

Devon & Severn IFCA

A stylized teal fish icon is positioned on the left side of the slide, swimming towards the right. The background features wavy teal and white shapes representing water.

Managing the Marine Environment *The Role of IFCAs*

Sarah Curtin
Environment Officer
November 2019

Today's talk

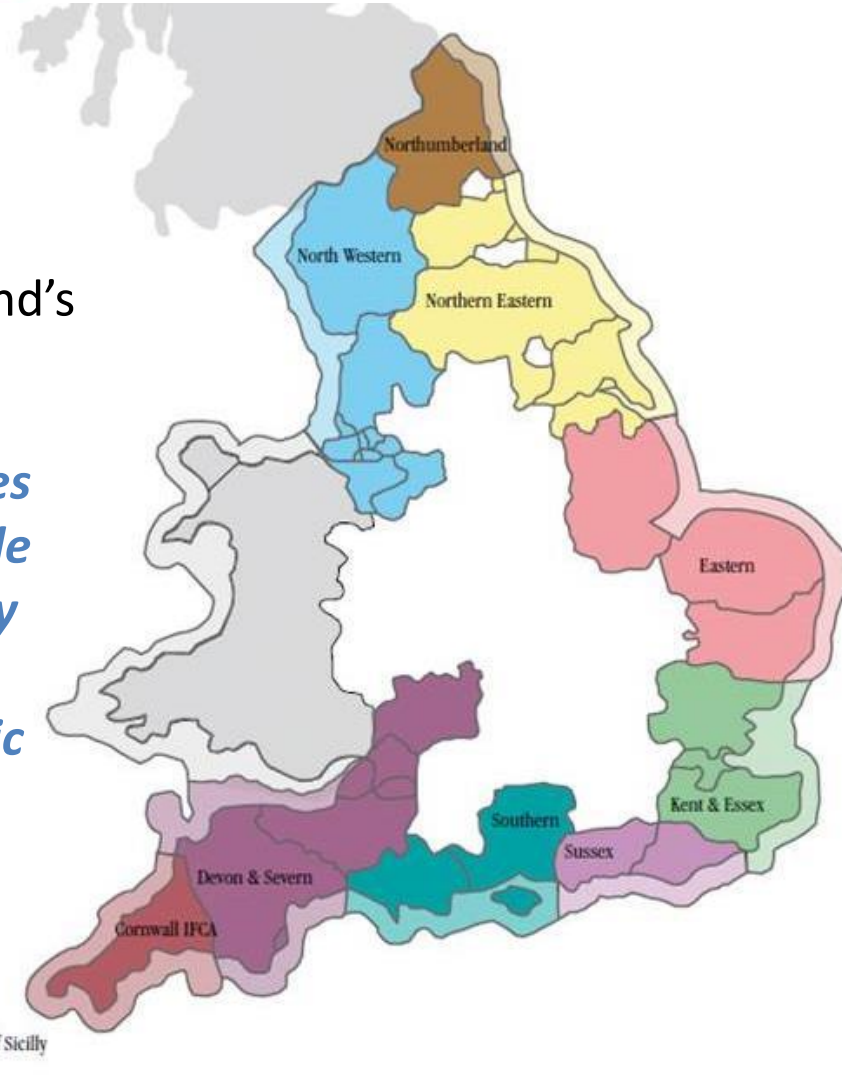
- How are fisheries managed in England
- Role of the IFCAs
- Enforcement
- A day in the life of an Environment officer:
 - Core research work
 - Partnership working
 - The Wrasse fishery – how research is used to manage sustainable fisheries
 - Applying for a job in marine management



What is an Inshore Fisheries and Conservation Authority?

- Statutory government inshore fisheries managers formed by the MaCAA 2009
- Districts cover baselines to 6nm
- There are 10 regional IFCAs around England's coast with a shared vision:

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



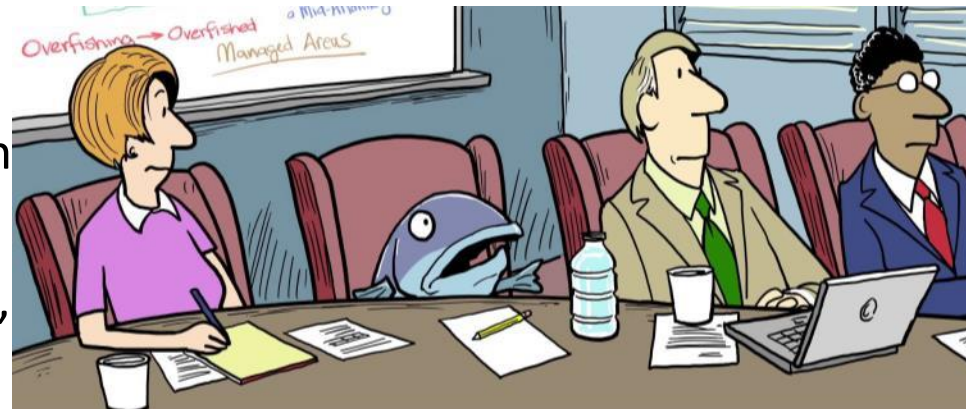
Inshore Fisheries and Conservation Authority

Marine Management: Where do IFCAs fit?

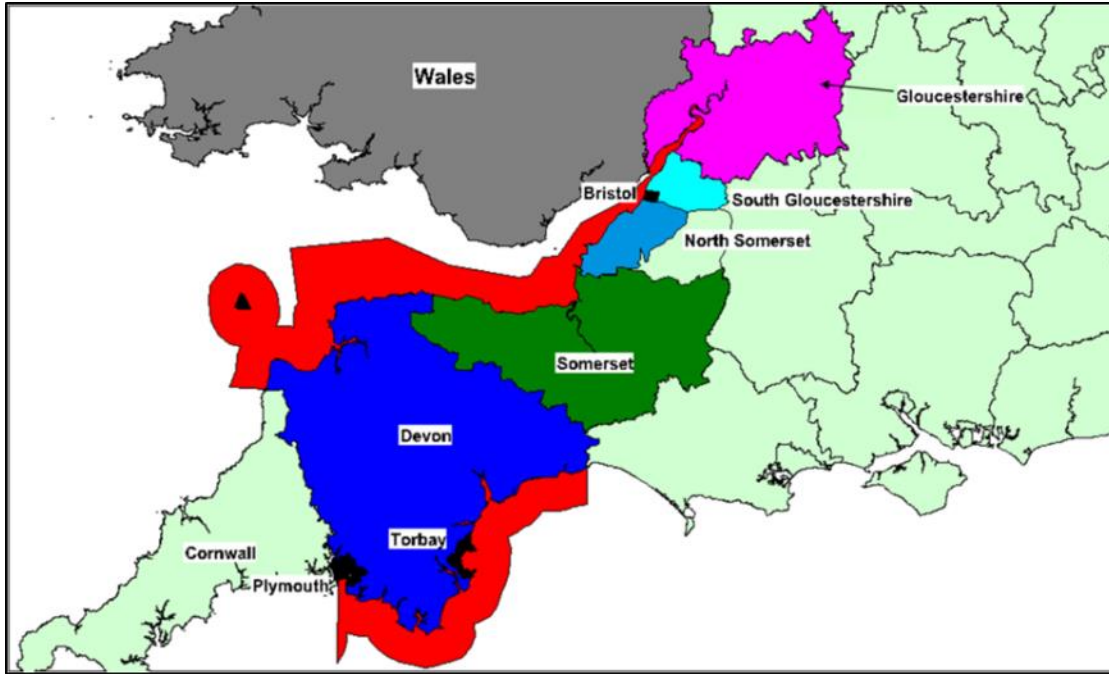
- Marine Management Organisation (MMO)
 - Statutory fisheries managers 6nm -200nm
 - Manage quota and are primary managers and enforcers of European fisheries legislation
 - Manage fishing activities in MPAs outside 6nm
 - Environment Agency (EA)
 - Statutory managers for freshwater and migratory (diadromous) 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 often cross-warranted



Devon and Severn IFCA



- 4,522 km² of sea
- 1,314 km² of coastline
- 9,141 km² of land
- 1,331 km² of Marine Protected Areas

The Authority

- Full authority=30 members
- Funded via several different councils with additional contribution from central government

The Officers

- Acting Chief Officer
- Deputy Chief Officer
- Enforcement Team - 1 Snr Officer & 3 IFCO Officers
- Environment Team - 1 Snr Officer & 3 Environment Officers
- Office Manager
- Permitting Officer

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 and Severn

Inshore Fisheries and Conservation Authority

MARINE AND COASTAL ACCESS ACT 2009 (c.23)

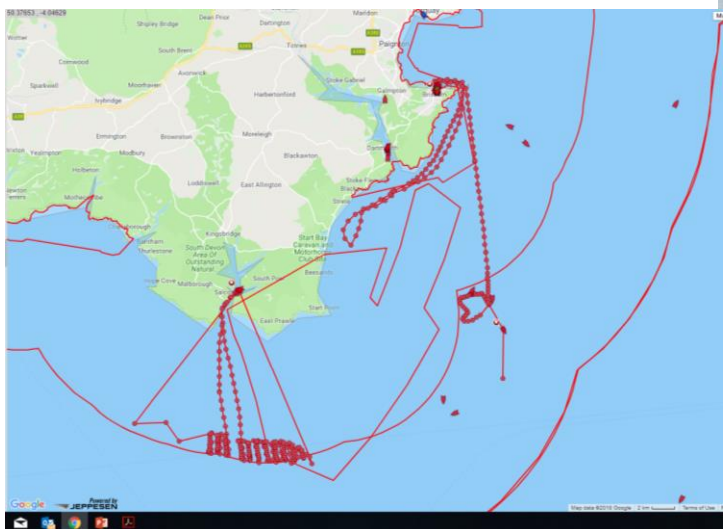
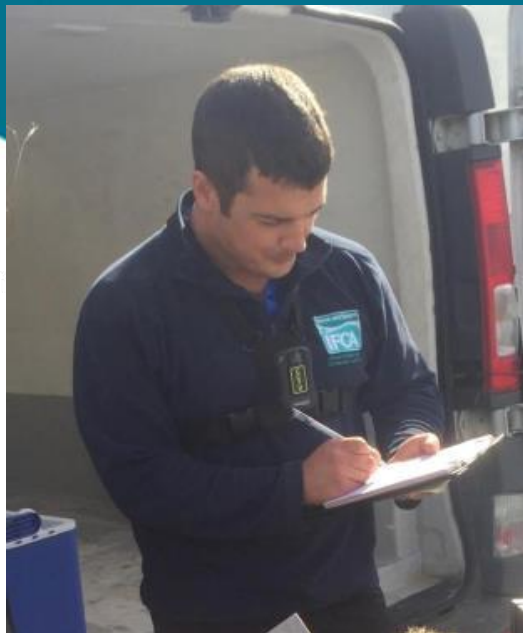
Netting Permit Byelaw 2016

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 they 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;

Enforcement



Devon & Severn



Inshore Fisheries and Conservation Authority

What happens when byelaws are breached?

- Written warnings
- Fixed Administrative Penalties (FAPs)
- Magistrates Court
- Crown Court

2017 - highlights

- Master and owner of a scallop dredger fined £37,770 for illegal fishing in Lyme Bay MPA
- 6 men from 3 Plymouth based potting vessels fined a total of £24,057 for retaining undersize crab and berried lobsters
- Fisherman fined £4,750 for using an illegal net

10th September 2015

Company fined over illegal Lyme Bay fishing

Alex Peace [@DorsetEchoAles](#)
Senior Reporter



D News ▶ Devon News ▶ Crime

High speed boats deployed to tackle Devon's illegal crab and lobster trade

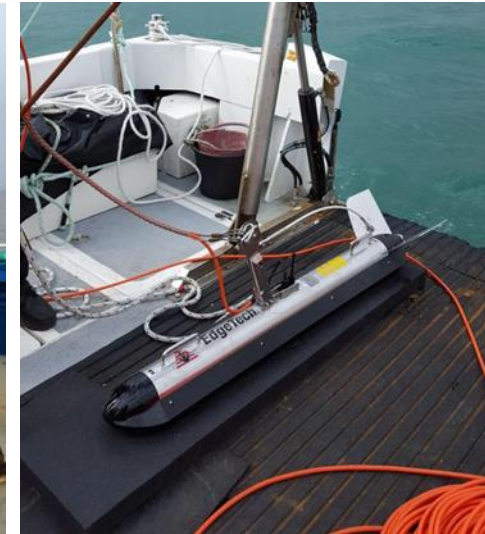
Inshore Fisheries and Conservation Authority

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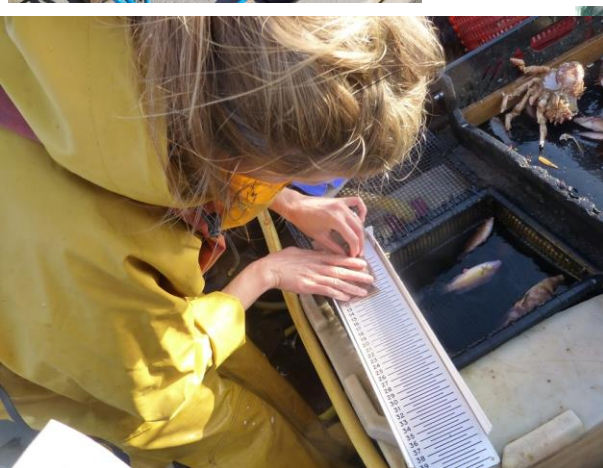
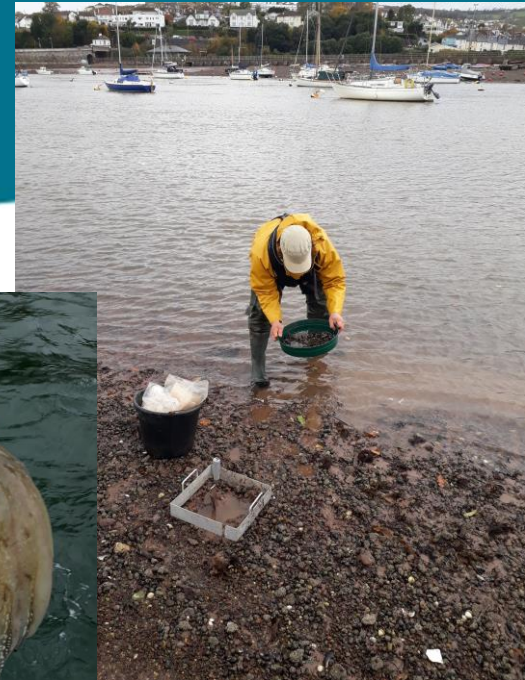


IFCA Research Capability

- Environment team – expertise in planning and executing surveys, data and statistical analysis , report writing, policy development
- Survey vessel, other IFCA vessels, skipper and crew
- Sidescan sonar
- Underwater video equipment e.g. cameras, sleds, Flying Array, dive cams
- Shared IFCA assets – ARIS sonar camera, Edgetech sidescan sonar, SeaSpider stills camera array, various grab sampling equipment



A day in the life of

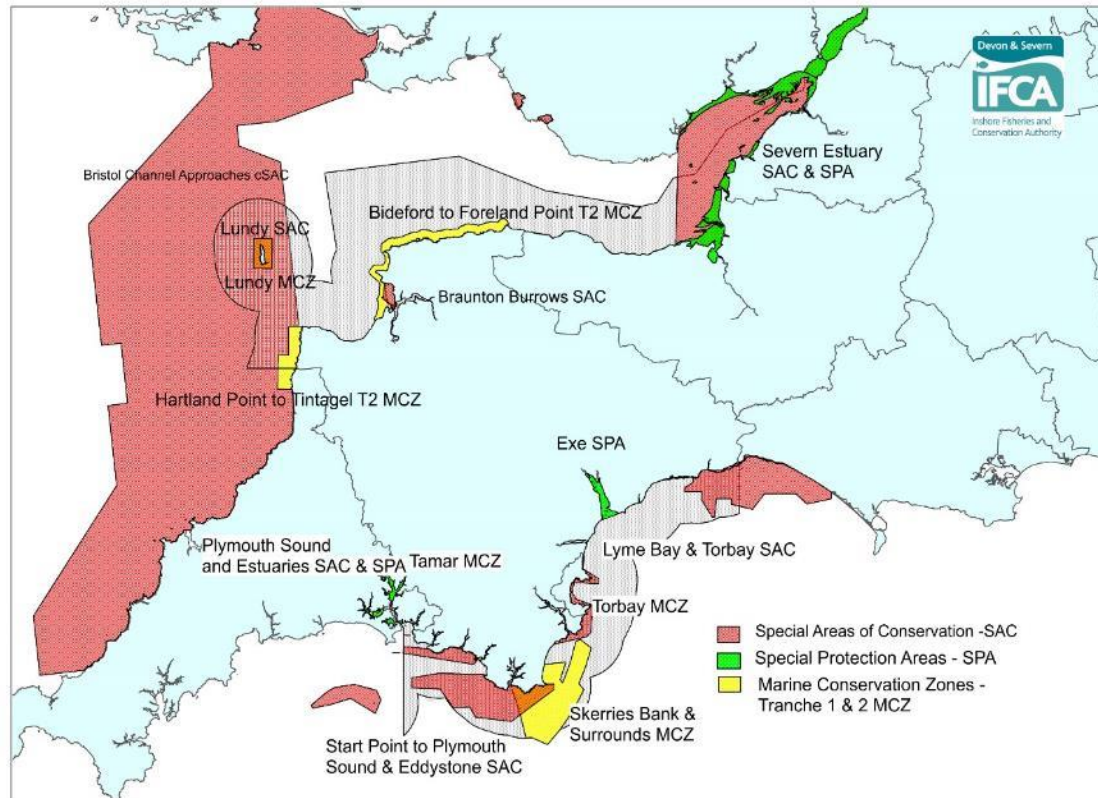


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Inshore Fisheries and Conservation Authority

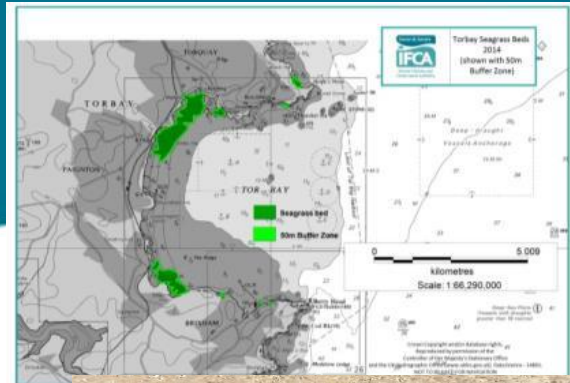
Devon & Severn IFCA – MPA Metrics



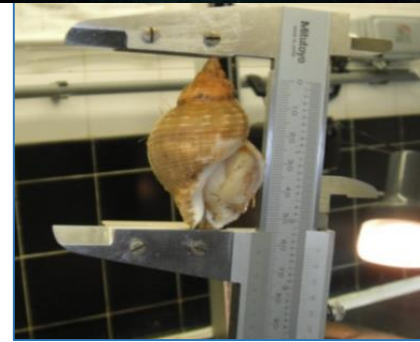
- 10 EMSs including the Bristol Channel Approaches cSAC for Harbour Porpoises
- 4 Tranche 1 MCZs.
- 2 Tranche 2 MCZs.
- 6 new Tranche 3 MCZs are proposed within the District.
- **1,881 km²** of MPAs (excluding co-location of EMS & MCZ) lie within the D&S IFCA District.
- 42% of D&S IFCA District lies within an MPA before Tranche 3 designations.
- 25% of the District closed to mobile gear

Core Research Work

- **Habitat mapping**
 - Seagrass – Torbay, Yealm and Salcombe
 - Underwater filming to ground truth habitats and assess condition – Lyme Bay, Salcombe Estuary
- **Shellfish research**
 - Mussel and cockles stock assessments
 - Local stock assessment of scallops (for Salcombe hand dredge fishery)
 - Whelk size of sexual maturity
- **Fishing activity monitoring**
 - Netting and Potting surveys
 - Monitoring and Control Plans for certain gears in certain MPAs
 - Crab tiles and bait digging
 - Recreational sea angling – effort and behaviour interviews
- **Finfish research**
 - Live Wrasse fully documented fishery



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Partnership working

- Universities
- Natural England, Environment Agency, Defra, MMO
- Fishing industry
- eNGOs
- Cefas
- Consultants
- Welsh Government & Marine Scotland
- Estuary partnerships, AONBs
- MSC



Example – A new fishery for wrasse

- Control of sea lice in Salmon farms
- Live fishery began in Norway in 1988
- Inshore species
- Sourced from SW England
- D&S IFCA Fishery in 2015
- Fishery operates out of Plymouth sound and Estuaries European Marine Site



Wrasse Species



Ballan Wrasse



Corkwing



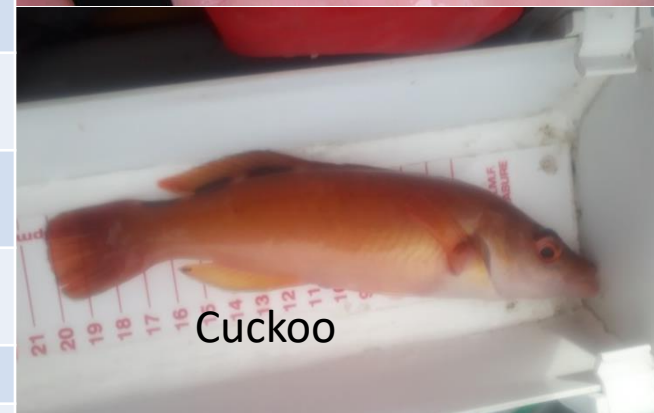
Rock Cook

Ecology & Biology

Distribution	Mediterranean to English Channel to West Baltic Sea
Habitat	inshore rocky reefs, kelp forests and seagrass beds. Territorial – 2m ² to 50m ² . Mostly shallow water <10m for smaller spp and often in MPA
Diet	molluscs and crustaceans – cleaner fish, grazing on seaweeds and rocks
Activity	diurnal and seasonal – hibernate in winter <7°C or move into deeper water
Sizes	ballan up to 60cm, cuckoo 35cm, rock cook to 15cm, goldsinny ~ 15cm, corkwing <25cm
Reproduction	Different strategies for different spp. Dominance hierarchy for Ballan and cuckoo. Males grow faster, harem of females
Spawning	April to September. Most species have benthic eggs (apart from goldsinny) & males provide care/guard nest
Size at Sexual Maturity	Ballan M-28cm F-16/18cm; Cuckoo M-24cm F-16cm; goldsinny 9.5cm; corkwing 10cm; rock cook 9cm
Sex change	ballan, cuckoo (Blue Planet)
Sneaker males	goldsinny, corkwing – steal fertilisation opportunity by mimicking females



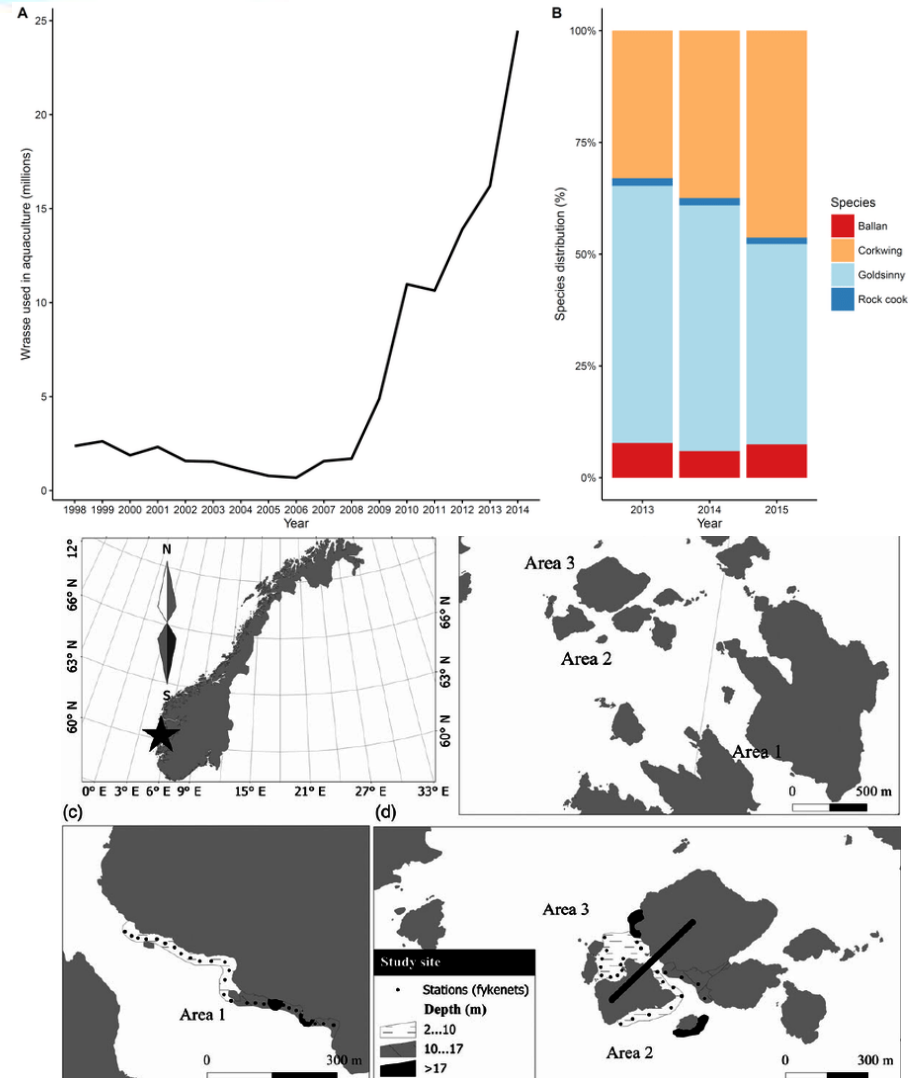
Goldsinny



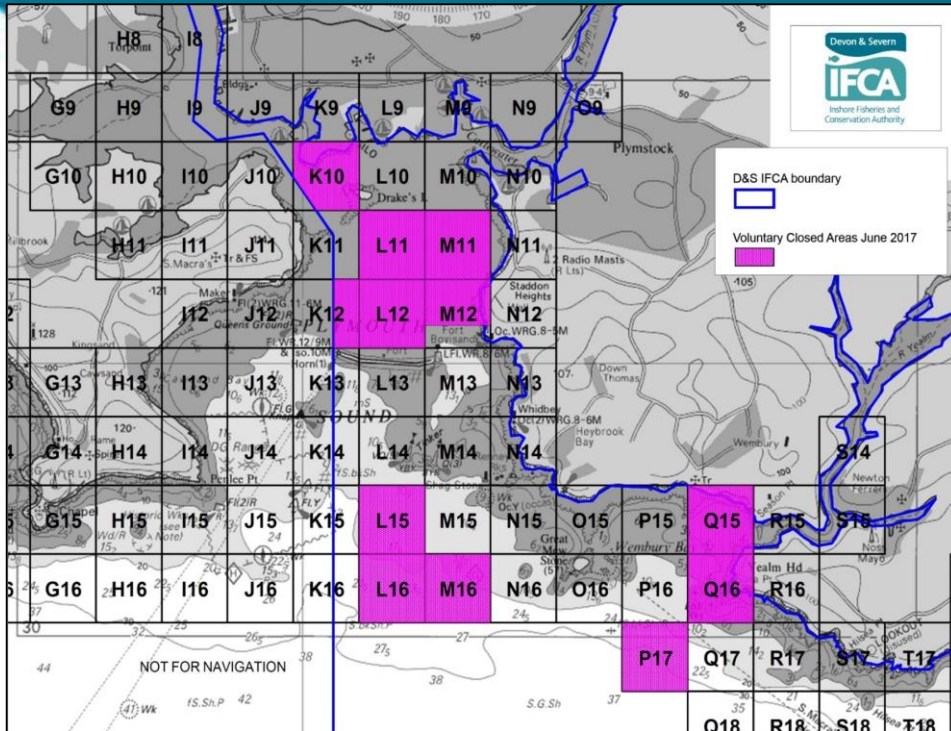
Cuckoo

Immediate review of management requirements

- Considered existing guidance e.g. Cefas report
- Liaised with industry and salmon farms and agents, Exeter University and Natural England
- Authority member's wanted to bring in an Emergency Byelaw initially
- Literature review and initial evidence requirements outlined late 2016 & early 2017
- Officers produced an HRA and a series of immediate recommendations to byelaw sub-committee to bring in management immediately in 2017
- Design of fully documented fishery to inform additional or more locally tailored management needs
- Potting permit byelaw already existed. Consultation on proposed management Feb 2017



Initial decision by byelaw subcommittee May 2017

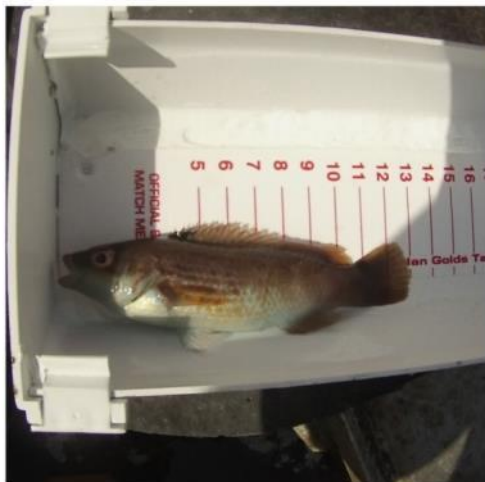
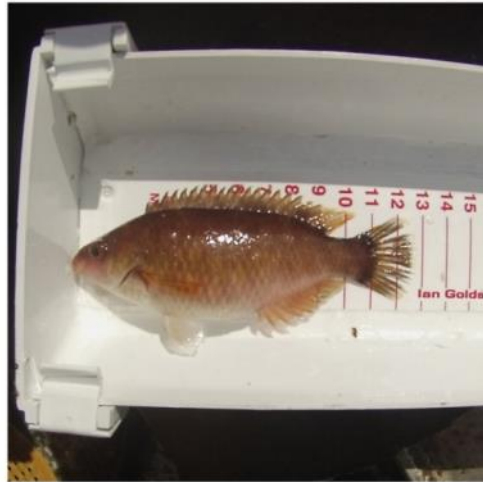
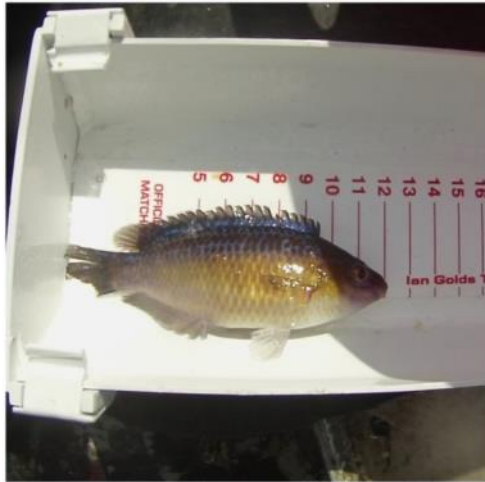


Management decision:

1. To implement a fully documented fishery
2. To implement a 120 pot limit per permit holder
3. To require the marking of wrasse gear with 'WRA' and Vessel's PLN, & wrasse pots marked with tags
4. To establish a closed season for spawning from 1st April to 30th June for the live wrasse pot fishery
5. To introduce Minimum and Maximum Conservation Reference Sizes for five species of wrasse 120-230mm for 3 species, 150-230mm for 2 other species
6. Voluntary closed areas



D&S IFCA Survey Work



	Landings data (from fishers)	On-board observer surveys
Data from every day of fishing effort	✓	
Fishing effort (no. pots per day) recorded	✓	✓
Daily total number of fish caught recorded	✓	✓
Daily total number of fish returned recorded		✓
Total number of fish caught per string		✓
Spatial LPUE/CPUE		✓
Species-level data recording		✓
Sizes of fish (kept and returned) recorded		✓
Spawning state of fish recorded		✓
Approximate location of fishing effort recorded (1 km ² grid)	✓	✓
Precise location of fishing effort recorded		✓

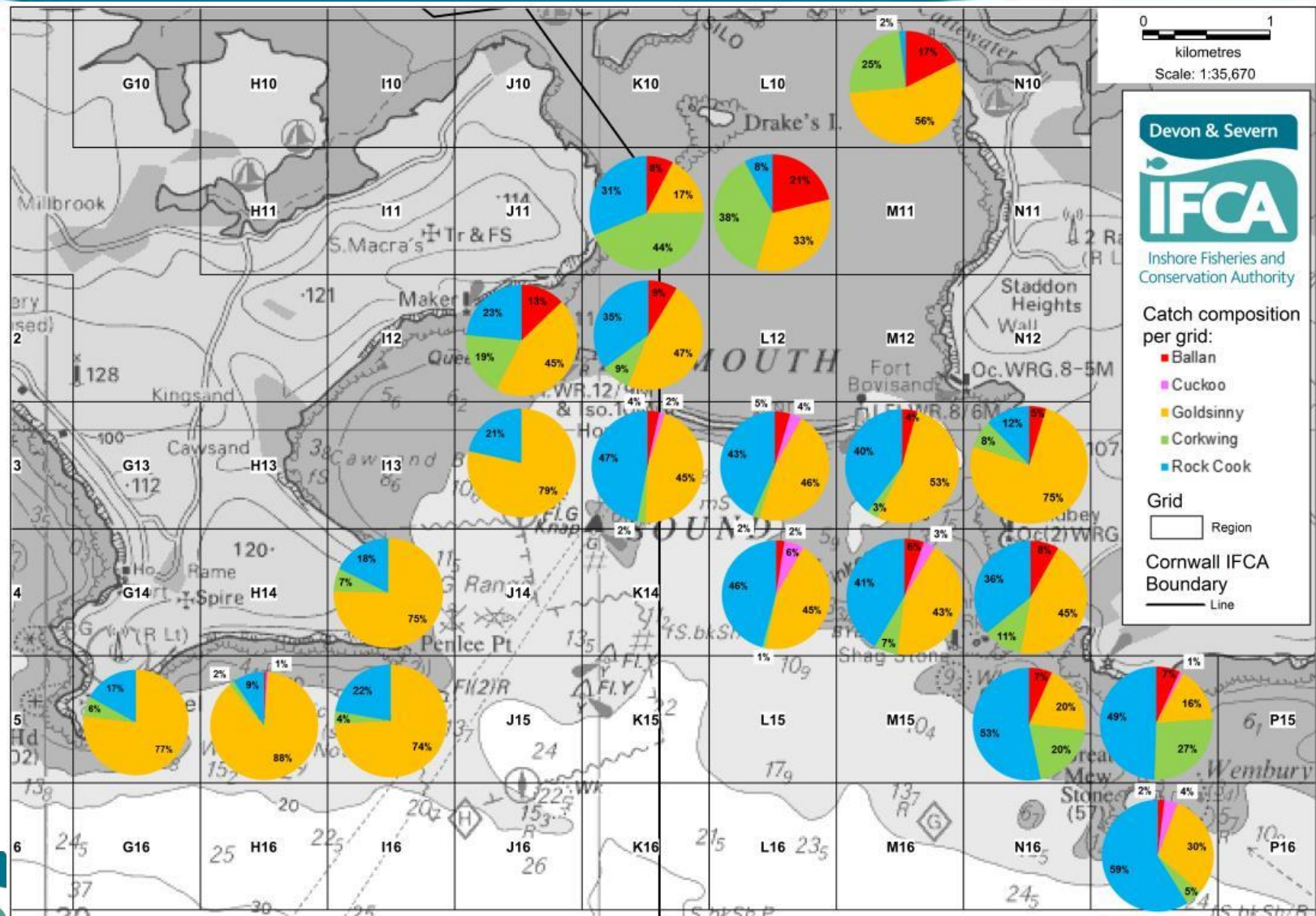
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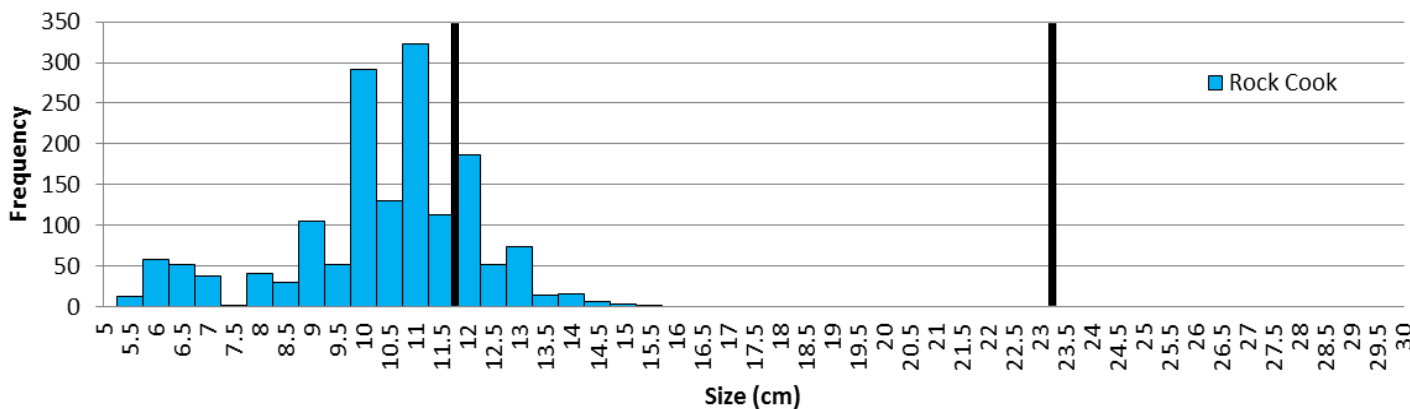
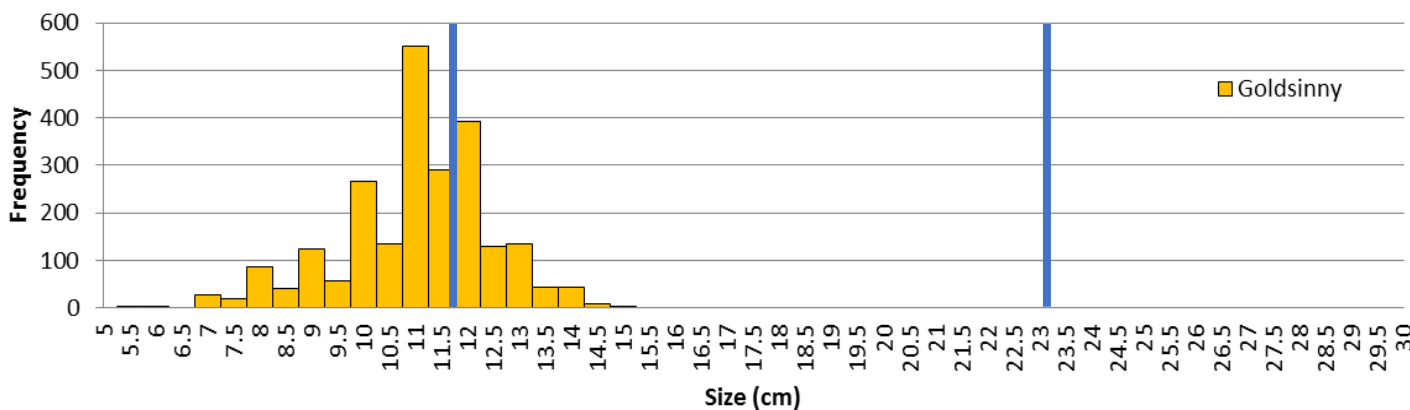
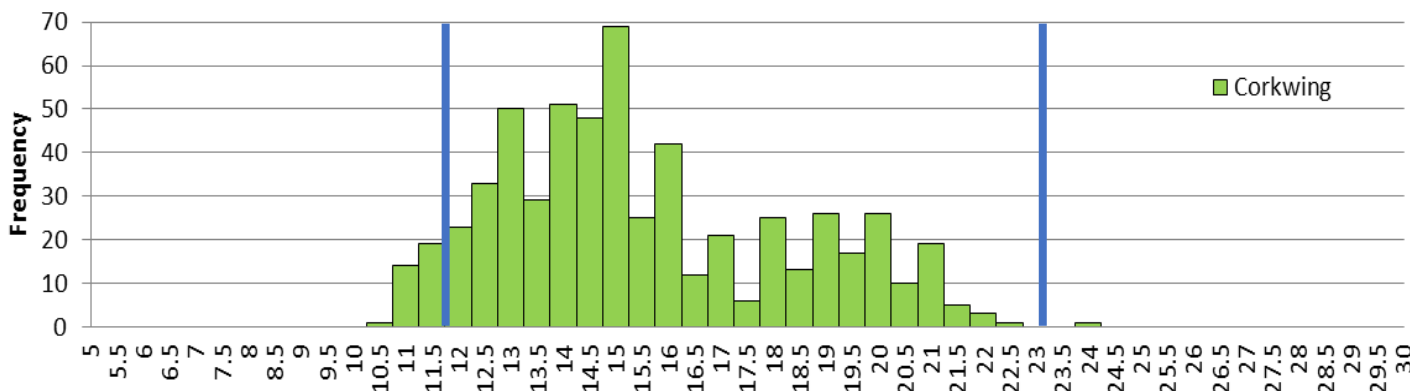
Inshore Fisheries and Conservation Authority

Data Analysis November 2017

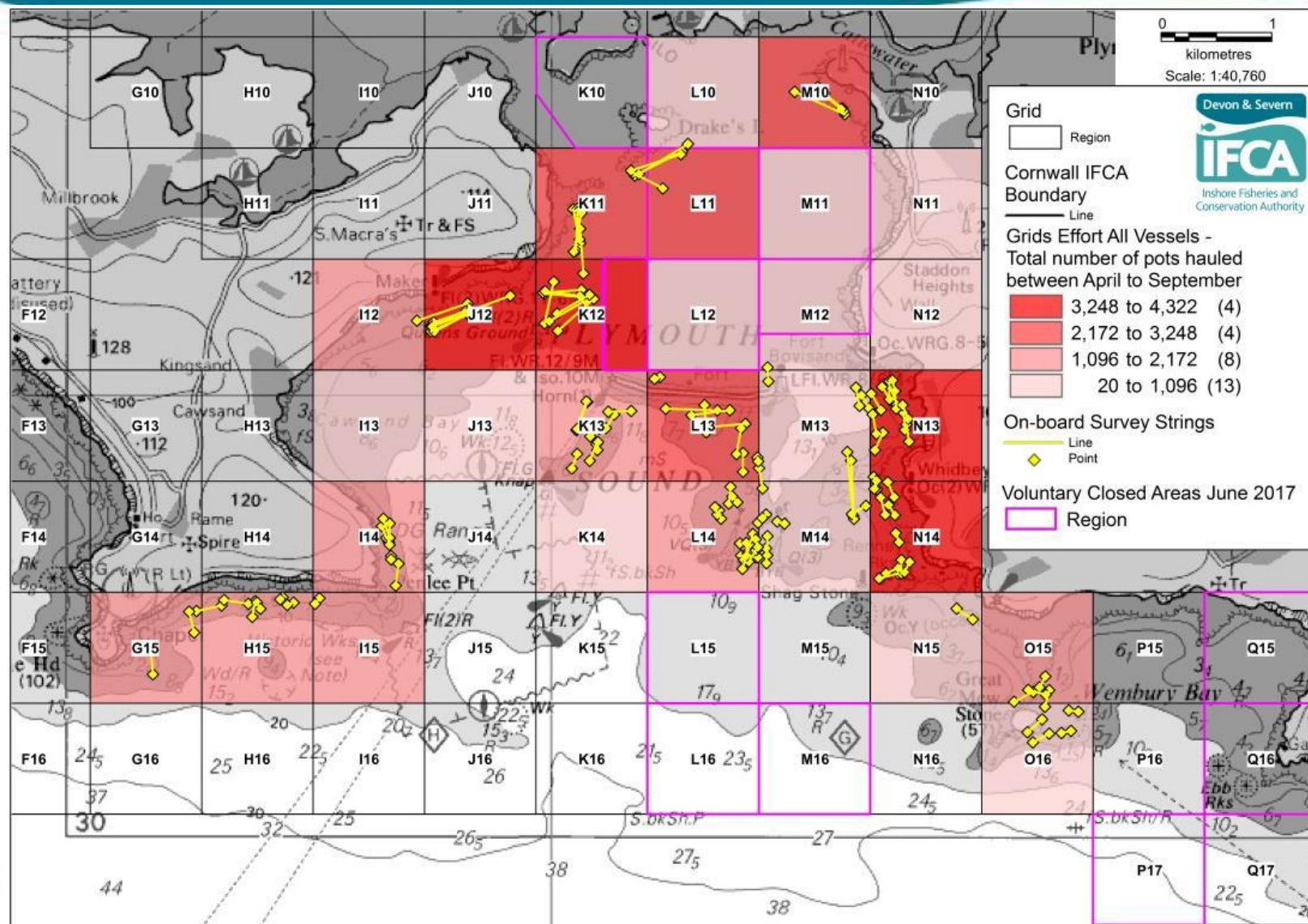
Species' distribution and habitat preferences



Data Analysis 2017. Effectiveness of slot sizes

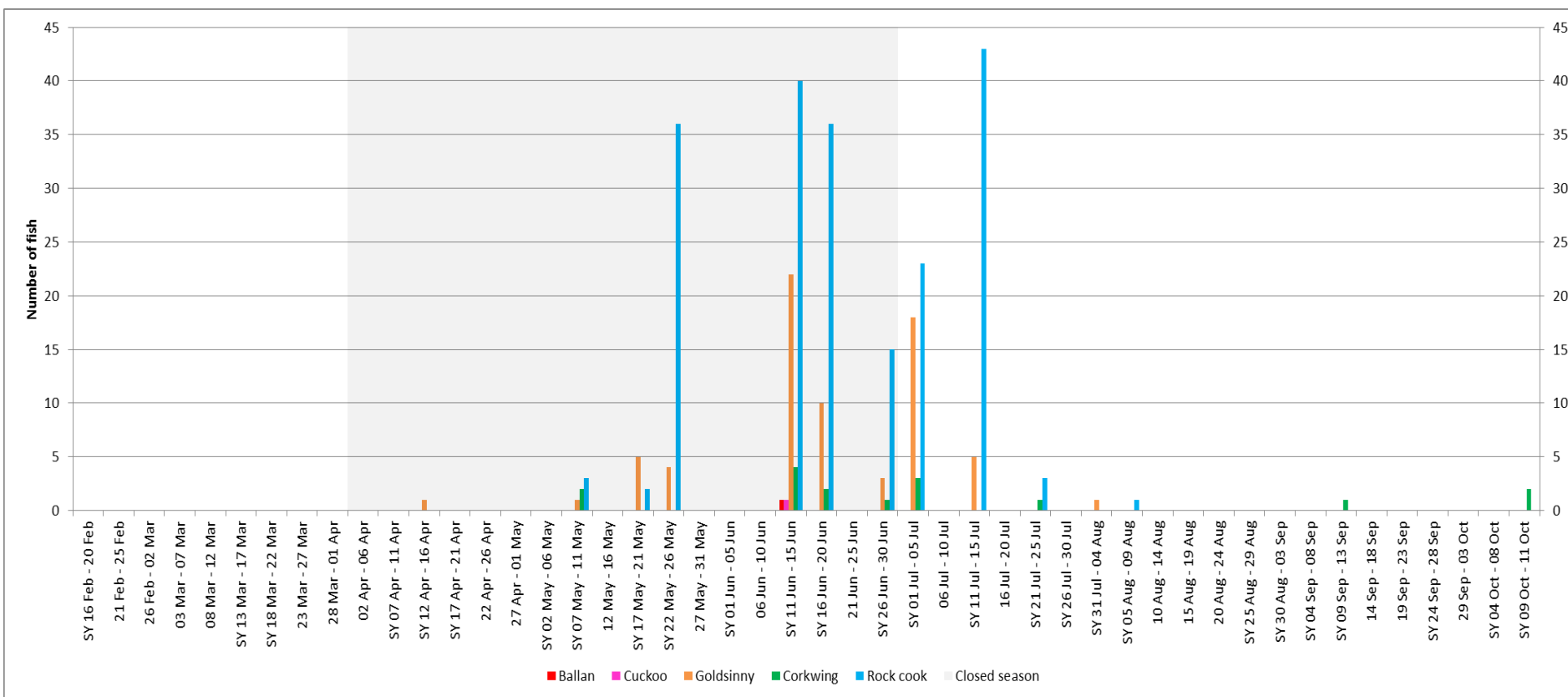


Effectiveness of voluntary closed areas



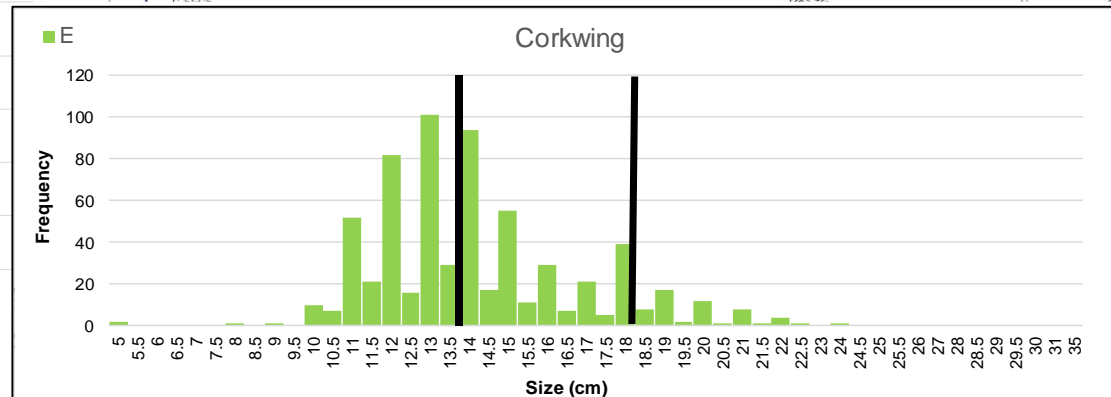
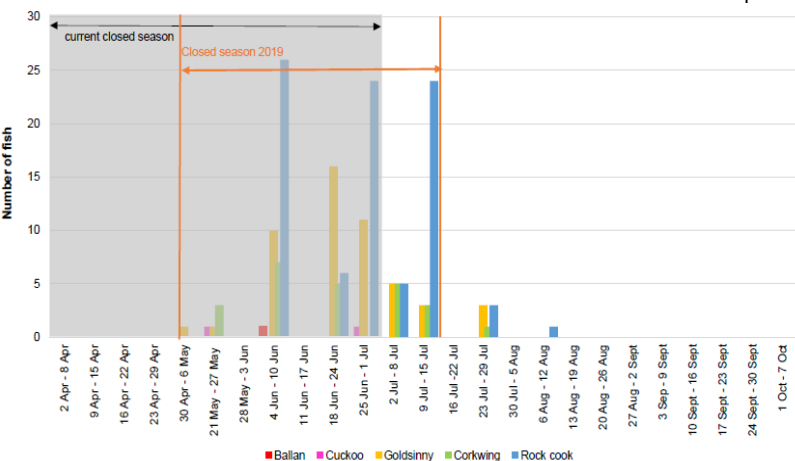
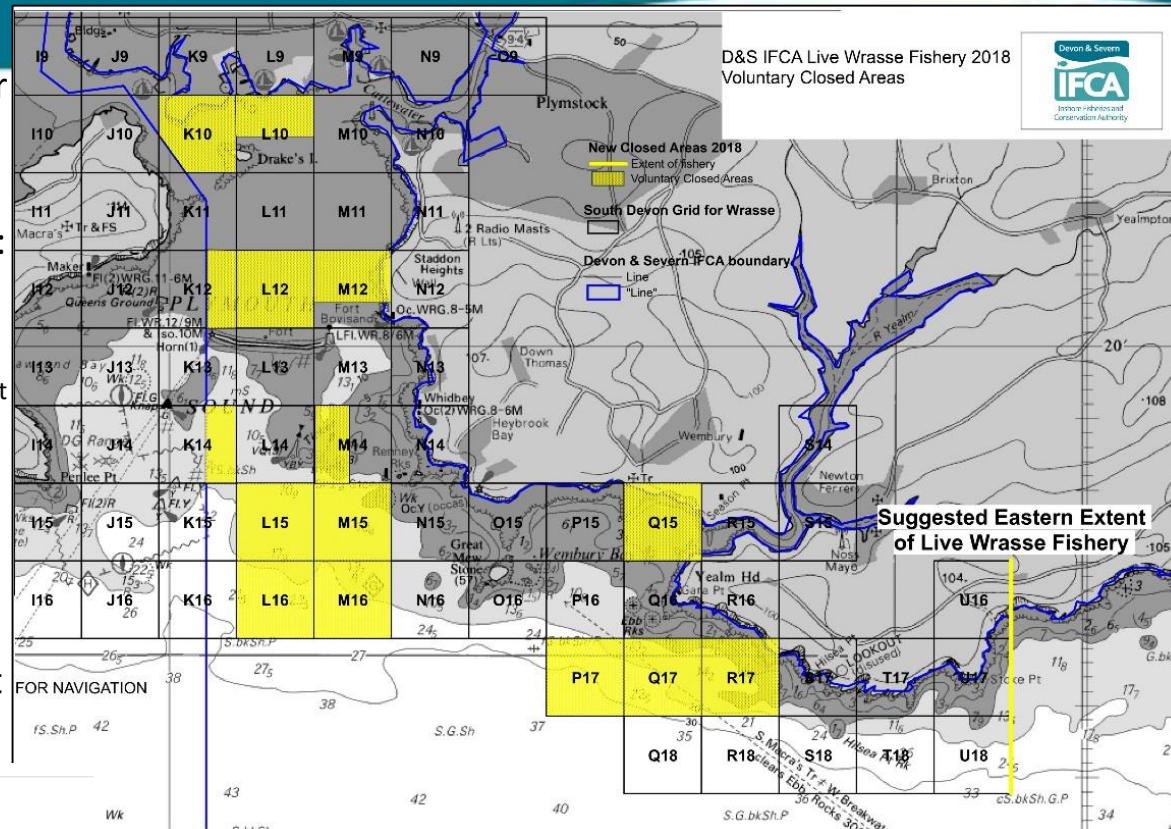
Data Analysis November 2017

Effectiveness of spawning season closure



Outcomes of research; revised management measures for the 2018 fishery

- Evidence collated in a report in November 2017 for the D&S IFCA byelaw subcommittee
- Changes to initial management measures:
 - Change of corkwing size limits to 140mm-180mm
 - Shift in spawning season closure (1st May -15th July)
 - Continuation of fully documented fishery
- Amendment of voluntary closed areas
- Introduction of voluntary geographic limit to fishery



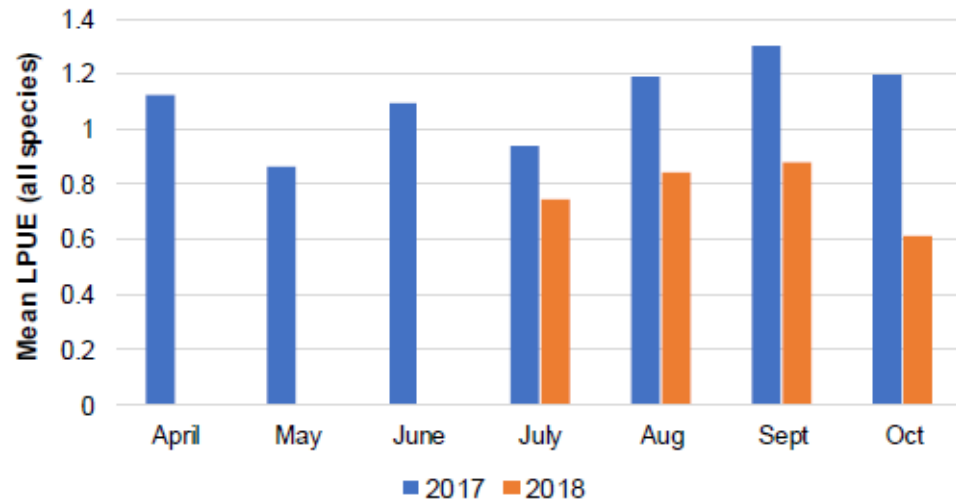
November 2018 Data Analysis

- 68% reduction in fishing effort (number of days fishing) in 2018 compared to 2017
- Mechanical issues with vessels, individual fisher's circumstances, fishers targeting Cornish waters within the Plymouth Sound during the Devon closed season and vessels remaining in Cornwall once Devon waters reopened

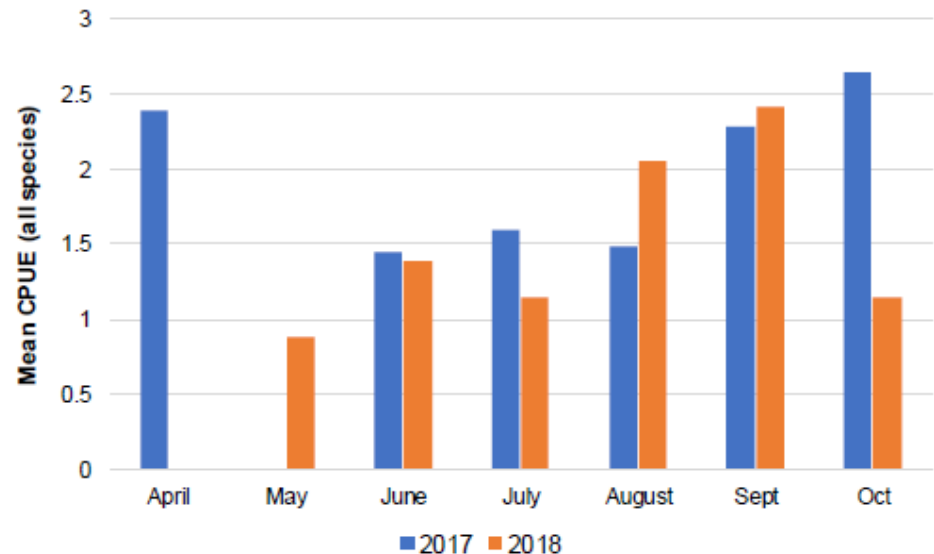


Wrasse – CPUE and LPUE comparison

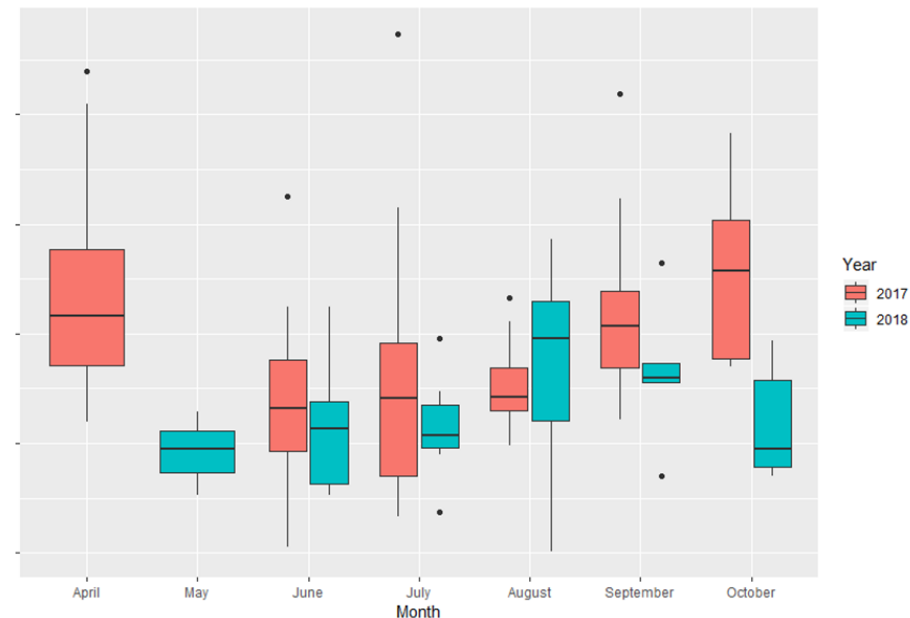
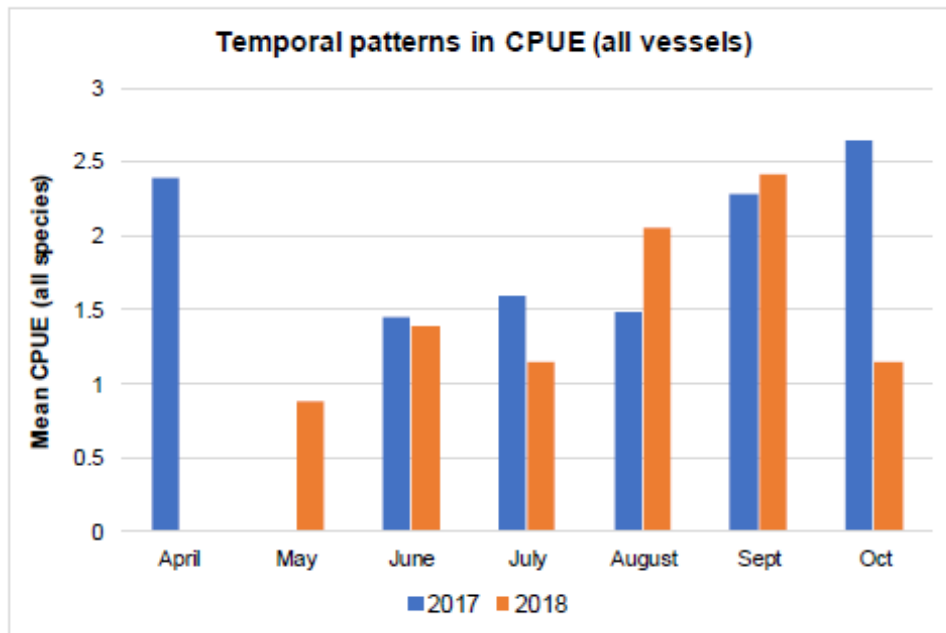
Temporal patterns in LPUE (all vessels)



Temporal patterns in CPUE (all vessels)

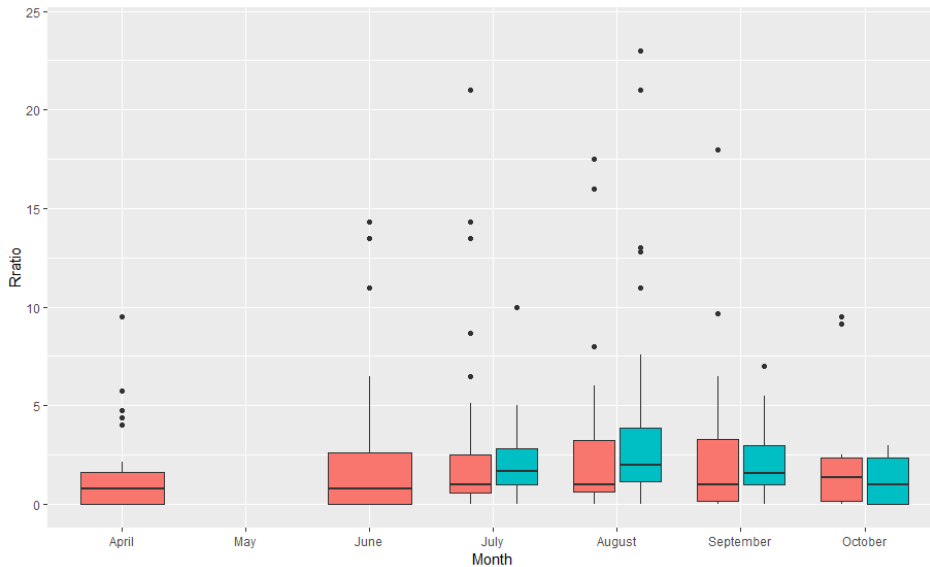


Additional Data Analysis CPUE

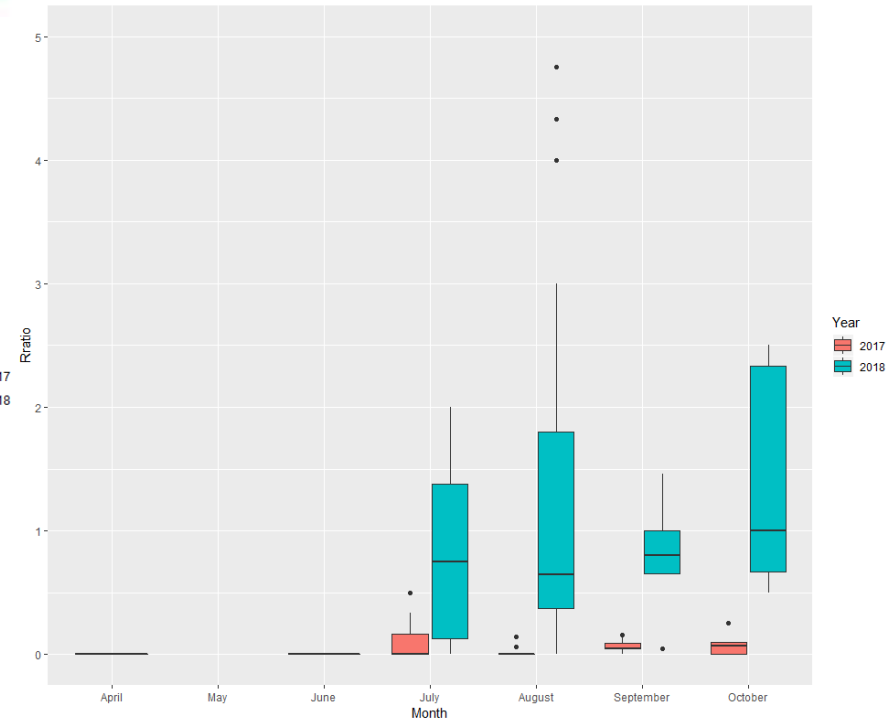


When a higher resolution analysis of CPUE was performed it was clear that CPUE had also generally declined from 2017 to 2018 – the dangers of using mean values!

Additional Data Analysis



Ratio of wrasse (goltsinny, rock cook, ballan) returned: kept



Ratio of wrasse (corkwing) returned: kept

Additional Data Analysis Conclusions

- High-resolution data detected a reduction in median CPUE between 2017 and 2018 with reductions in all months except for August
- Change in slot size for corkwing wrasse may have contributed to increased returns but were not the only cause of the decrease in LPUE
- Lower catches and higher return rates (not just because of change in corkwing size) in 2018 compared to 2017

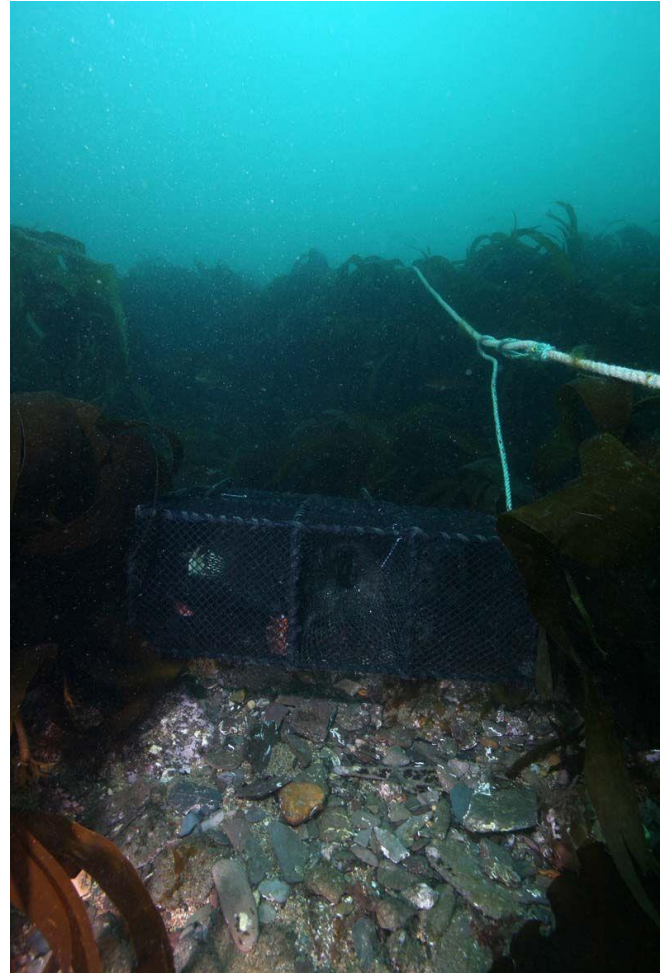
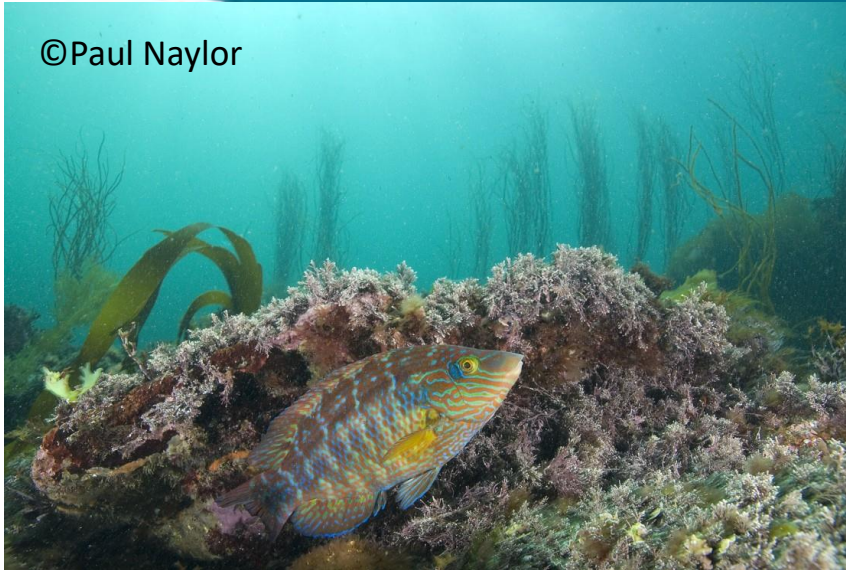


Photo: Keith Hiscock

Outcomes of research; continuation of management measures for the 2019 fishery

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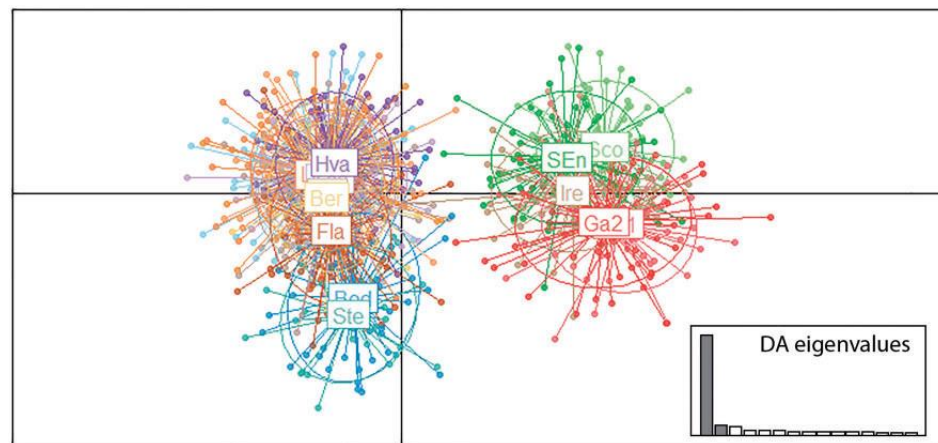
- Decline in LPUE/ CPUE not unexpected in a new fishery
- Need to be mindful of conservation designations and balance with other users such as anglers and divers
- Most heavily restricted and managed fishery in D&S IFCA District
- Byelaw and Permitting Subcommittee agreed to continue fishery with existing management measures for one more year, after which there will be comprehensive review



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Future wrasse research shopping list

- ✓ Fisheries independent survey data & time series
- ✓ Ecological effects of wrasse removal
- ✓ High resolution genetic population structure study UK south & SW coast
- ✓ Some sort of large tagging programme – mark-recapture and DST/ acoustic telemetry



Applying for a job in marine management

- Don't just tell us what you have done – explain how it relates to the job criteria
- Internships, volunteer work, part-time jobs particularly in UK
- Get as much statistics (in R) and GIS experience as possible – industries always want this
- Boat experience helpful
- Understand the legislation and a little bit about how fisheries management works
- Develop your critical thinking skills and try and understand marine management from the points of view of different stakeholders
- Get someone to re-read your application (please!)



**"The mouse chase story is great.
Tell me about your other work experiences."**

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**"My short-term goal is to bluff my way through
this job interview. My long-term goal is to invent
a time machine so I can come back and
change everything I've said so far."**

Thanks for listening..... Questions??

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