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State of Fish Stocks in NE Atlantic, North Sea and Baltic Sea

By
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Seminar "State of Fish Stocks in European Waters",
Brussels, July 14, 2015)

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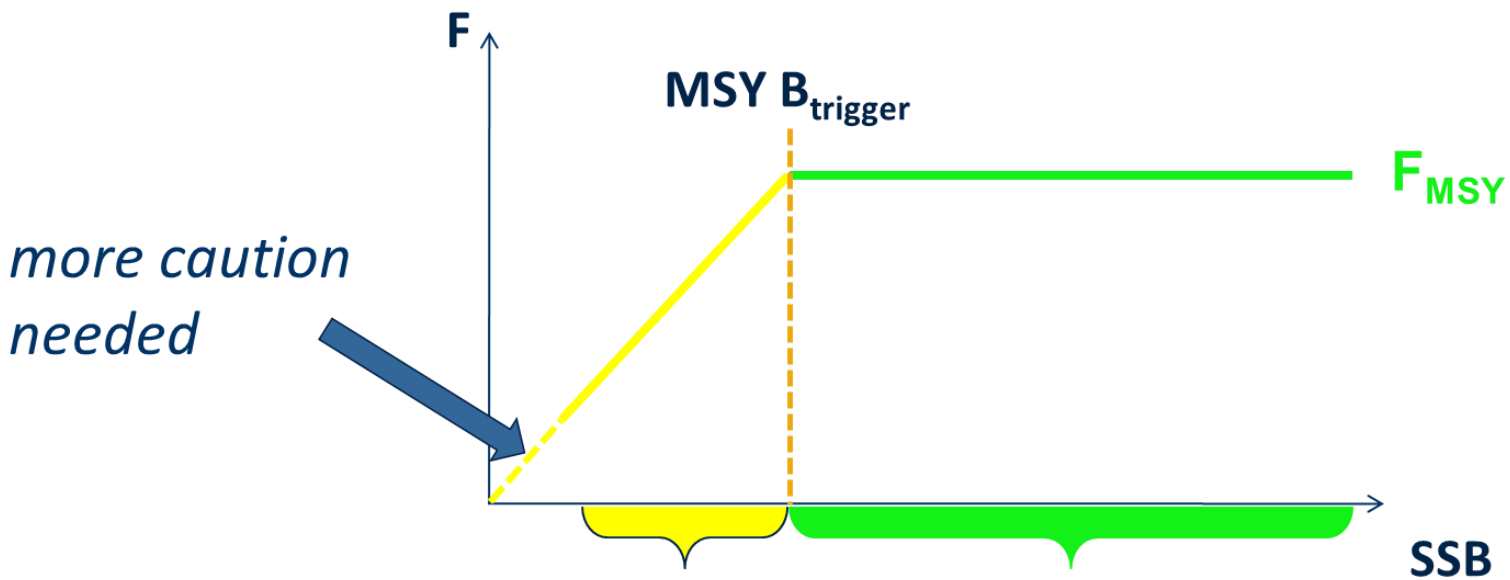
Stock Categories

1	Stocks with an accepted analytical assessment and forecast for MSY	MSY approach
2	Stocks with an analytical assessment and forecast accepted for trends only	MSY approach
3	Stocks with survey-based assessments indicating trends	Precautionary approach MSY approach being developed
4	Stocks with reliable time-series of catch data to approximate MSY	Precautionary approach MSY approach being developed
5	Only catch or landings available	Precautionary approach
6	Only landings available and largely discarded	Precautionary approach

- Each category has several available methods dependent on stock status.

ICES MSY advise rule (Category 1 and 2 stocks)

ICES bases its MSY approach on attaining a fishing mortality rate at or below F_{MSY}. In this approach, both fishing mortality and biomass reference points are used; these reference points are F_{MSY} and $B_{MSY\text{-}trigger}$. $B_{MSY\text{-}trigger}$ is a biomass reference point that triggers a cautious response. ICES approach does not include a MSY biomass target (B_{MSY}).



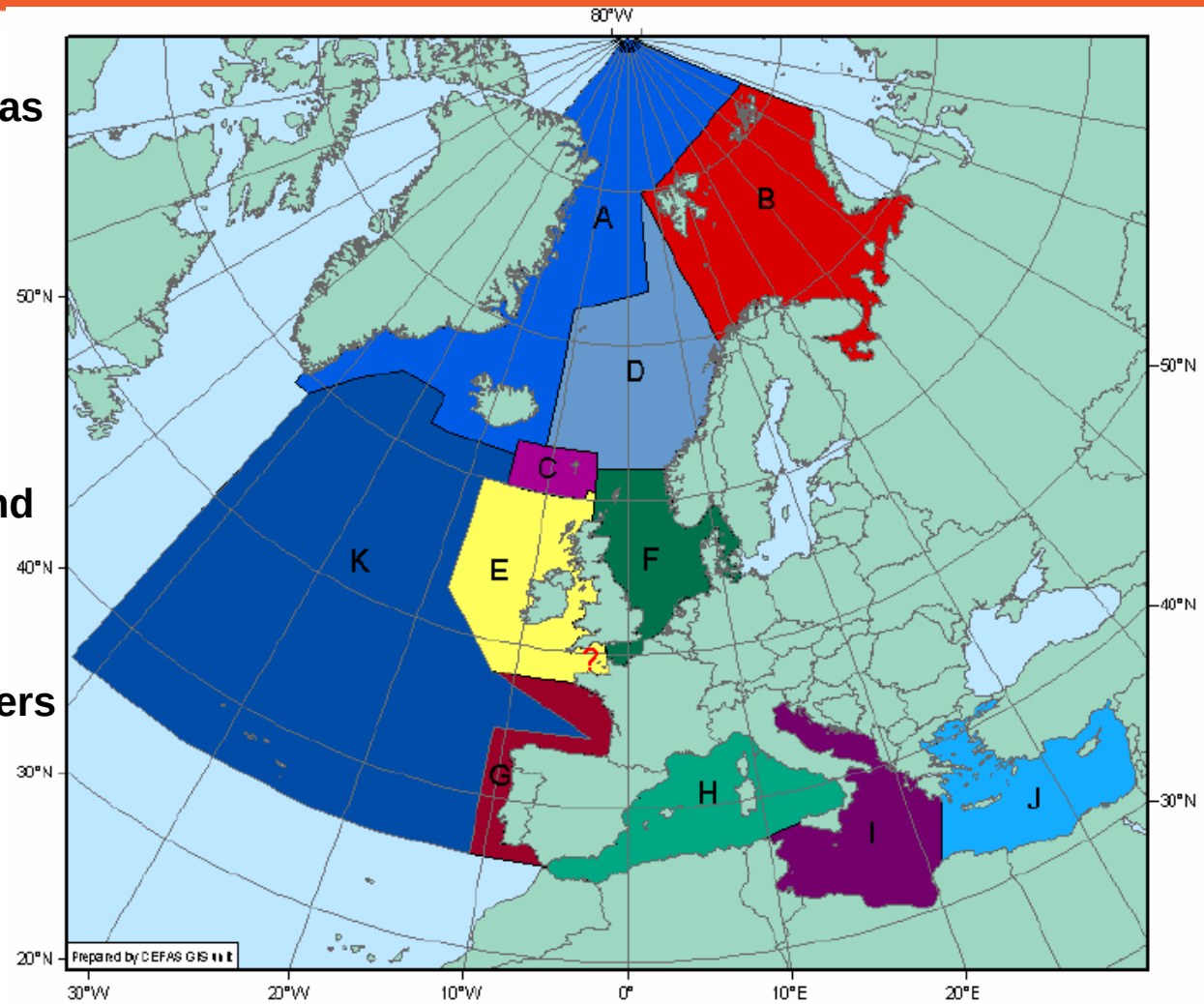
Stock status

Stock size relative to $B_{MSY\text{-}trigger}$

Fishing mortality relative to F_{MSY}

ECOREGIONS

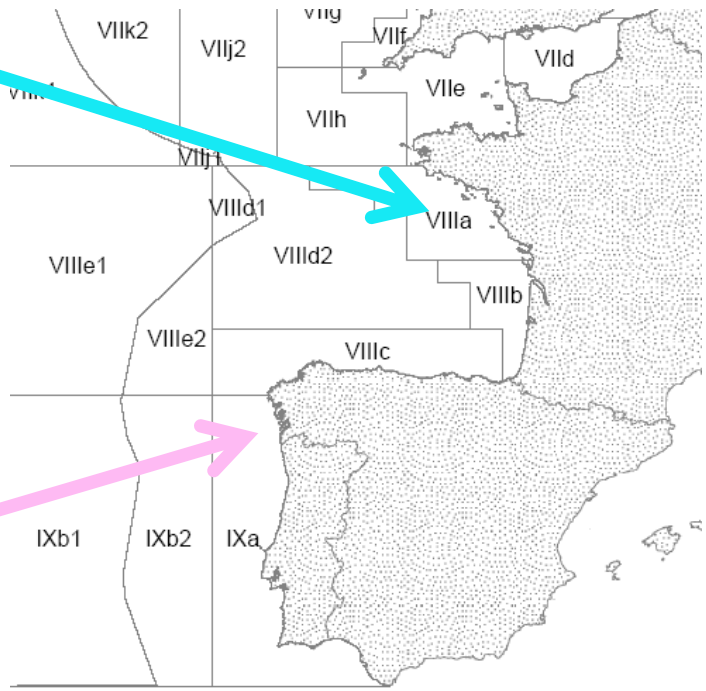
- Iceland and East Greenland Seas
- Barents Sea
- Faroe Plateau Ecosystem
- Norwegian Sea
- Celtic Sea and West of Scotland
- North Sea
- Bay of Biscay and Iberian Waters
- Baltic Sea
- Oceanic northeast Atlantic



Bay of Biscay & Iberia ecoregion

BAY OF BISCAY:

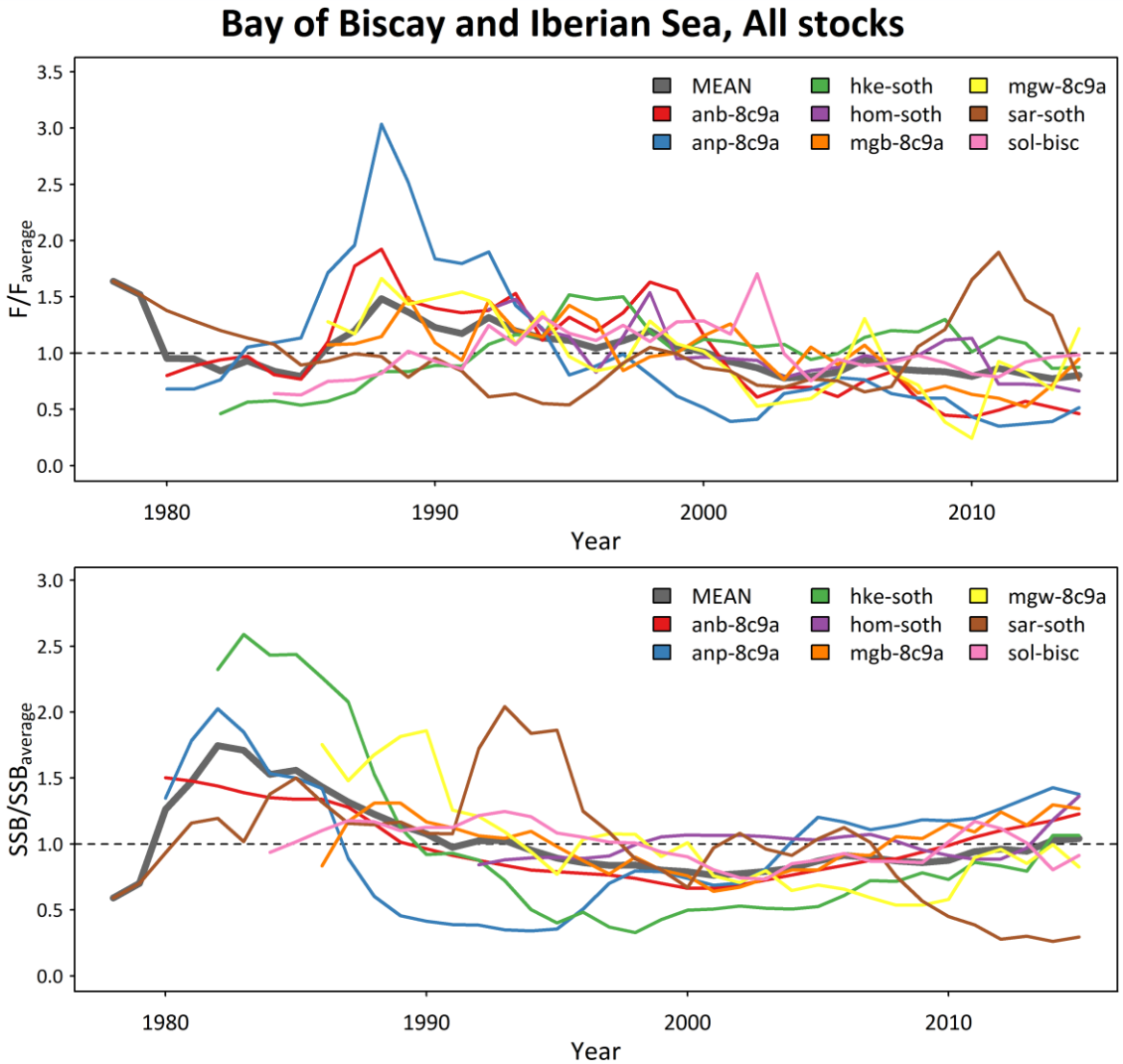
- **Sole**



IBERIA (VIIIc, IXa):

- **Hake**
- **Anglerfish (*pisc.*)**
- **Anglerfish (*budeg.*)**
- **Megrim (*whiff.*)**
- **Megrim (*bosc.*)**
- **Sardine**

- Hake, Southern
- Anglerfish (*pisc.*)
- Anglerfish (*budeg.*)
- Megrim (*whiff.*)
- Megrim (*bosc.*)
- Sole Bay of Biscay
- Sardine, Cantabrian Sea, Atlantic Iberian Waters

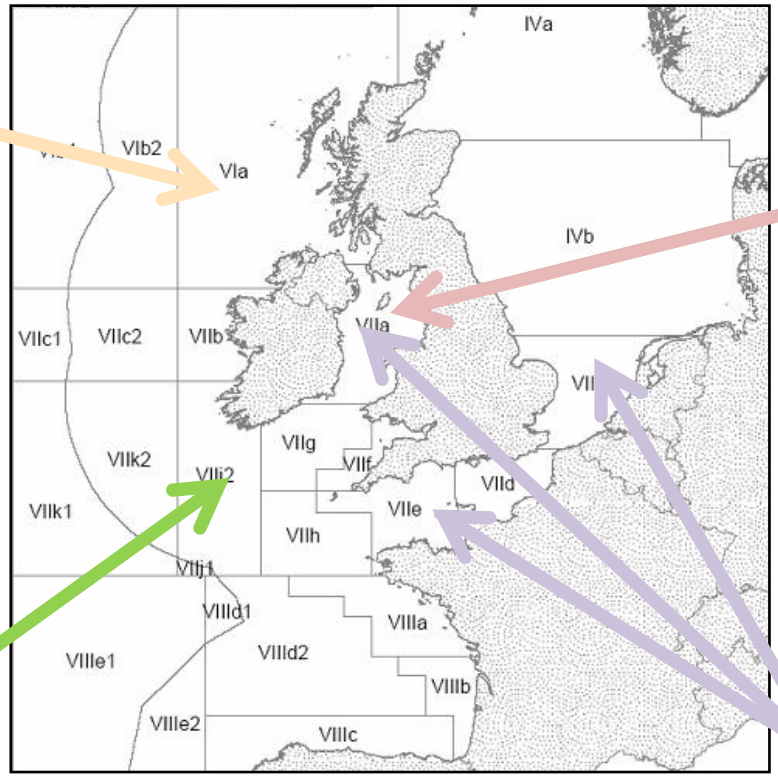


Bay of Biscay & Iberia ecoregion

Celtic Seas ecoregion

West of Scotland & Rockall

- Cod (VIa; VIb)
- Haddock (Rockall)
- Herring (Via, VIIbc)
- Whiting (VIa; VIb)
- Megrim (IVa-VIa; VIb)



Irish Sea

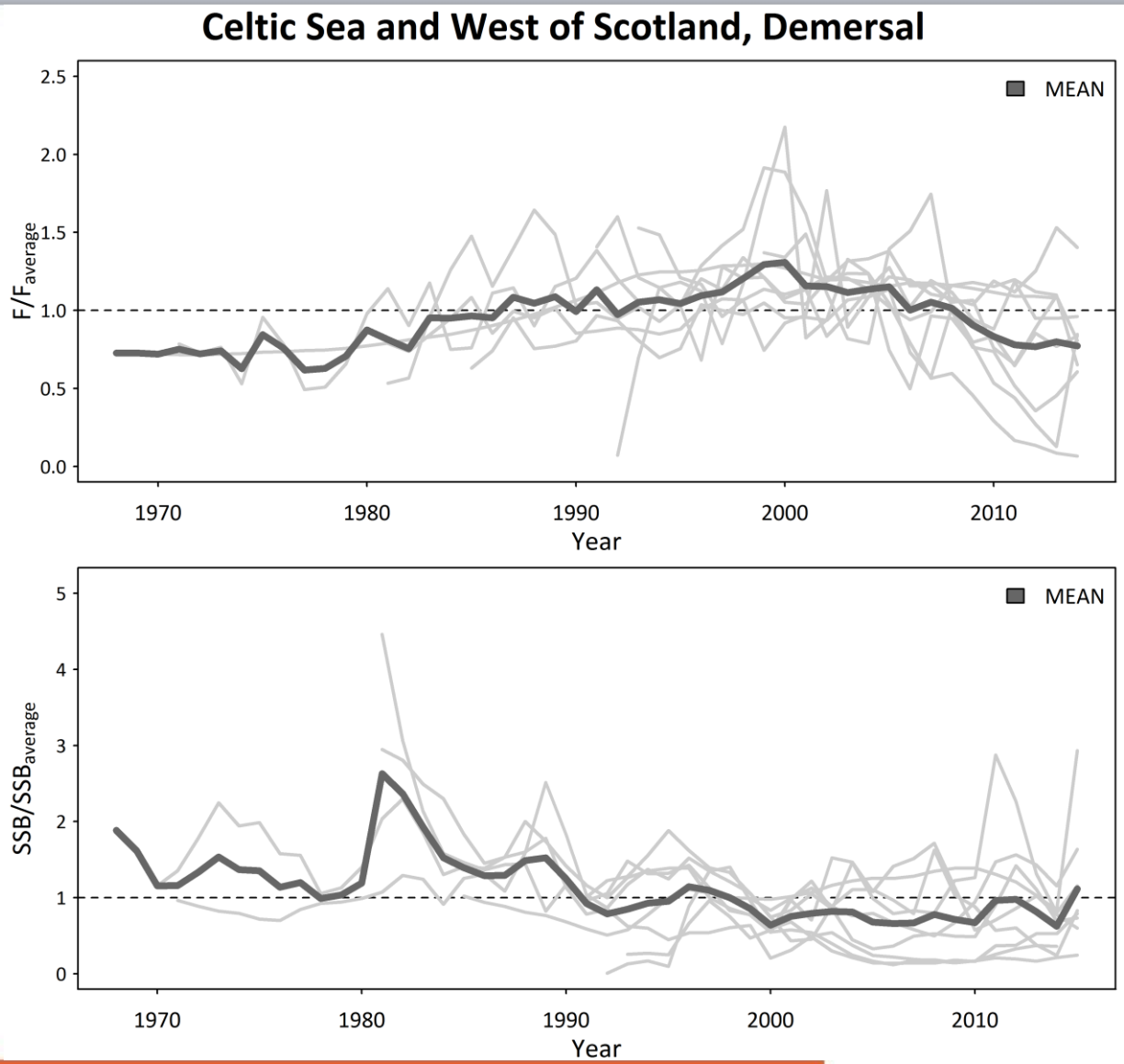
- Herring
- Sole

Celtic Sea & West, Southwest Ireland

- Cod
- Haddock
- Herring
- Whiting
- Plaice
- Sole

Sea bass (IVbc, VIIa, VIId-h

- Cod West of Scotland
- Cod Eastern English Channel and Southern Celtic Seas
- Sea bass Central and South North Sea, Irish Sea, English Channel, Bristol Channel, Celtic Sea
- Haddock Southern Celtic Seas and English Channel
- Haddock Rockall
- Whiting Southern Celtic seas and Eastern English Channel



Celtic Seas ecoregion

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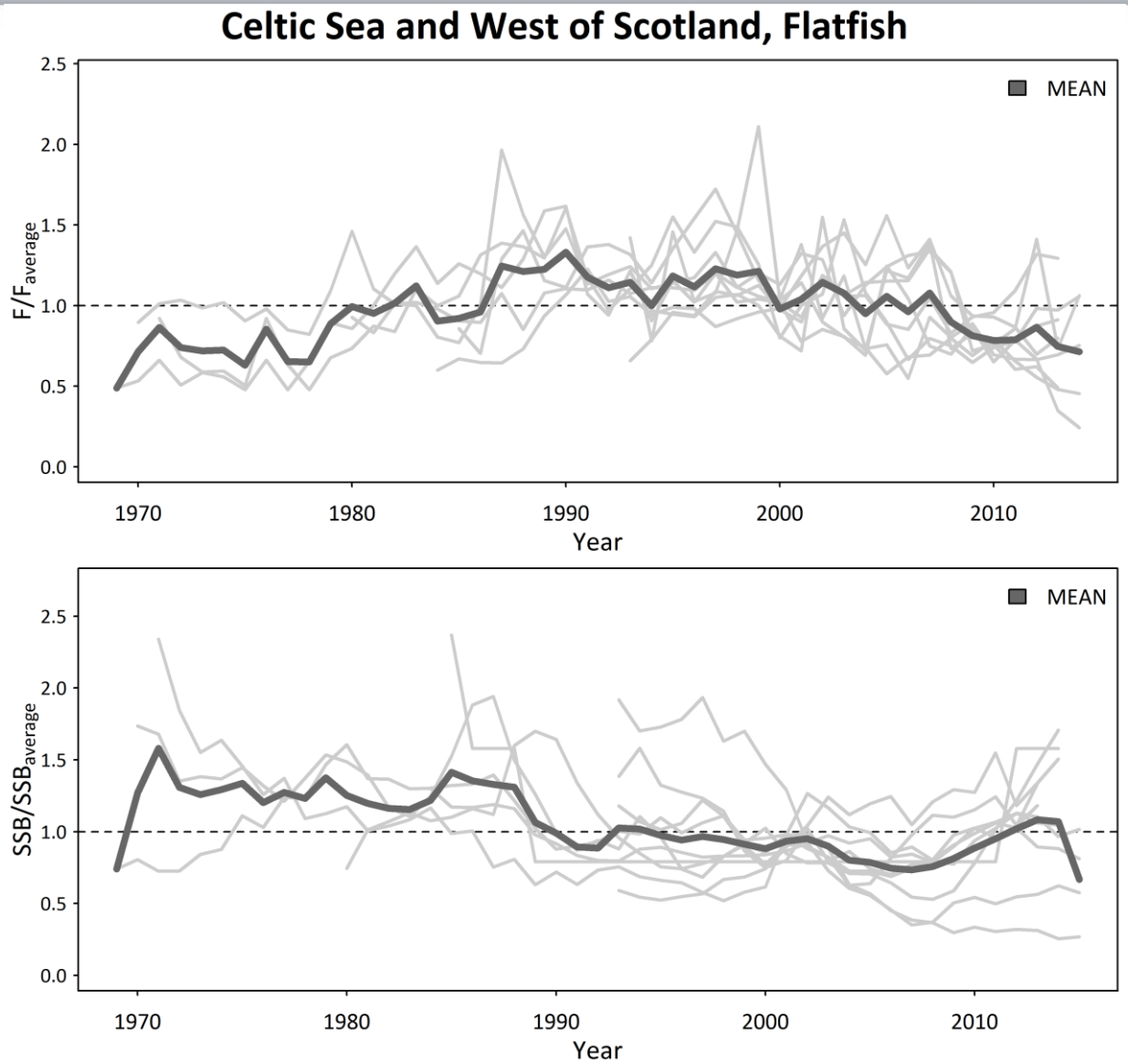
- Megrim North Sea & West of Scotland
- Plaice, Irish Sea
- Plaice, Celtic Sea
- Sole Celtic Sea
- Sole Irish Sea
- Sole Southwest of Ireland



Celtic Seas ecoregion

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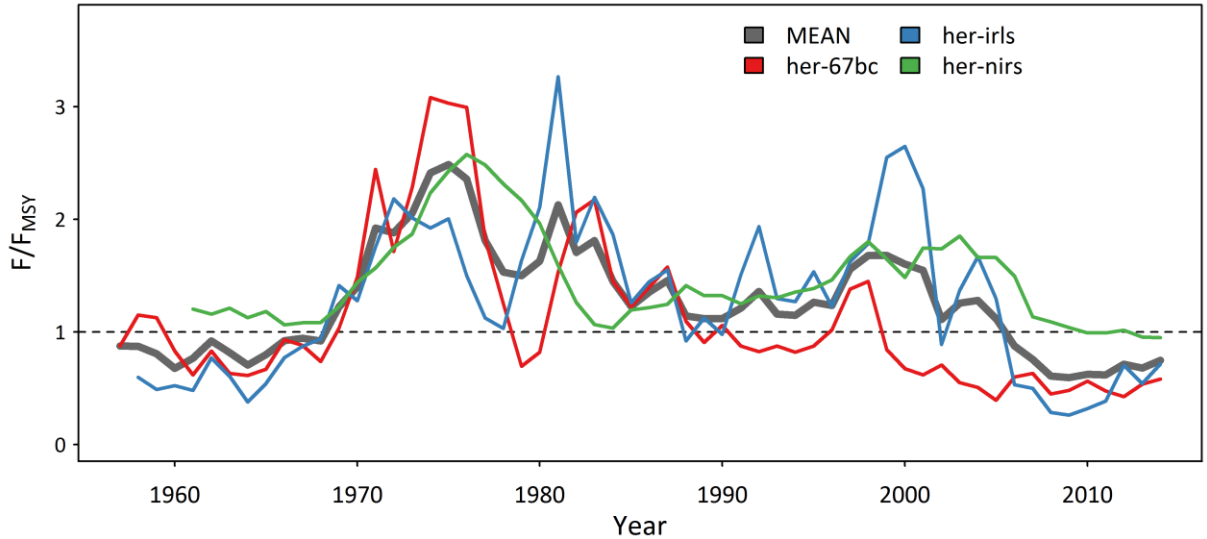
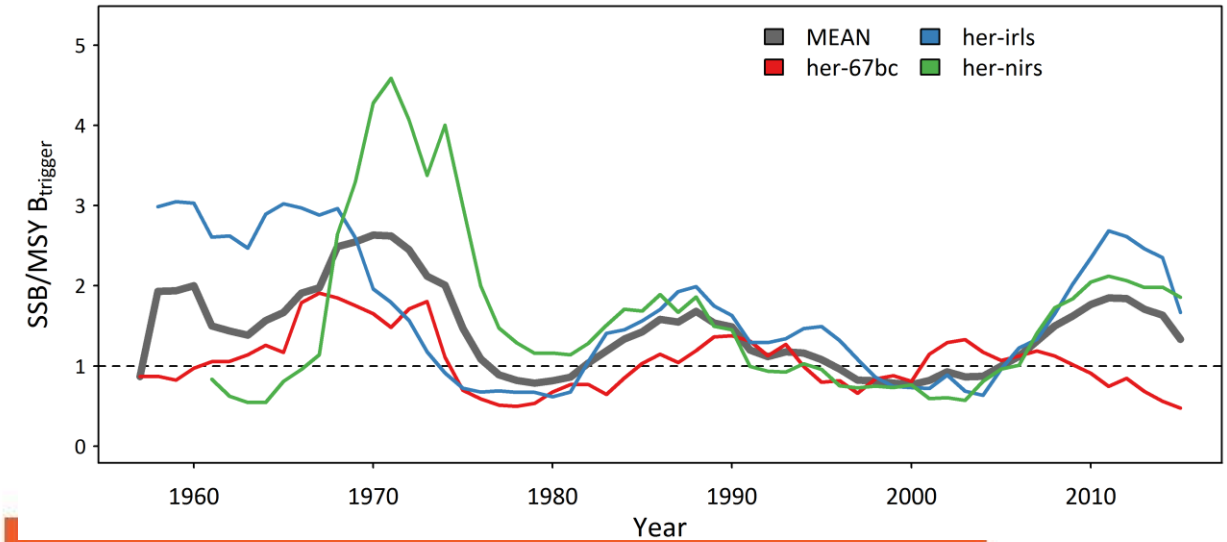
- **Herring West of Scotland & Ireland**
- **Herring Irish Sea**
- **Herring Celtic Sea**

Celtic Sea and West of Scotland, Pelagic





Celtic Seas ecoregion

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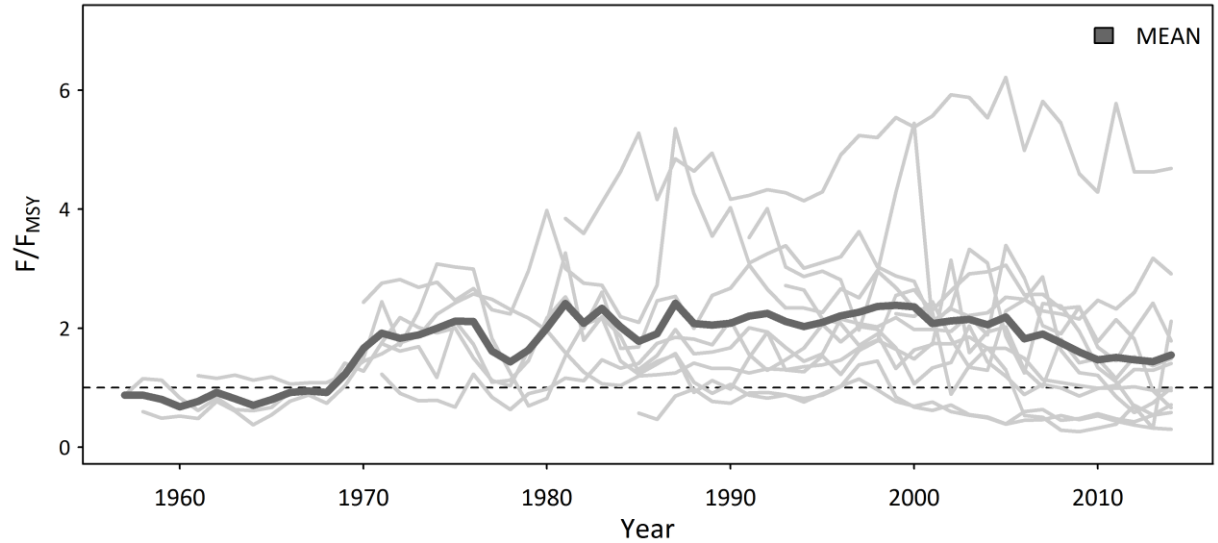
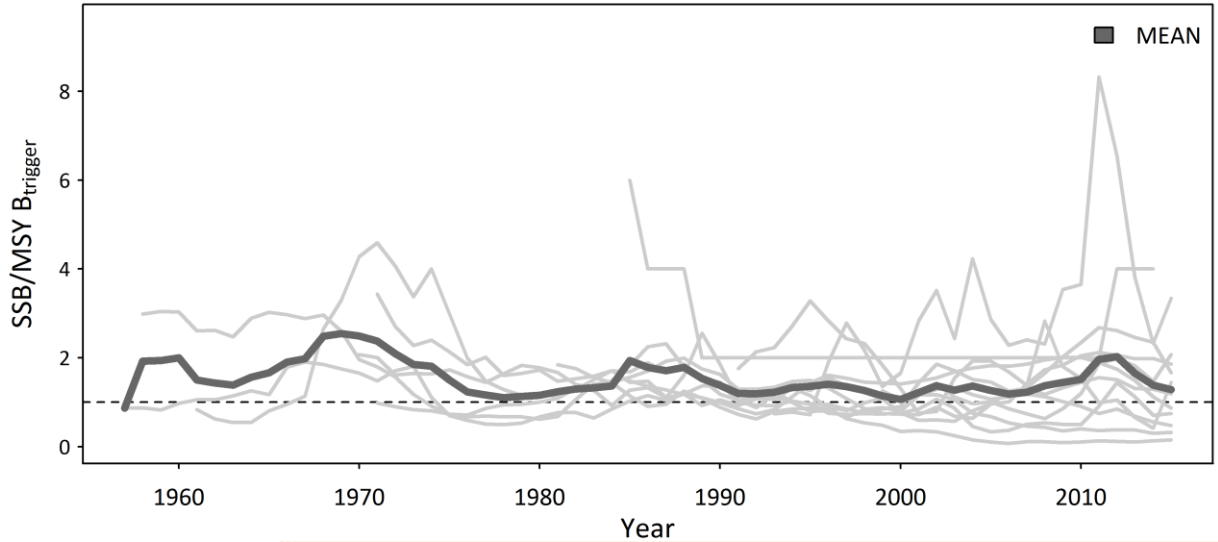
Celtic Sea and West of Scotland, All stocks





Celtic Seas ecoregion

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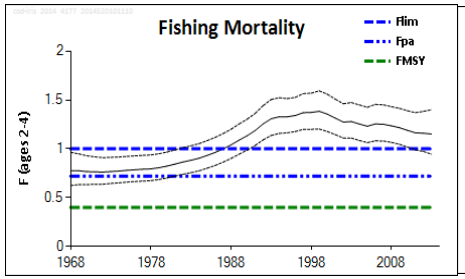
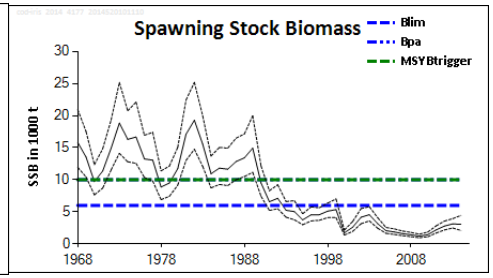
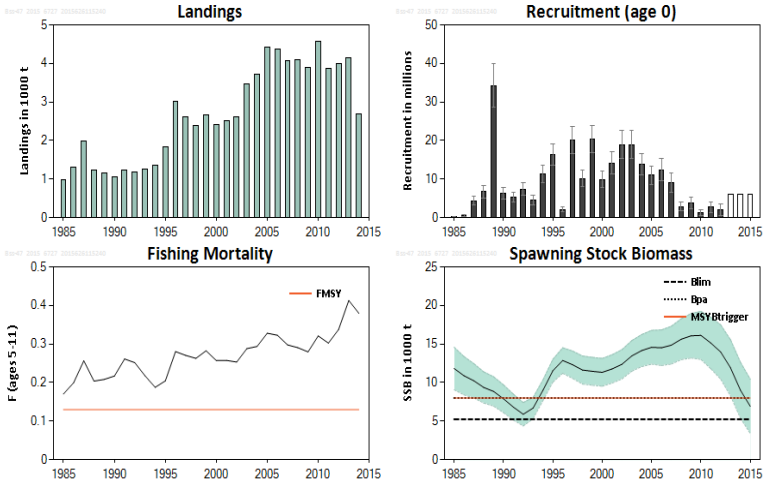
Cod, Irish Sea

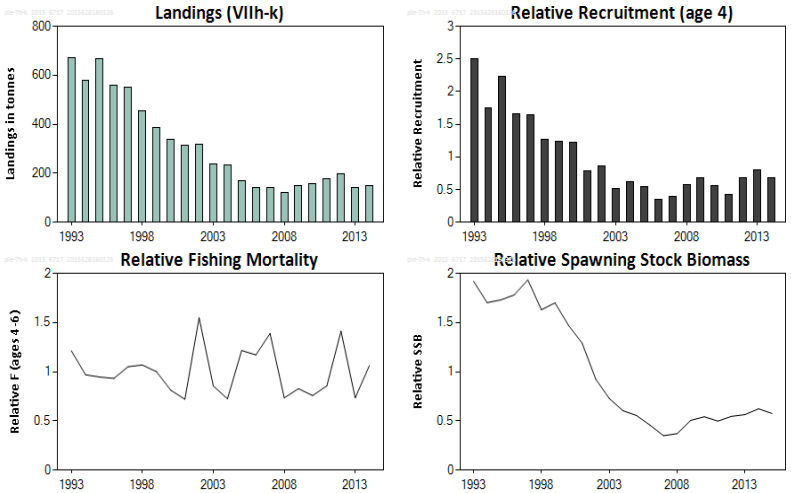




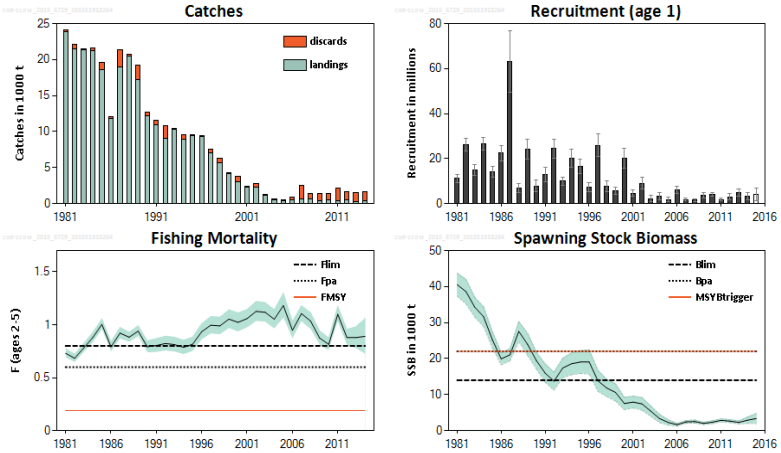
Sea bass, IVbc, VIIa, VIId-h



Plaice in Divisions VIIh–k



Cod, west of Scotland



Celtic Seas ecoregion

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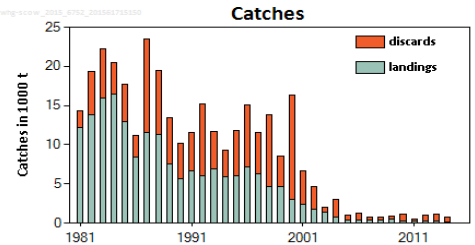
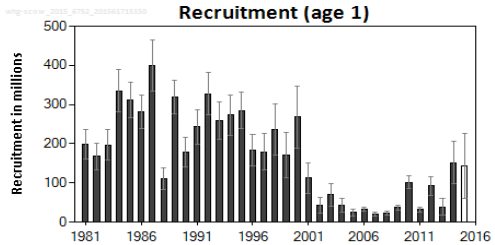
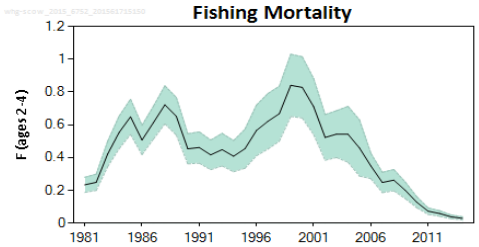
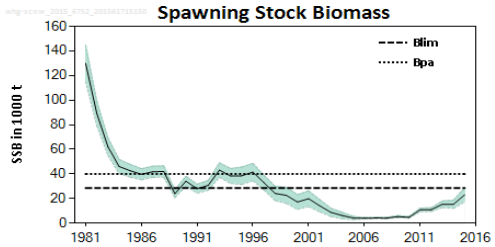
Whiting, West of Scotland

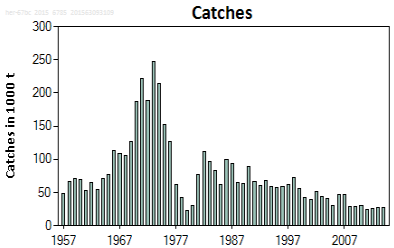


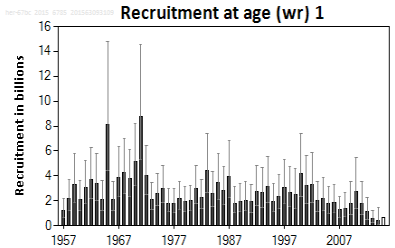


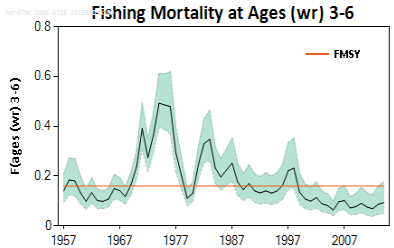


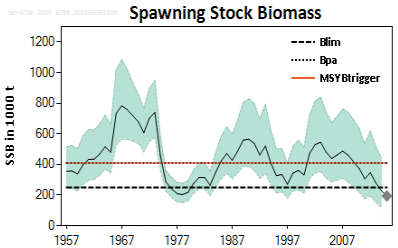


Herring, west of Scotland and Ireland









Celtic Seas ecoregion

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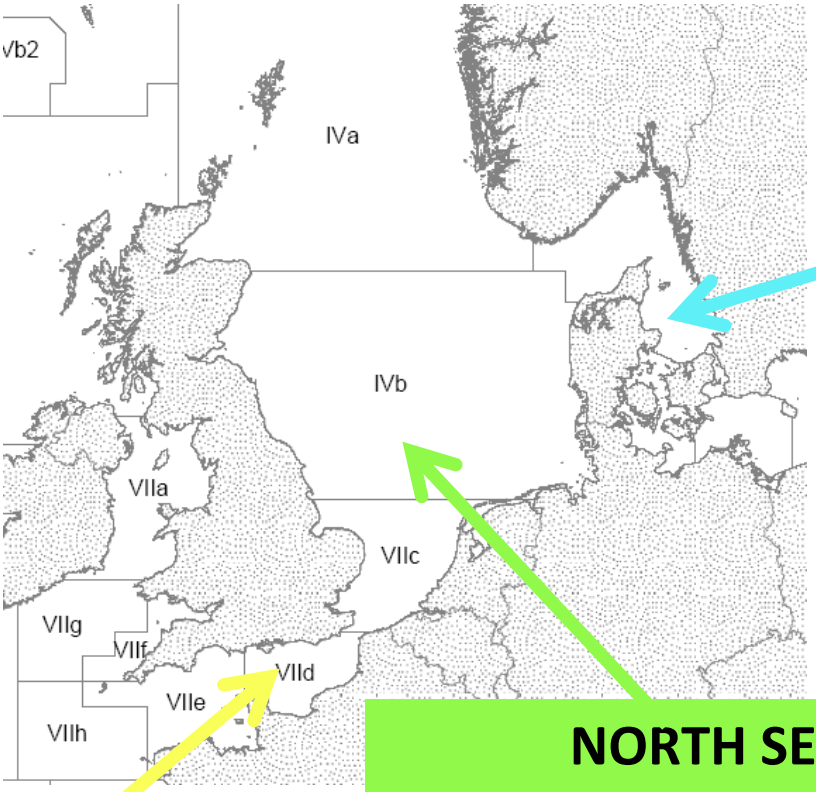
North Sea ecoregion



- Cod in Kattegat
- Whiting in Skagerrak & Kattegat
- Plaice in Skagerrak
- Plaice in SD 21-23
- Sole in Skagerrak, Kattegat & SD 22-24

EASTERN CHANNEL

- Plaice (VIId)
- Sole (VIId)

NORTH SEA:

- Cod (IV, Skagerrak, VIId)
- Haddock (IV, Skagerrak)
- Whiting (IV, VIId)
- Saithe (IV, IIIa, VI)
- Plaice (IV)
- Sole (IV)

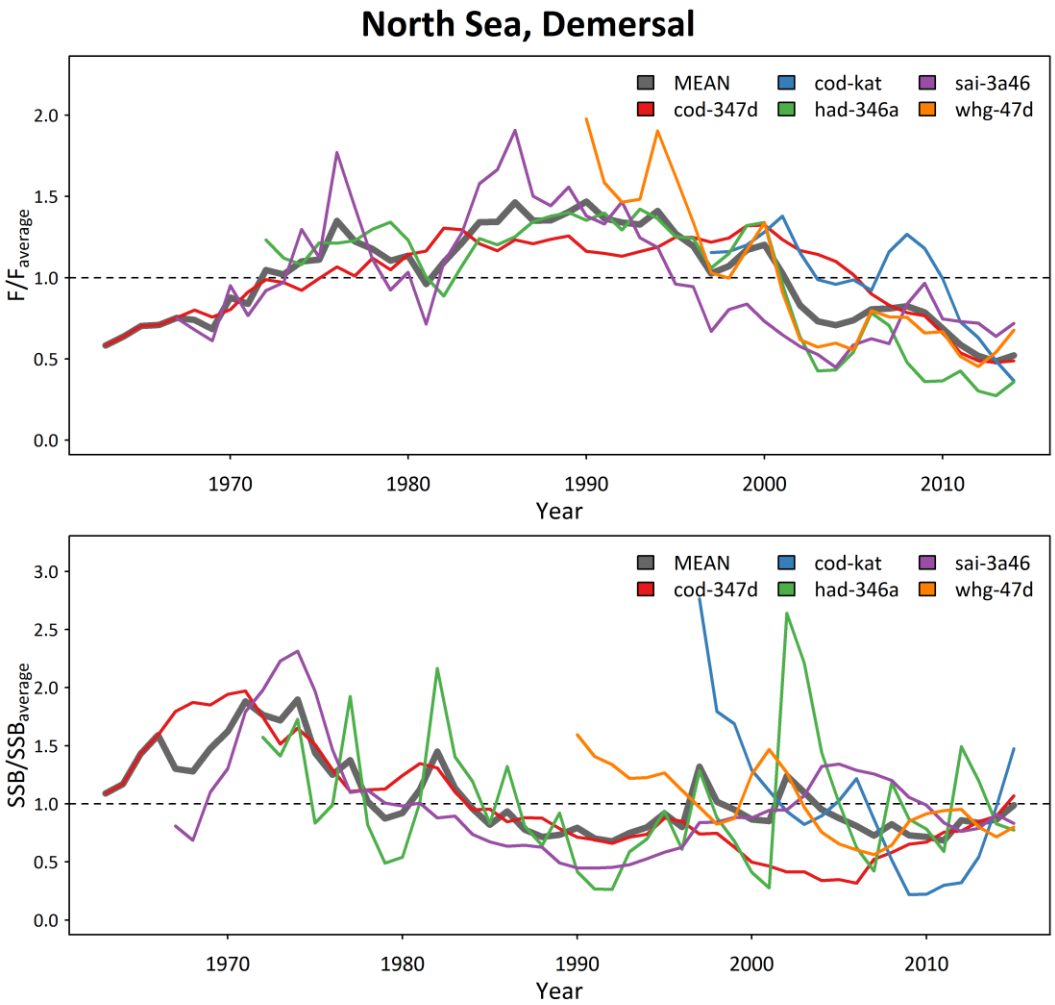
Brill, Dab, Flounder, Lemon sole, Turbot (IV; IIIa), Witch

Nephrops

Short lived:

Sandeel, Norway pout, Sprat (IV, IIIa)

- Cod North Sea, Eastern English Channel & Skagerrak
- Cod Kattegat
- Haddock West of Scotland, North Sea and Skagerrak
- Whiting North Sea & Eastern English Channel
- Saithe West of Scotland, North Sea, Skagerrak and Kattegat



North Sea ecoregion

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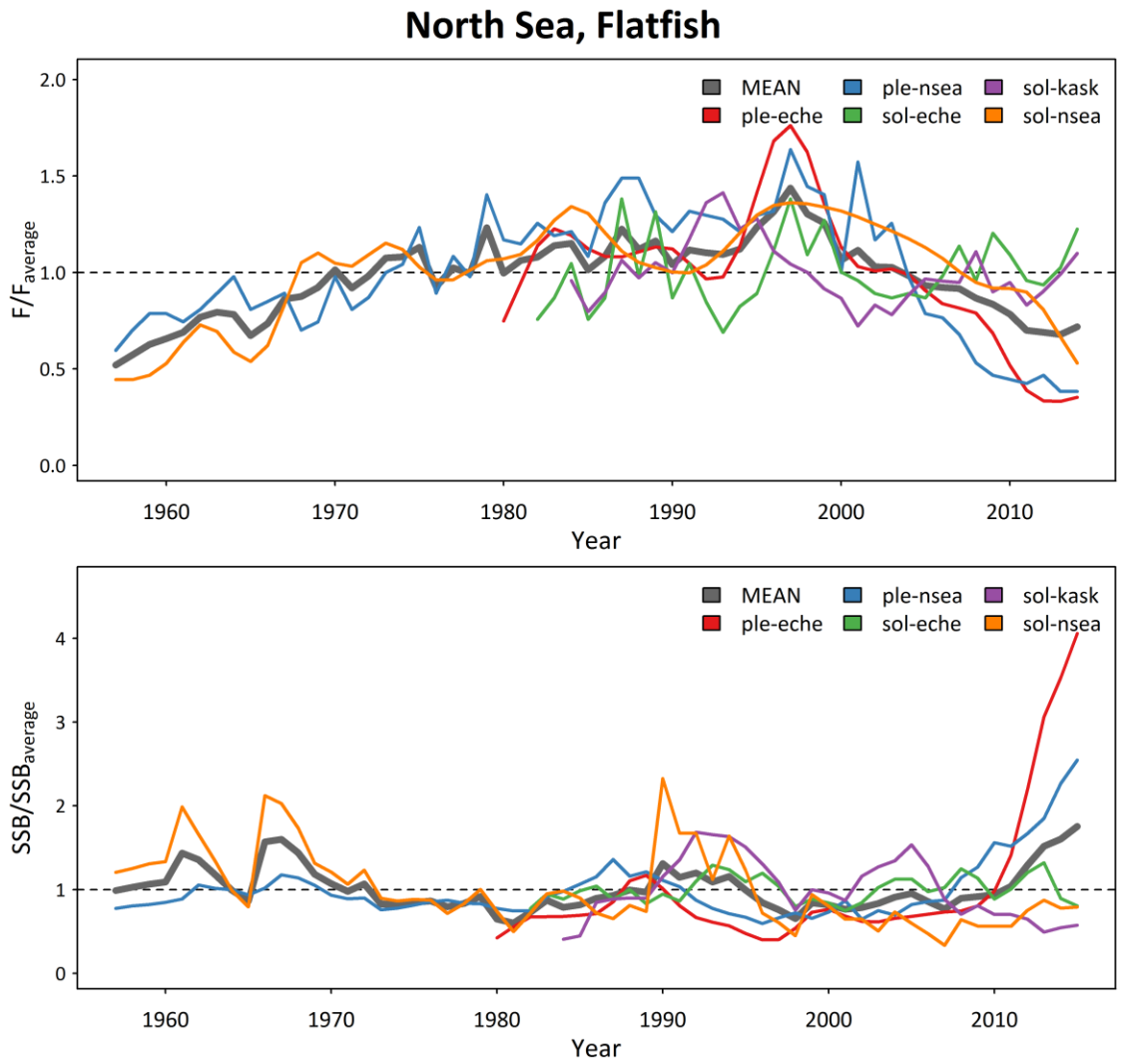
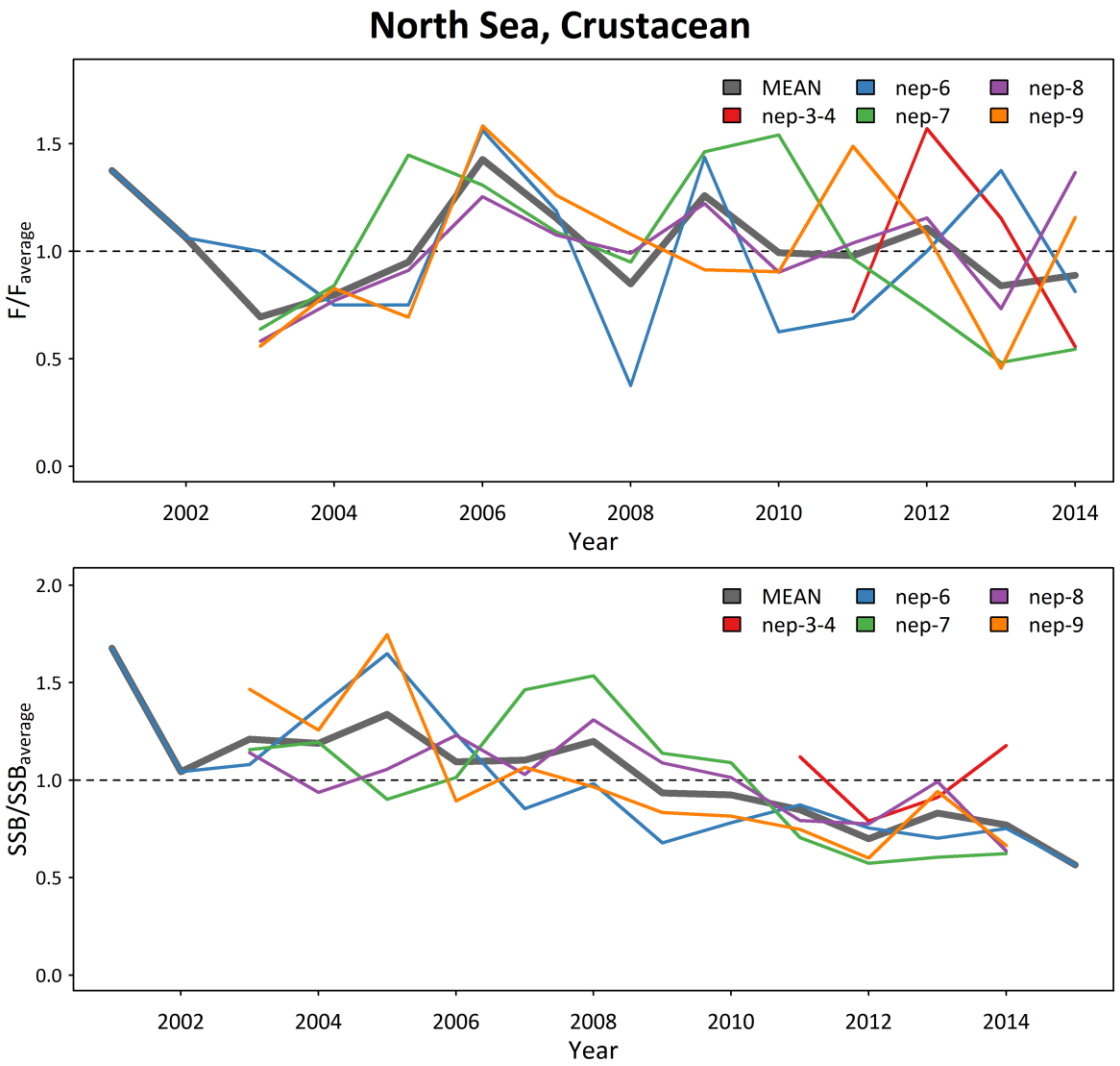
- Plaice Eastern English channel
- Plaice North Sea & Skagerrak
- Sole Eastern English channel
- Sole Kattegat & Skagerrak
- Sole North Sea



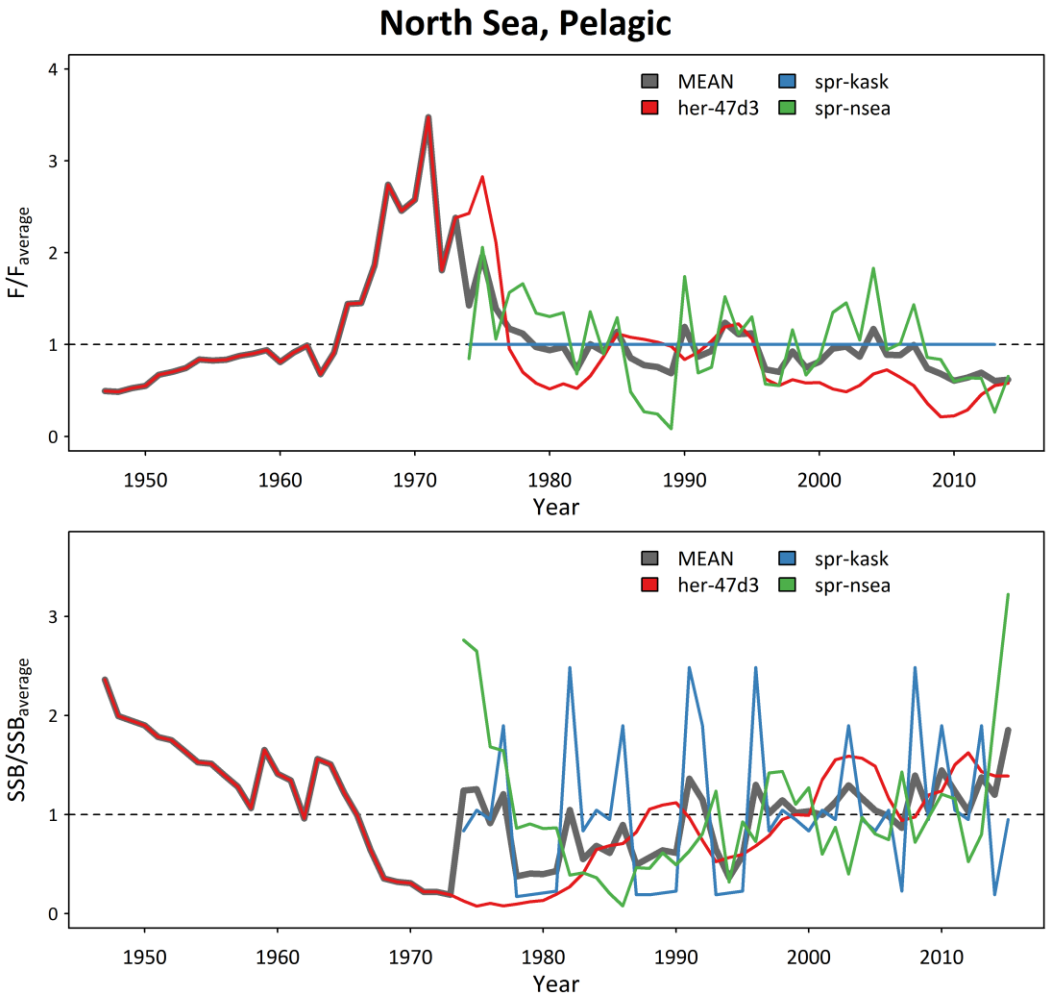
North Sea ecoregion

- Nephrops North Sea, Skagerrak and Kattegat



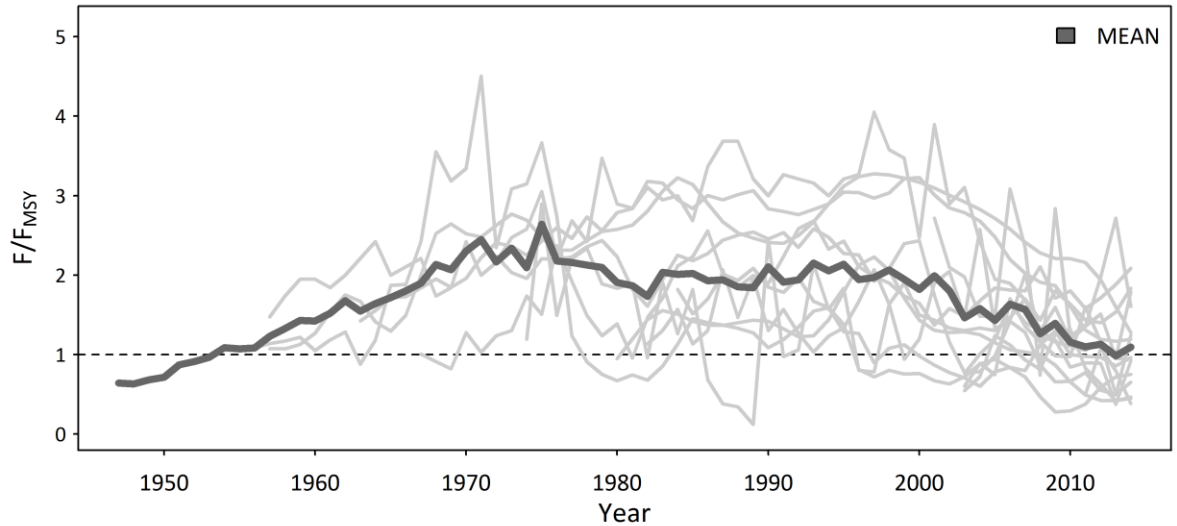
North Sea ecoregion

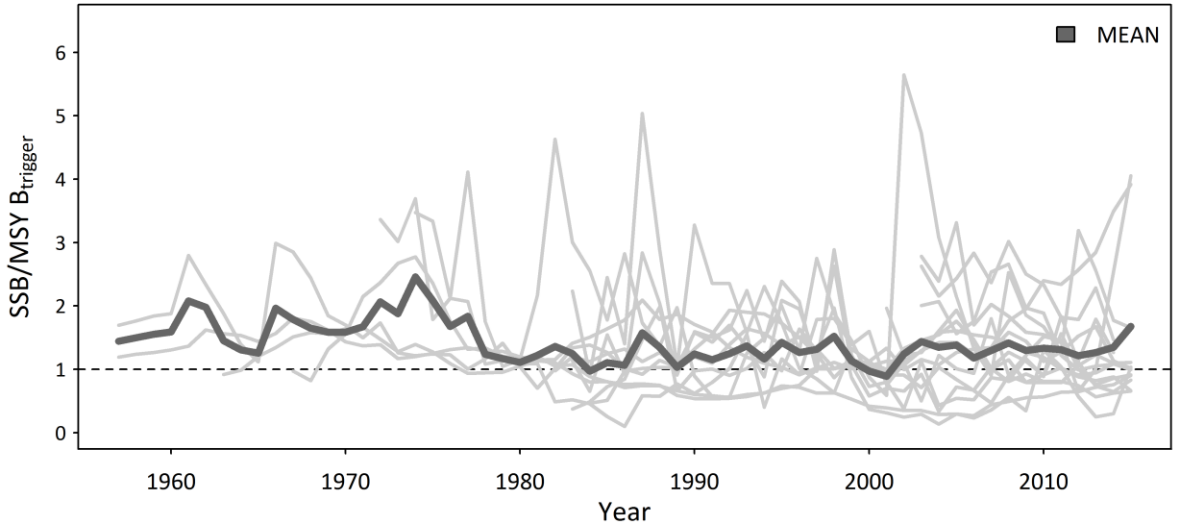
- **Herring North Sea**
- **Sprat North Sea**
- **Sprat Skagerrak & Kattegat**



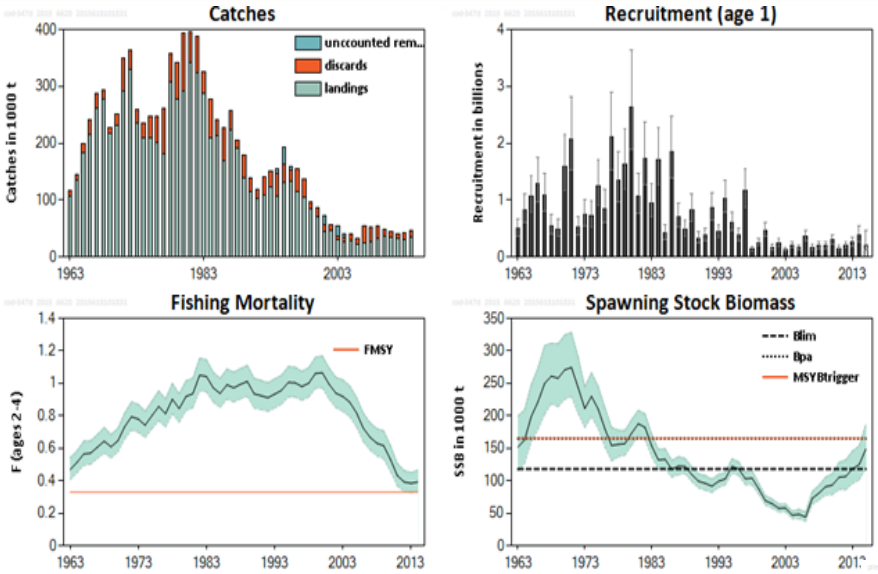
North Sea ecoregion

North Sea, All stocks



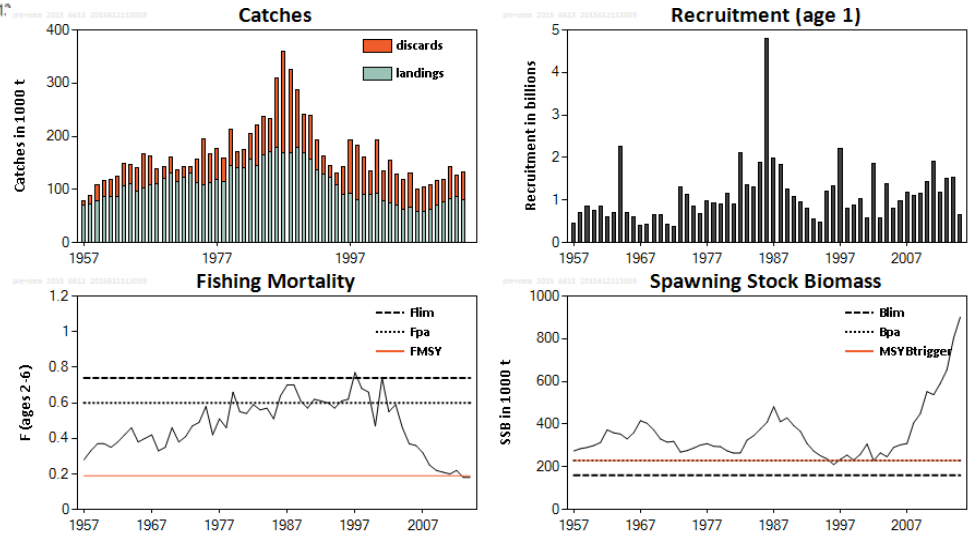


North Sea ecoregion



North Sea cod

Plaice North Sea



North Sea ecoregion

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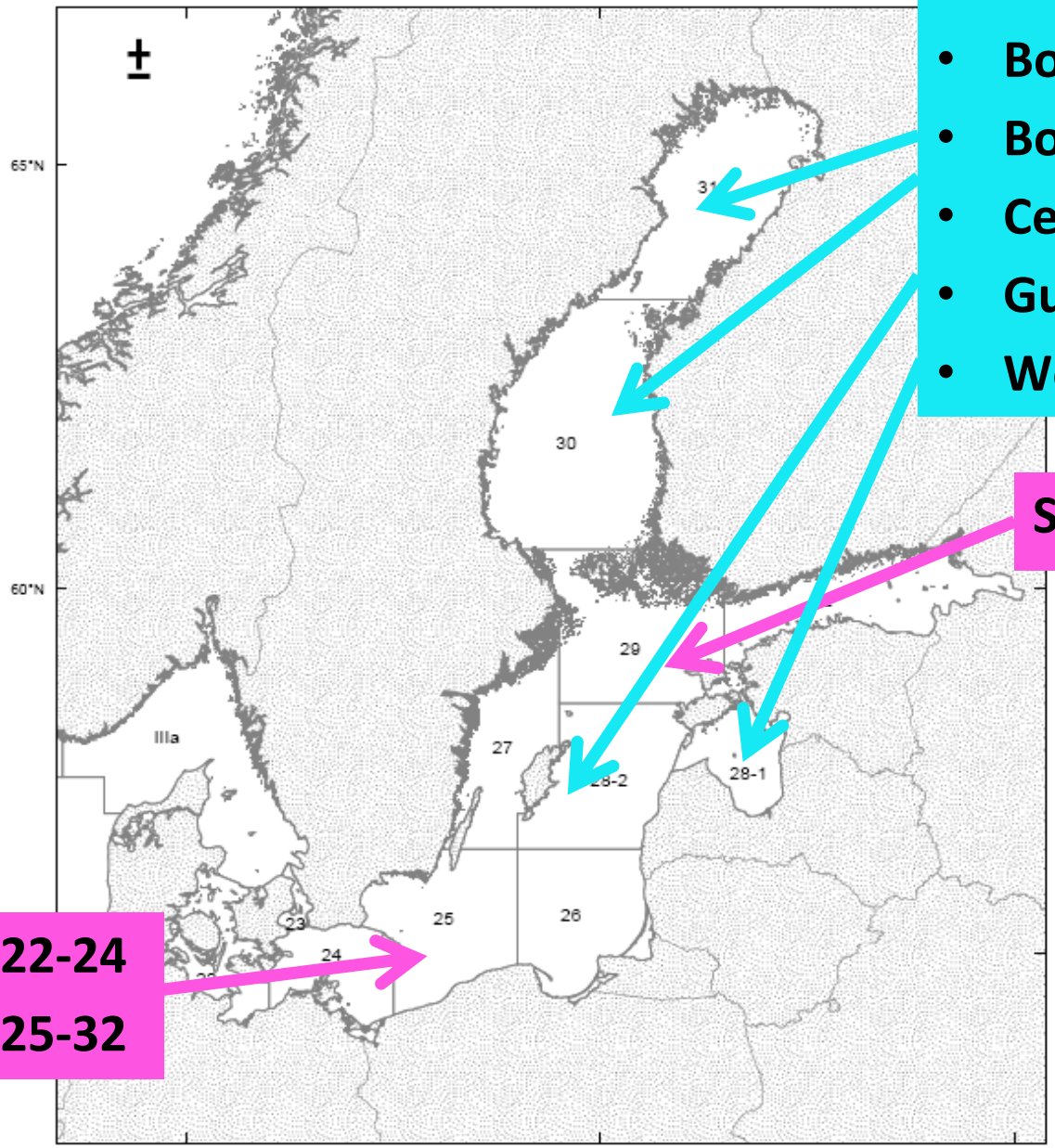
Baltic ecoregion

HERRING:

- **Bothnian Bay**
- **Bothnian Sea**
- **Central Baltic**
- **Gulf Riga**
- **Western Baltic, IIIa**



Sprat SD 22-32

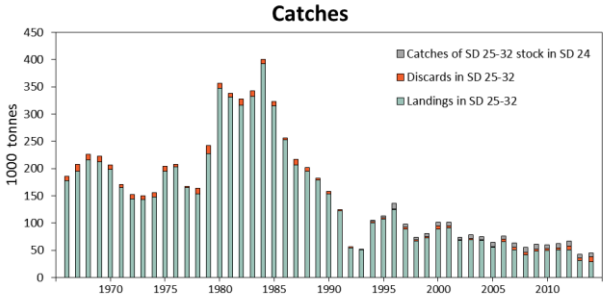
Flatfishes

Plaice, Brill, Dab, Flounder, Turbot

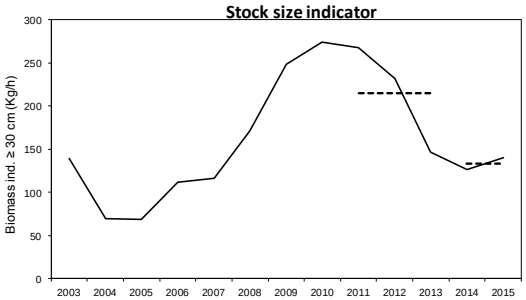
Salmon & Trout

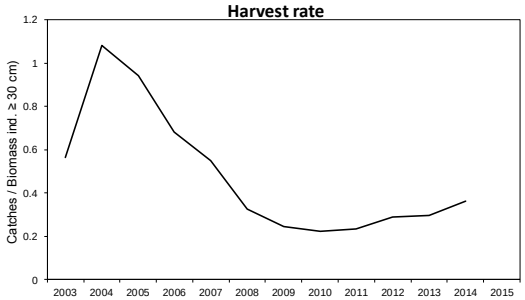
- **Cod SD 22-24**
- **Cod SD 25-32**

Western Baltic Sea cod



Eastern Baltic Sea cod





Baltic ecoregion

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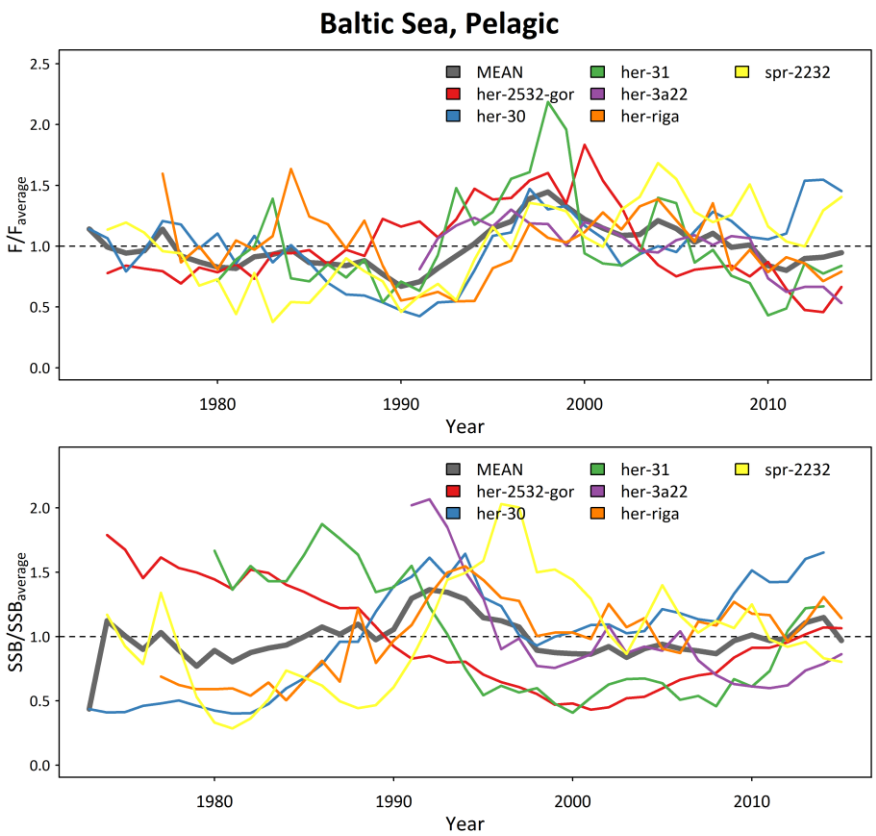
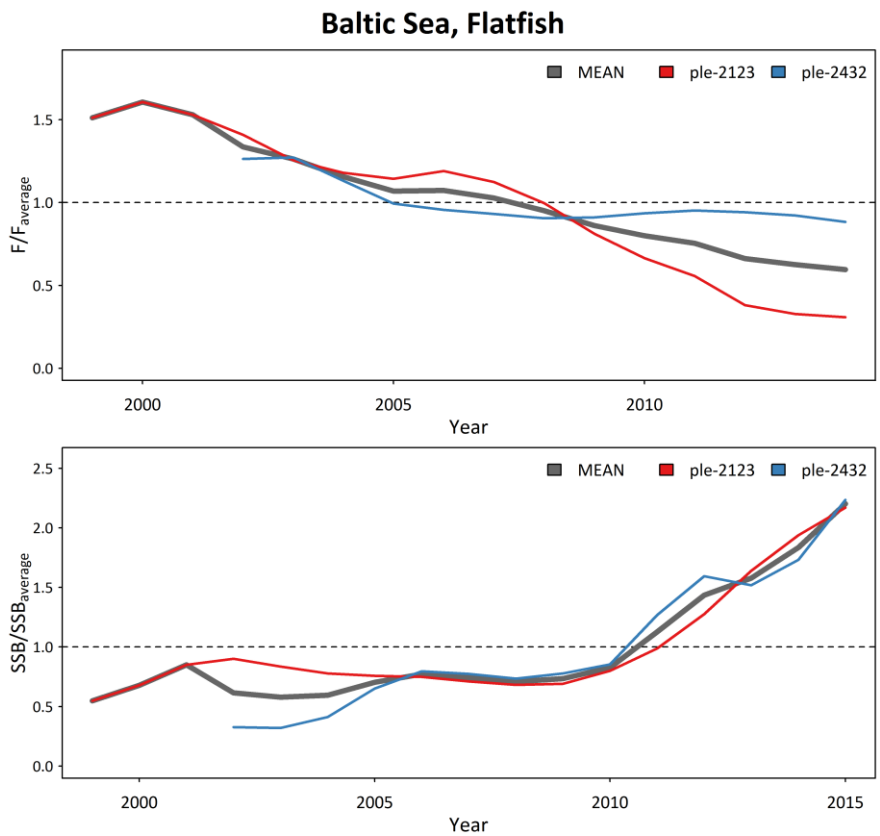
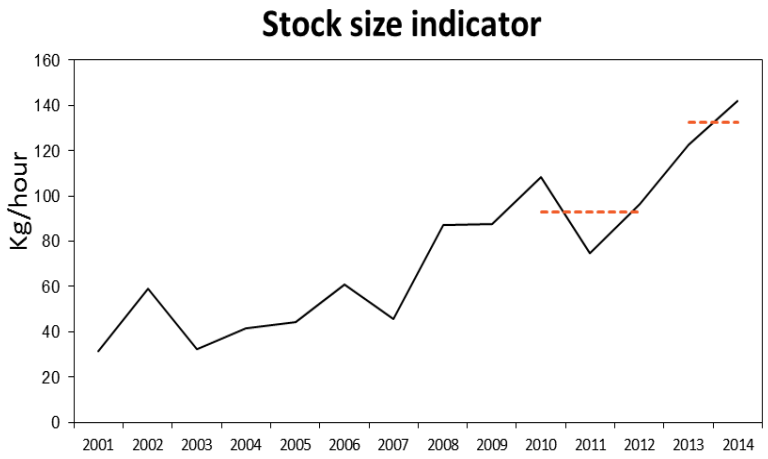
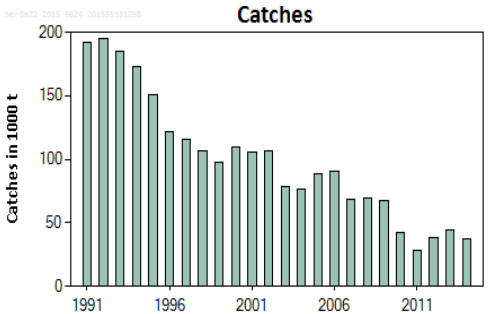


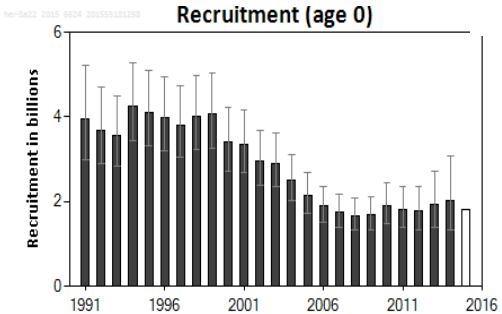


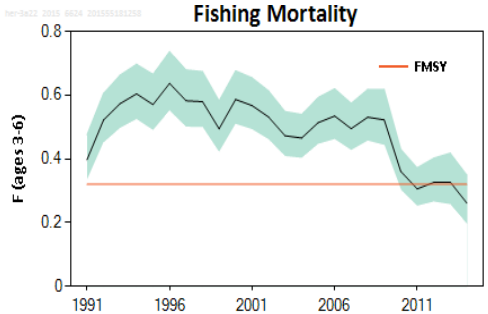
Baltic ecoregion

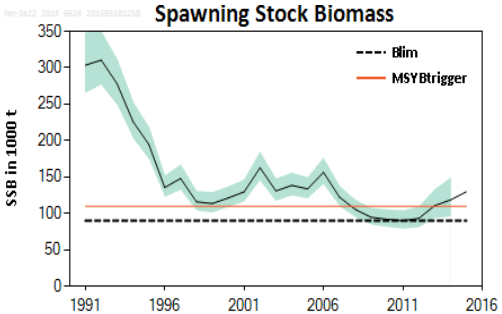
Flounder Central Baltic
(subdiv. 24 & 25)











Herring in Western Baltic,
Skagerrak and Kattegat

Baltic ecoregion

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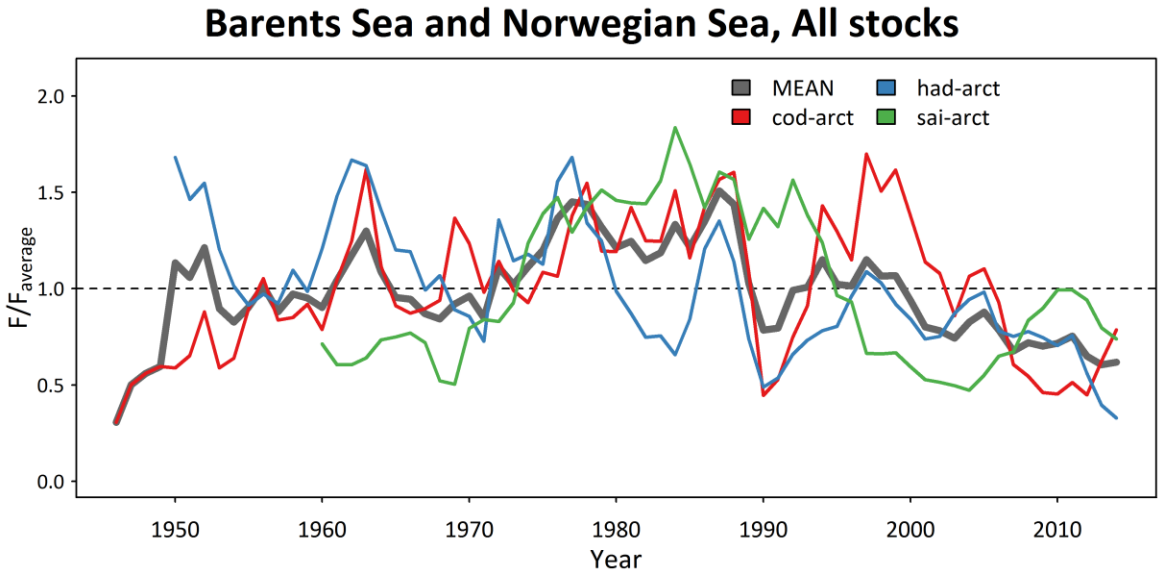
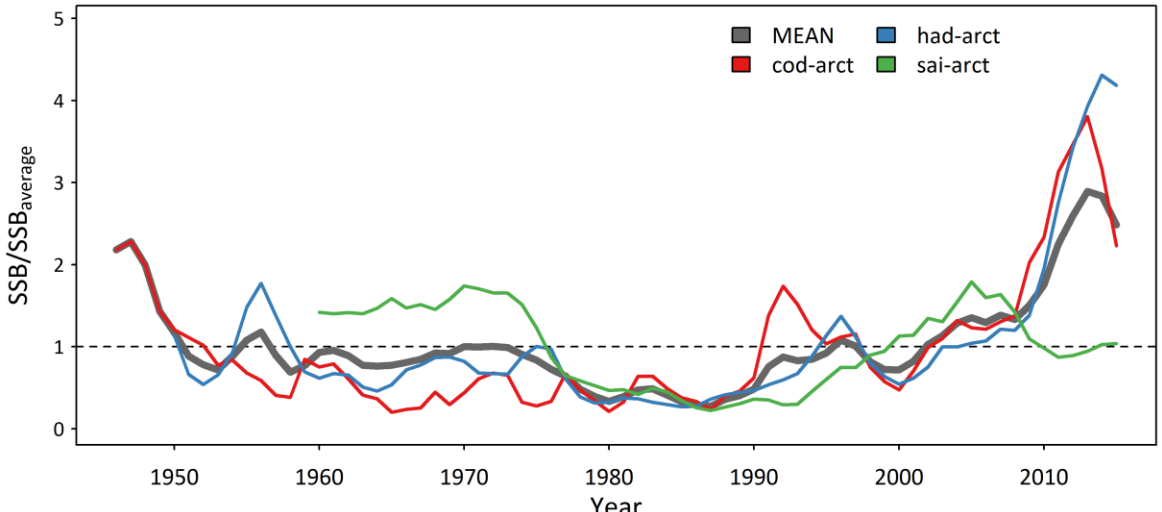
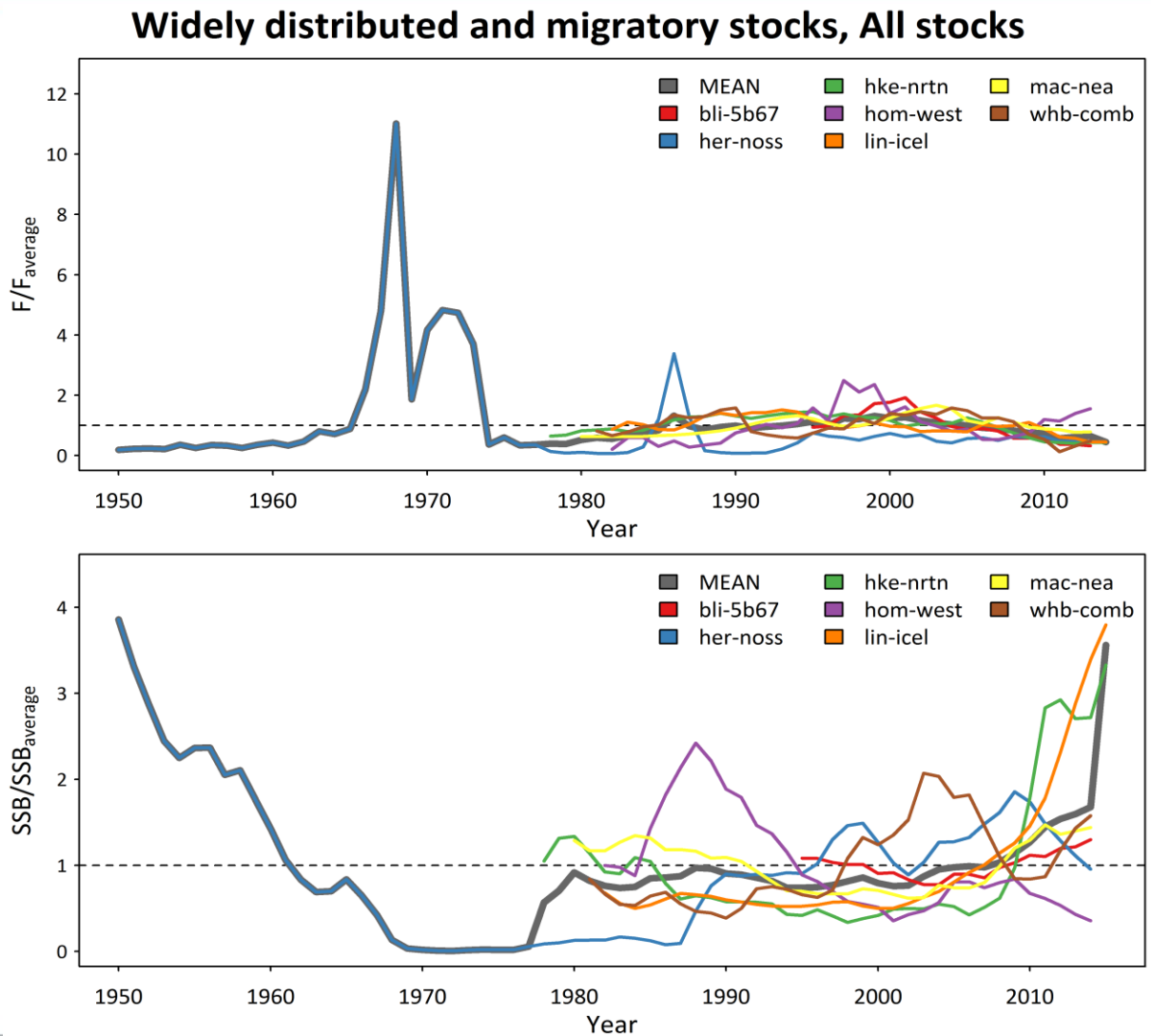
Northeast Arctic stocks



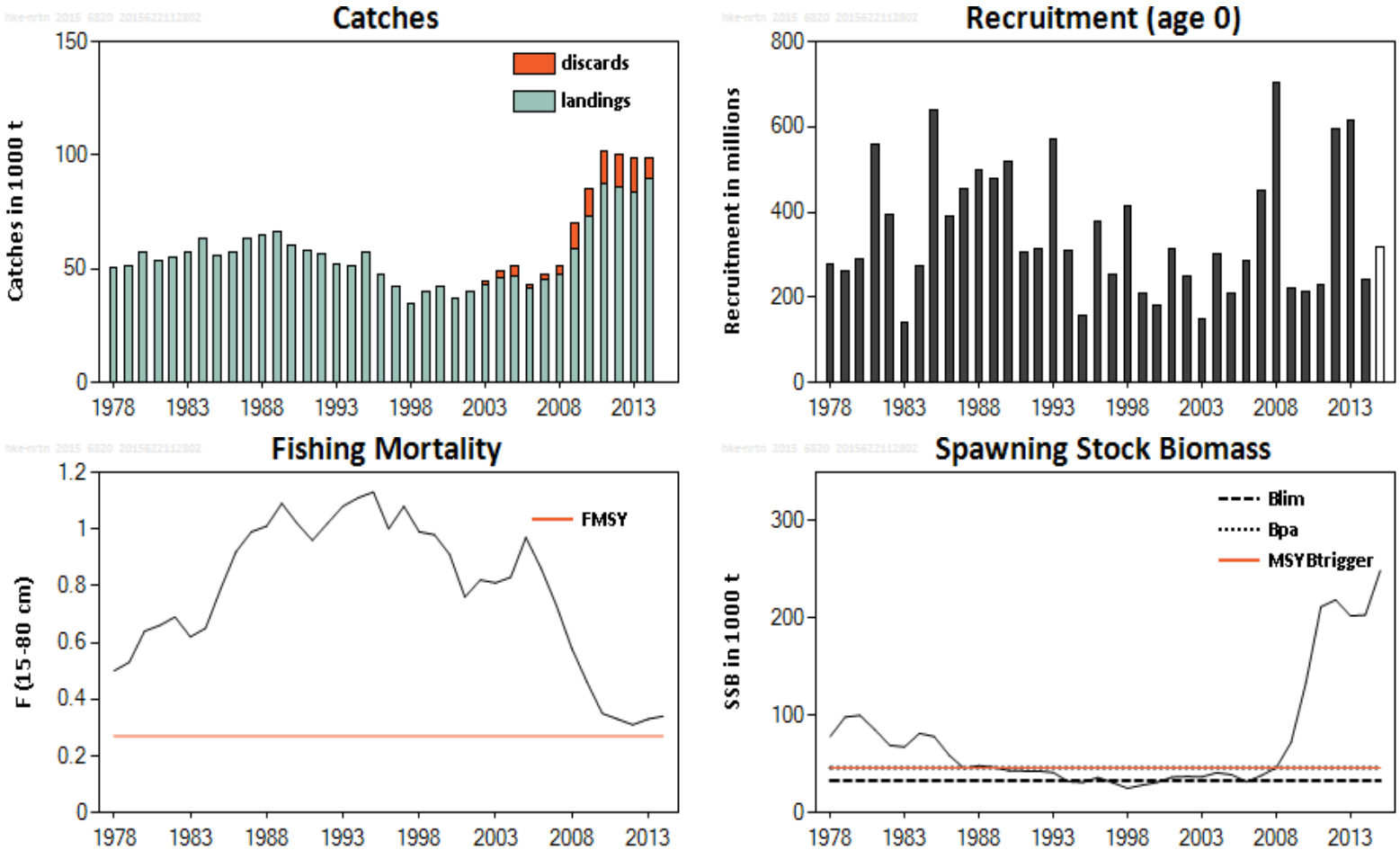


Widely distributed and migrtory stocks

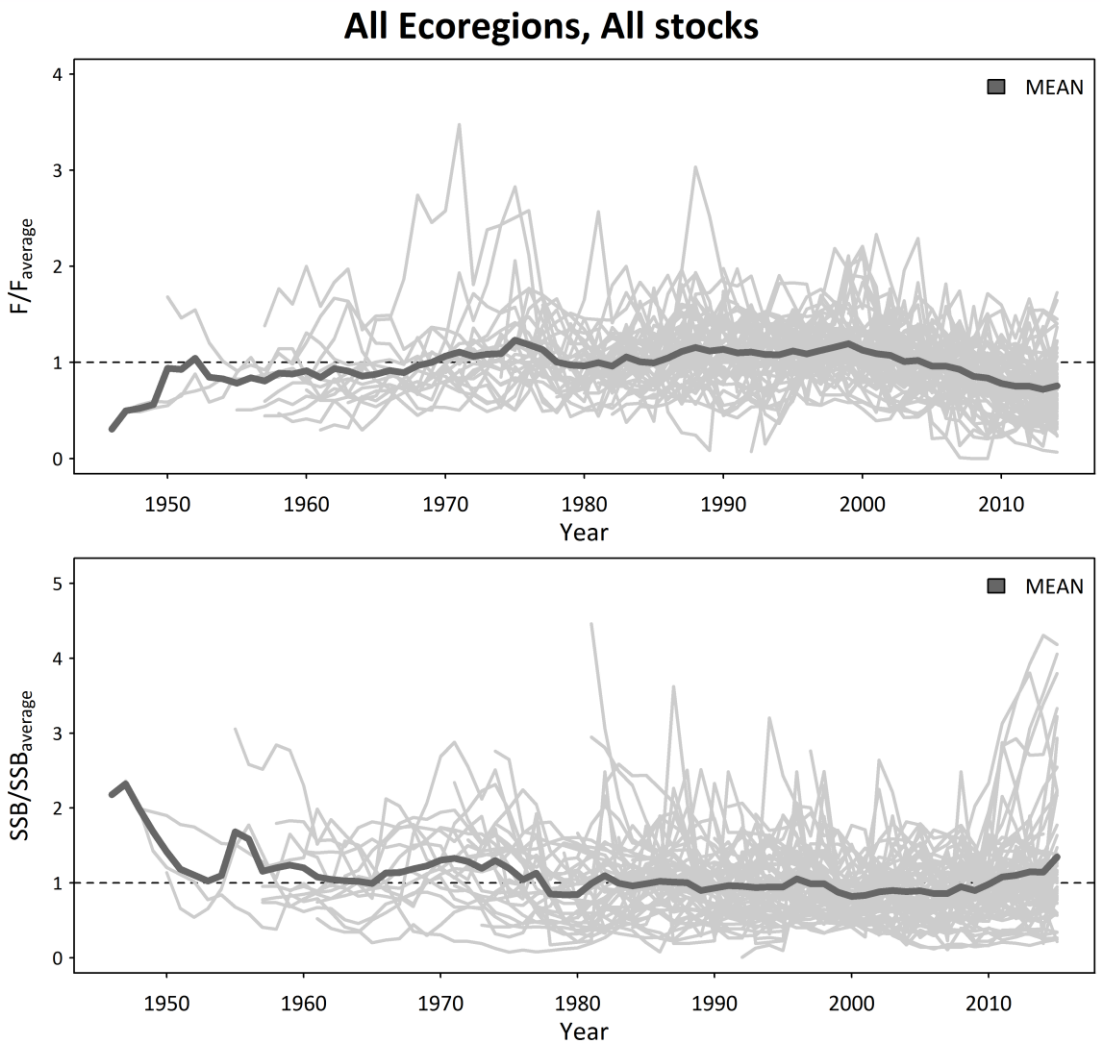


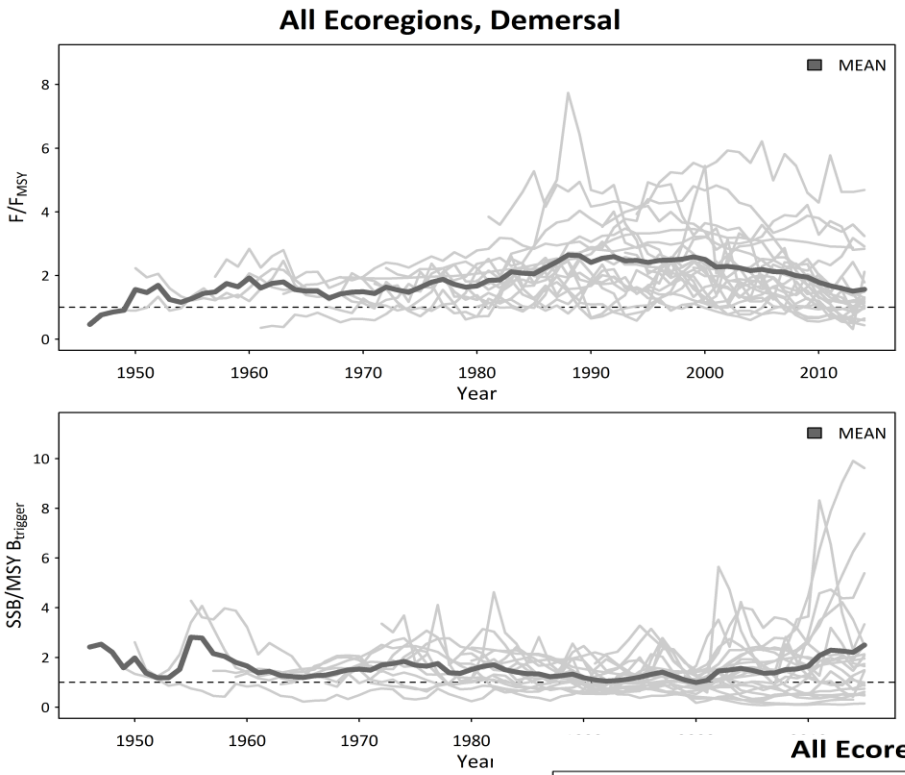
Widely distributed and migrtory stocks

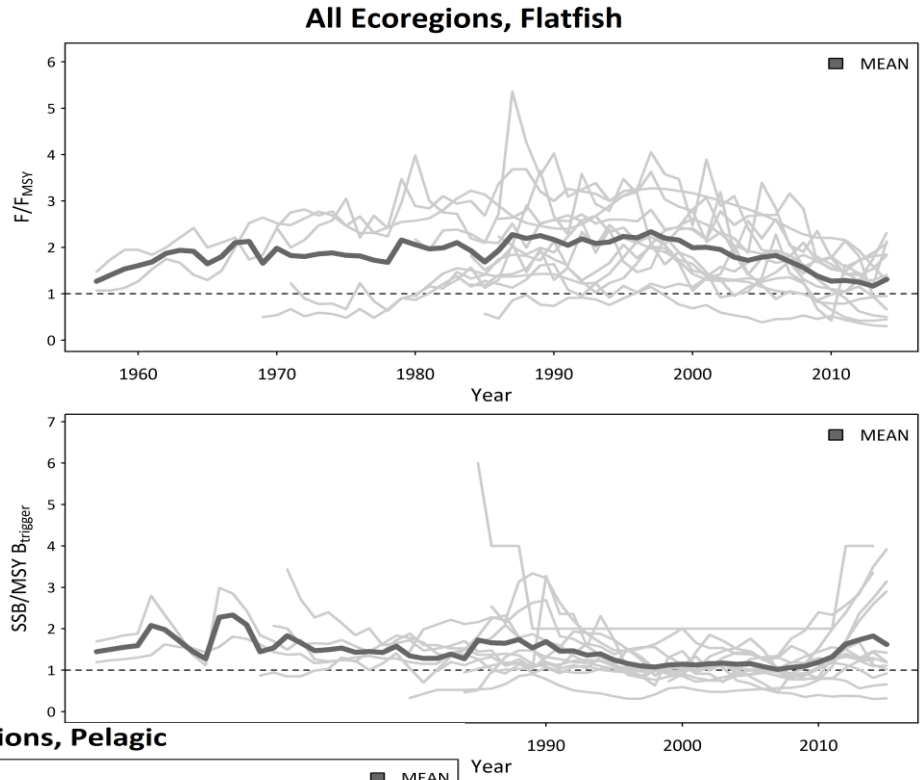
Hake, Northern

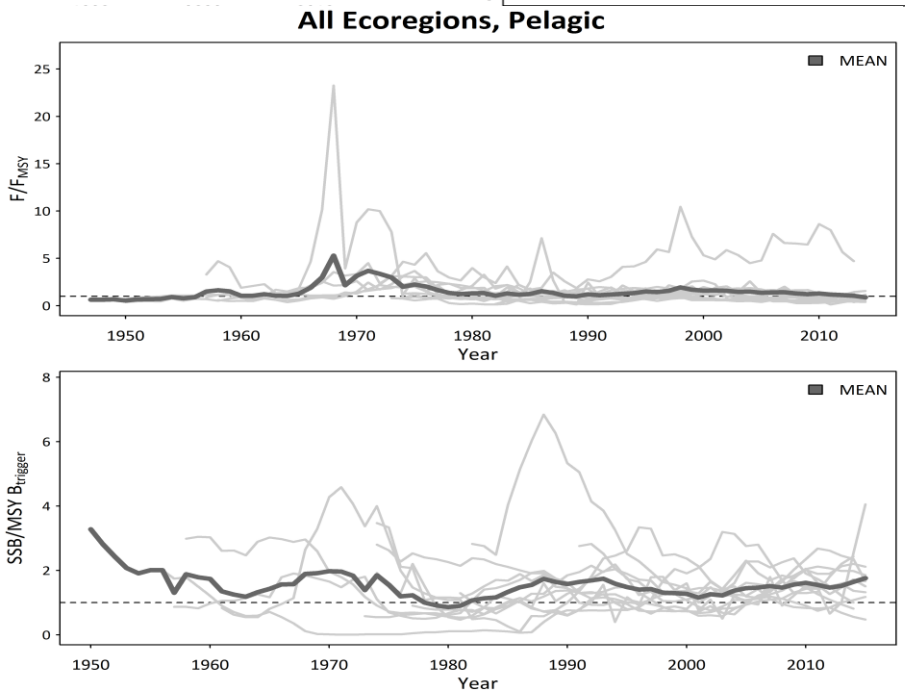


General trend in stock size and exploitation




All Ecoregions, Demersal
MEAN
F/F_MSY
Year
MEAN
SSB/MSY B_trigger
Year


All Ecoregions, Flatfish
MEAN
F/F_MSY
Year
MEAN
SSB/MSY B_trigger
Year


All Ecoregions, Pelagic
MEAN
F/F_MSY
Year
MEAN
SSB/MSY B_trigger
Year

General trend in stock size and exploitation

- Fishing mortalities have declined towards F_{MSY}
- Stocks are increasing

Thank you for your attention

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