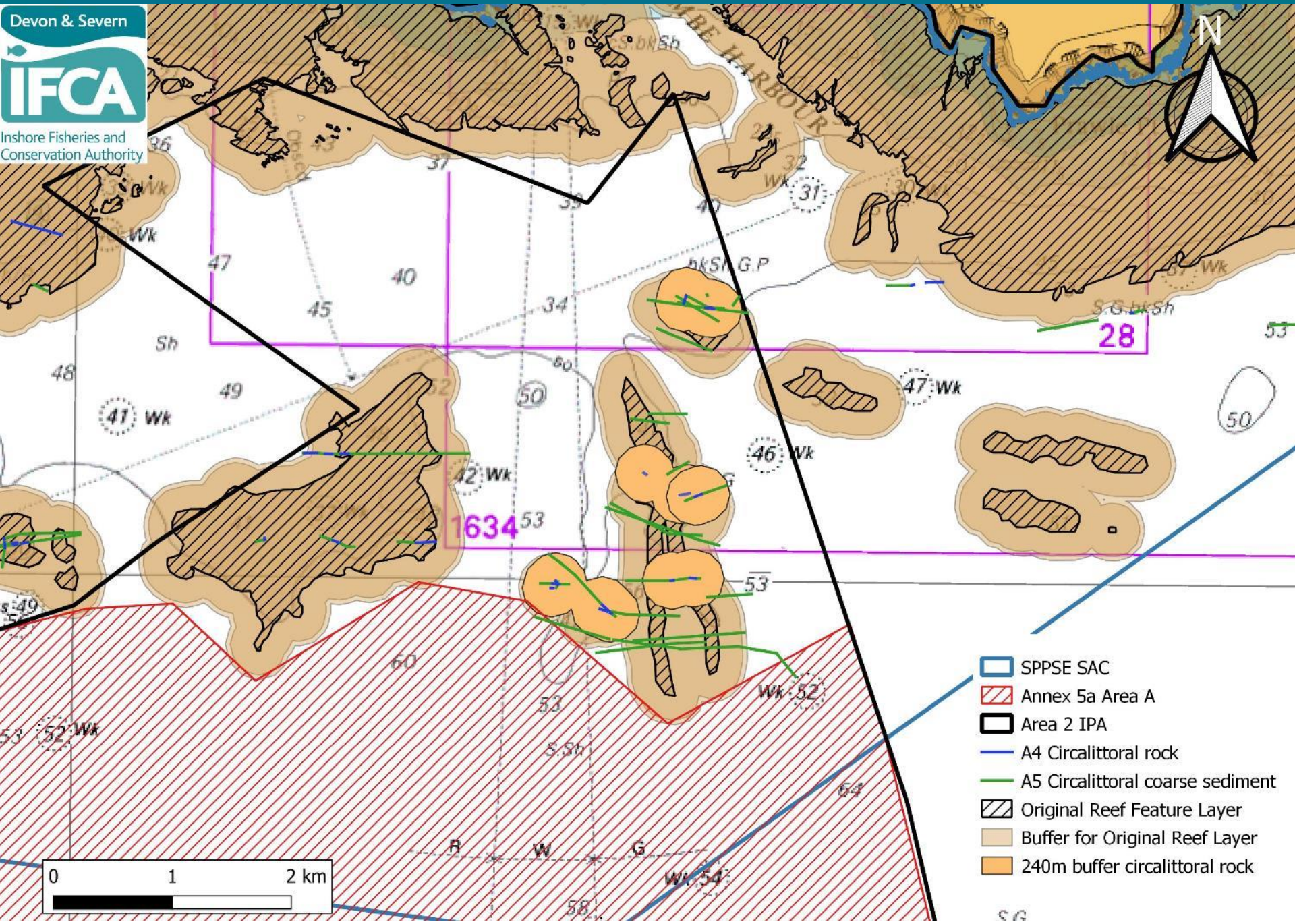
Devon & Severn IFCA

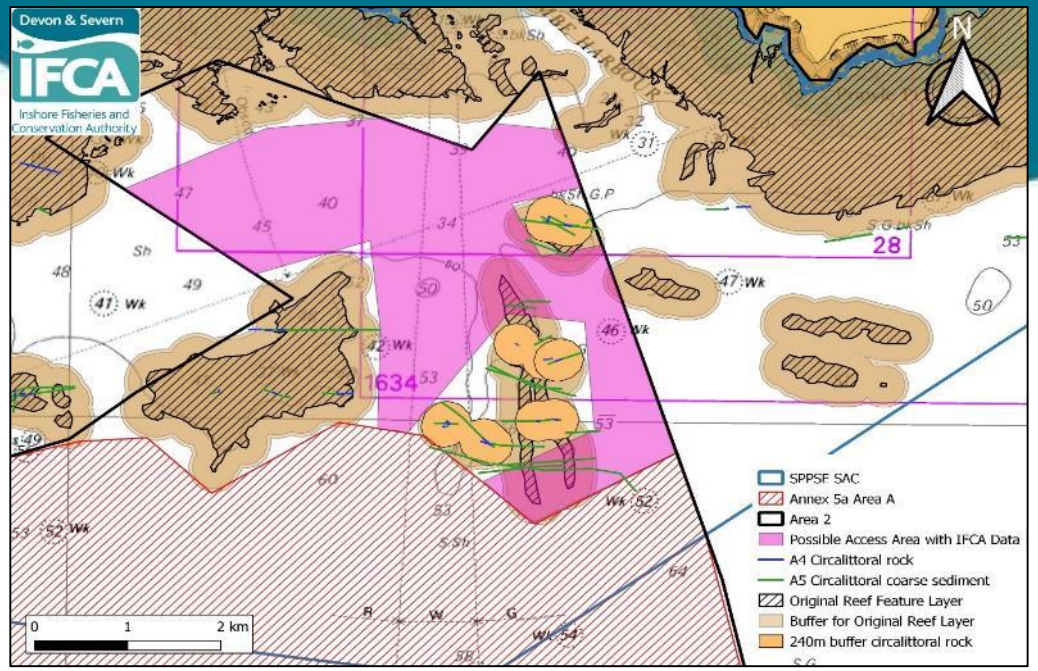
Inshore Fisheries and Conservation Authority

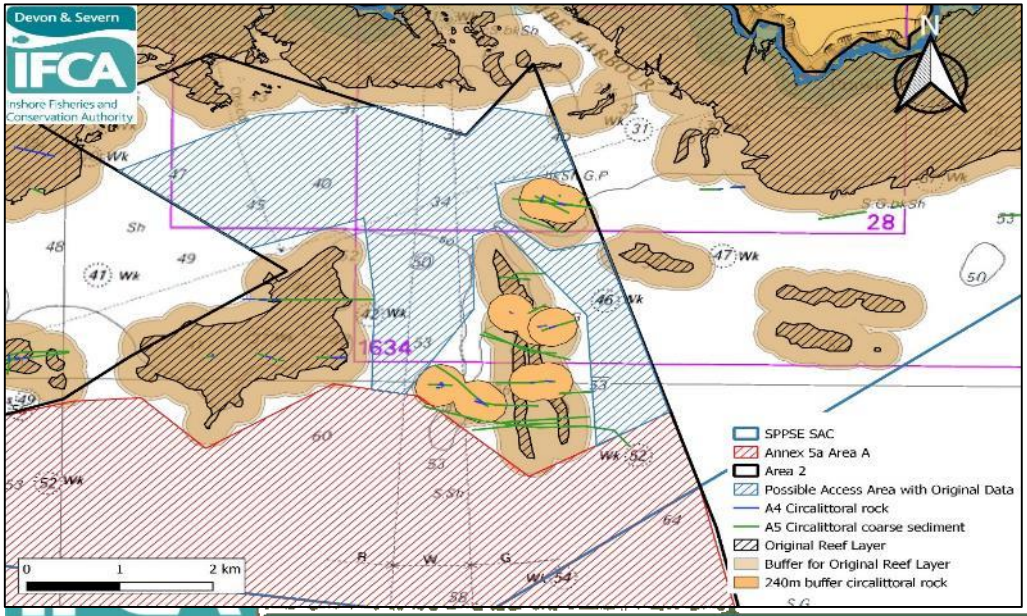
Flying Array Camera Surveys



Devon & Severn IFCA


Devon & Severn
IFCA
Inshore Fisheries and Conservation Authority
N
28
1634
SPPSE SAC
Annex 5a Area A
Area 2 IPA
A4 Circalittoral rock
A5 Circalittoral coarse sediment
Original Reef Feature Layer
Buffer for Original Reef Layer
240m buffer circalittoral rock
0
1
2 km





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Fisheries in EMS Habitats Regulations Assessment for Red risk category. Assessment for the proposal for potential access area changes.

European Marine Site: Start Point to Plymouth Sound & Eddystone SAC

Fishing activities assessed: Towed demersal & dredges

Gear/feature interactions assessed:

D&S IFCA Interaction ID	Fishing Activity	Feature	Sub-feature(s)
HRA_UKD030373_AC	Beam trawl (whitefish)	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Beam trawl (shrimp)	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Beam trawl (pulse/wing)	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Heavy otter trawl	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Multi-rig trawls	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Light otter trawl	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Pair trawl	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Anchor seine	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Scottish/fly seine	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Scallops	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock
HRA_UKD030373_AC	Mussels, clams, oysters	Reefs	Infralittoral rock
HRA_UKD030373_Z			Circalittoral rock

IFCA reference:
SPPSE_006

Any Questions?

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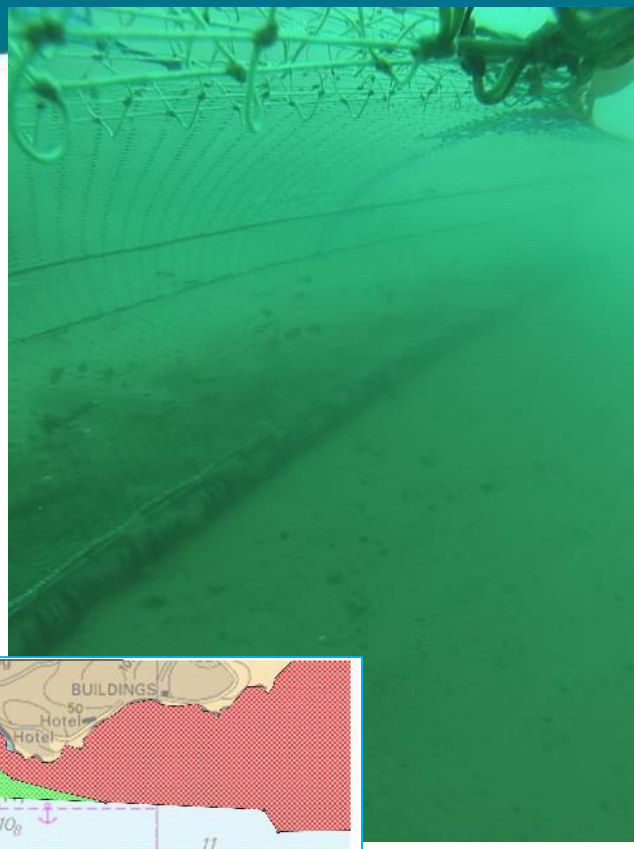
Fishing Activity Surveys

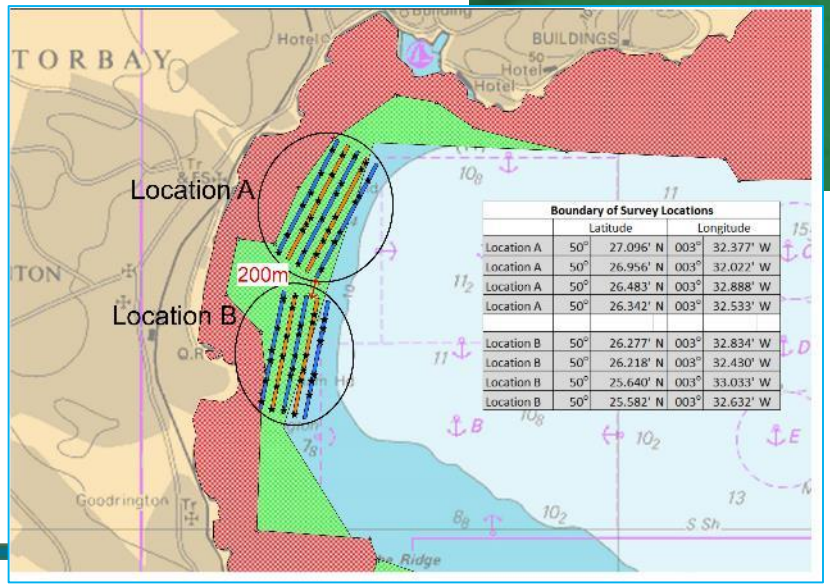
- Bait collection surveys – Severn, Exe and Plymouth Estuaries
- Recreational sea angling – effort and behaviour interviews
- Assessing impacts of fishing gear e.g. pots, towed gear
- Surveys of industry
- Crab tiles in estuaries

Devon & Severn IFCA

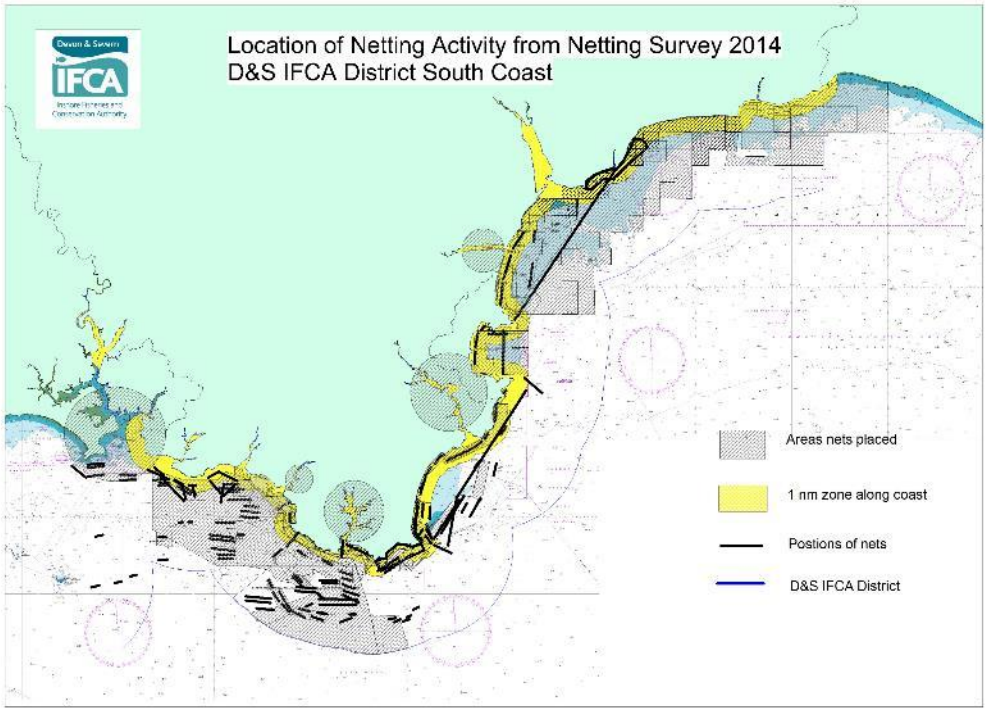
Gear Impact Studies

- MPA assessments highlighted gaps in knowledge
- Otter trawling on mud
  - Cuttle fishery in Torbay- including on the mud feature open in the MCZ (54% of mud feature closed)
  - Granted funding (£44,610) from Defra IEG to carry out BACI survey, gear footprint, and direct impact study
- Cuttle potting on seagrass
  - Fishery in Torbay within the seagrass
  - Small scale study putting GoPros on a cuttle pot

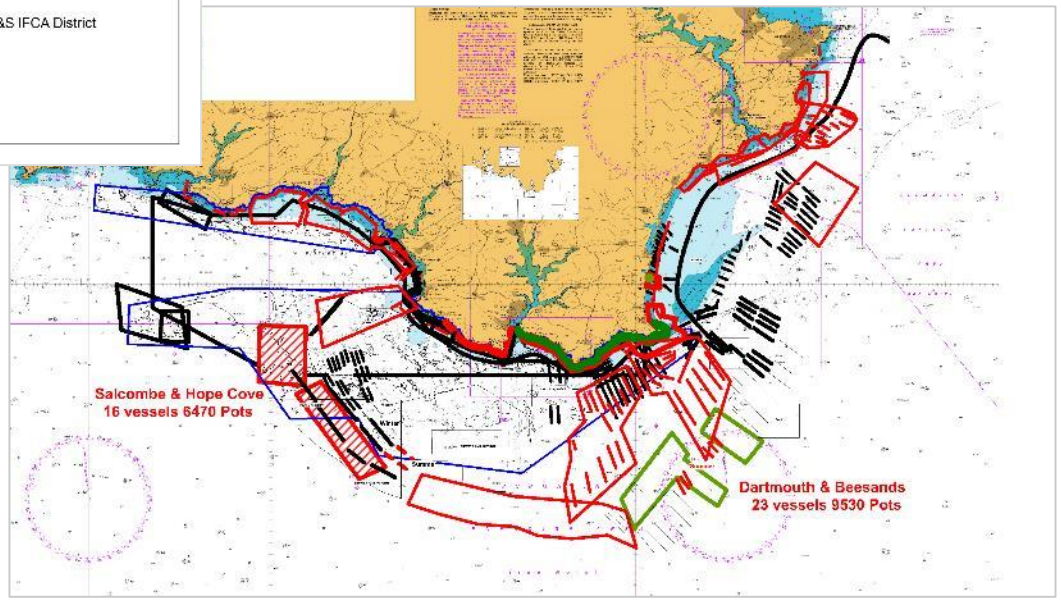




Fishing Effort Surveys



- Potting South Devon, North Devon, Lundy 2008
- Potting and Netting 2014
- Tranche 2 MCZ Potting, Netting and Towed Gear 2018



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Crab Tile Surveys by UAV

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Any Questions?

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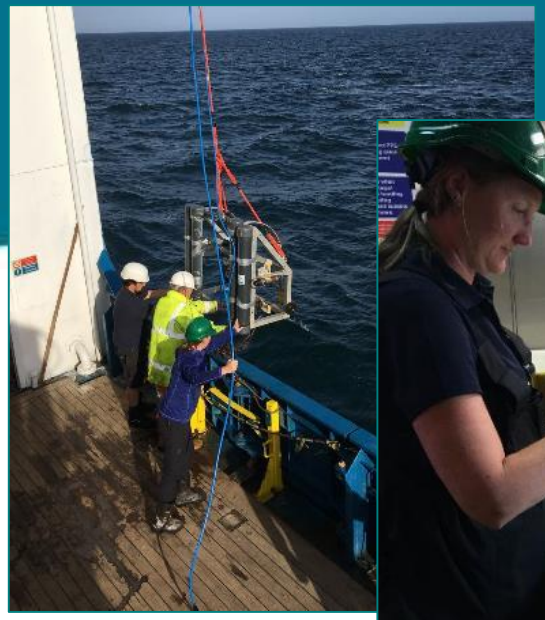
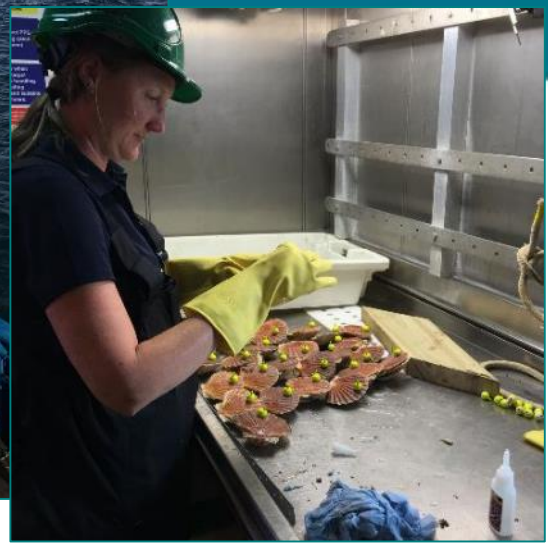
Evidence Gathering - Shellfish





- Shellfish surveys are undertaken to understand stock levels, trial stock assessment methodologies; test new techniques; inform management measures and ensure sustainability of fisheries

- Crustacea – lobsters abundance and tagging; spiny lobster population studies, tagging and larval collection; brown crab on-board and landings surveys; green crab surveys populations studies

- Mollusca – mapping of beds; native oyster growth trials; scallop stock assessments; cuttlefish egg laying; cockle and mussel stock surveys

- Surveys involve working with the fishing industry, Natural England, Cefas, community groups, other IFCAs, Defra, NGOs and volunteers

Detachable netting

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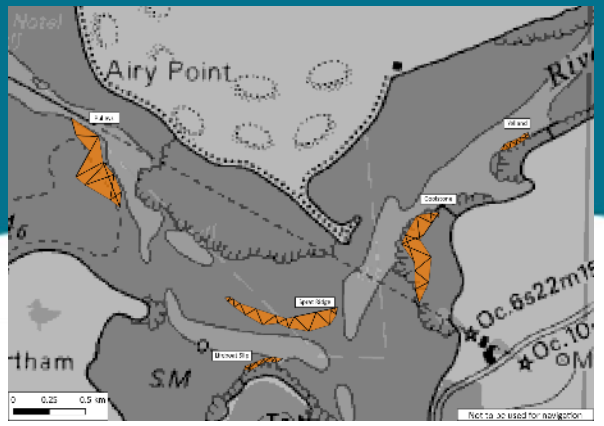
Evidence Gathering - Mollusca

Mussel Stock Assessment Surveys

- Taw Torridge Estuary SSSI
- Exe Estuary SPA
- Teign Estuary

- SPA and SSSI designated for overwintering and migratory populations of wading birds
- Public mussel beds
- Concern over increased removal of mussels
- Annual Stock assessment surveys undertaken since 2011 on Taw Torridge Estuary, 2013 on Exe Estuary and 2012 , 2018 and 2019 on the Teign Estuary
- Stock assessment involve the Dutch Wand Method

Evidence Gathering - Mollusca

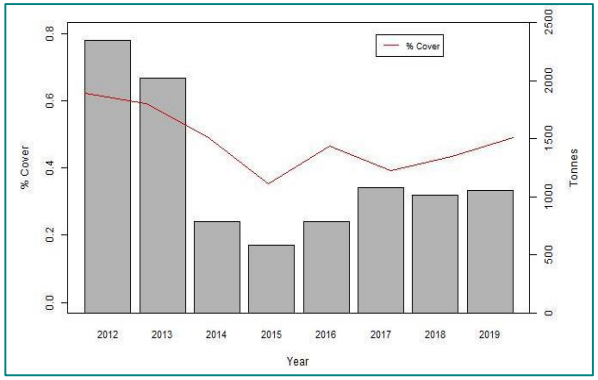


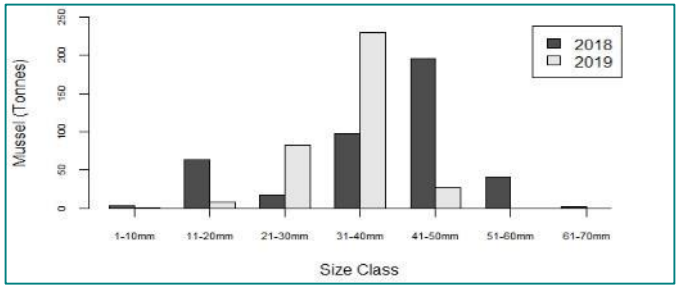
Taw Torridge Estuary

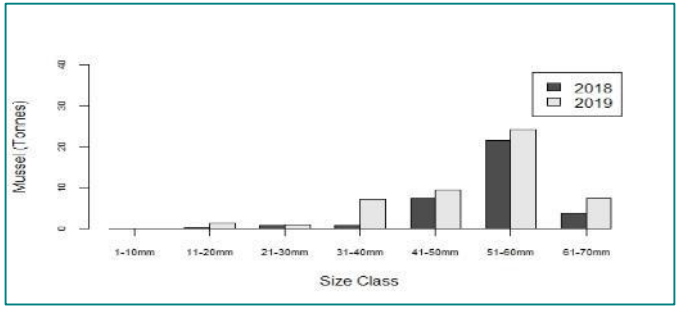
Due to increased removal of mussels form gatherers around the UK in 2013 and concern that reduce stock would impact bird population D&S IFCA worked with NE to introduce restrictions under Wildlife & Countryside Act 1981 (amended)

Measures put in place:

1. *No more than 500kg of mussels should be removed from the SSSI per month.*
2. *must notify NE and D&S IFCA of intention to remove mussels by 23rd of the month prior to the month of proposed removal.*
3. *Applications to remove mussels after the 23rd of the month prior to the month when mussel harvesting is proposed will not be considered for the following month's harvesting.*
4. *In addition the business must inform D&S IFCA and NE on the day of mussel removal prior to harvesting taking place. This will allow inspection of the catch.*
5. *Records of quantity of mussel removed (including location) together with copies of movement documents should be submitted to NE & D&S FCA no more than 14 days after harvesting.*







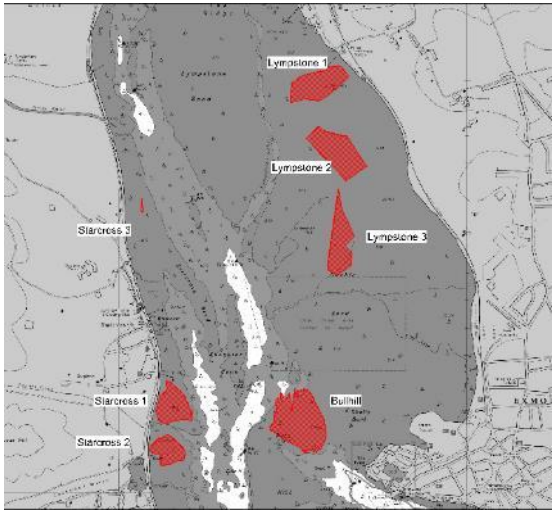
The management of the Taw Torridge will be reviewed in 2020 – food availability modelling and bed size structure will determine the possible changes

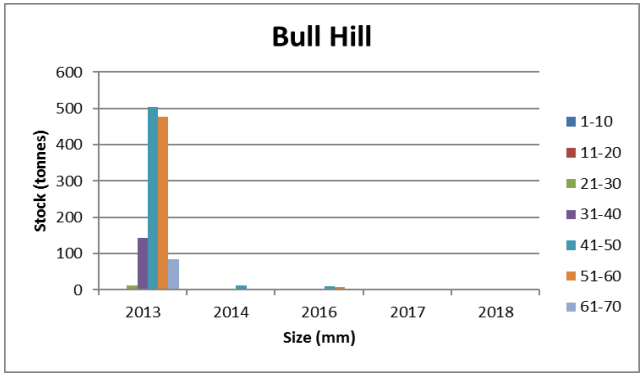
Evidence Gathering - Mollusca

Exe Estuary

The public beds on the Exe are well studied and have been an important source of food for the overwintering birds such as oystercatchers, which are features of the SPA. Commercial harvesting from theses beds does not take place but recreational hand gathering is prevalent.

- Stock level shave declined from 2013.
- Storms over winter 2913/2014 had huge impact on beds
- Recovery has not happened
- Shellfishermen have tried restocking techniques but unsuccessful
- D&S IFCA introduced a closure prohibiting the removal of mussels from the beds
- Development of hand working byelaw may restrict recreational take of shellfish.



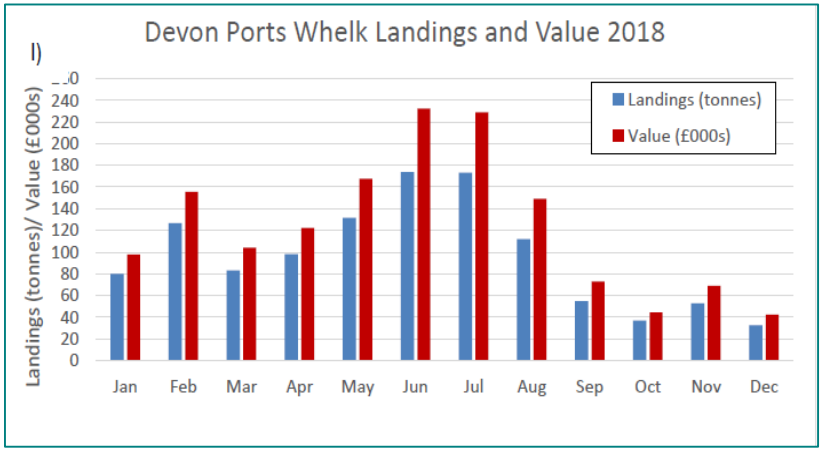


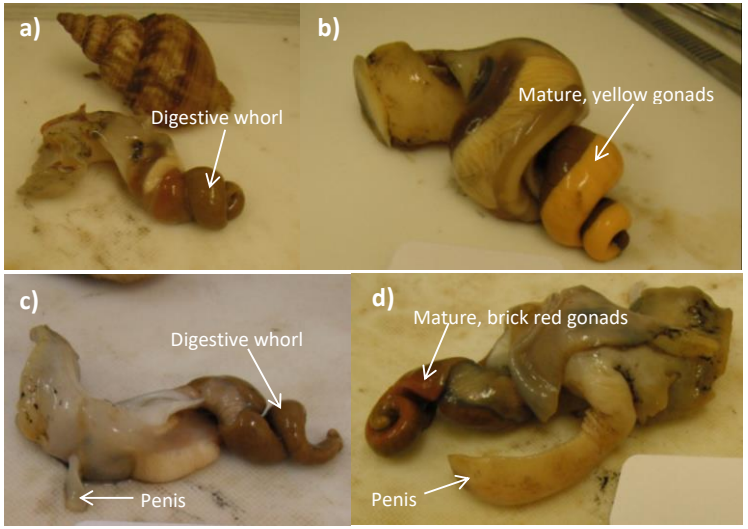
	2013	2014	2016	2017	2018	Difference since last survey
Area (ha)	10.9	11.1*	11.2*	12.7*	5.5	-57%
Density (kg/m^2)	11.25	0.14	0.16	0	0	0%
Total stock (tonnes)	1222	16	18	0	0	0%
Stock 1-10mm	0	0	0	0	0	0%
Stock 11-20mm	1	0	0	0	0	0%
Stock 21-30mm	13	0	0	0	0	0%
Stock 31-40mm	142	3	0	0	0	0%
Stock 41-50mm	504	13	10	0	0	0%
Stock 51-60mm	478	0	8	0	0	0%
Stock 61-70mm	84	0	0	0	0	0%

Evidence Gathering - Mollusca

Whelk Size of Sexual Maturity (SOM) Studies

- Landings of whelks were increasing across the District and concern raised about it becoming ‘a boom and bust fishery’
- Cefas had taken samples form North & South Devon and determined that the SOM might be larger that the MCRS of 45mm (EU)
- D&S IFCA undertook research with larger sample size to verify this
- Monthly samples collected from Exmouth & Ilfracombe for a period of 12 months
- Size & sex stratified sub-samples analysed
- Biometric data collected
- Assessed maturity stage – through gonadal size for males and females





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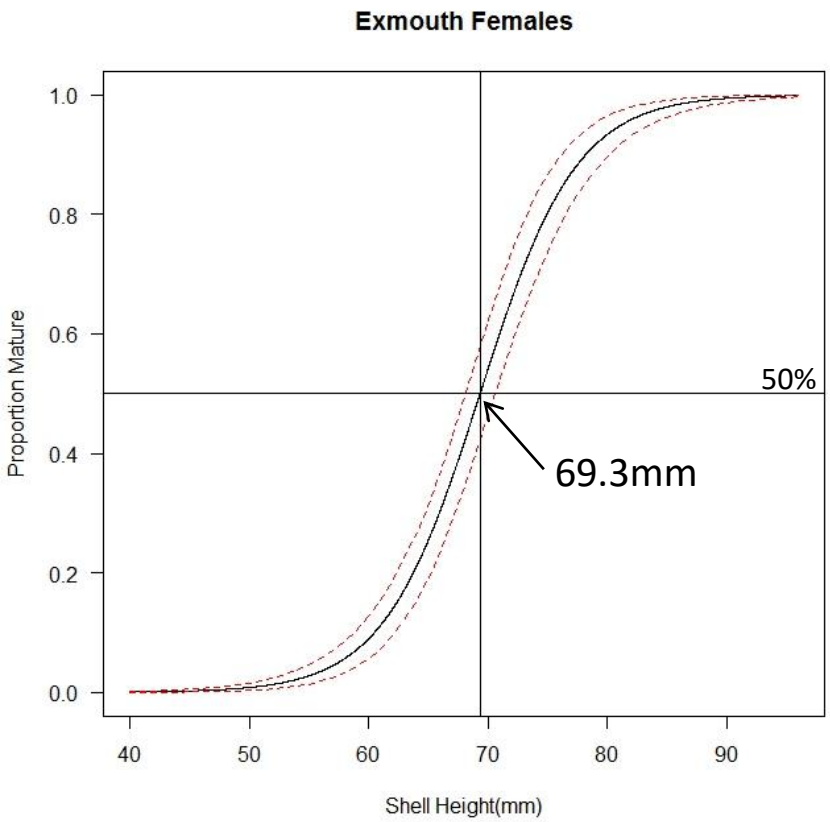
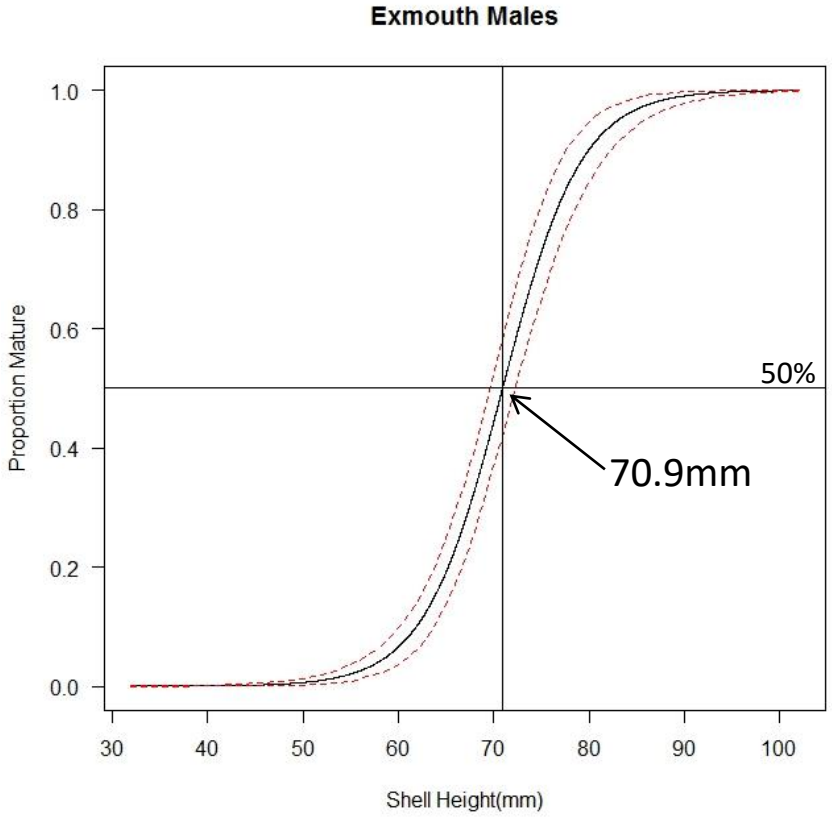
Evidence Gathering - Mollusca

Whelk SOM – the results

Size of maturity by shell height (Exmouth):

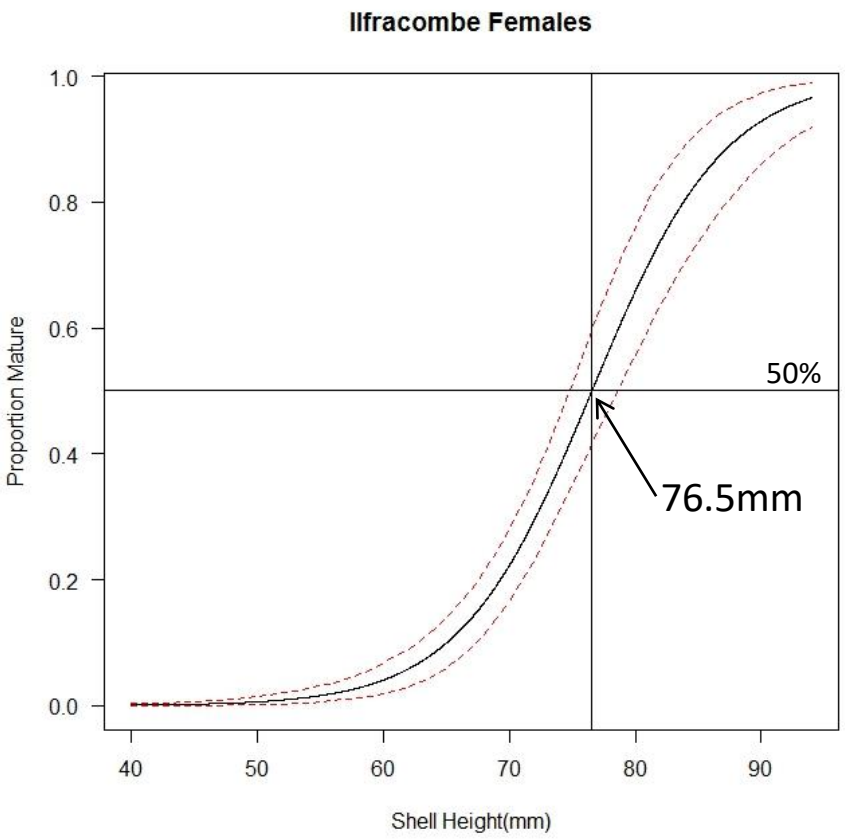


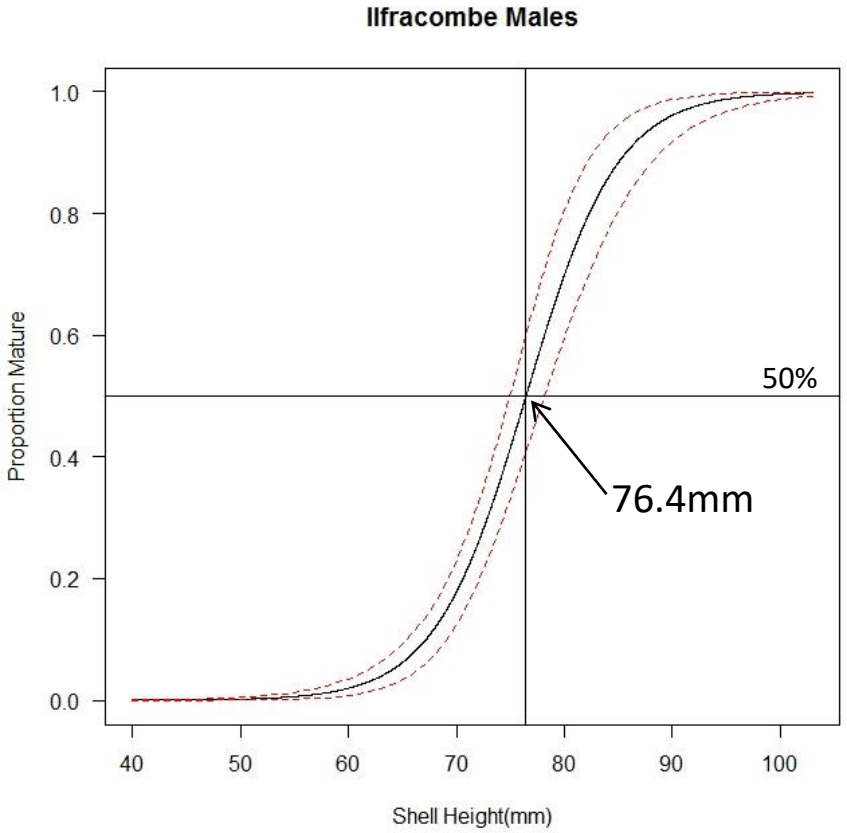


Evidence Gathering - Mollusca

Whelk SOM – the results

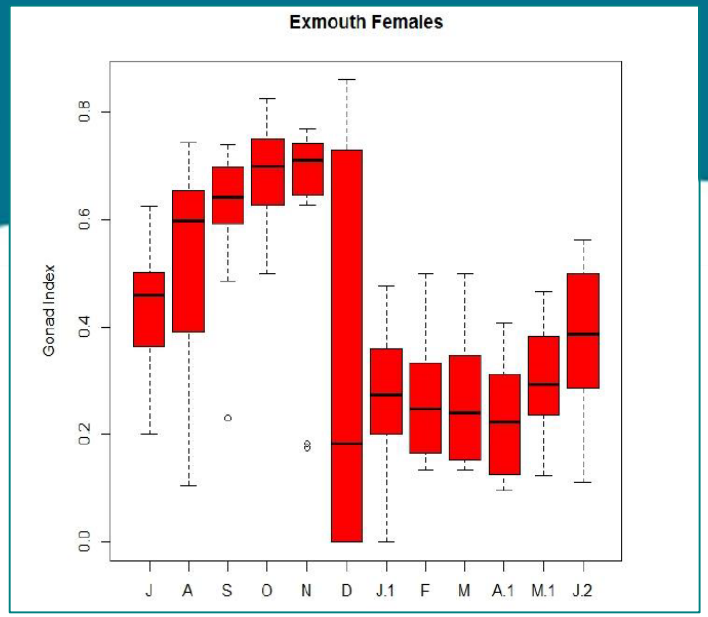
Size of maturity by shell height (Ilfracombe):

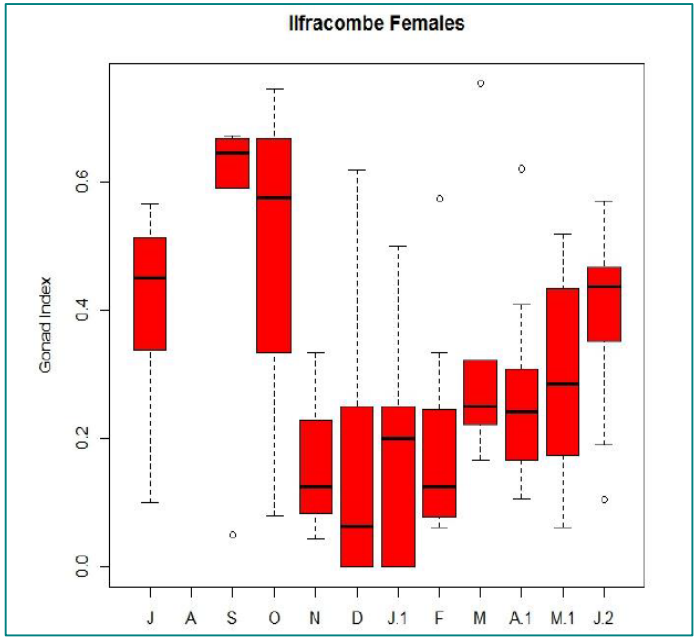




Evidence Gathering – Mollusca
Whelks SOM and Spawning Period

- 45mm shell height Minimum Size is insufficient to protect spawning stocks
- D&S IFCA Authority members made a decision to increase the MCRS from 45mm to 65mm
- However to lessen the impact to the fishers and processors this was introduced in a phased approach:
  - 1st November 2018 – MCRS – 55mm
  - 1st November 2020 – MCRS – 65mm
- Further investigation of closure during the spawning period is underway and we be presented to the Authority's Byelaw and Permitting Sub-Committee to determine if further management measures are needed





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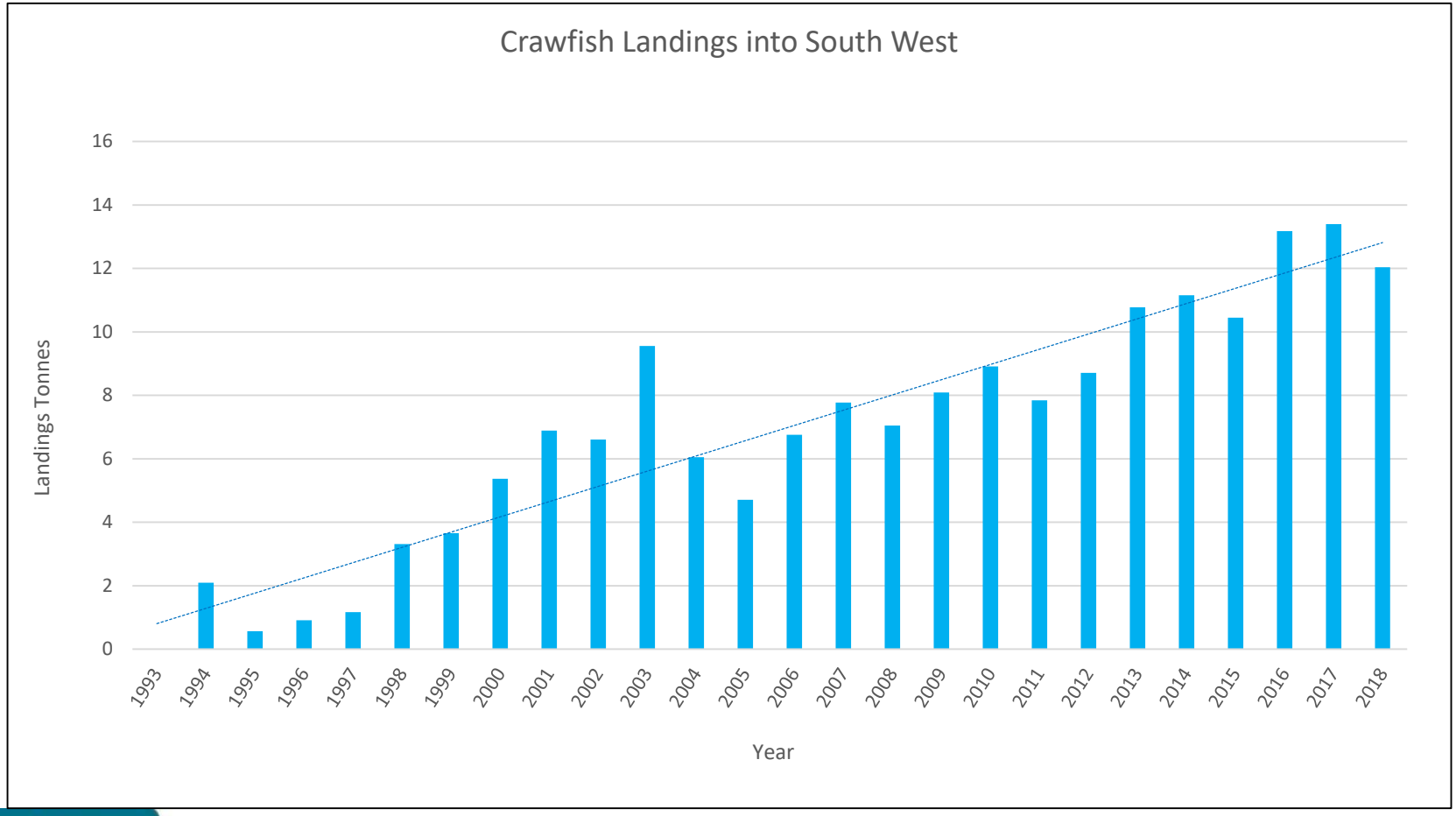
Evidence Gathering – Crustacea
Spiny Lobster (crawfish) Research

- Spiny lobster is a feature of conservation importance in some SW MCZs
- Demise of the population in the 1970s and 80s potentially due to overfishing by divers and netters, and environmental factors such as the Atlantic Multidecadal Oscillation and larval distribution
- In Devon the spiny lobster is at the close to the limit of its distribution eastwards
- Landings of spiny lobster have bee quite large in Cornwall and the Isle of Scilly and has been increasing since 1998.
- In Devon spiny lobsters are caught more as a bycatch but there have been some increases in landings since 2014 although the highest annual landings has only reached 560kgs on 2016
- Complex life history – 10 larval stage ~11 months as planktonic larvae
- Movements and growth rates not known

Crawfish Landings 1994 - 2018



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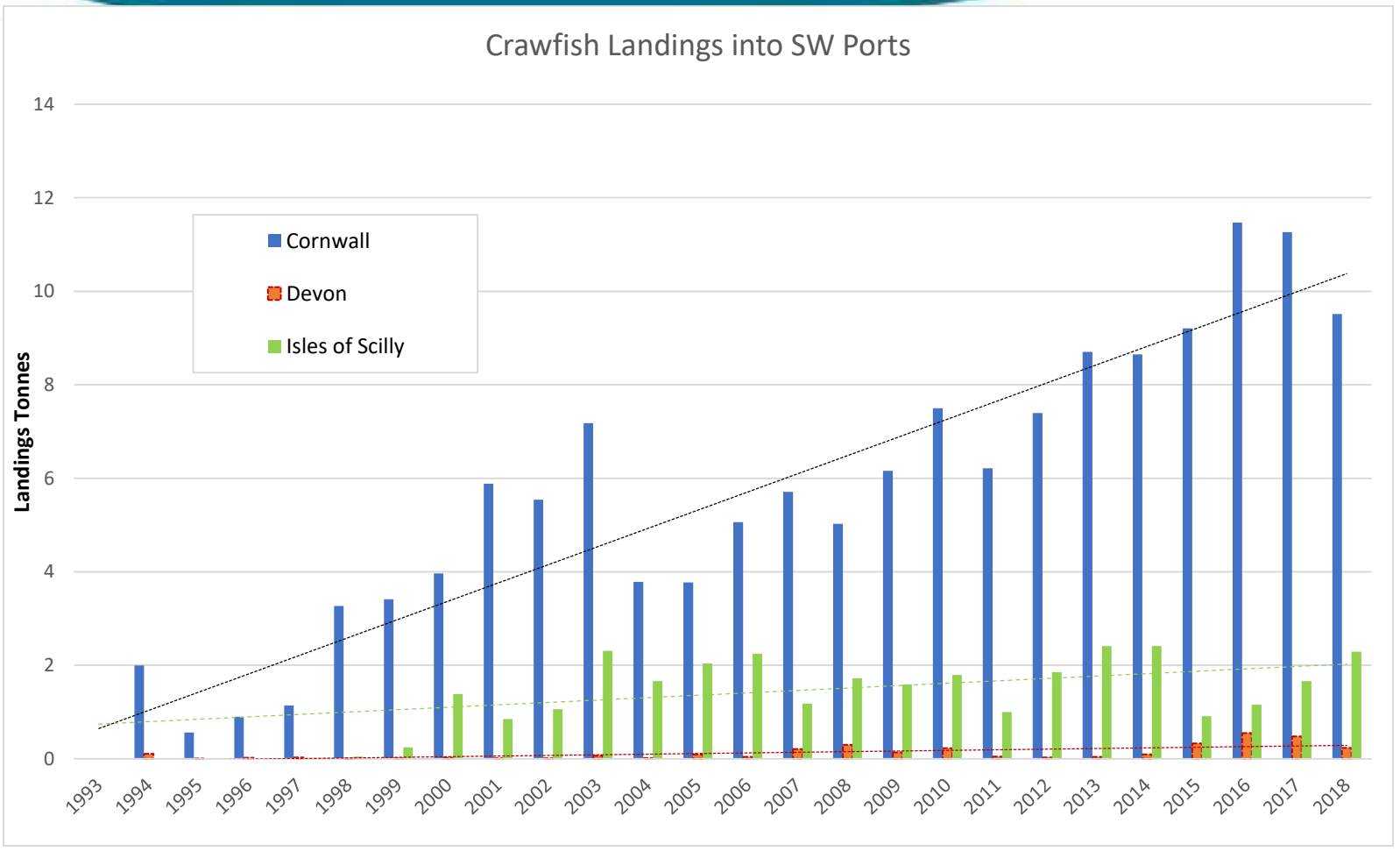
Crawfish Landings 1994 -2018



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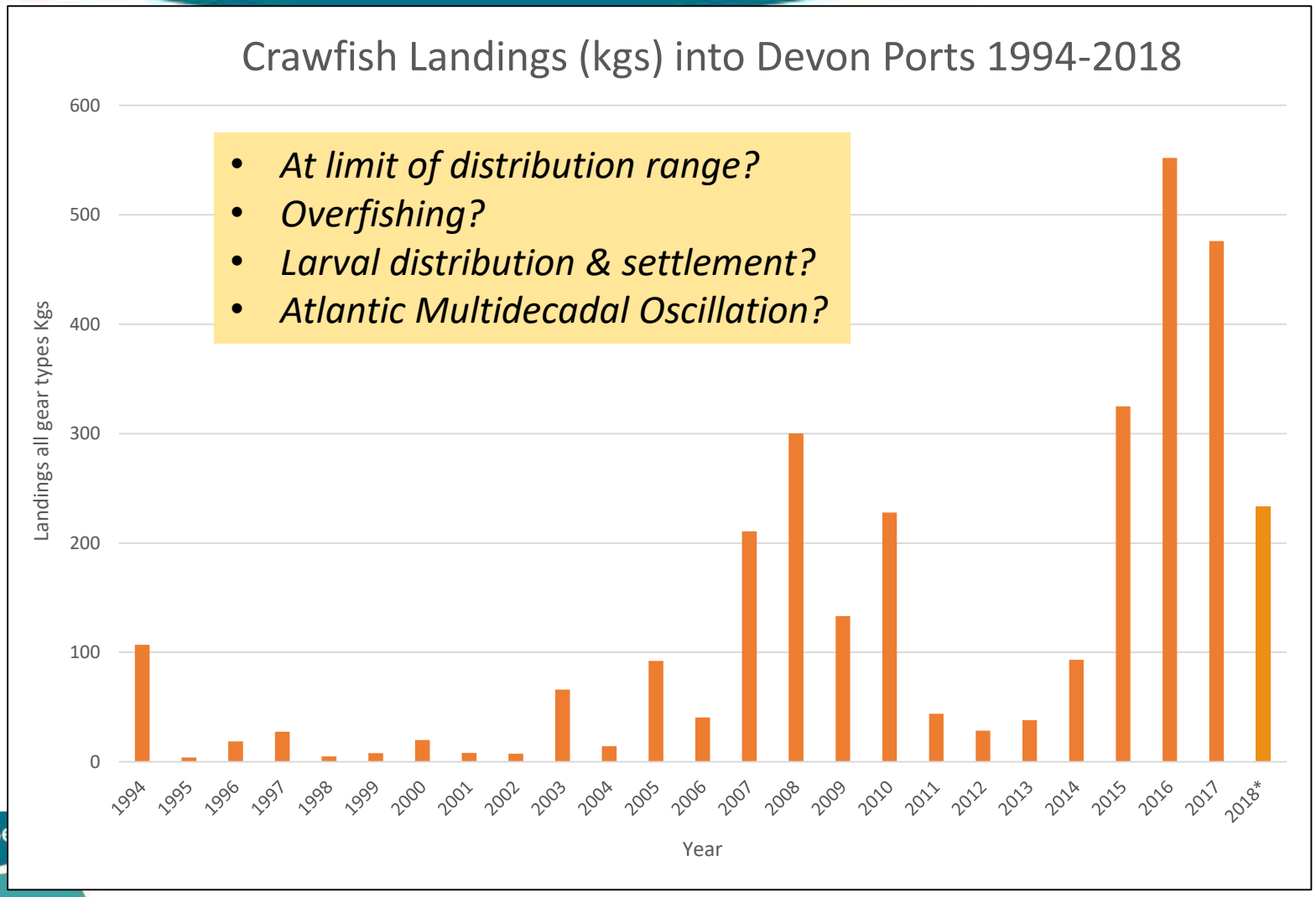
Crawfish Landings in Devon Ports 1994 -2018



D&S IFCA's Current Management

- Increase in Minimum Conservation Reference Size – 110mm carapace length (also CIFCA) compared to 95 mm EU/National Regulations.
- IoS IFCA new MCRS byelaw to harmonise.
- Ban on landing berried spiny lobster – now also National Legislation
- Ban on landing soft shell spiny lobster
- Ban on landing parts of spiny lobster
- Catch limit of 2 lobsters (European and/or Spiny) per day for recreational divers, netters and potters
- In 3 MCZs in D&S IFCA's District total prohibition of removal of spiny lobster as a designated feature of the sites

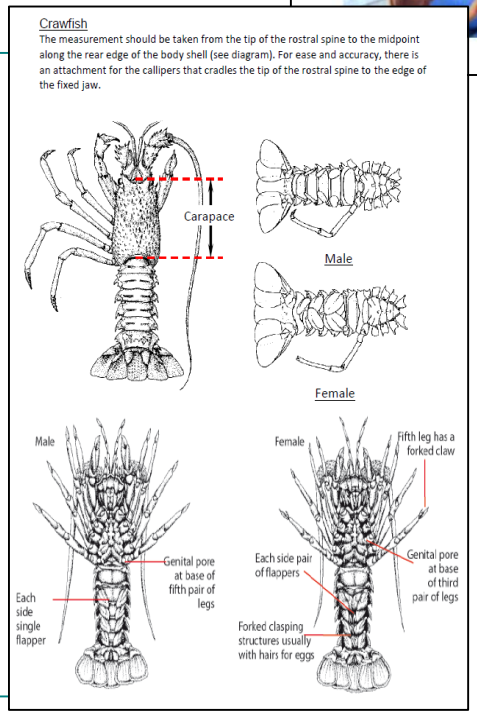
Crawfish Evidence Gathering

- Working with fishers – crawfish survey reporting size, sex and location of crawfish caught
- Data collected via form, e-mails, texts, photos
- Five fishermen actively recording data

Devon & Severn IFCA - Crawfish Survey 2018

Name:			Boat Name:				Tel No.	
PLN:			Port:				Pot/Net/Dive:	
Date caught	Carapace Length mm			Position Caught		returned or landed?	If tagged crawfish caught	
	male	female	berried	latitude	longitude		Tag number	where released

Contact: Sarah Clark mobile: 07517 050887 or email: s.clark@devonandsevernifca.gov.uk



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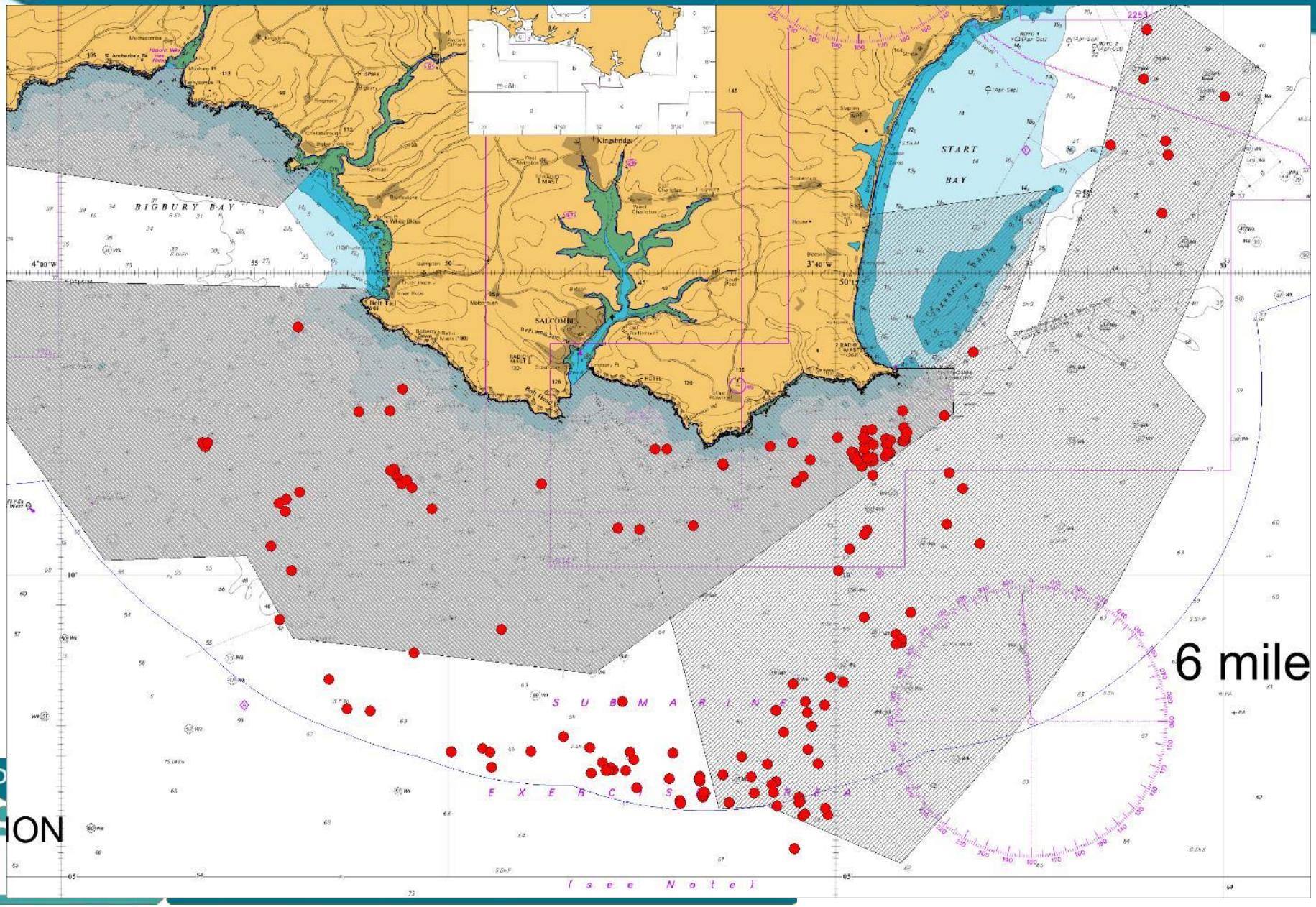
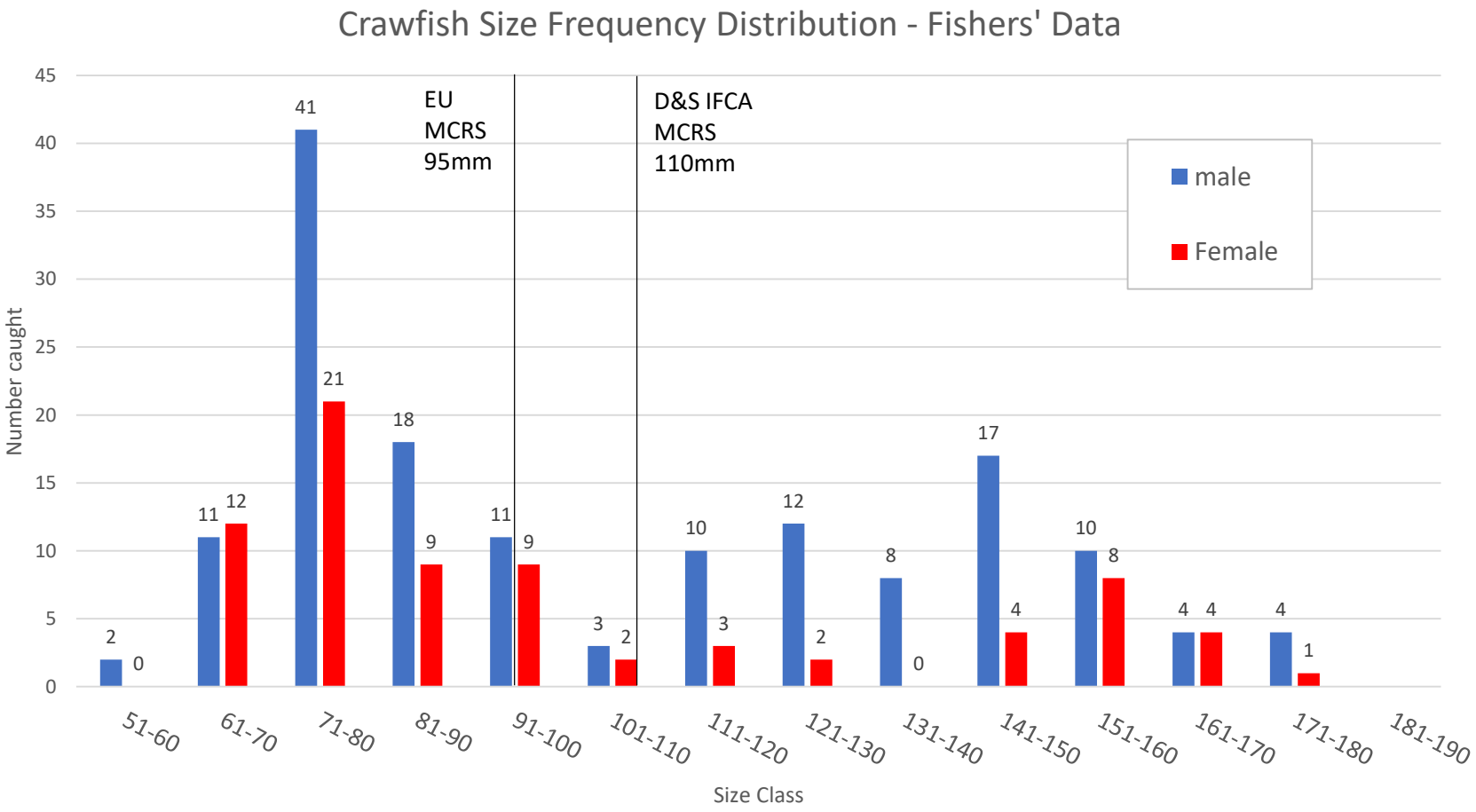
Fishermen's Data – Location of Recorded Catches from Five Vessels



Fishers' Data – Size Distribution of Recorded Crawfish Catches



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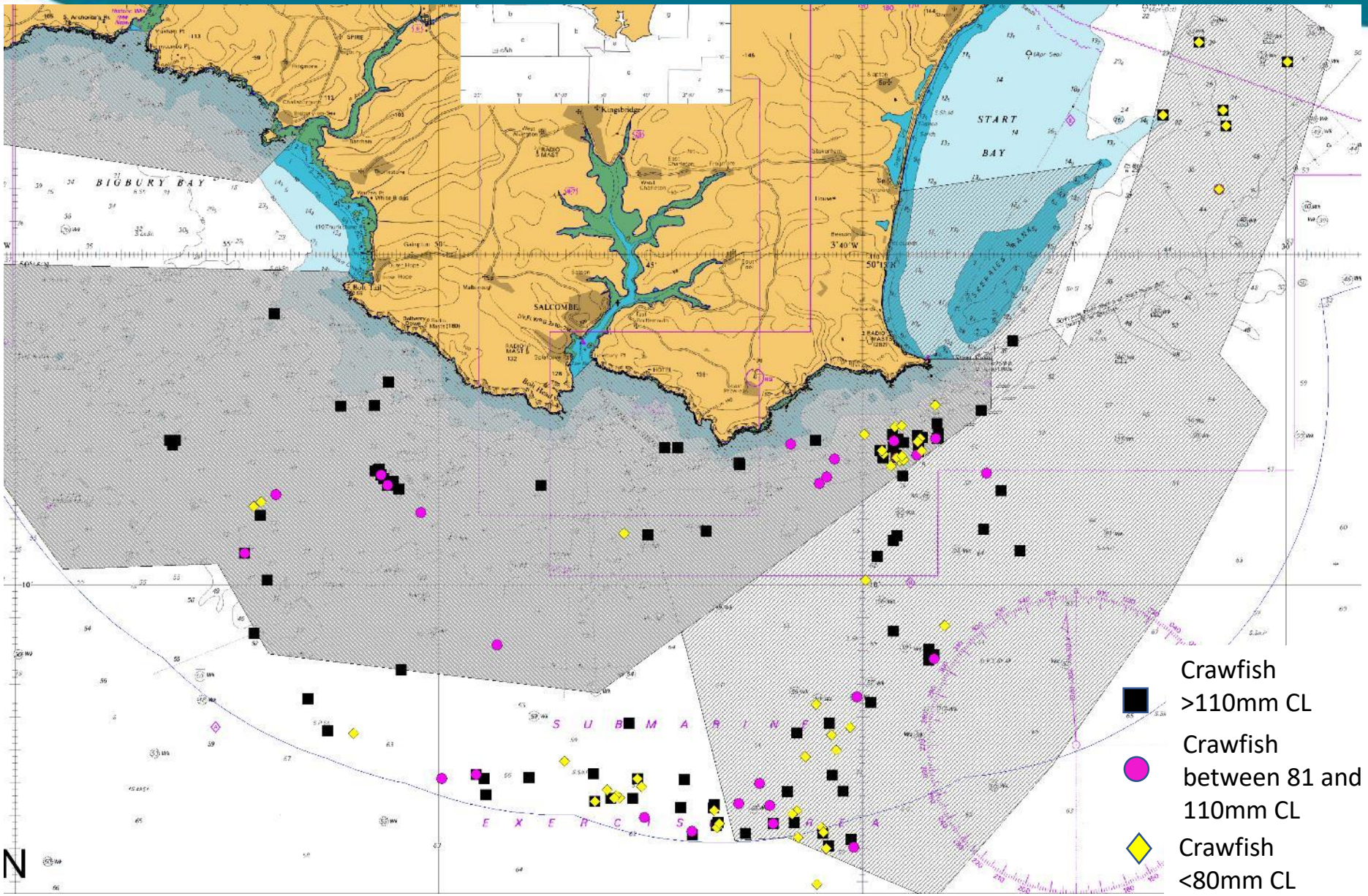
Fishers' Data – Location of Different Size Ranges of Crawfish Caught



Engagement and Collaboration

- D&S IFCA sent out a call for information to all permit holders to gather information and anecdotal evidence on the crawfish fishery, its demise and recovery, and potential future management measures

- Workshop held on 11th April 2019 with IFCAs, Universities, Defra, MMO, WTs, MBA, NGOS, Fishers and processors to determine evidence gaps; management needs and research options and collaboration

Devon & Severn IFCA Inshore Fisheries and Conservation Authority

Crawfish Evidence Gathering

Continue to request and collect SW fishers' catch/landings data and encouraging more data collection

- On-board / shore surveys of fishing vessel catches and landings to gather morphometric data:
  - *size frequency distribution;*
  - *carapace length : weight ratio;*
  - *morphometric/biometric measurements;*
  - *population analysis;*
  - *year classes/recruitment*
- Size of sexual maturity – size first showing eggs
- Tagging of crawfish to investigate movements/migration and growth increments – working with fishers. All SW IFCAs involved

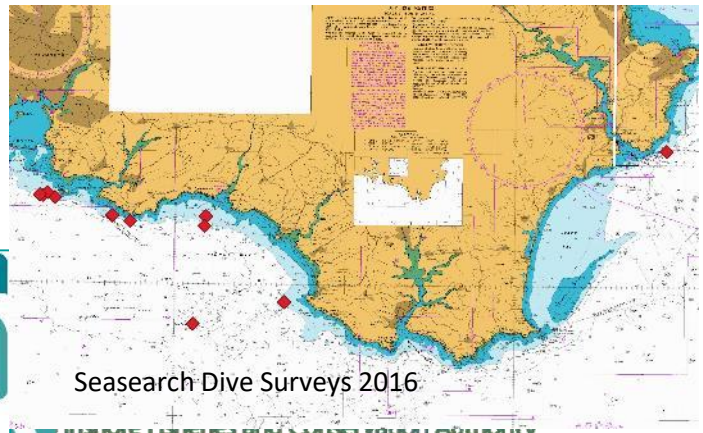
Devon & Severn IFCA

Inshore Fisheries a

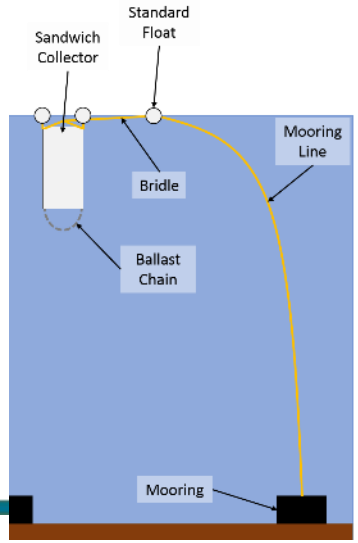
Crawfish Evidence Gathering

- Population genetics research across the SW by Exeter University – samples of tissue taken by fishers
- Understanding life history and habitat preferences - post larvae collection, settlement location and analysis
- Sales notes data from MMO – further analysis of landings data
- Investigate past landings and historical information to determine track record information and understanding of the past fishery
- Effort level of commercial / recreational diving and crawfish removal
- Seasearch dive surveys
- Investigate benefit of non-fished areas vs fished areas

Examples of where to take sample



Seasearch Dive Surveys 2016



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Any questions?


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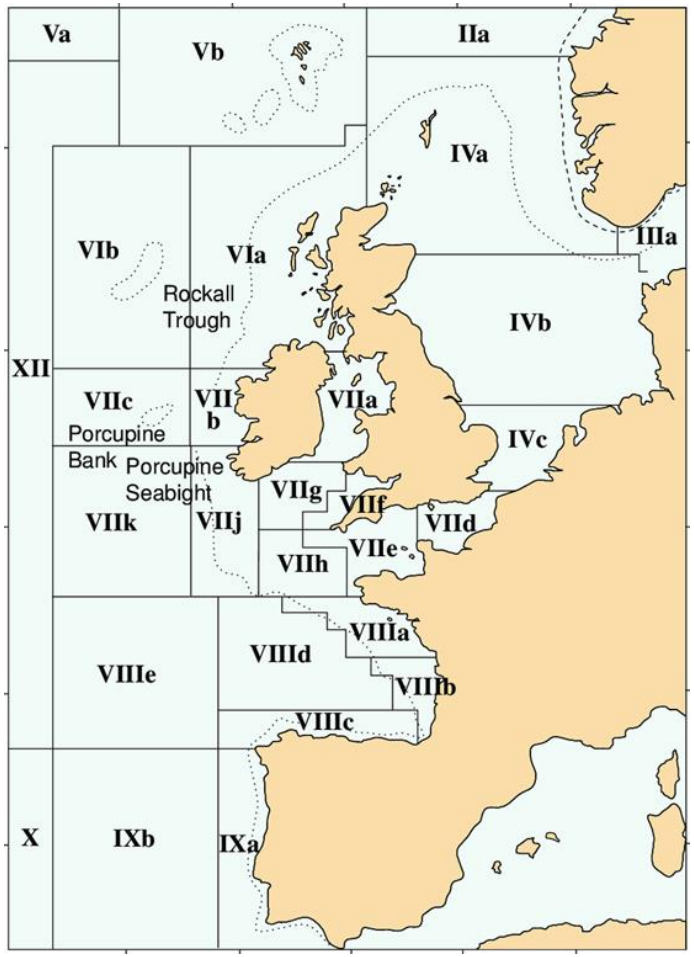
1036

Evidence Gathering: Finfish

- Management of inshore fisheries has been increasingly devolved to a local level.
- Major evidence collection frameworks for fish still operate at an EU or national level (such as ICES data series, WFD TrAC sampling).
- Correct for species with wide geographic ranges BUT many species have finer population structure which is significant in managing viable local stocks.
- New inshore fisheries have also emerged for finfish (such as the Live Wrasse Fishery), which are not covered by any EU or National legislation.
- Partnership working to fill evidence gaps where possible



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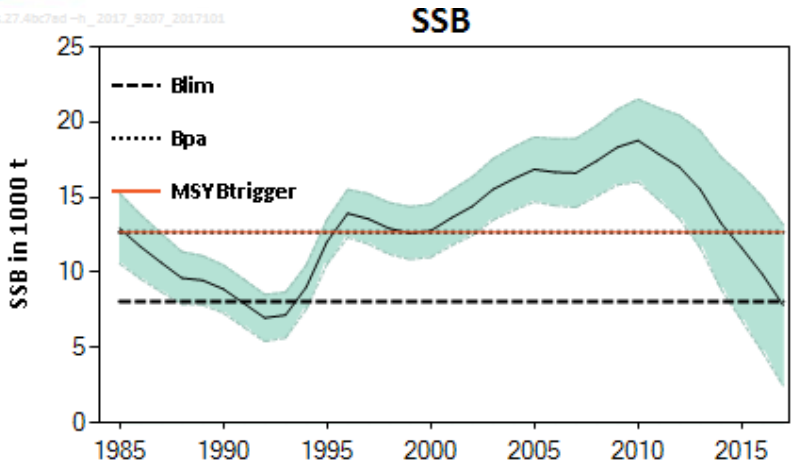
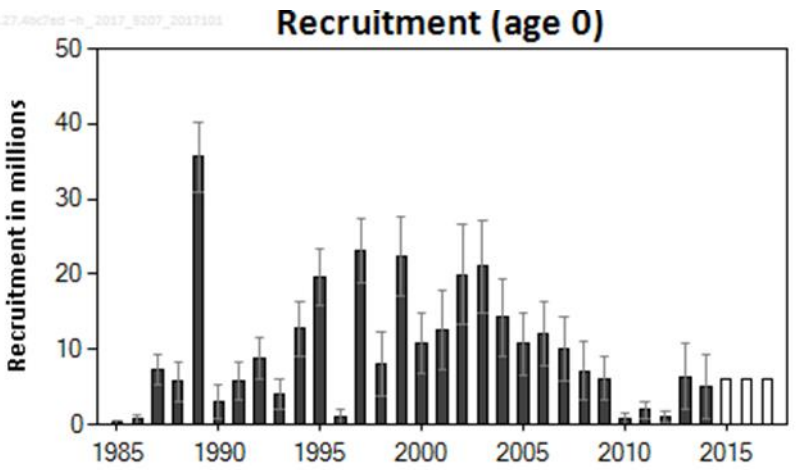
European Sea Bass

- Commercial and recreational value
- Increasing fisheries pressure – non quota stock
- Cold winters = poor recruitment
- Complex layers of EU and National legislation – new measures since 2015
- Complex movement and migration patterns
- ICES stock = southern North Sea, English Channel and Celtic Sea
- BUT evidence of residency, smaller stock units and site fidelity
- New EU measures did little to reduce commercial catches in D&S IFCA District





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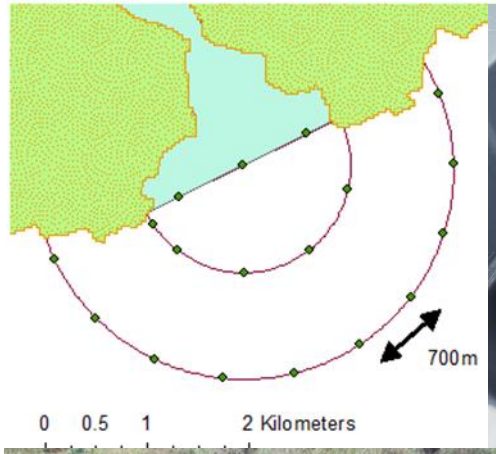
European Sea Bass



- PhD looking at bass use of designated nursery areas, saltmarsh, habitat associations, co-funded with Plymouth University Tom Stamp)
  - **I-BASS £245,000 EMFF funded project led by Plymouth University**
  - **146 bass acoustically tagged and tracked in 3 Devon estuaries**
- Partnership working with Cefas and others to look at migrations, spawning aggregations, fisheries pressure and discard survival – CBASS and SBCFUK projects
- 100 bass recently tagged with data storage tags in North Devon

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UNIVERSITY OF PLYMOUTH

Bristol Channel Herring Project

- Traditional fisheries going back thousands of years at Clovelly and Minehead, very seasonal & small-scale
- No stock-assessment, little known
- Fishermen at Minehead reported local spawning
- Spawning area protection very important for herring (e.g. from aggregate dredging)
- Swansea University, D&S IFCA, Blue Marine Foundation partnership as part of Defra Pioneer Programme
- Using genetics and habitat mapping to look at if Bristol Channel fish are a separate stock and map spawning area

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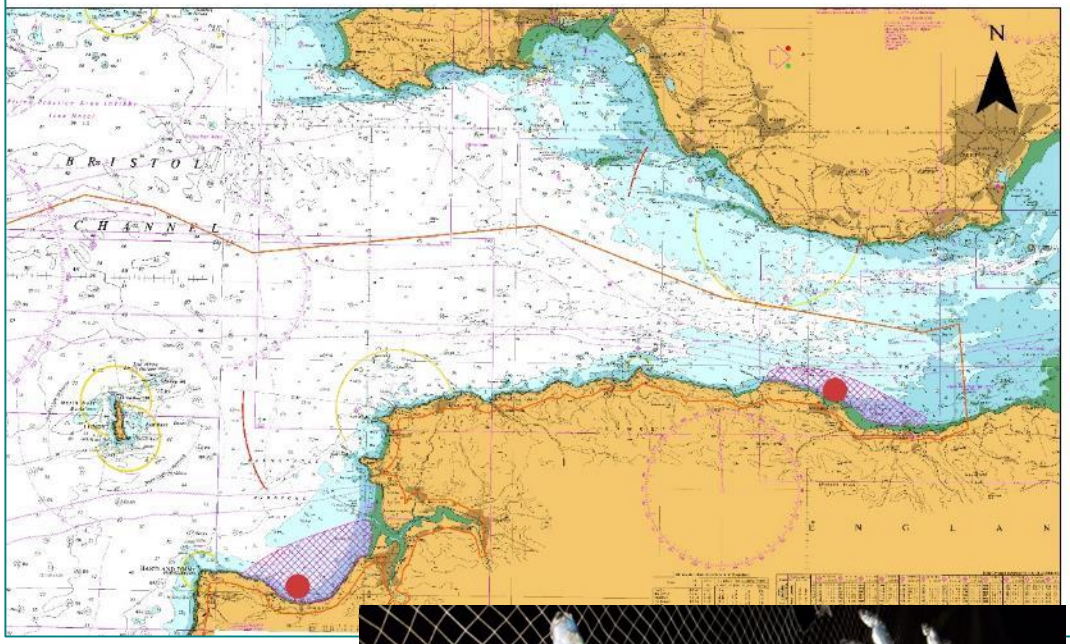
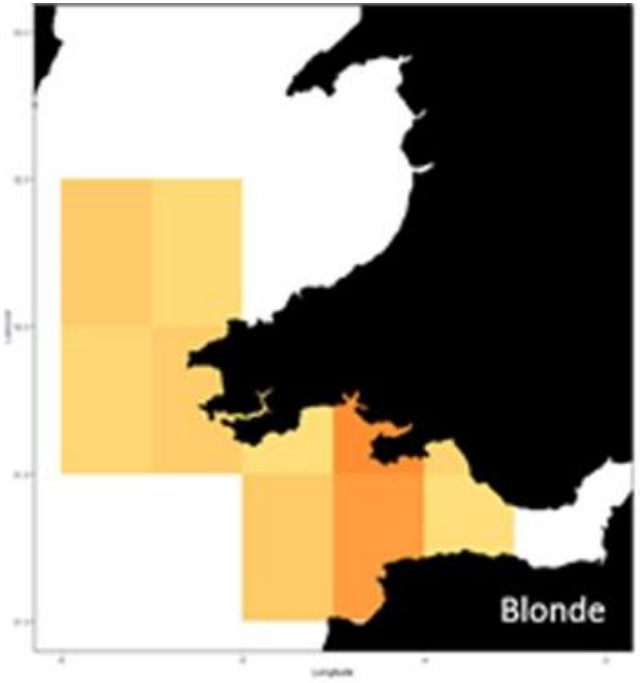
Bristol Channel Herring Project

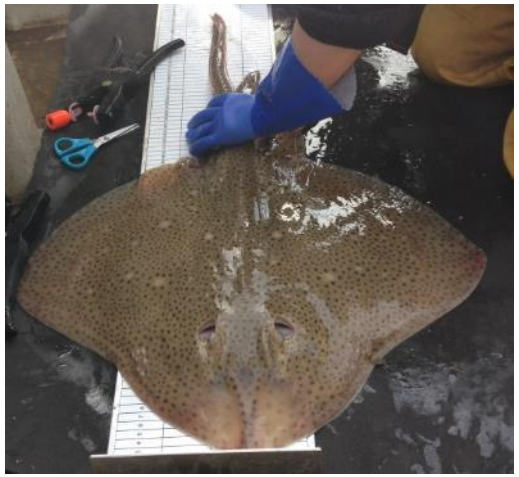


- Two samples were collected from each site in October and December 2018
- All samples contained a significant proportion of spawning fish. Clear that they are spawning along the North/Devon Somerset coastline during winter
- Age range of the fish sampled is 3-8 years old. Age range was wider in the October samples with a more limited age range in December.
- Genetic work is ongoing and further results are expected shortly. There is some indication from early results that more than one stock may be present in the Bristol Channel.
- Early evidence suggests that these herring are not the same as the Milford Haven population.

North Devon Skate and Ray Pilot Project

- Much of ray fishery is outside IFCA district - whole Bristol Channel
- BUT so important to local fishermen & anglers
- 2014 – quota used so fishery shut 'ray ban'
- All skate and ray combined into one quota
- Small-scale project to collect data on ray movements and highlight need for more research
- Data-storage tags highlighted movement ranges and need for more work





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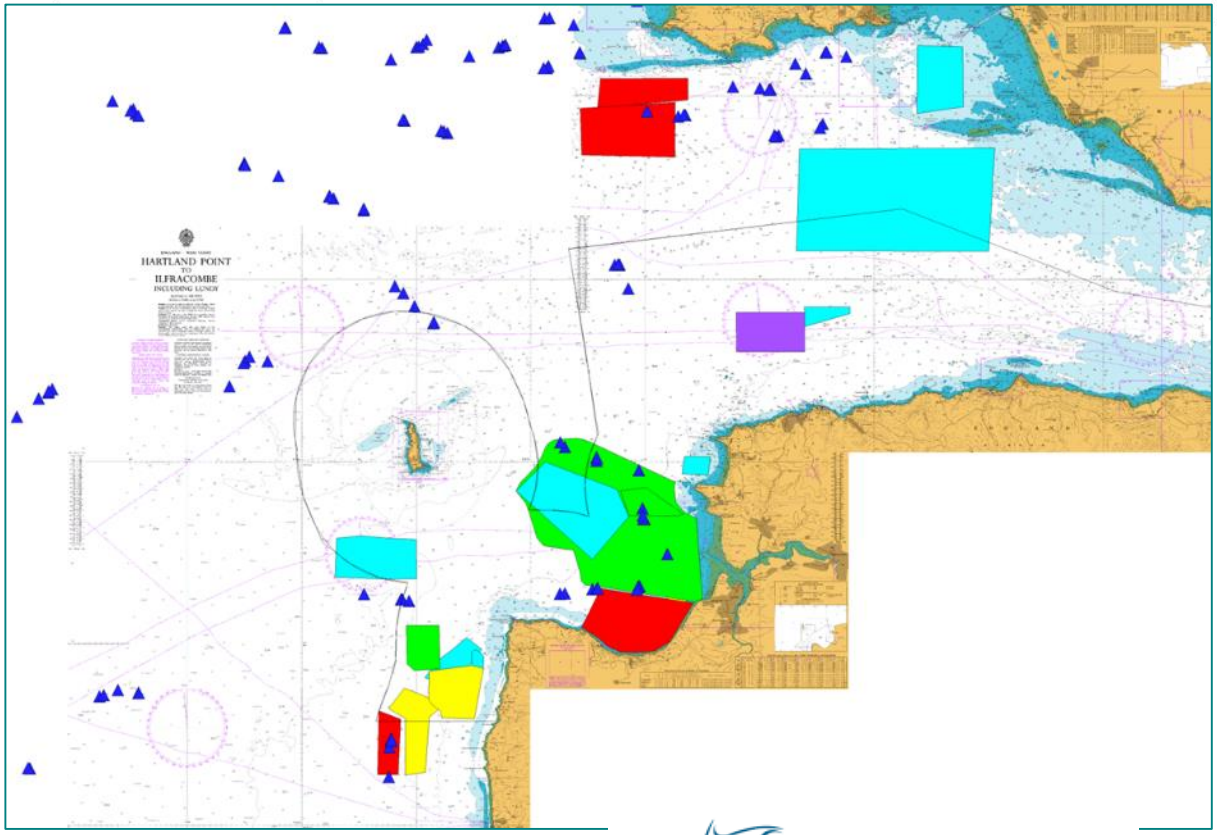
FLAG Northern Devon Fisheries Local Action Group

NORTH DEVON BIOSPHERE
living and working in harmony with nature

NORTH DEVON COAST
Areas of Outstanding Natural Beauty

Shark By-Watch UK2



- Partnership project with Cefas
- IFCA input addressed concerns of local fishermen about under-sampling or way habitat in current stock assessments
- Mapped fishermen's knowledge of ray distribution against stock assessment survey points
- Supported concerns
- Also planned a number of habitat surveys for each species

Cefas

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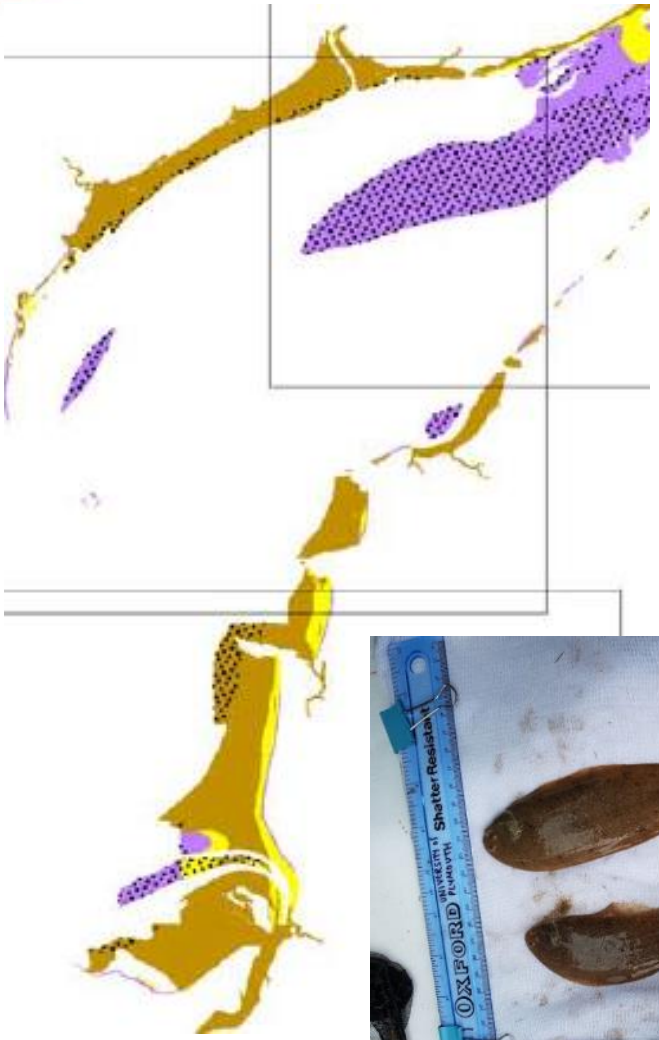
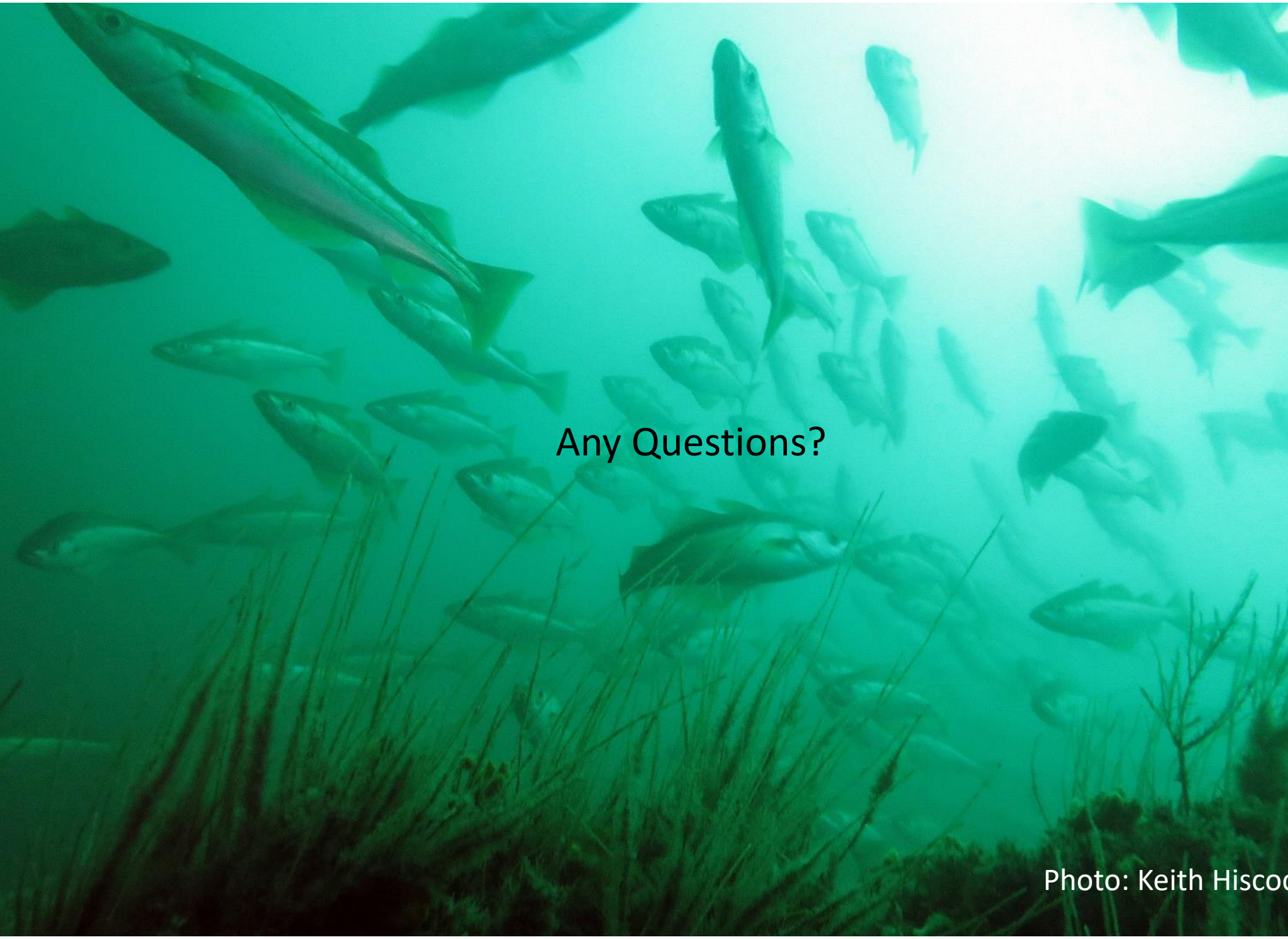
Sole Habitat Use in the Severn Estuary

- Partnership project with Ben Ciotti at Plymouth with undergraduate students
- Initially exploratory flatfish sampling around whole SW peninsula and then turned into a focussed survey of flatfish in the Severn
- Different use of three intertidal mudflats in the Severn Estuary European Marine Site
- Sole much more common at Burnham-on-Sea than at adjacent Weston-Super-Mare and Sand Bay
- Insight into complexity of Essential Fish Habitat and need for fine-scale resolution of data collection



Fisheries Research and Management Plans

- Short-term project-based work helps to build on the evidence base BUT these projects are often short lived & little strategic approach
- Development of the IFCA-level evidence frame work to direct research to inform local management – Fisheries Research and Management Plans
- EMFF funding received for one year full time officer
- Systematic review of species ecology, local knowledge, fisheries management
- Prioritise research, identify evidence gaps and potential impacts


Any Questions?
Photo: Keith Hiscoc

Marine Environment Matters – D&S IFCA Role

- Under Section 153(2c) of the Marine and Coastal Access Act (2009) IFCAs must:

  "take any other steps which in the authority's opinion are necessary or expedient for the purpose of making a contribution to the achievement of sustainable development when performing its duty to manage the exploitation of sea fisheries"

- IFCA Vision includes championing inshore fisheries: relies on healthy inshore populations of fish and well-managed Essential Fish Habitat
- D&S IFCA comments on Marine Licence Applications (including scoping assessments, SEA, EIA,), Marine Plan developments.

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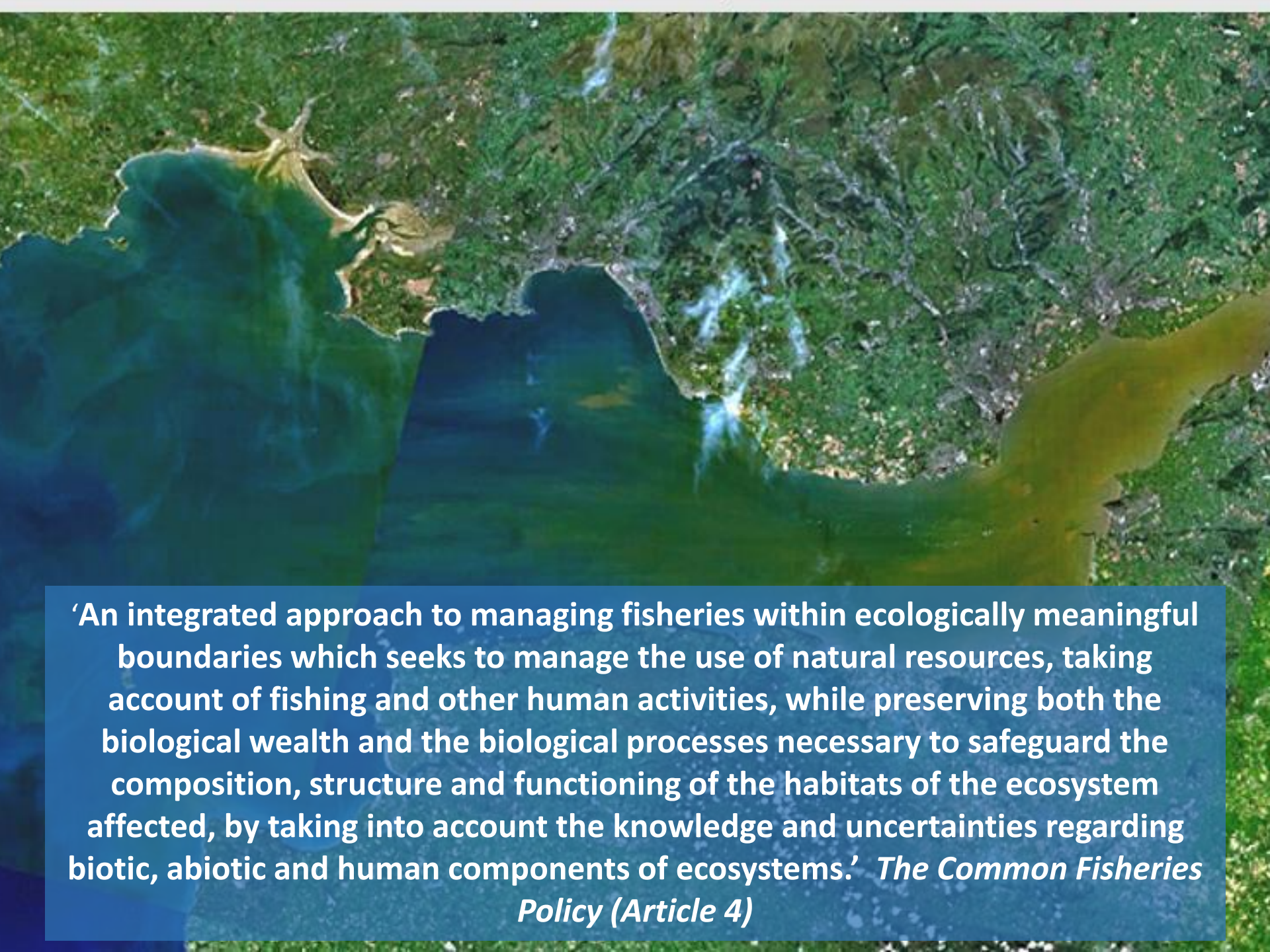
The Ecosystem Approach

- Government commitment to the Ecosystem Approach essentially formed IFCAs
- Principle 12 – devolved management, increased stakeholder participation, greater inclusion of local knowledge of ecosystems
- Government commitment to the Approach recently reiterated in 25 Year Environment Plan

Convention on Biological Diversity

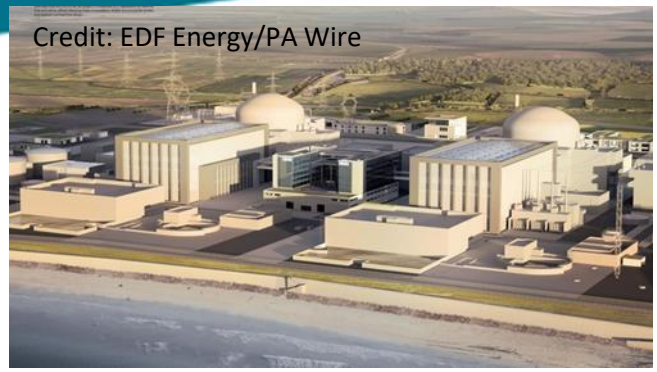


‘An integrated approach to managing fisheries within ecologically meaningful boundaries which seeks to manage the use of natural resources, taking account of fishing and other human activities, while preserving both the biological wealth and the biological processes necessary to safeguard the composition, structure and functioning of the habitats of the ecosystem affected, by taking into account the knowledge and uncertainties regarding biotic, abiotic and human components of ecosystems.’ *The Common Fisheries Policy (Article 4)*

Marine Activities, Fish & Fisheries

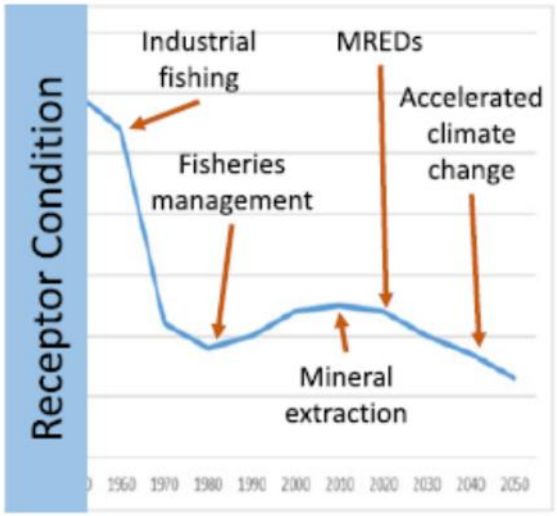
- Direct impacts – fish mortality and injury
- Indirect impacts – fish habitat, nursery, spawning, feeding areas, connectivity between habitats
- Spatial conflict with fisheries (displacement)

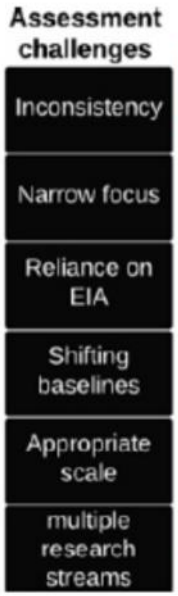
Aggregate dredging, navigational dredging, water abstraction for power stations, tidal barrages and lagoons, moorings for yachts and commercial vessels, aquaculture developments

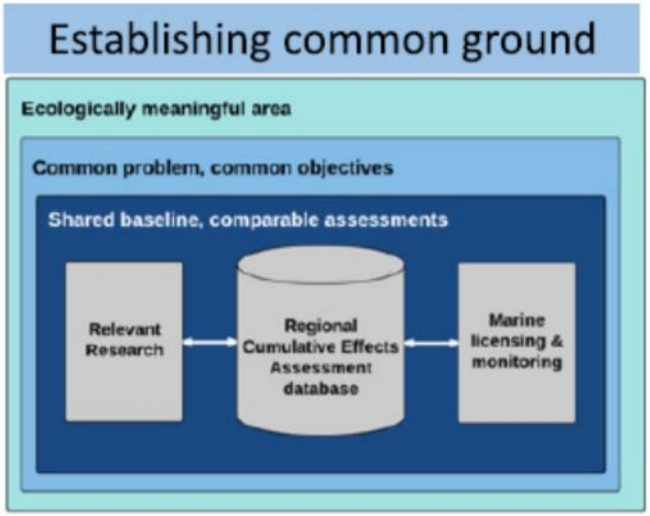

Credit: EDF Energy/PA Wire


©British Marine Aggregate Producers Association

Cumulative Effects



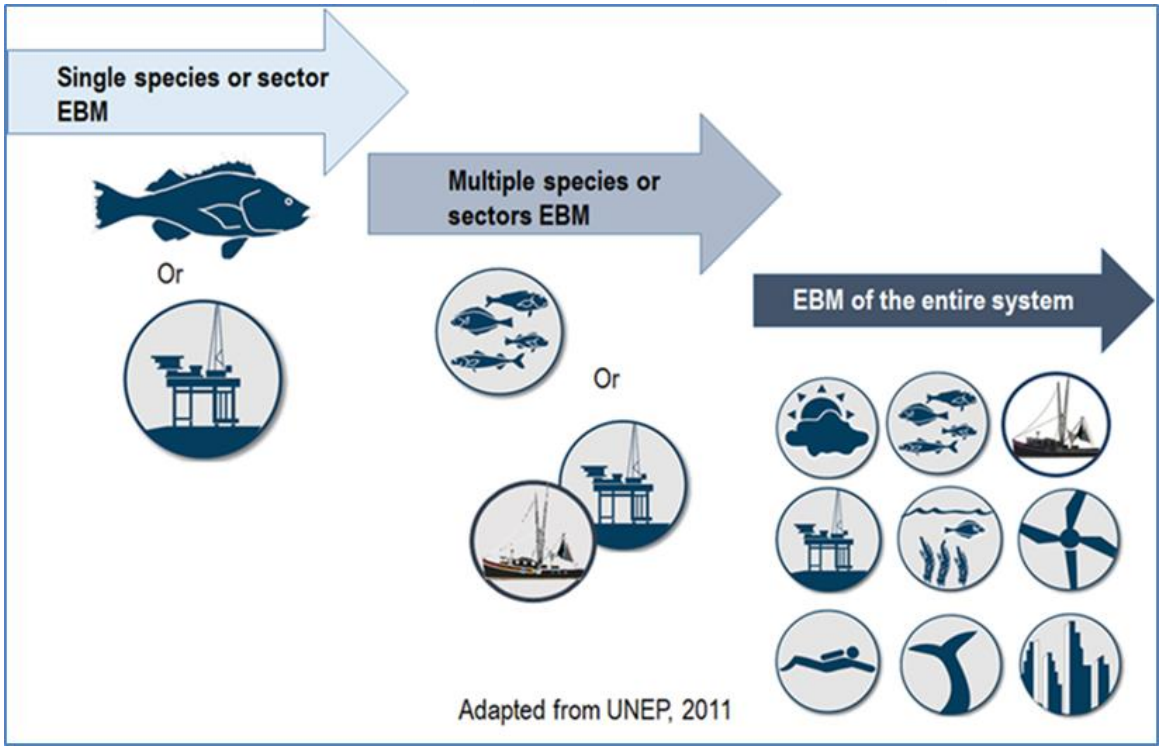




- Constant development pressures and potential impacts directly and indirectly on fish habitats and populations
- Lack of publicly available research on fish in inshore environments
- Stakeholders often geographically distant from impacts, or poorly represented in current marine management frameworks
- “Marine managers and developers perplexed on how best to discharge their legal obligations to undertake cumulative effects assessments”

Policy Gaps for an Ecosystem Approach

- Different management pathways for fisheries and 'other' marine activities
- Marine Spatial Planning meant to be the solution, but currently little inclusion of inshore fisheries in English Marine Plans
- Marine Licensing conflicts with fishing and poor evidence baselines still an issue
- D&S IFCA input into national policy discussions e.g. Defra Ecosystem Approach Group



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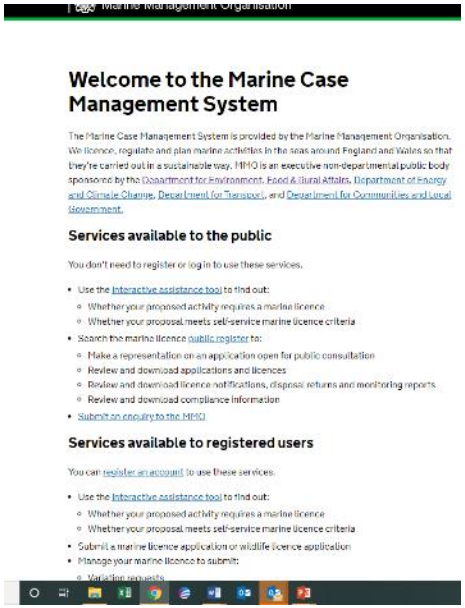
Any questions?

Marine Environment Matters
Marine Licence Applications

- D&S IFCA's primary role is to ensure that fisheries, fish and fish habitat are considered thoroughly and meaningfully by marine managers and developers. This includes responding to consultations for marine licenses and other kinds of environmental permits and preparing position statements on the potential impacts of some developments
- Under Part 4 of the MaCAA 2009, a marine licence is required for all deposits or removals of articles or substances below the level of mean high water springs, unless a relevant exemption applies.
- D&S IFCA is a consultee on marine licence applications that relate to developments in its District
- Done through the MMO Marine Case Management System



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Marine Licence Applications - Examples

Seaweed Farm – Start Bay MLA/2018/00506

- Proposal to put a sea weed farm in Start Bay – sugar kelp and oarweed
- Initially proposed within MCZ – in an area where heritage static fisheries occur
- Applicant had no contact with fishing industry until D&S IFCA highlighted the importance
- After the meeting with Beesands and Hallsands fishermen and discussions with NE, the applicant proposed to move the site but relocated in an area open to mobile fishing gear – trawlers and scallopers
- 63% of South Devon between Plymouth and Berry Head is closed to mobile demersal gear for part or all of the year
- An application for the farm in this area was submitted
- 38 documents as part of the application

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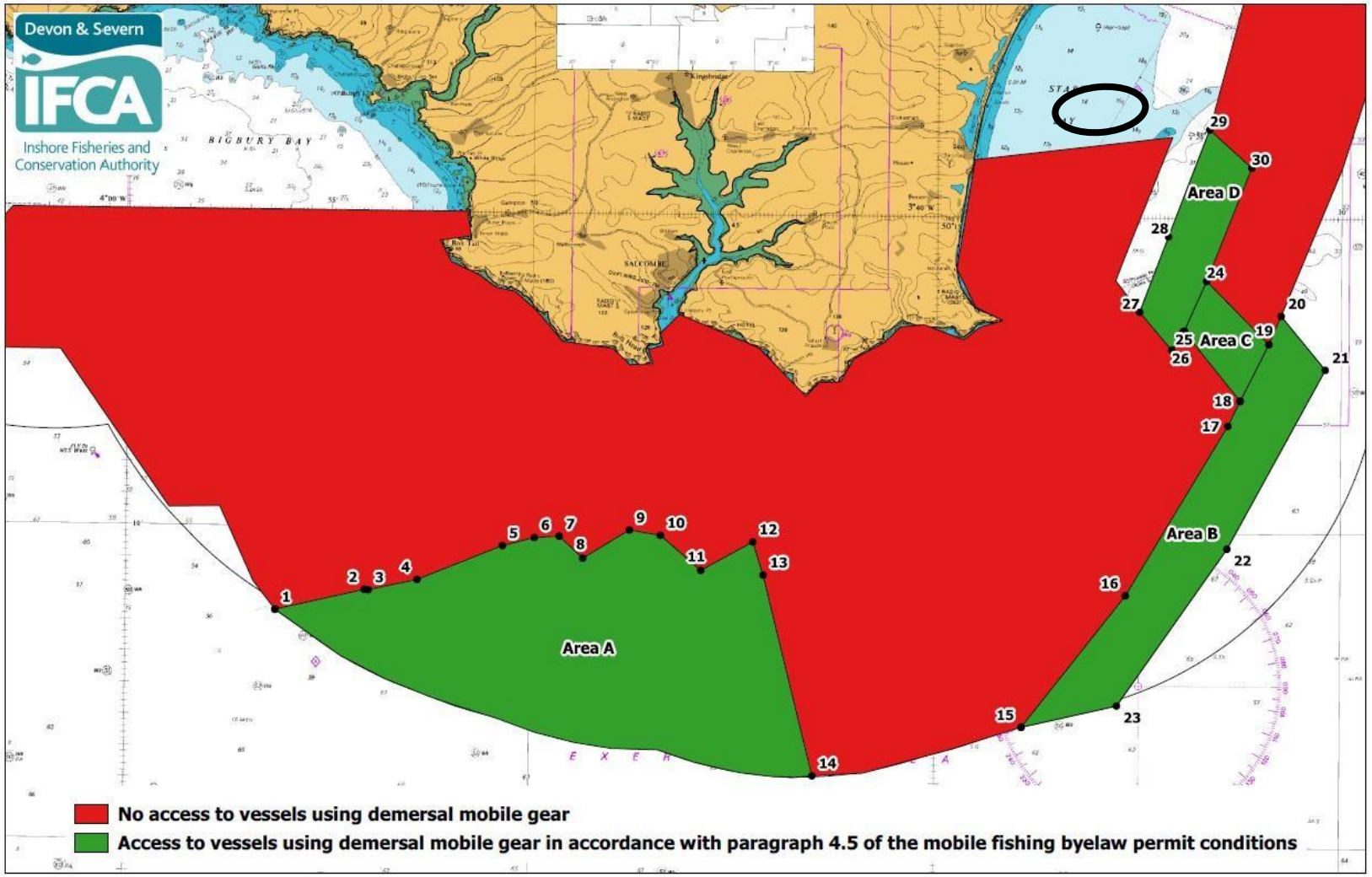
Marine Licence Applications – Seaweed Farm Start Bay

Annex 5a South of Salcombe - Access areas for vessels using demersal mobile gear in accordance with paragraph 4.5 of the mobile fishing byelaw permit conditions

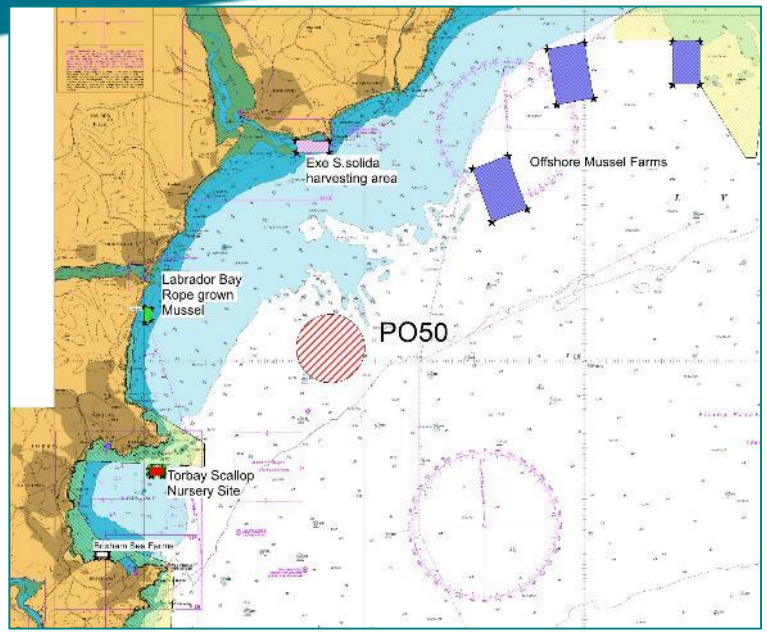


Marine Licence Applications – Seaweed Farm Start Bay

- D&S IFCA objected to the farm – solely on its proposed location
- D&S IFCA supports sustainable developments such mariculture including sea weed farms and understood the growth potential as a developing industry for biofuels, food, fertilisers
- The site proposed would significantly impact the mobile fleet – further displacement and pressure on other areas
- Under MaCAA Part 4, Chapter 1 section 1 (C) the MMO must have regard to the need to prevent interference with legitimate users of the sea
- Over 20 trawlers and scallopers use that area – and whilst the sitr is only 6ha in size and the farm will be smaller still it will interfere with one of the few areas that is still open to them to fish
- D&S IFCA proposed other locations e.g. Torbay where aquaculture already takes place- rope grown mussel farm and scallop ranch, and the Harbour Master is supportive of the aquaculture
- <u>Site selection is Key</u>

Marine Licence Applications – Exmouth Marina Dredge Disposal

- Exmouth Marina wish to vary a marine licence to dispose of dredge material from the marina to a previously closed site PO050 6/7 km off Teignmouth
- 8,000 tonnes to be dumped per year
- Previous disposal of the dredge material at a site closer to the shore resulted in black sand and material being washed dup on Teignmouth Beaches and in fishermen's gear - pots and nets



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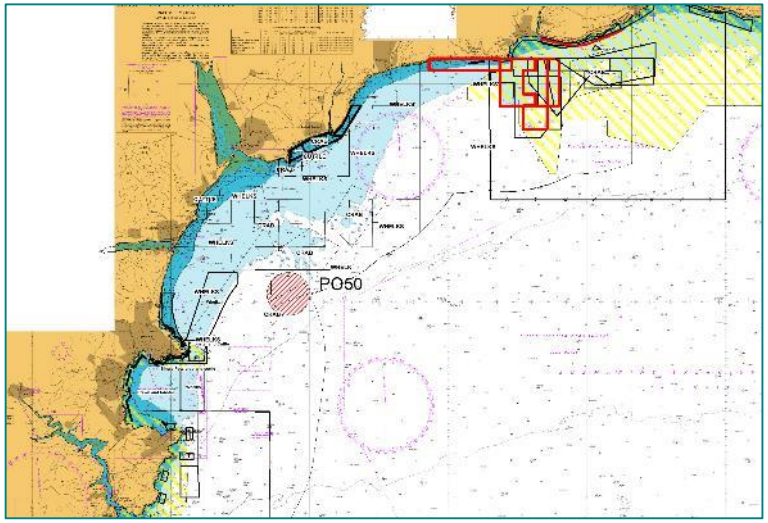
Marine Licence Applications – Exmouth Marina Dredge Disposal

- The proposed disposal ground lies within an areas where multiple fisheries exist – potting for crab, lobster, whelk; netting for sole, rays; trawling and scalloping
- The site is close to mariculture sites – Offshore rope grown mussels in Lyme Bay, rope grown mussels in Labrador Bay
- Estuarine oyster production and surf clam harvesting areas
- The proposed disposal site lies within fish spawning and nursery grounds
- Modelling was not verified and did not include wind and storm impacts on movement of dumped material
- Concern relating to smothering, heavy metals, TBT, PCBs, shellfish quality, impact son essential fish habitats and life stages of fish



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Marine Licence Applications – Exmouth Marina Dredge Disposal

- Is dumping at sea acceptable?
- Alternatives available
- Licence application at Noss Marina on the Dart to dredge material
- Proposal to remove the dredge material from the site and dewater it using a flocculant unit. The water/ sediment and flocculant are pumped into geotextile bags where the flocculant and sediment is retained, and the clean water can flow freely though the membrane and is collected and drained back into the river in a controlled way.

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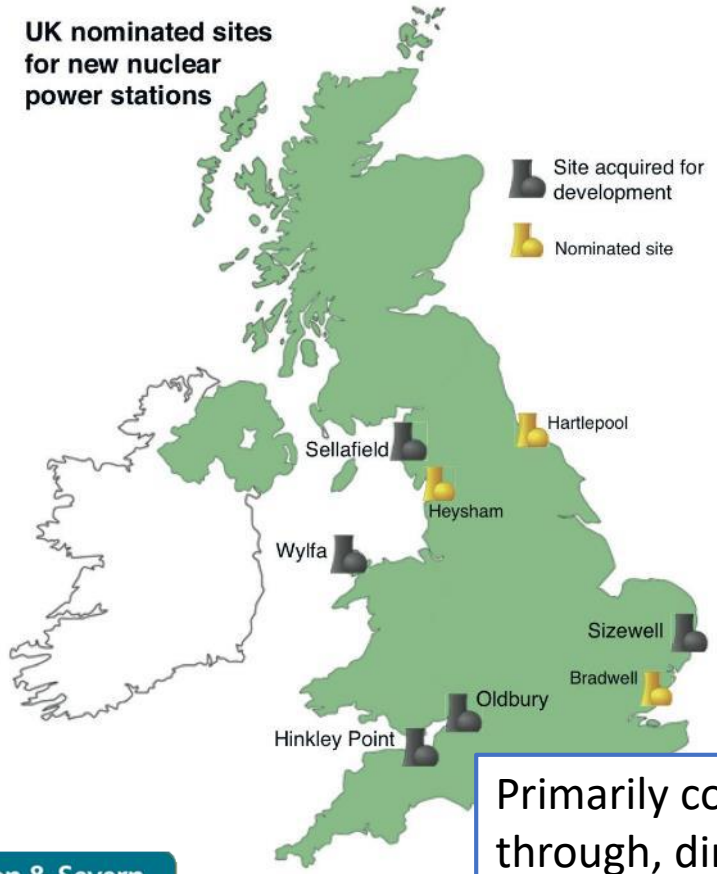
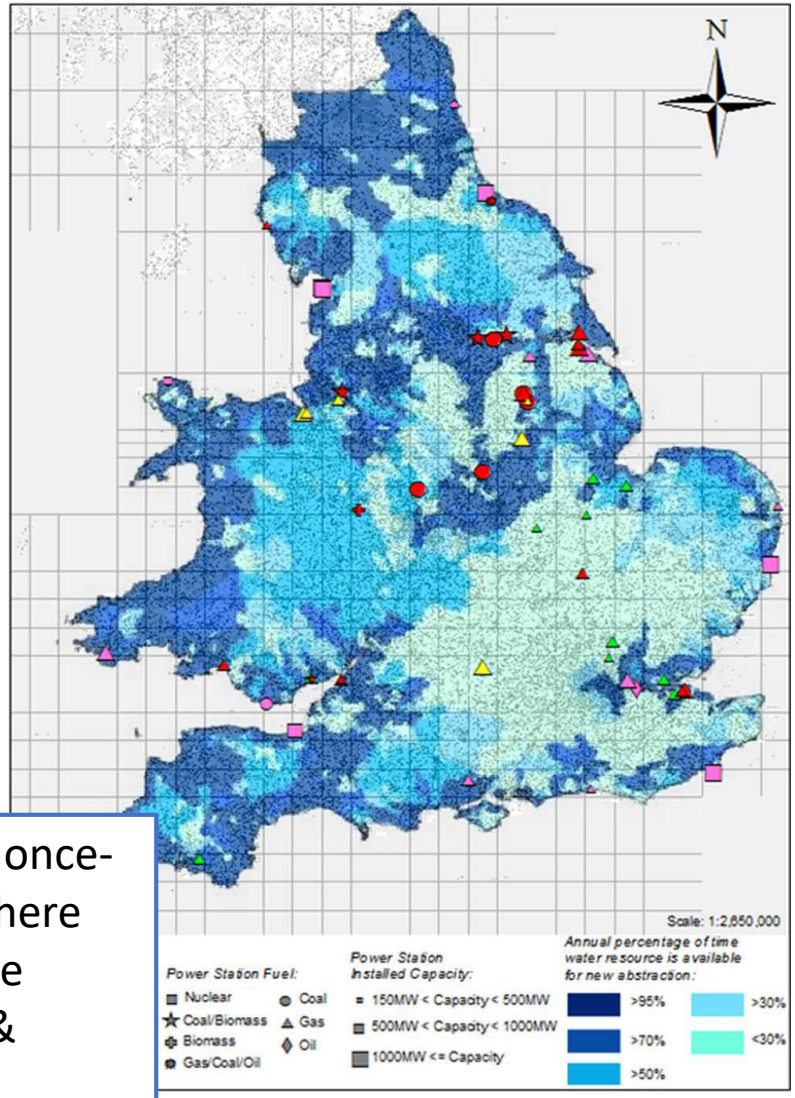
Any questions?

Coastal and Estuarine Power Stations





Primarily concerned with once-through, direct cooling where large volumes of water are abstracted from coastal & estuarine areas

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Once-Through, Direct Cooling

Hinkley Point B = 30m^3s^{-1}, 2.5 billion litres per day, **570 million gallons per day**

Hinkley Point C = 125m^3s^{-1}, 10.8 billion litres per day, **2.3 billion gallons per day**

Impact Pathway For Fish

Photo Credit: Dr Peter Henderson

Devon &

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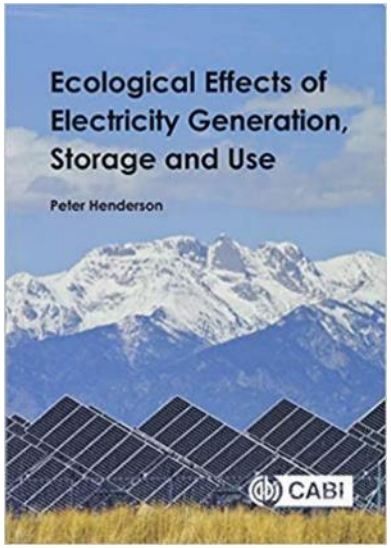
Impact Pathway

	Type	Cooling Water Volume m^3/s	Total number of fish >3cm impinged	Total no. fish <3cm entrained	Total no. eggs entrained
Sizewell B	Nuclear	48	5.2×10^6	8.0×10^7	3.3×10^{10}
Dungeness B	Nuclear	40	1.1×10^6	$>7 \times 10^8$	$>5.6 \times 10^8$
Hinkley Point B	Nuclear	30	9.9×10^5	?	?
Aberthaw B	Conventional	67	2.2×10^6	?	?

Data summarised from Henderson 2018 –see Chapter 5

"The 17 power stations sited in the southern North Sea are estimated to kill sole and herring equivalent to about 50% of British commercial landings for the region. In Northern Europe there is a need for international co-operation to determine the magnitude of fish kills and their effects on populations"



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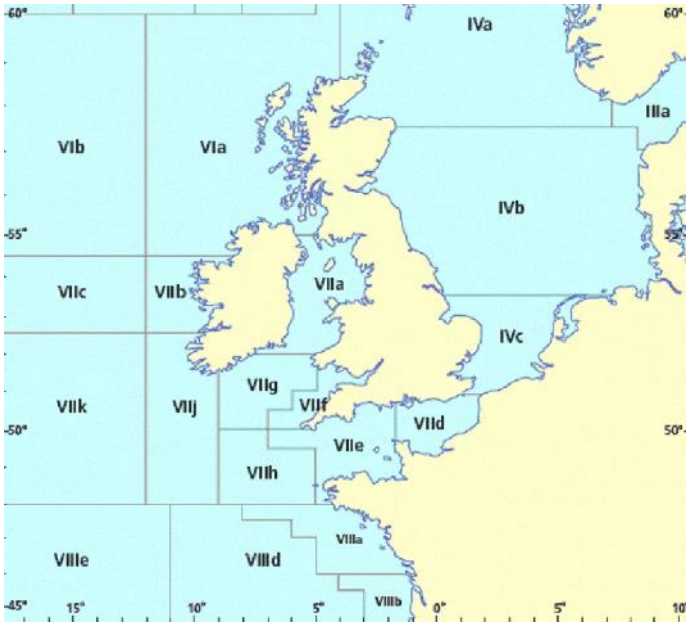
Previous Paradigm & Assessment Approach

- Calculate Equivalent Adult Value (EAV) – what proportion of an adult stock do you impact?
  - If it is less than 1% of the SSB of a stock = 'negligible' impact
- Very little consideration of in-situ effects - largely juvenile fish = density dependence is a cure-all
- Effects which were considered 'localised' were not thought to be important to wider populations
- Very little attention in published literature
- Rarely mentioned in lists of anthropogenic impacts on marine environment.



So negligible effect if one power station kills less than 1% of the SSB for:

- European sea bass in IVbc, VIIa, VIId-h
- Cod in VIIe-k

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Emerging Understanding

- Fish population structure for some species often much finer than that currently acknowledged by ICES stocks
  - Herring, cod, bass, sole
  - ICES stocks are designed to manage activities over large geographic areas, do not always represent evolutionary/ ecologically significant units
- Ecological value of fish in estuaries does not only relate to their recruitment potential to commercially exploitable populations
  - Assessment only at stock level therefore missing a really important step. What about community dynamics? Especially important for Severn Estuary because of designations.
- Large volume of literature on importance of connectivity of 'seascape' – different sub-populations contribute different amounts under different conditions. Require functional diversity for populations to be resilient.
- Direct-cooling effectively banned for new-build power stations in the US because of concerns over entrainment

D&S IFCA Concerns and Involvement

- Invited member of the Hinkley Point C Marine Technical Forum (EDF, their consultants and the regulatory bodies) since 2013/2014
- At the time the HRA had been agreed as 'no significant impact' to the fish assemblage, or any of the Annex II species and there was no way to question this decision. D&S IFCA was inputting into monitoring plans and fine-scale design issues
- Recently EDF have announced their attention to not install one of the three main mitigation methods: Acoustic Fish Deterrents
- D&S IFCA input detailed consultation responses for application to remove AFD - ongoing
- D&S IFCA not only concerned about the change to use of AFDs, concern around the original decision

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Thank You

Any Questions?

Lunch