# The Ecology and Distribution of Seabass in the Southwest UK

D&S IFCA quarterly meeting

# The Ecology and Distribution of Seabass in the Southwest UK

| Supervisory Team | |
|---|---|
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Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

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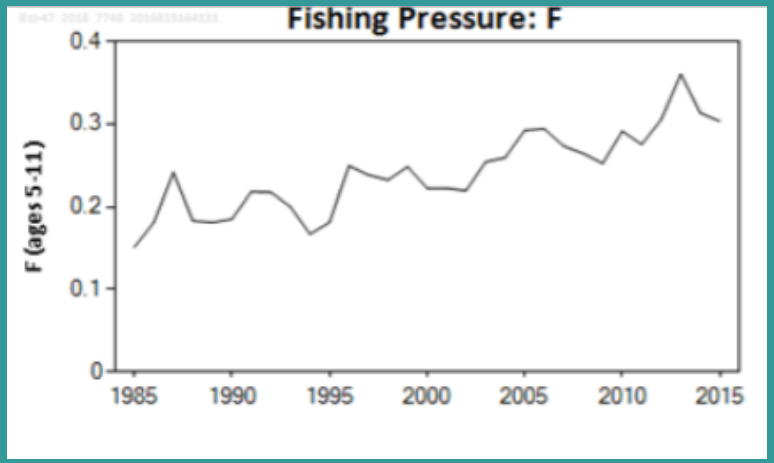
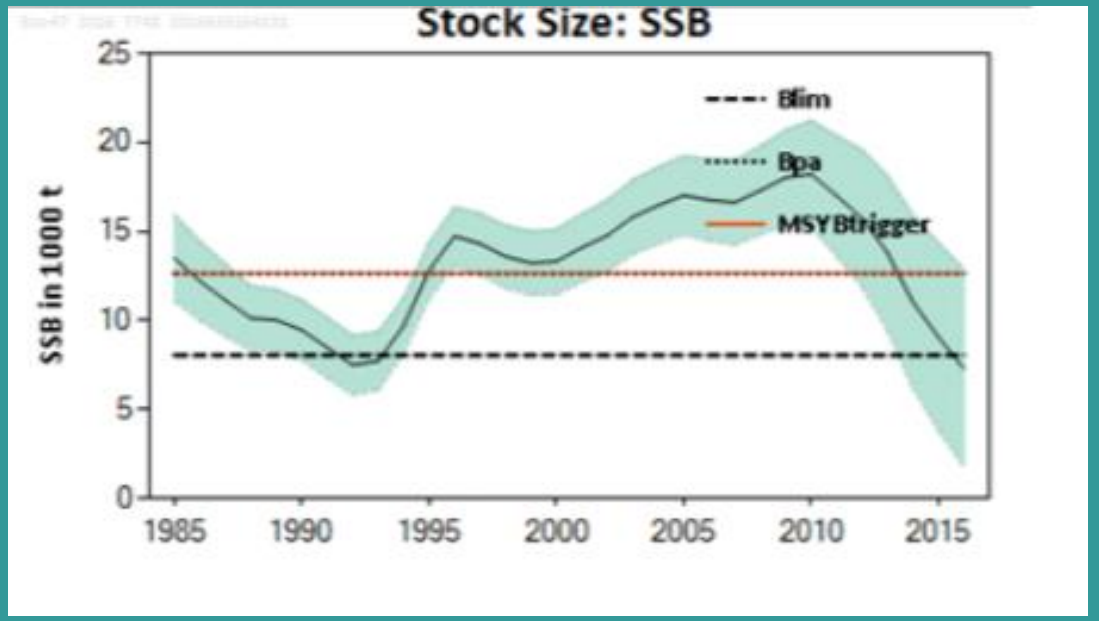
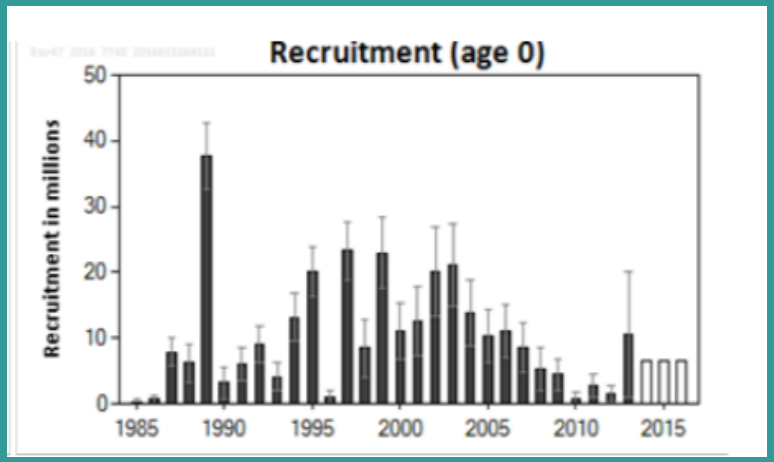
# PhD Context

# Stock Status

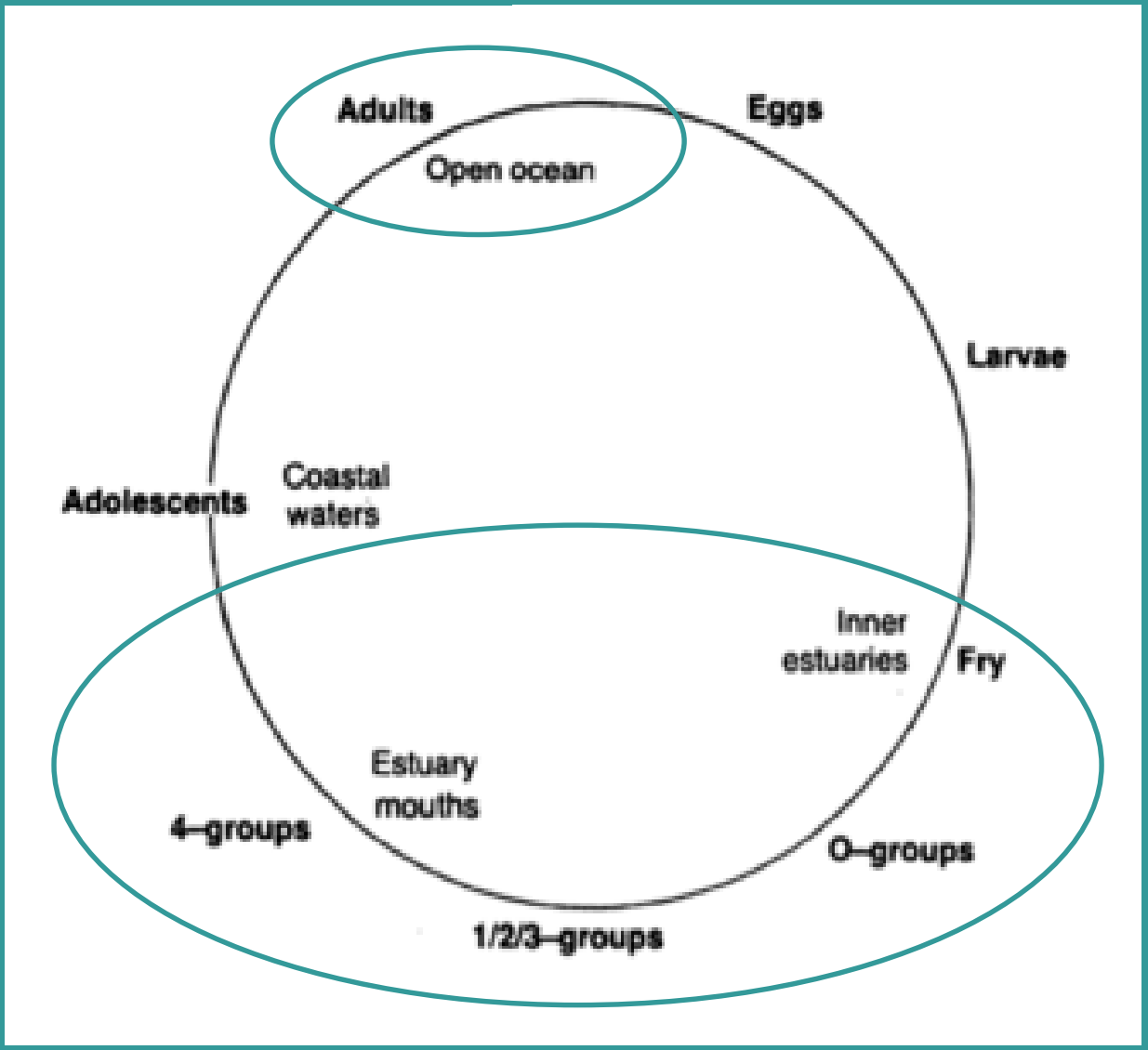



With 0 commercial catch in 2017, the North Atlantic stock is predicted to remain below ***"Blim"*** in 2018 (ICES, 2016)

# Dependence on estuaries



# Regional management


## Estuaries:

- Highly important ecosystem for European Seabass
  - Nursery ground
  - Feeding opportunities

Review:

- Existing management of European Seabass within and adjacent to estuaries
- Identify specific habitats or “features” important for seabass

# Managed Re-alignment fish survey

- 85% of UK estuaries adapted by land reclamation
- 25-80% loss in intertidal habitat
- Estuaries in “Bad and deteriorating” Conservation Status – EC habitats directive
- Saltmarsh in “unfavourable status” – EC habitats directive

# Steart Marsh, Severn Estuary


# Overall Question:

- Do Managed Re-alignment schemes provide equivalent habitat to natural saltmarsh
- Testing for differences between:
  - Fish community
  - Diet & feeding success


# Survey Plan:

- 3 Managed Re-alignment schemes plus natural saltmarsh

# Managed Re-alignment Fish Survey


a – Fyke net


a – Fyke net


b – Seine net

## Method:

- Deploy fyke (a) and seine (b) nets in Managed Re-alignment and adjacent natural saltmarsh

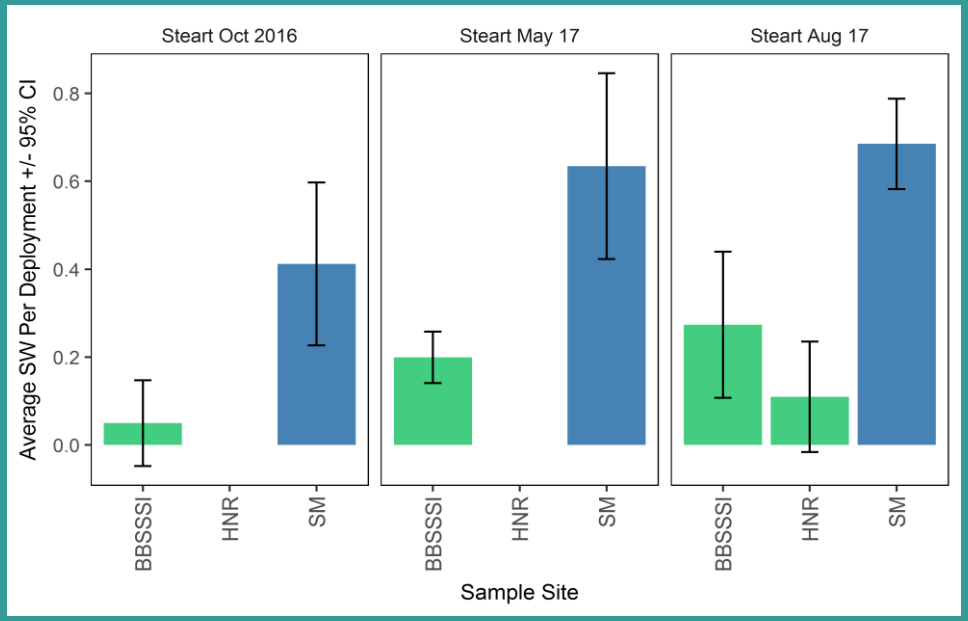
# Managed Re-alignment Fish Survey





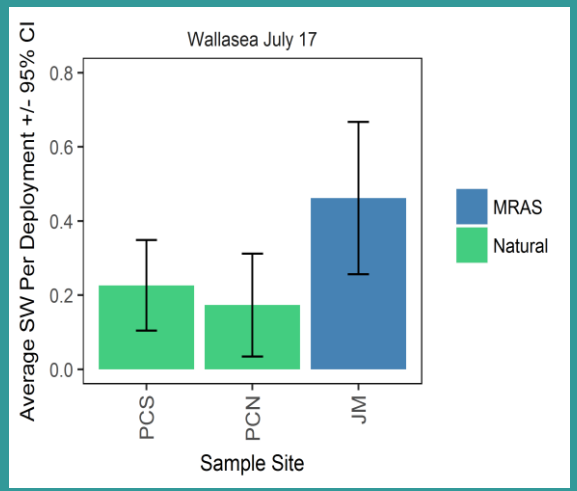

Pictures taken at **Steart Marsh, Severn Estuary**

- Five surveys completed
- 16 species - nine of **commercial interest:**
  - Seabass;
  - Herring;
  - Flounder;
  - Plaice;
  - Sprat
  - Whiting
  - Mullet (3 species)
- European Eel of **Conservation interest**



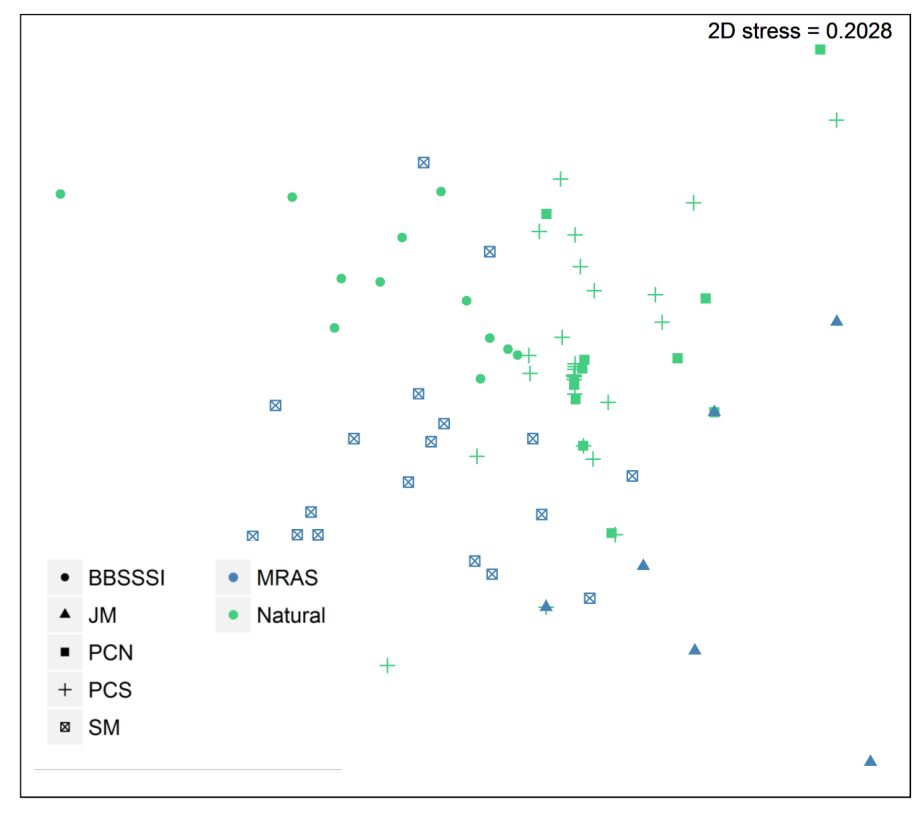

# Fish Community

- Different fish community captured within Managed Re-alignment than in natural saltmarsh




- Average diversity higher within Managed Re-alignment Schemes than natural saltmarsh

# Diet: 0+ Seabass

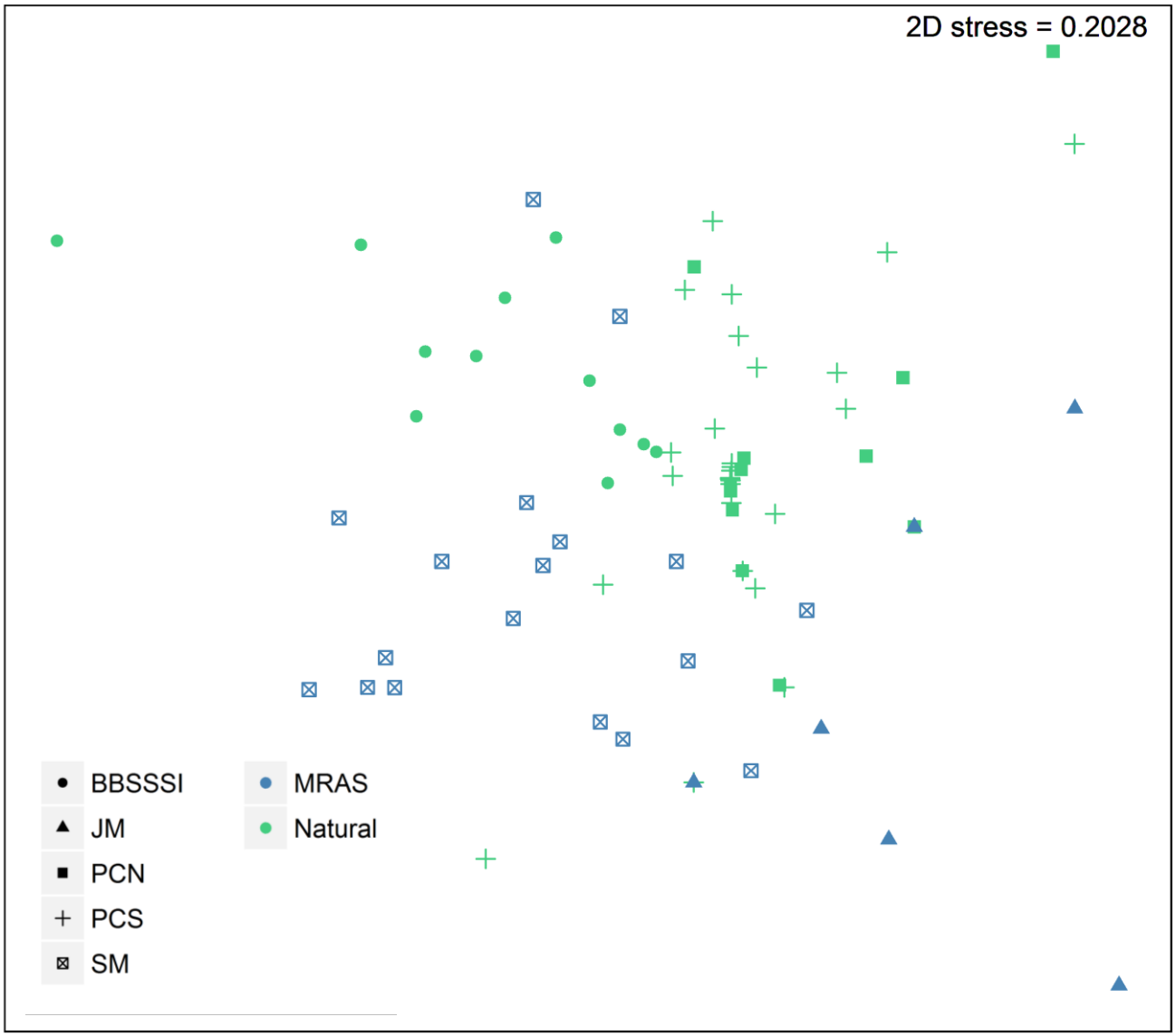



- MDS plot suggests some grouping of 0+ European Bass diet
- 1+ Seabass, TLM and Gobies captured however not analysed to date

**Sample Size - * sample site removed**

| Survey | Sample Site | Treatment | n |
|---|---|---|---|
| Steart Marsh | BBSSSI | Natural | 12 |
| | HNR* | Natural | 1 |
| | SM | MRAS | 18 |
| | JM | MRAS | 8 |
| Wallasea Island | PCN | Natural | 13 |
| | PCS | Natural | 27 |

Managed
Re-alignment Fish Survey

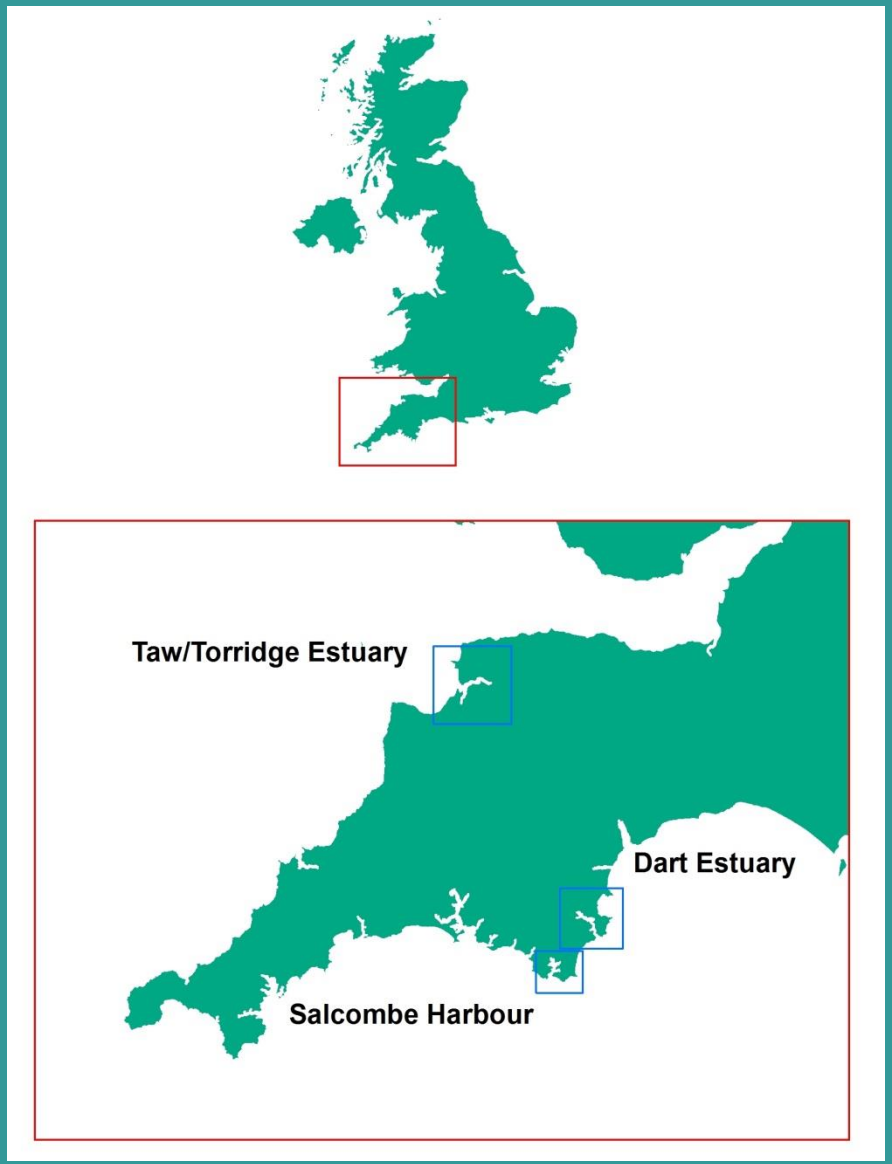


# Summary

- MRAS do provide habitat for fish:
  - High fish diversity
- Habitat not currently equivalent to natural saltmarsh:
  - Different diet
- Continue monitoring

# Tracking bass within and adjacent to Estuaries

- Assess the effectiveness of designated Bass Nursery Areas
- Monitor movement with other fish species




# IBASS - Immature Bass Acoustic Stock Surveillance

- EMFF funding - **£249,000.00**
- Track juvenile European seabass movement through acoustic telemetry
  - 84 Receivers
  - 150 transmitter tags

EMFF OPERATIONAL PROGRAMME 2014-2020

European Union
European Maritime and Fisheries Fund



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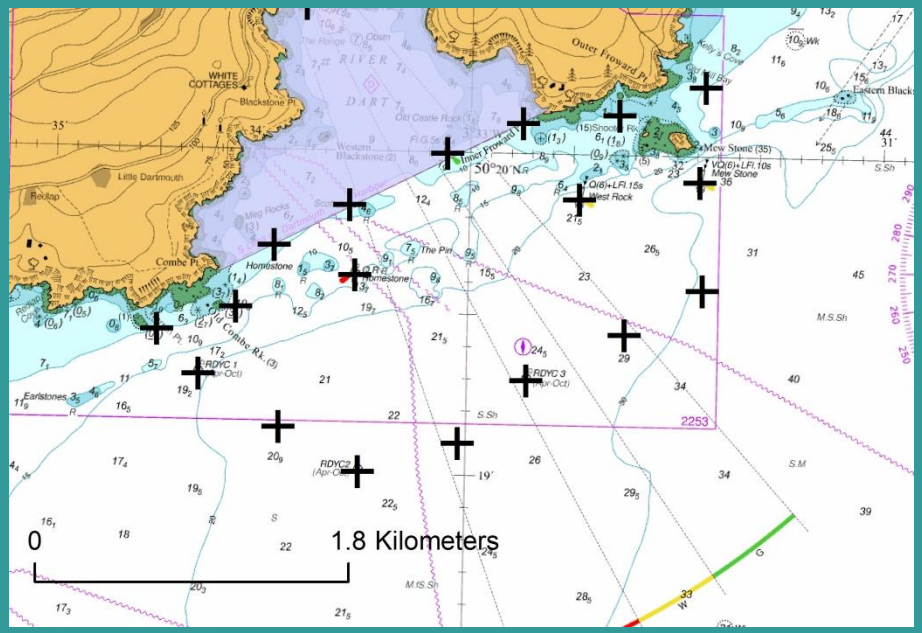
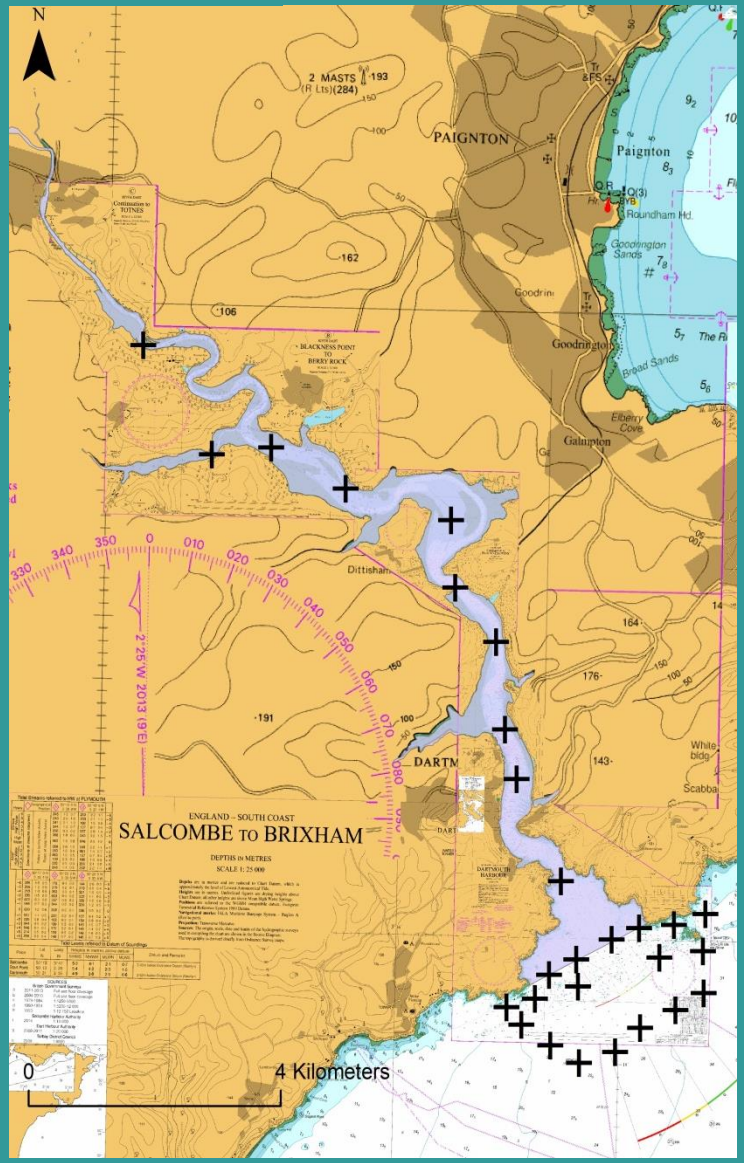
# IBASS - Immature Bass Acoustic Stock Surveillance




## Aim – Monitor movement **across** BNA boundary:

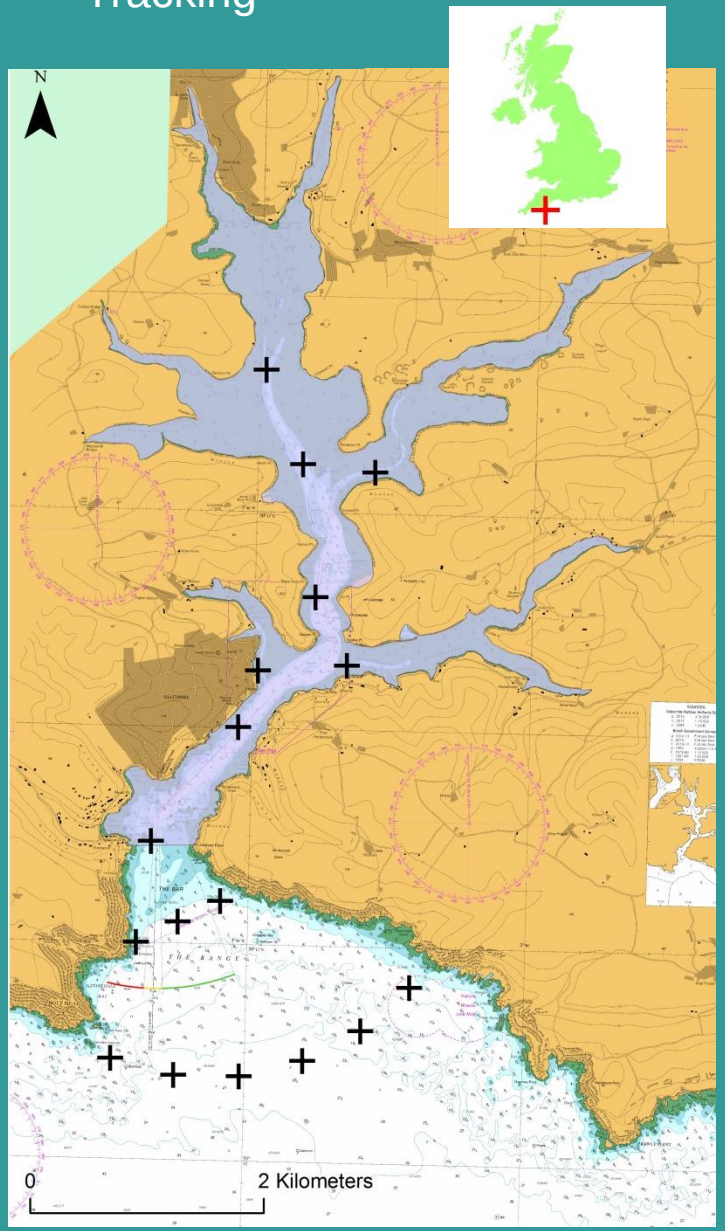
1) Identify the frequency of movement outside BNA boundary
2) Help inform BNA demarcation or netting practices in close proximity




# IBASS - Immature Bass Acoustic Stock Surveillance

## Aim - Monitor movement patterns **within** BNA:

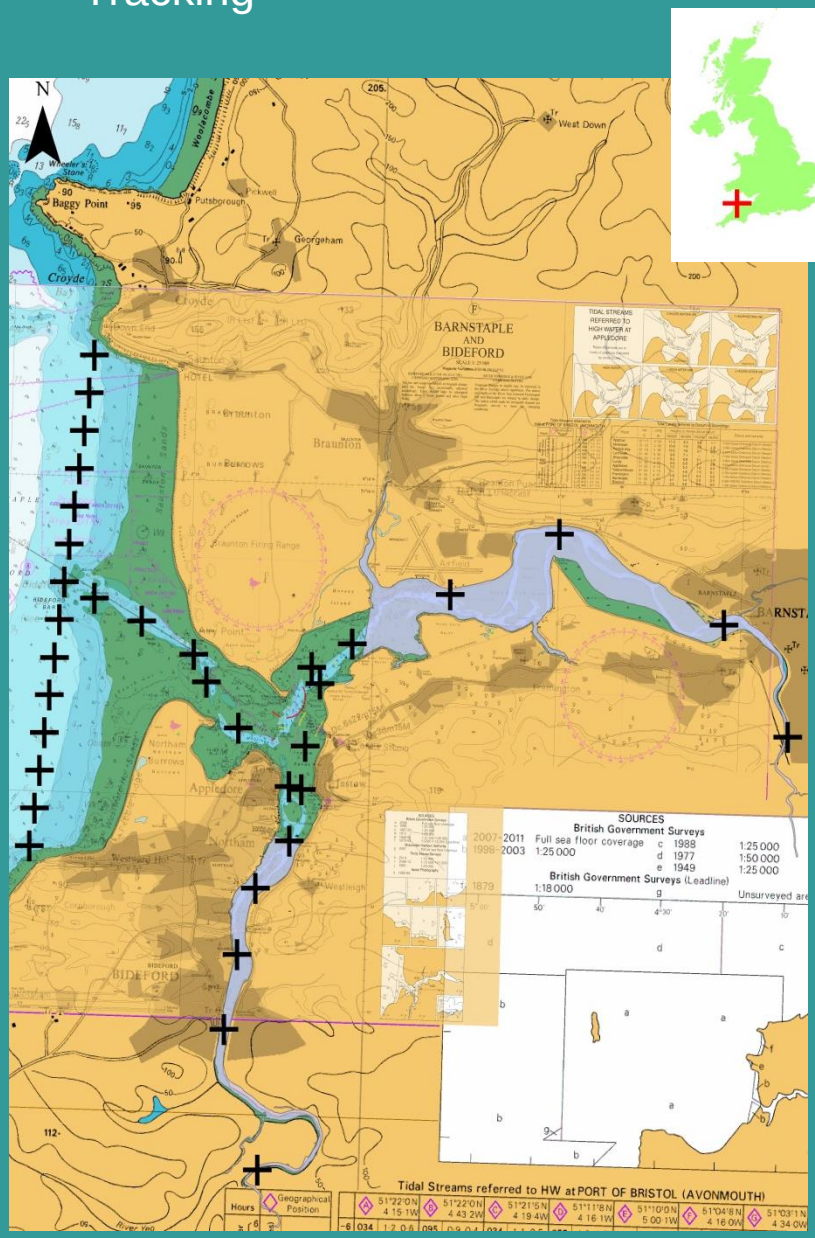
1) Track overall movement
2) Correlate movement to environmental variables
3) Identify broad areas of interest for “active tracking” surveys




# Assessing competitive interactions between European Seabass and Gilthead Seabream

- Salcombe Harbour – Ria system
  - 50 European seabass,
  - 25 Gilthead seabream

- Gilthead seabream (*Sparus aurata*)
  - "Recent" colonisation of the south UK
  - High commercial value
  - Exploit similar habitats to European seabass






# Assessing spatial overlap between commercial target and non target fish species

- Taw/Torridge and Dart estuaries
  - 2 Estuaries
  - 100 European Seabass
  - 40 Sea trout (Salmo trutta)
- Sea trout;
  - Very little information on estuarine movement,
  - Potential by-catch species with high recreational value

Environment Agency



EMFF OPERATIONAL PROGRAMME 2014-2020
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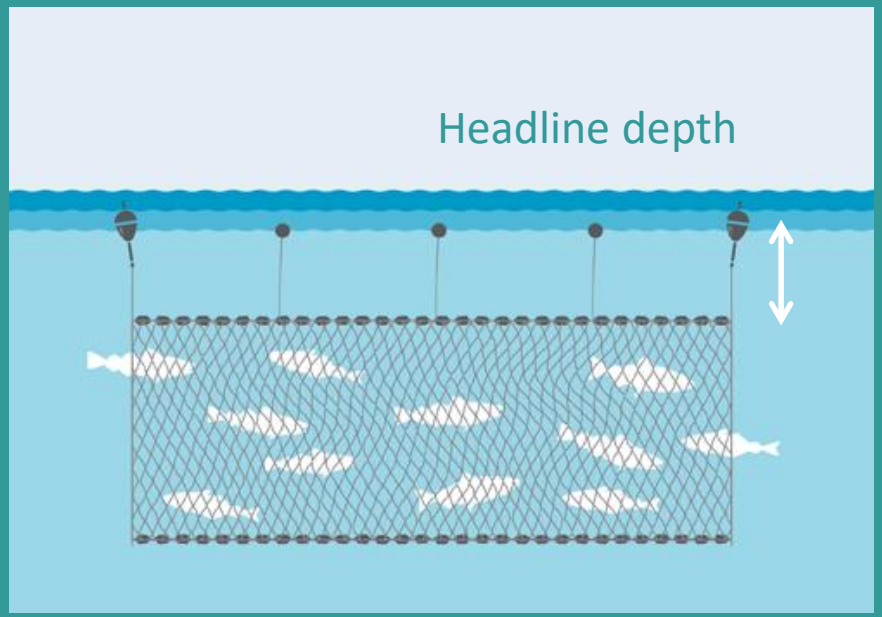
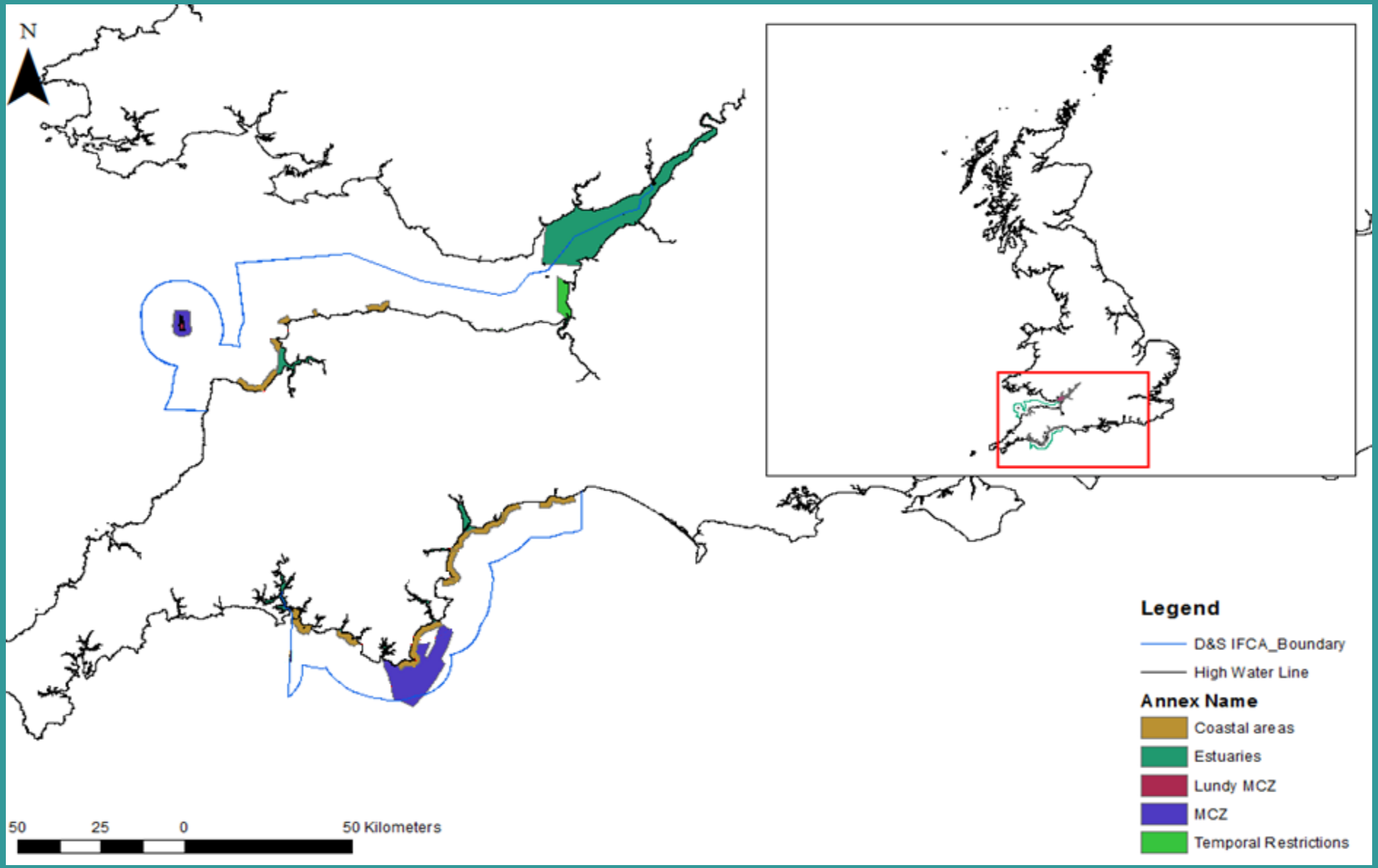
# Static netting review




| Headline depth | Reason |
|---|---|
| 0m | Control |
| 3m | Current headline depth |
| 5m | Experimental headline depth |

- D&S IFCA netting permit bylaw
- Fixed net headline depth of 3m within “coastal areas”
- Migratory salmonids associated to shallow (0-5m) water depth (Summer, 2015)
- EA suggested headline depth of 5m
- Limited supporting evidence and could reduce catch from net fisheries

# Static netting review



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# Fin . . . .

Comments and suggestions welcome!!

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