

Devon & Severn IFCA



Review of the Live Wrasse Fishery in D&S IFCA's District 2017–2020

February 2021

Lauren Henly
Environment Officer

Last year's report



Three Year Comprehensive Review of the Live
Wrasse Fishery in Devon and Severn IFCA's District



April 2020

Sarah Curtin
Environment Officer

Lauren Henly
PhD student,
University of Exeter

James Stewart
Senior Environment
Officer

Last year's report from D&S IFCA

Used 3 years of observer data

Evidence of a negative fishery effect for rock cook

Resulted in changes to the Potting Permit Byelaw
Prohibit removal of rock cook

Survey effort

Environment Officers continued observer surveys

Despite COVID-19 restrictions, completed surveys on 6.3% of total fishing trips

Fishers still submit catch returns, but the majority of the data analysis is based on data from observer surveys

These provide the species-specific data that are required for a robust assessment

A new and more robust statistical approach to analysis of CPUE and LPUE

Able to statistically control for variation in CPUE and LPUE that results from variation in environmental variables or fishing location

Based on methods from Henly *et al.* (in review)

Identified the main drivers of variation in CPUE and LPUE of the four target species of wrasse

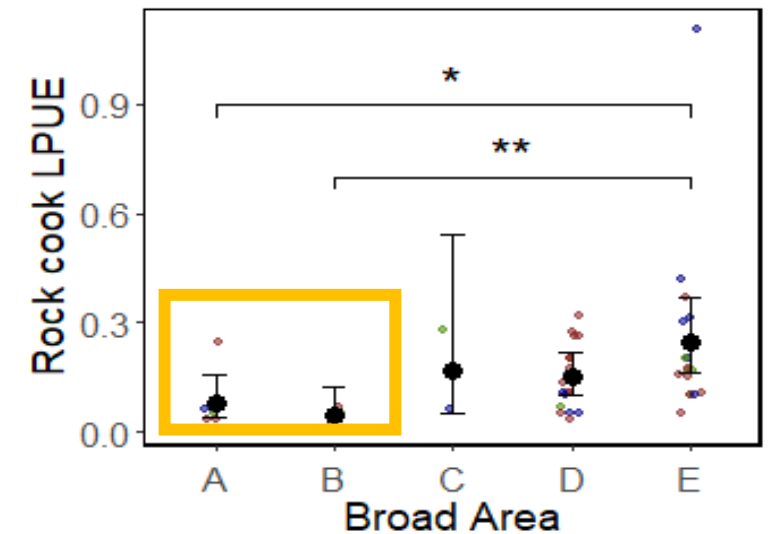
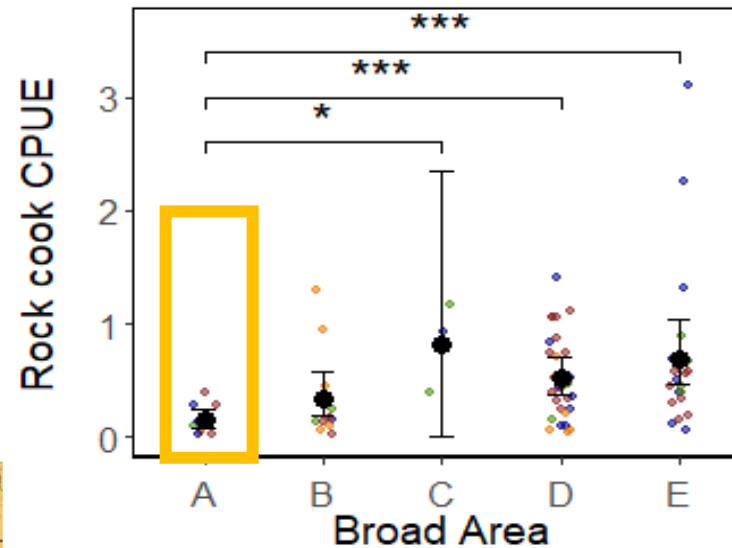
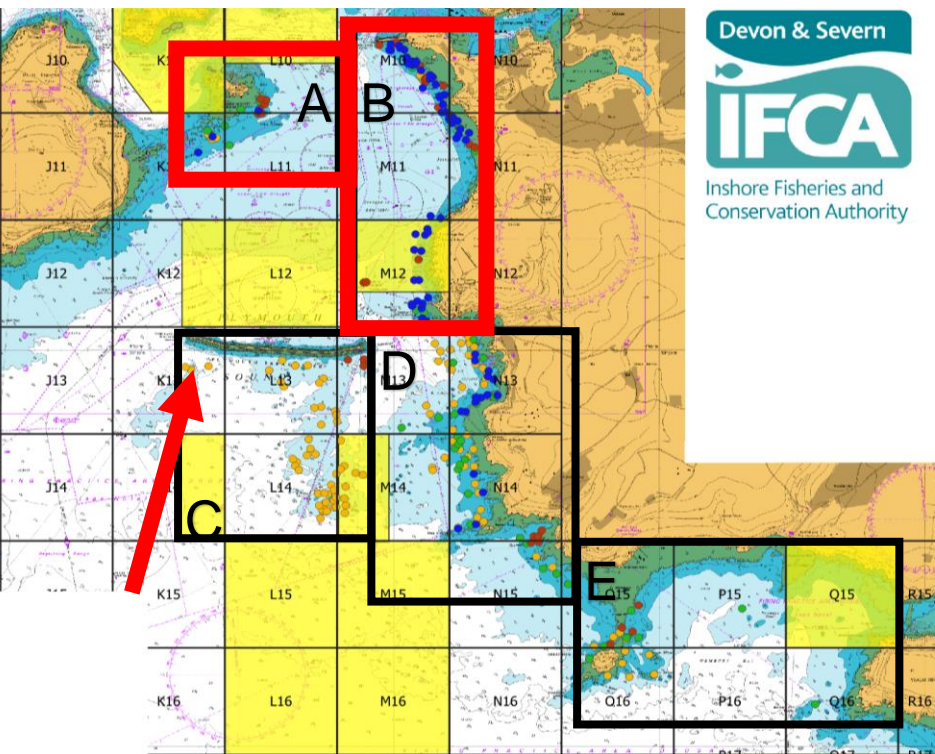
Main drivers of variation in CPUE and LPUE varied between species

Highlights the importance of species-specific data collection

If all species are combined, may miss important patterns in CPUE and LPUE of each species

Results – Rock cook

No evidence of a negative fishery effect



CPUE and LPUE vary with fishing location and are significantly lower in more sheltered areas

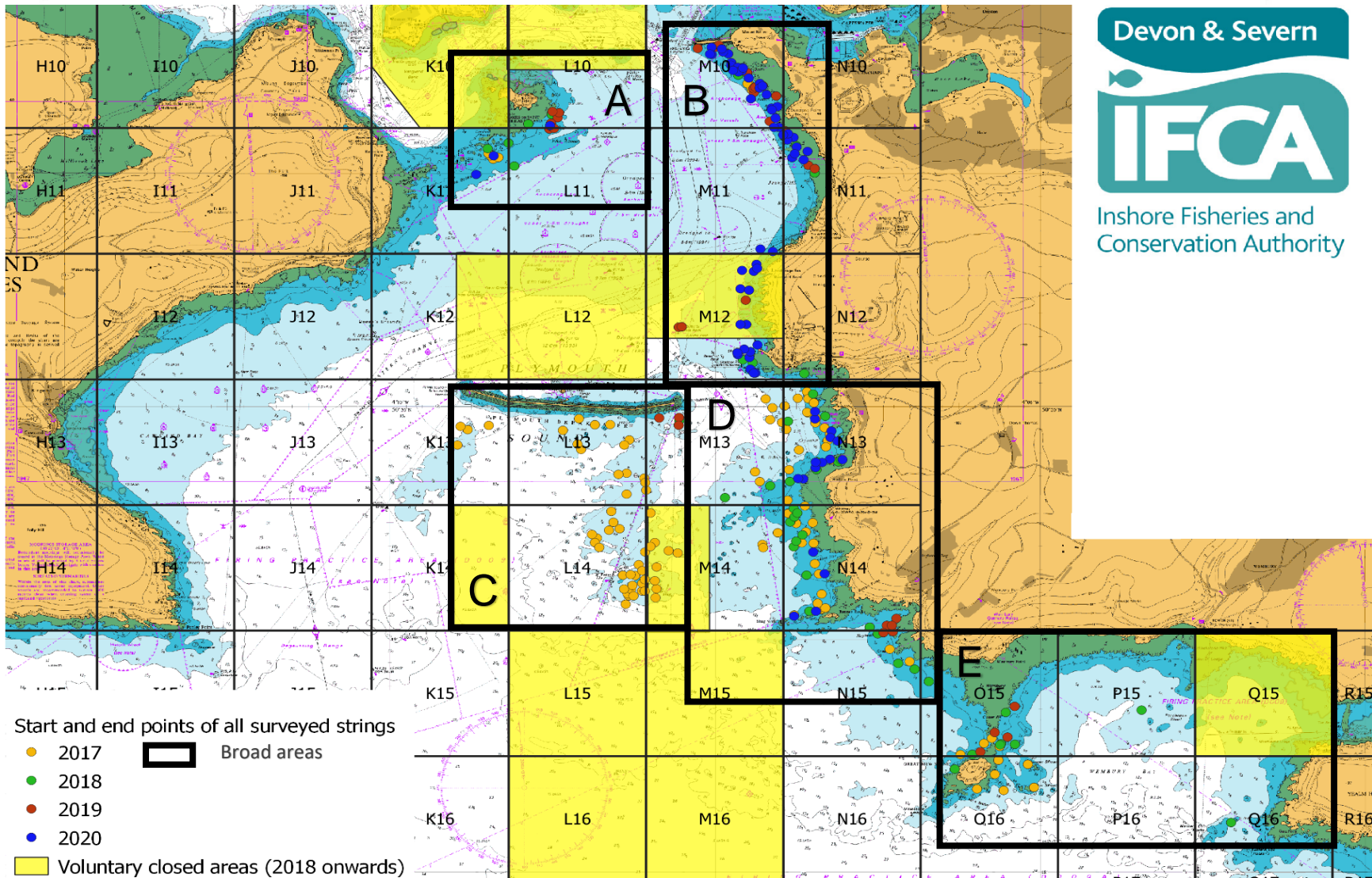
Agrees with Skiftesvik et al. (2014) - Lower abundance in more sheltered locations

Results – Rock cook – What's different?



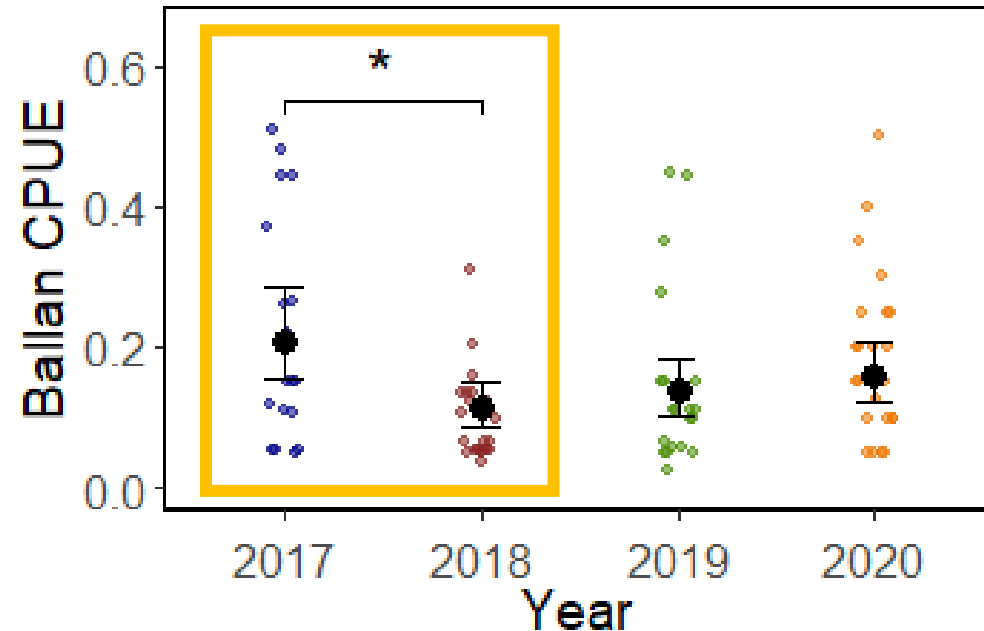
Survey effort was uneven across years between exposed and sheltered locations

- Considerably more strings in exposed areas 2017/18 and more in sheltered areas in 2019/20
- By accounting for fishing location we reduce the risk of identifying a false year effect
 - uneven survey effort and
 - environmental preferences
- Evidence supports a lifting of the prohibition on removal of rock cook from the fishery

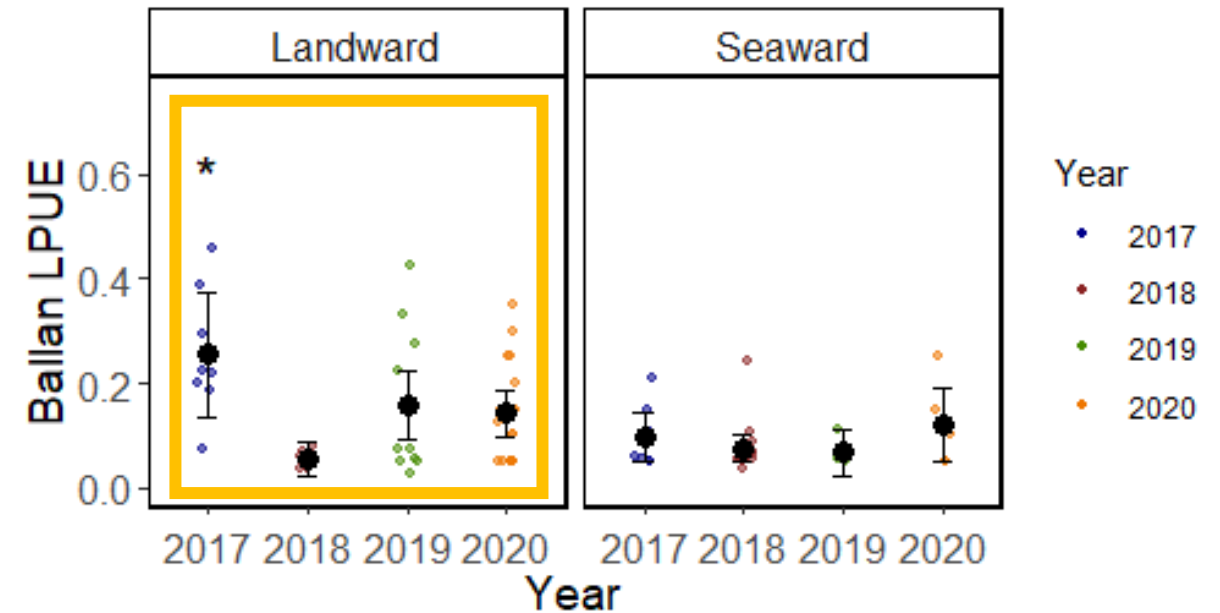


Results – Ballan wrasse

Evidence of a decline in ballan wrasse CPUE and LPUE



Significant decrease in CPUE between 2017–18



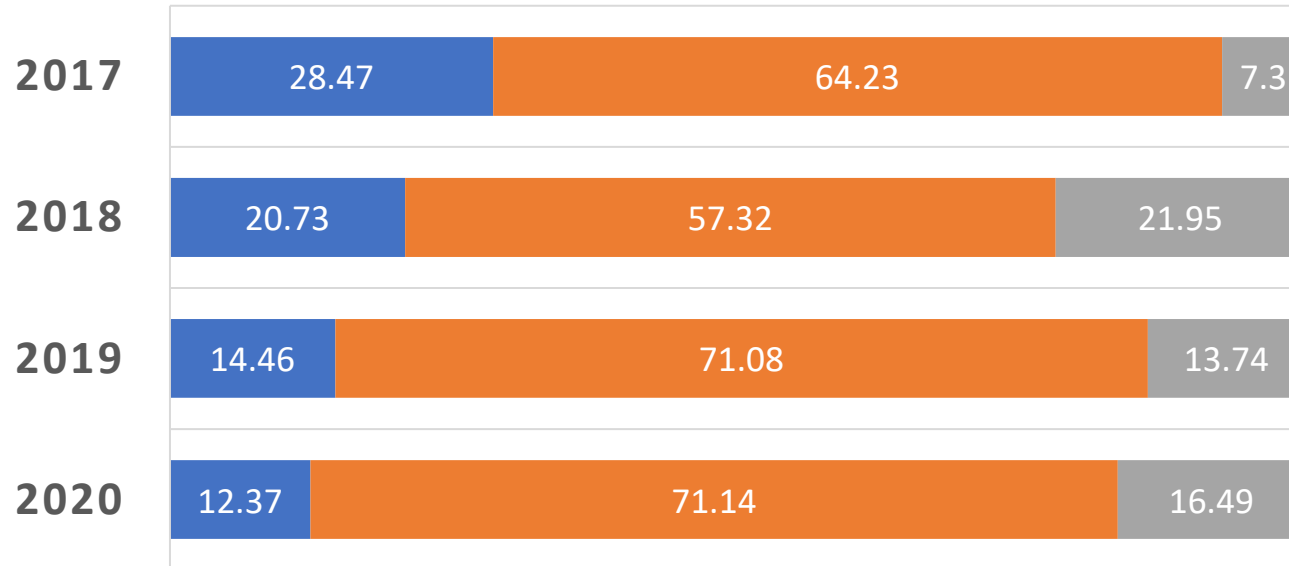
LPUE has only decreased landward of the breakwater

Suggests the decrease in CPUE is driven by a decrease in IN SIZE ballan on the landward size of the breakwater

Results – Ballan wrasse

SIZE DISTRIBUTION

■ % Below ■ % Within ■ % Above



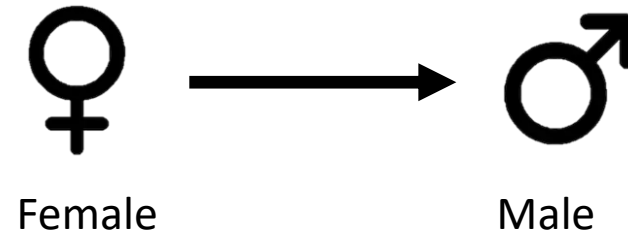
CRS limits currently 15–23 cm

Proportion of total catch within CRS range (retention rate)

Always over 50% of total catch landed
Increased over the 2017–2020 period

High retention rate combined with life history and behavioural traits are likely drivers of the negative fishery effect

Protogynous hermaphrodites



- Need to protect some larger mature females and smaller mature males
- Length at sexual inversion and sexual maturity??
- Varies across the species distribution
- **AND** is driven by social cues (absence of males)

Discussion— Ballan wrasse

The current CRS range for ballan (15–23 cm) likely targets a large proportion of the mature females.

A revised CRS range of 18–22 cm was suggested to improve the sustainability of the ballan populations by increasing the proportion of mature females that are returned to the sea and can subsequently reproduce.

Discussion— Ballan wrasse

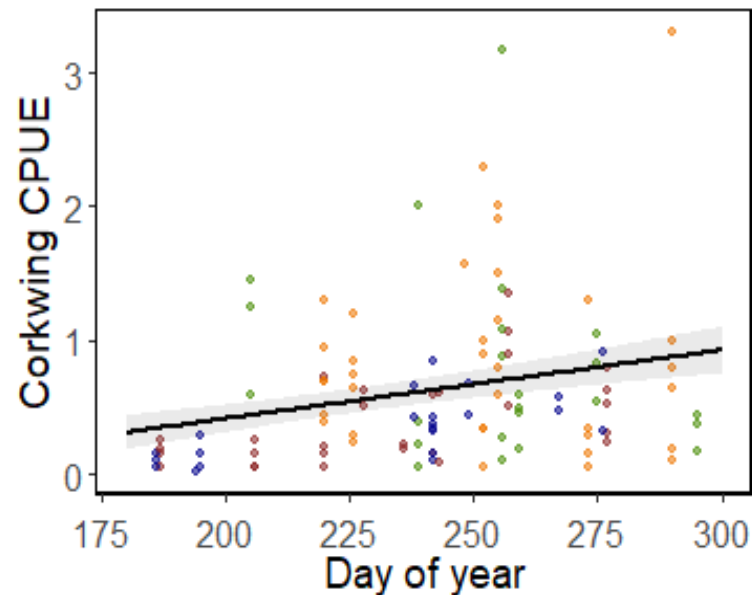
The current CRS range for ballan (15–23 cm) likely targets a large proportion of the mature females.

A revised CRS range of 18–22 cm was suggested to improve the sustainability of the ballan populations by increasing the proportion of mature females that are returned to the sea and can subsequently reproduce.

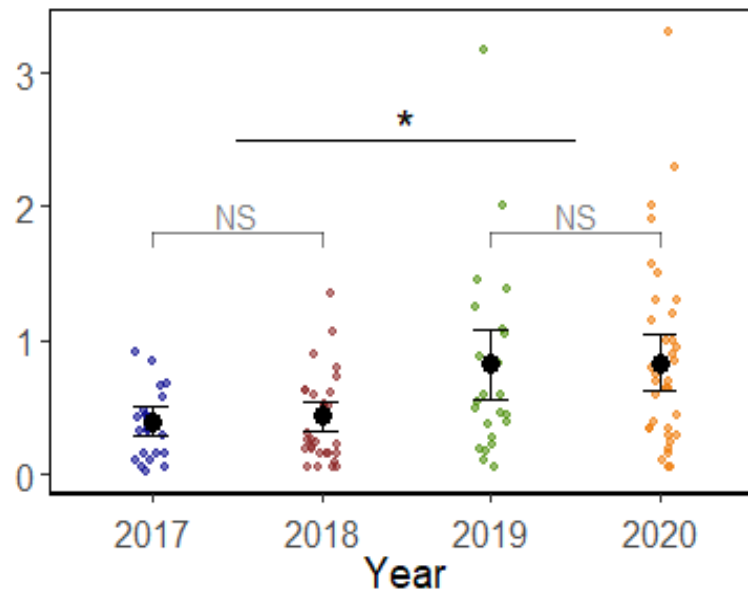
A revised recommendation of 18–26 cm is being proposed today, which similarly shifts effort from mature females while maintaining the social and economic benefits of the fishery.

Results – Corkwing wrasse

Evidence of seasonal variation and an increase in corkwing CPUE



Corkwing CPUE and LPUE increased from July – October



CPUE has increased significantly in 2019 and 2020 compared to 2017 and 2018

Seasonal variation may reflect spawning season and activity levels

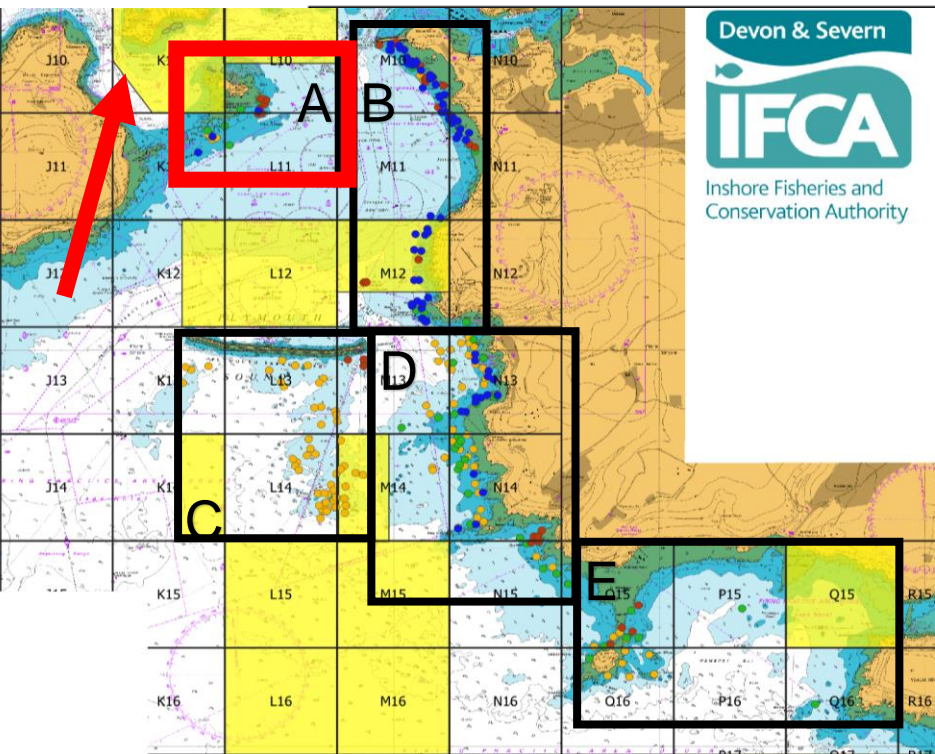
Increased despite high retention rate (85–94%) before the CRS change in 2018

Min CRS of 14 cm (previously 12 cm) likely to be above suggested length at maturity

Change in CRS range likely protected larger, more fecund individuals of both sexes, aiding recruitment

Results – Goldsinny wrasse

Agrees with evidence in the literature



Returns forms vs observer surveys

Robust assessments of this fishery require **species-level** estimates of CPUE and LPUE from known locations, as provided by observer surveys

Assessments of the fishery are not improved by fishers' returns forms

Returns forms can aid D&S IFCA's understanding of the spatial distribution of fishing effort in each year

This information could also be gained through informal talks with fishers

Recommend that the requirement to submit returns forms is removed and focus on observer surveys

Enhanced survey effort should ideally be **distributed evenly across time and locations.**

Summary & recommendations

1. Evidence supports a lifting of the prohibition on removal of rock cook from the fishery
2. Ballan wrasse populations may be better supported by a change to the Conservation Reference Size limits for this species.
3. Robust assessments of this fishery require species-level estimates of CPUE and LPUE from known locations, as provided by observer surveys, but are not improved by fishers' returns forms.
4. Enhanced survey effort should ideally be distributed evenly across time and locations.

Summary & recommendations

1. Continue to manage the fishery as outlined in the D&S IFCA's Policy Statement and Potting Permit Conditions for the Live Wrasse Fishery (24th June 2020), except in the case of rock cook (2, below) and ballan wrasse (3, below), and except with regards to fishers returns forms (4, below).
2. Lift the prohibition on removal of rock cook from the fishery and reintroduce previous conservation reference size (CRS) limits of 12-23cm.
3. Change the ballan wrasse CRS range from 15–23 cm to 18–26 cm.
4. Remove the requirement for wrasse fishers to submit returns forms.

Devon & Severn IFCA

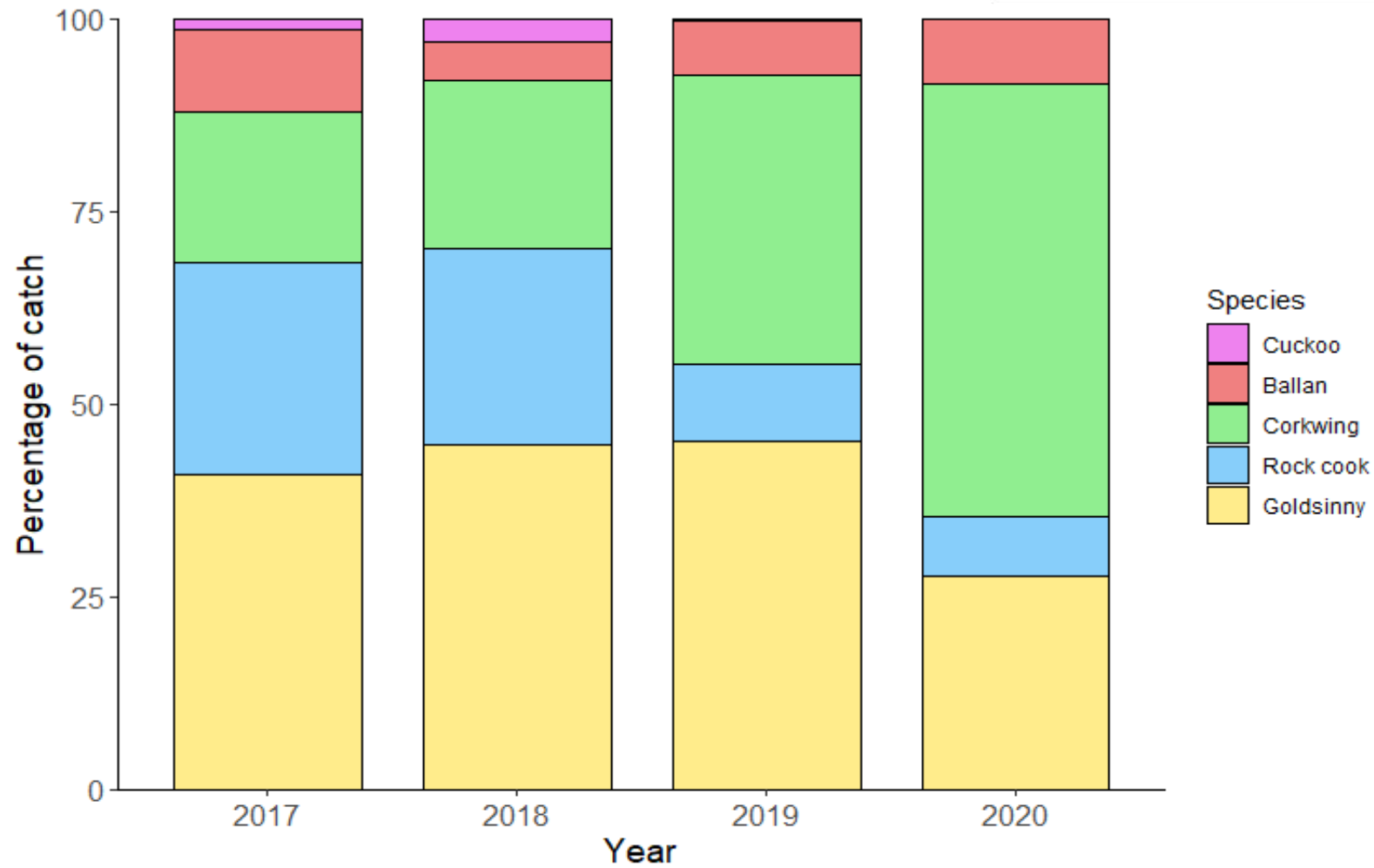


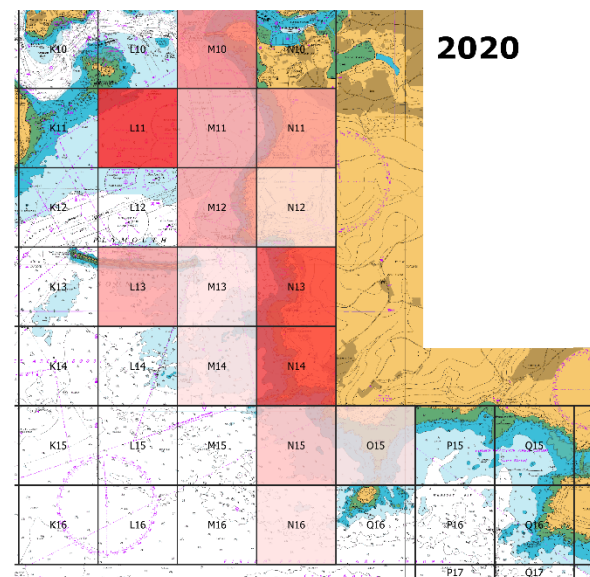
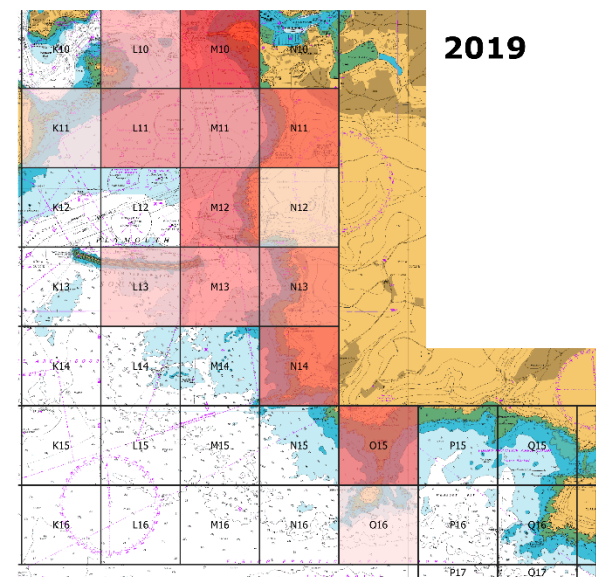
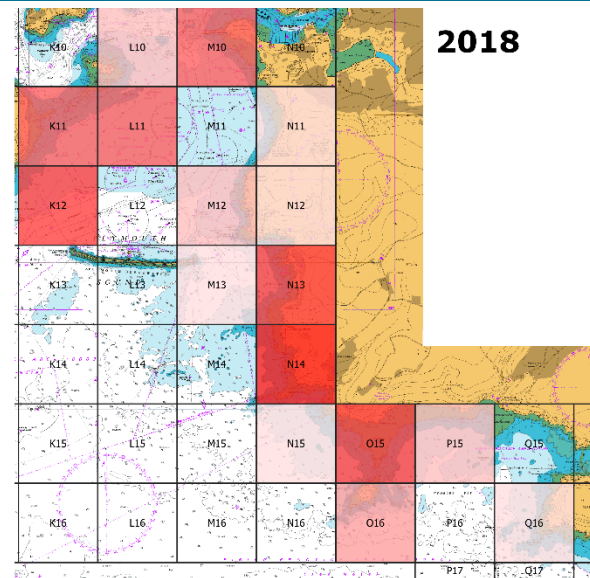
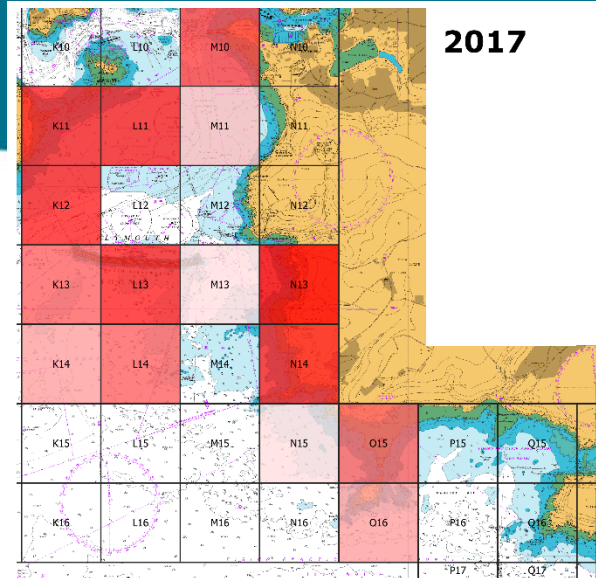
Review of the Live Wrasse Fishery in D&S IFCA's District 2017–2020

February 2021

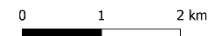
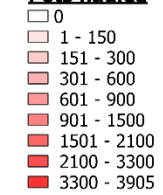
Lauren Henly
Environment Officer

Catch composition

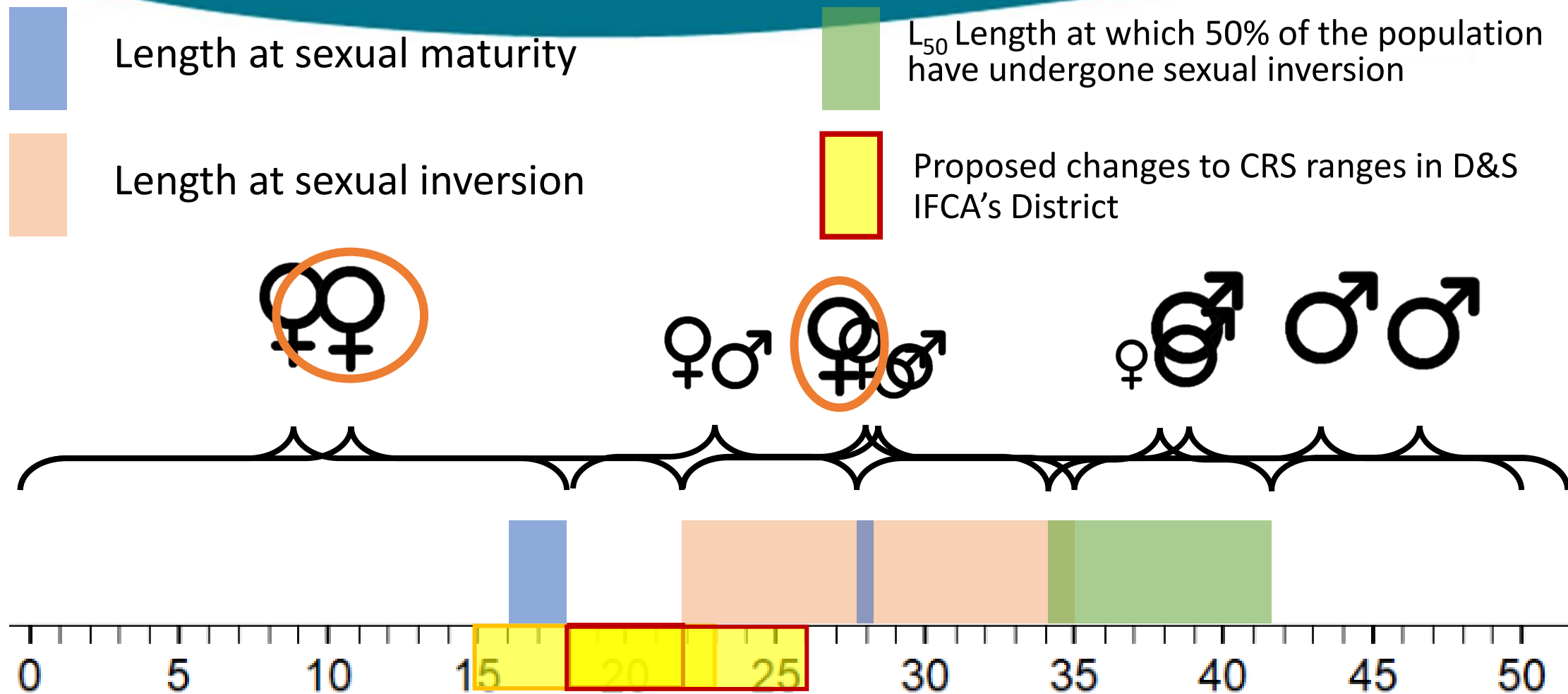




Pots hauled



Measures to consider – Ballan wrasse



No negative fishery effect

Corkwing CPUE increased significantly

Interesting ecological patterns, which agreed with previous evidence in the literature