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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, September 26, 2014)

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Outline

A few words about the basis for ICES advice

Summarize biological status of main stocks and their exploitation in the NE Atlantic, North Sea and Baltic Sea

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MSY – maximum sustainable yield

Until 2009, ICES' advice was based on the precautionary approach, extended by long-term considerations for maximising yield and considering ecosystem effects of the fishery.

In 2010, ICES started a formal implementation of the maximum sustainable yield-concept in its advice.

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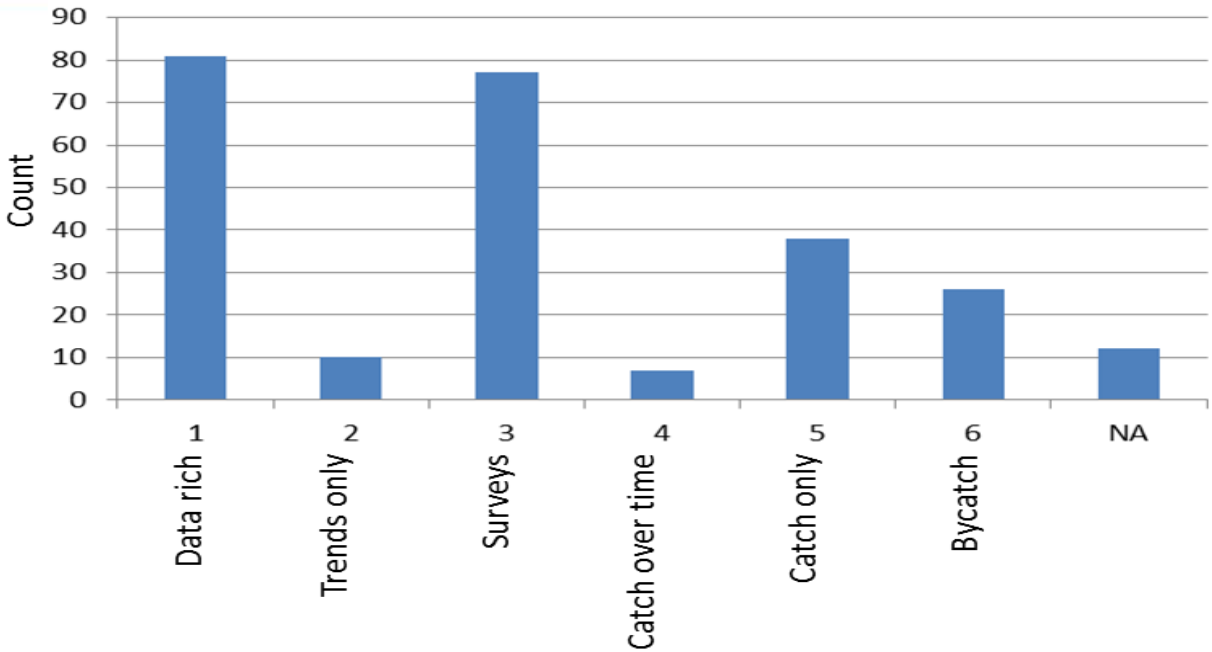
Stock Categories

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	Developing MSY approach 2014
3	Stocks with survey-based assessments indicating trends	Developing MSY approach 2014 - ?
4	Stocks with reliable time-series of catch data to approximate MSY	Developing MSY approach 2014 - ?
5	Only catch or landings available	Risk based approach
6	Only landings available and largely discarded	Risk based approach

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

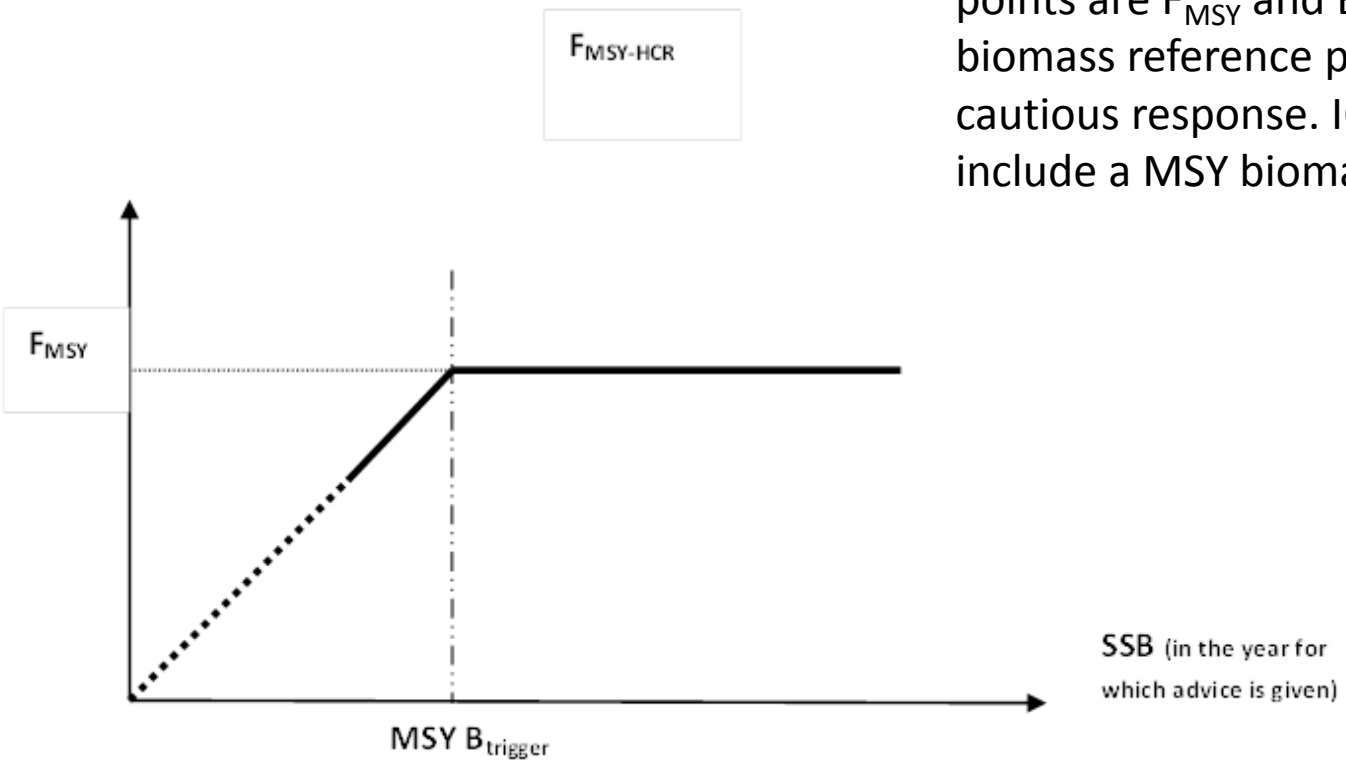
Stock Categories



ICES provides advice for app. 260 stocks.
1/3 of the stocks are in category 1 and 2
2/3 of the stock are in category 3 to 6

ICES harvest control rule

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}).



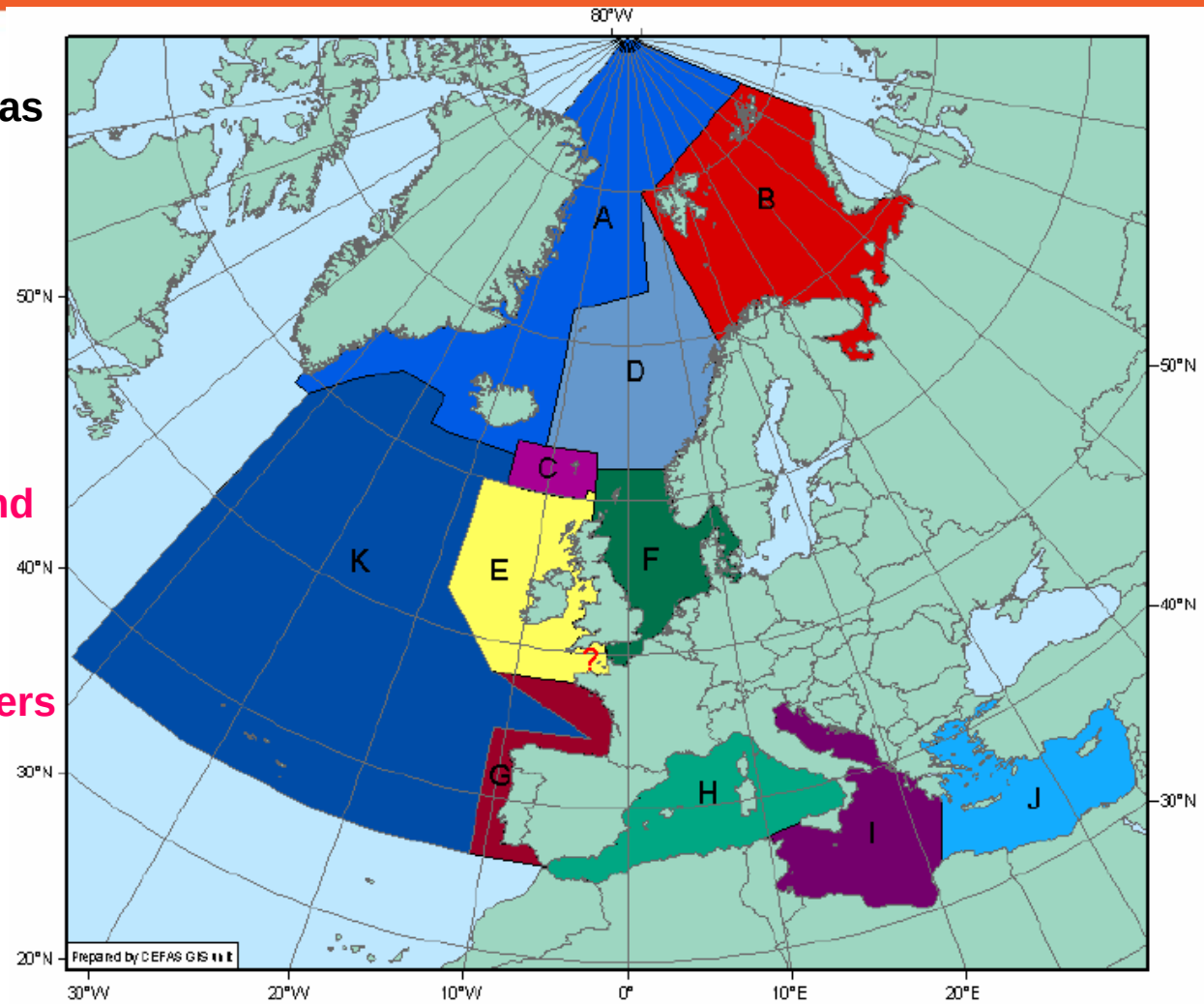
Stock status

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

Fishing mortality relative to F_{MSY}

ECOREGIONS

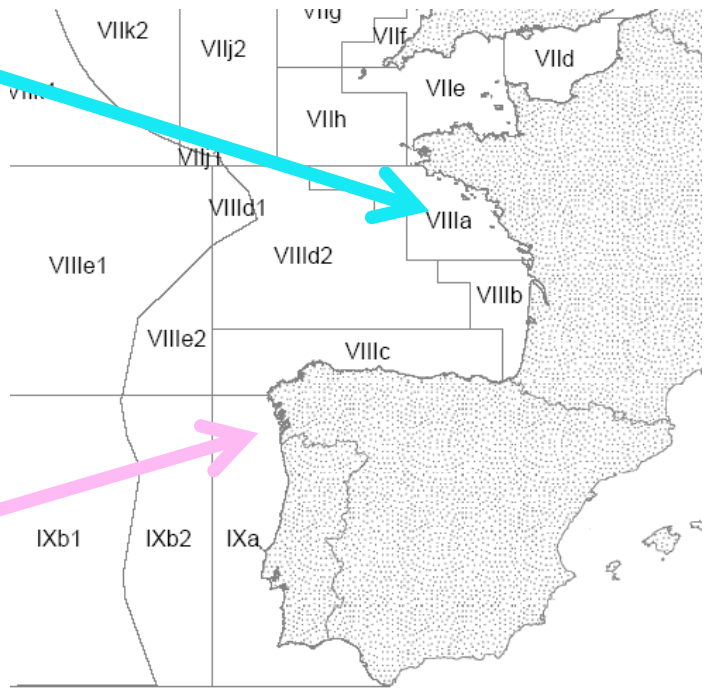
- Iceland and East Greenland Seas
- Barents Sea
- Faroe Plateau Ecosystem
- Norwegian Sea
- Celtic Sea and West of Scotland
- North Sea
- Bay of Biscay and Iberian Waters
- Baltic Sea
- Oceanic northeast Atlantic



Bay of Biscay & Iberia ecoregion

BAY OF BISCAY:

- **Sole**
- **Anchovy**



IBERIA (VIIIc, IXa):

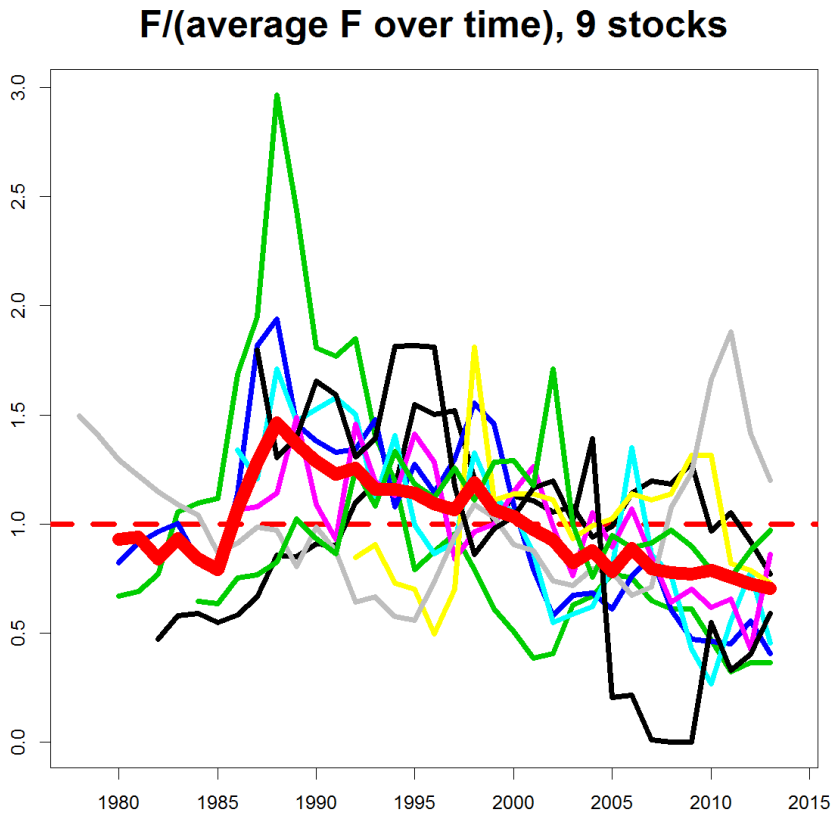
- **Hake**
- **Anglerfish (*pisc.*)**
- **Anglerfish (*budeg.*)**
- **Megrim (*whiff.*)**
- **Megrim (*bosc.*)**
- **Sardine**
- **H. mackerel (IXa)**

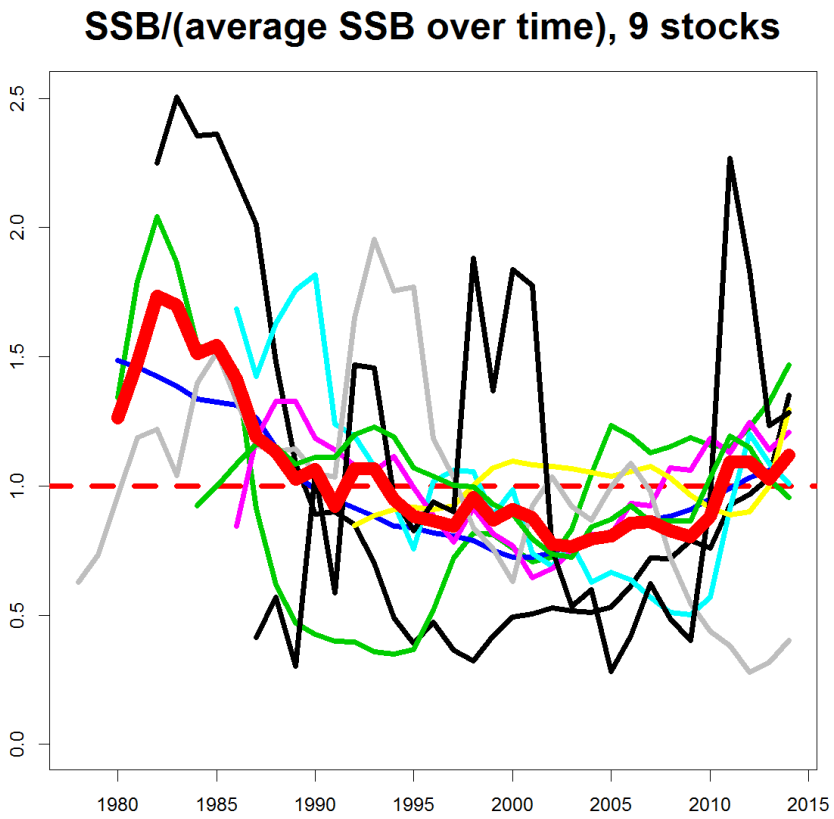
Nephrops

- **VIIIc, IXaN**
- **IXaS**
- **VIIIab**

"New" stocks

whiting
plaice
sole
pollack
grey gurnard
sardine 7+8abd
sea bass





Bay of Biscay & Iberia ecoregion

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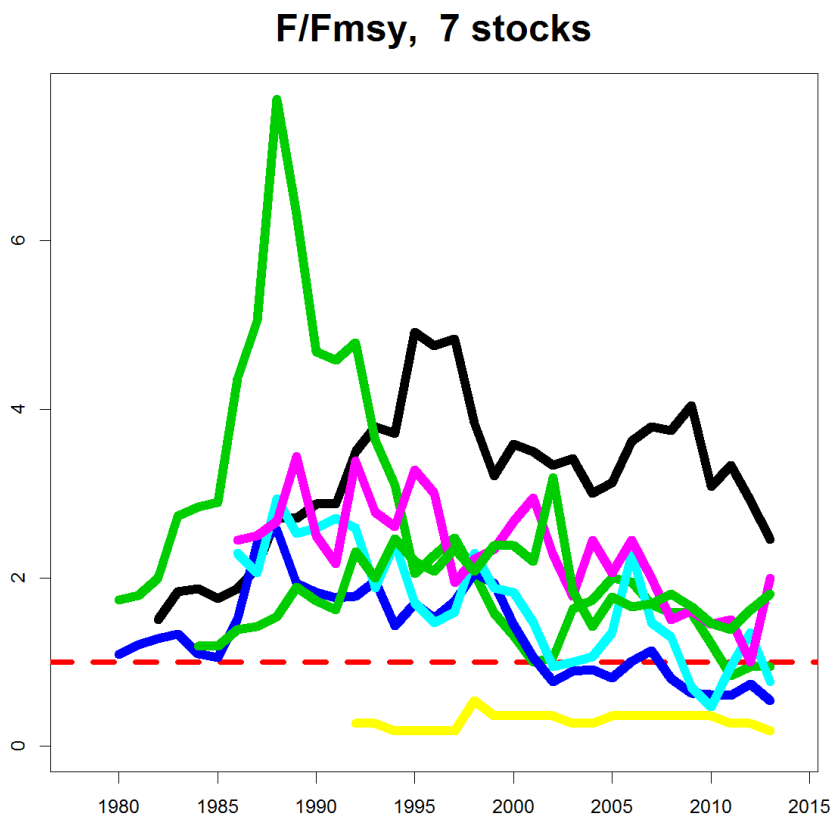

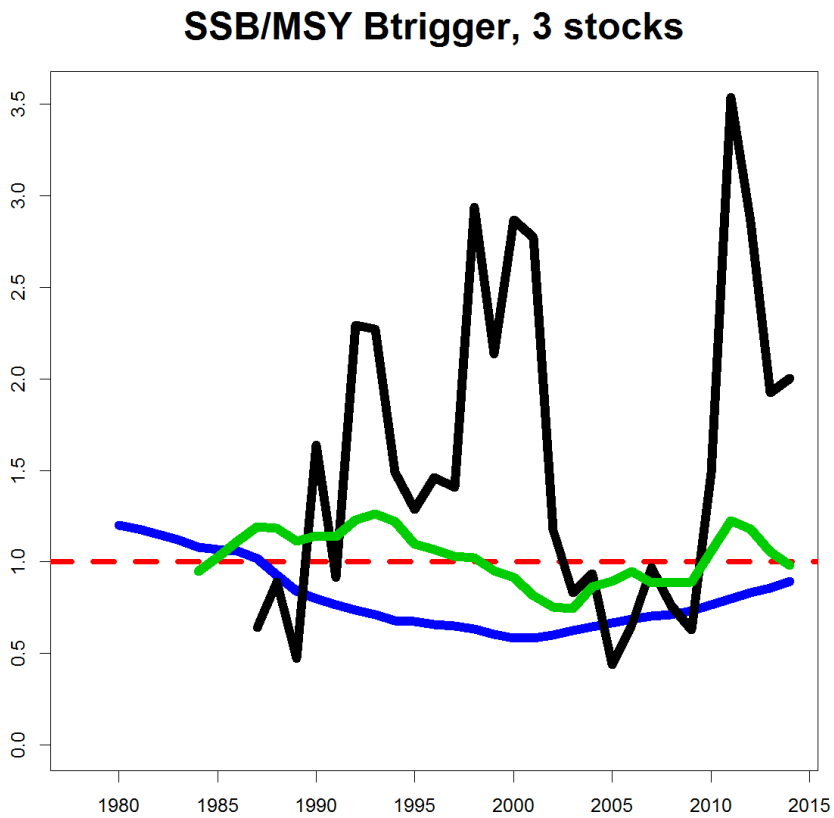

Bay of Biscay & Iberia ecoregion

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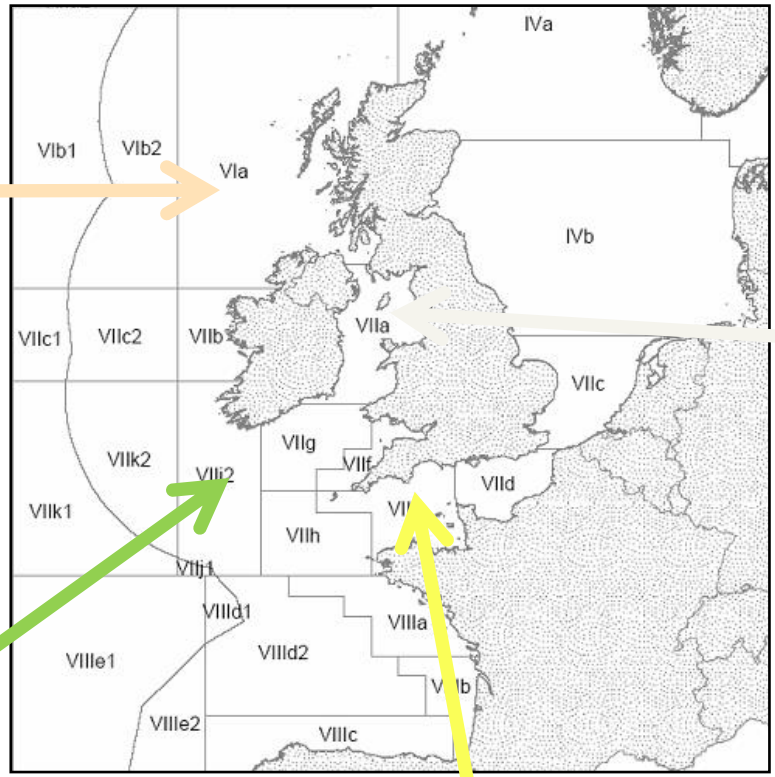
Celtic Seas ecoregion

West of Scotland & Rockall

- **Cod** (**VIa**; VIb)
- Haddock (VIa; VIb)
- **Whiting** (**VIa**; VIb)
- Anglerfish (IIIa,IV,VI)
- Megrim (IVa-VIa; VIb)
- *Nephrops* (FUs11-12-13)



Irish Sea

- **Cod**
- Haddock
- **Whiting**
- Plaice
- **Sole**
- *Nephrops* (FUs 14-15-19)

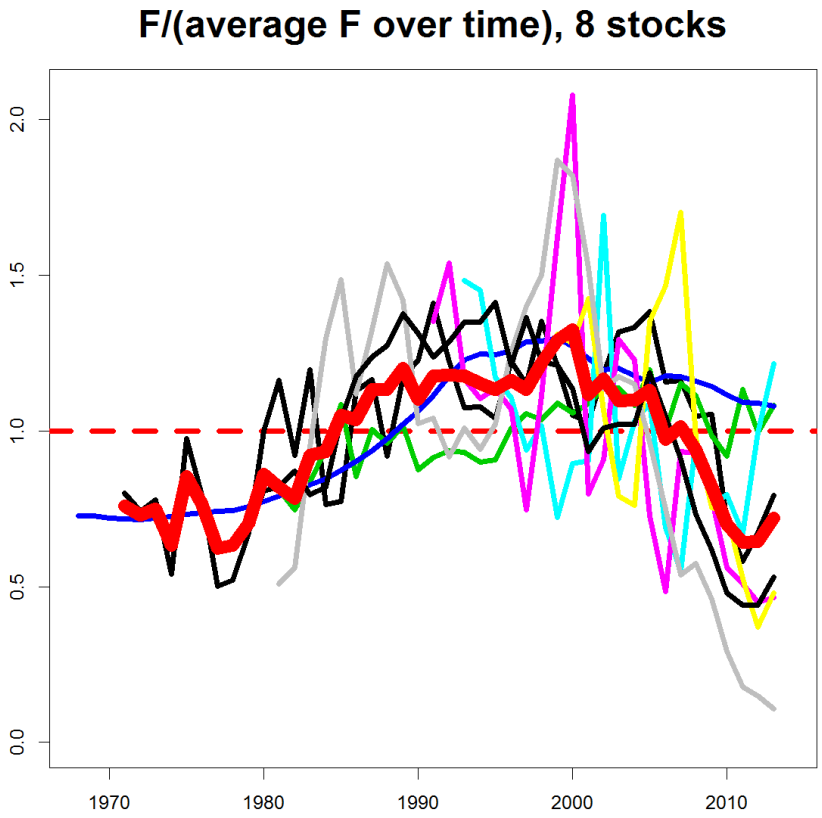
Celtic Sea & West, Southwest Ireland

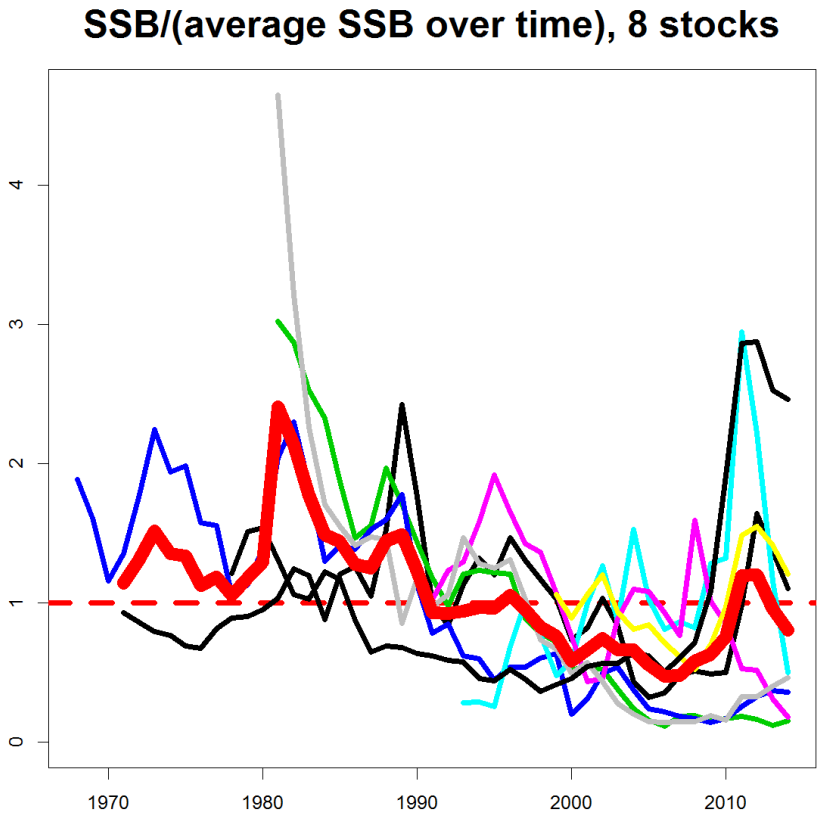
- Cod (VIIe-k)
- Haddock (VIIb-k)
- Whiting (VIIe-k)
- Plaice (CS; VIIh-k; VIIbc)
- Sole (CS; VIIh-k; VIIbc)
- Northern hake
- Anglerfish (VIIb-k, VIIIabd)
- Megrim (VIIb-k, VIIIabd)
- *Nephrops* (FUs 16-17-20-22)

Western Channel

- Plaice (VIIe)
- Sole (VIIe)

Cod, Haddock, Whiting, Hake





Celtic Seas ecoregion

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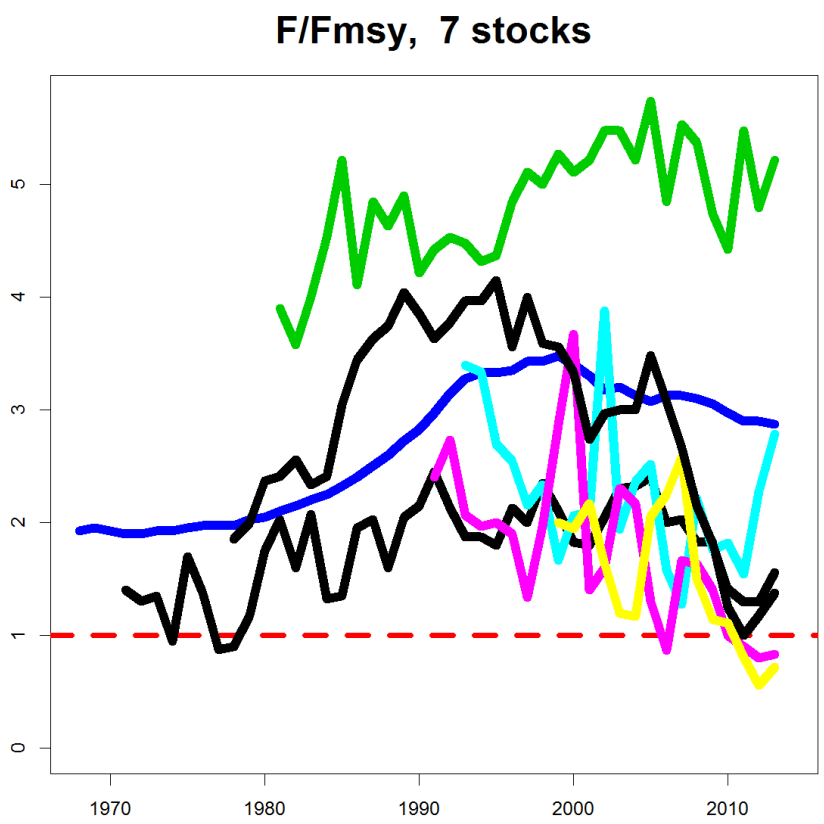
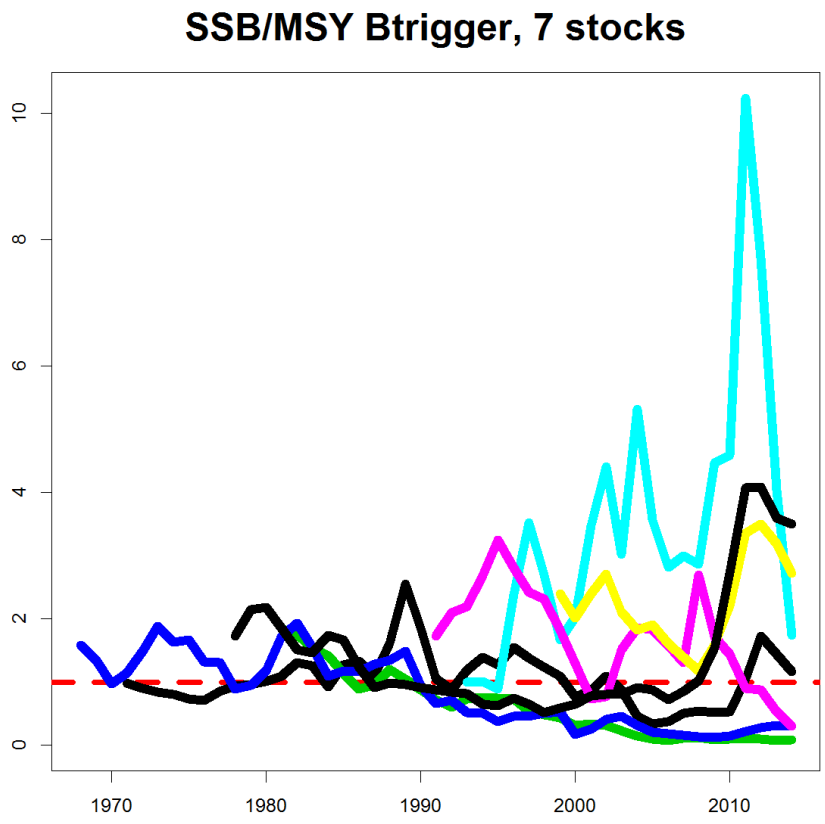
Cod, Haddock, Whiting, Hake





Celtic Seas ecoregion

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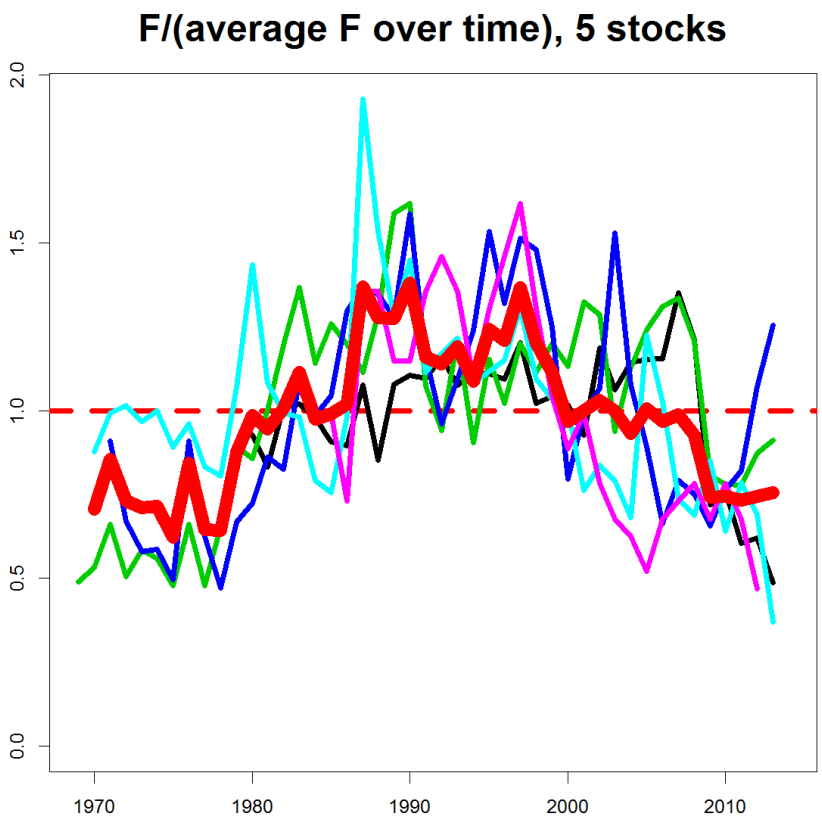
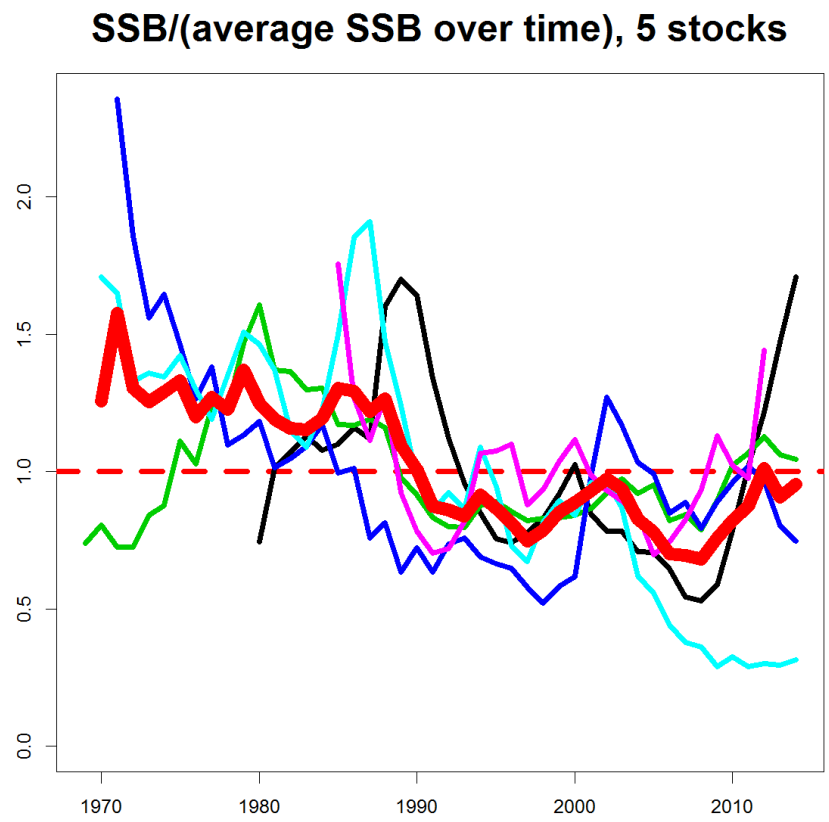
Plaice, sole and megrim





Celtic Seas ecoregion

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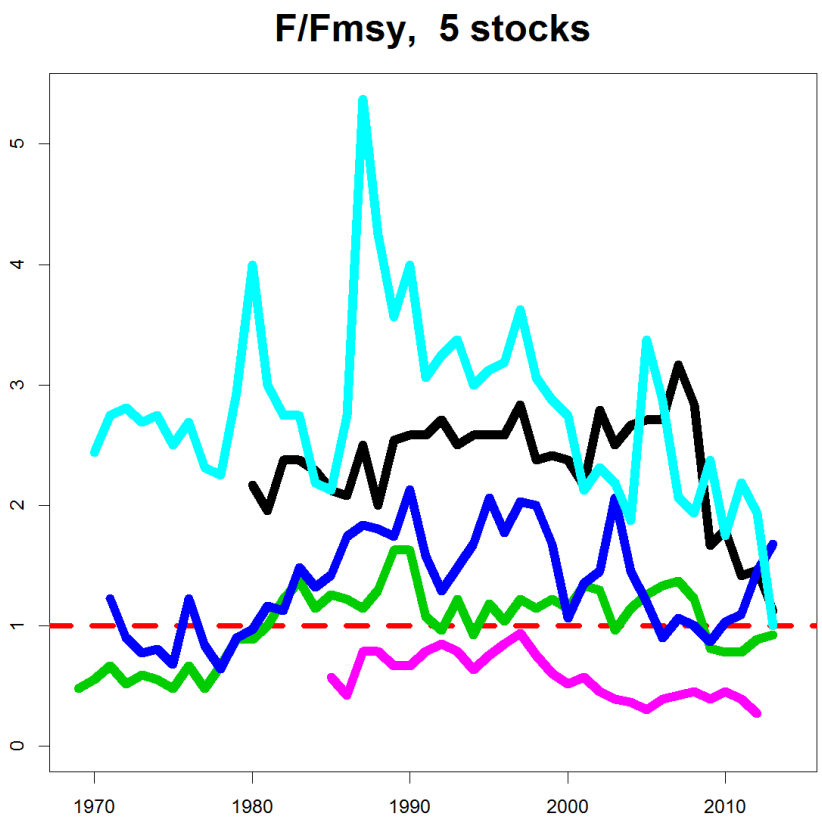
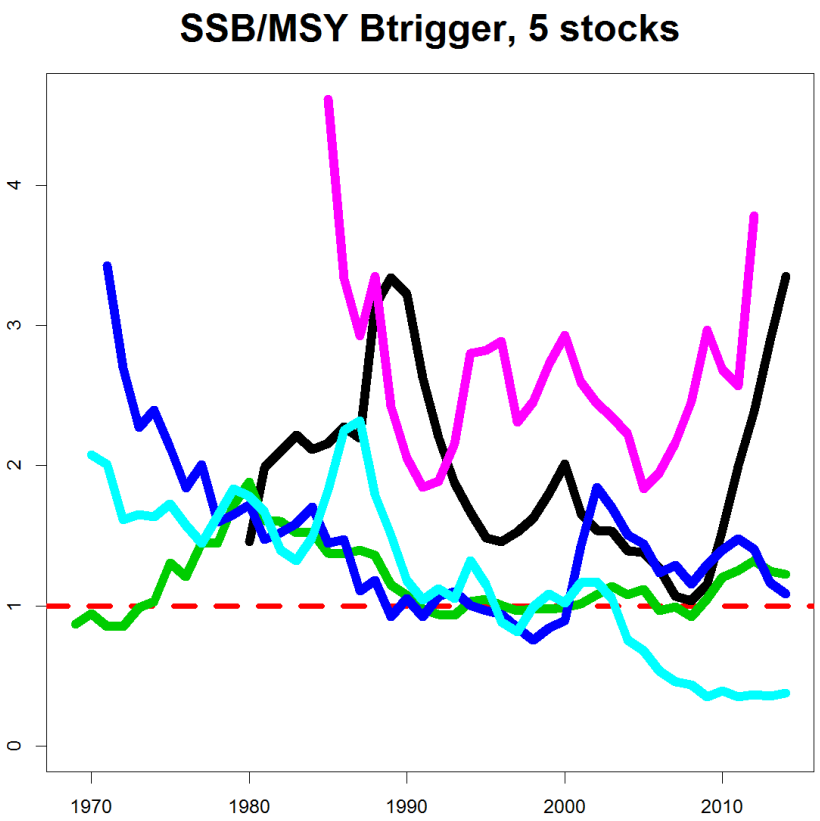
Plaice, sole and megrim





Celtic Seas ecoregion

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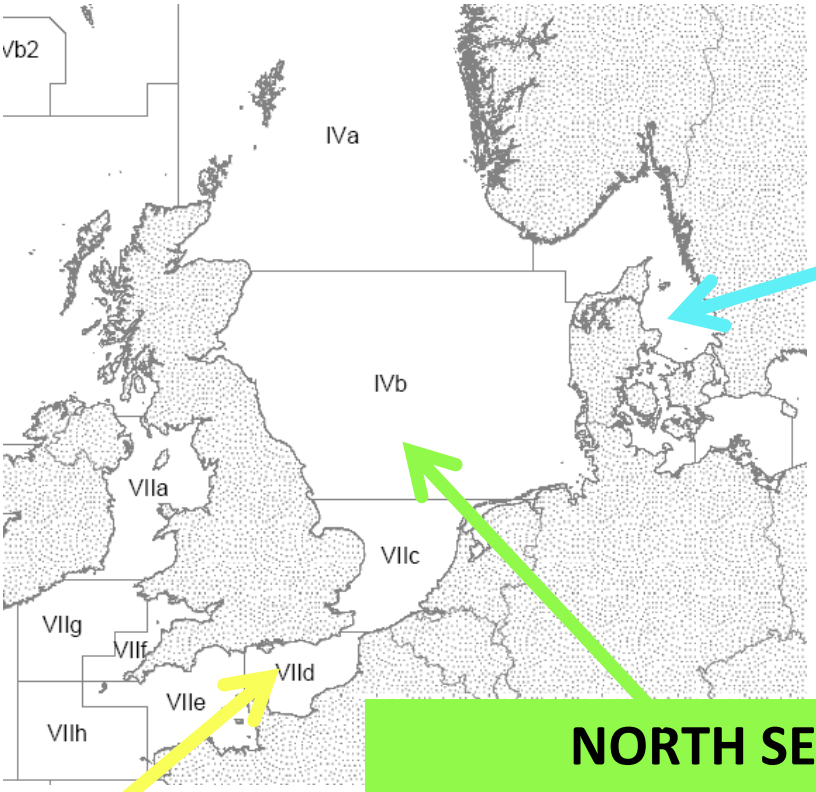
North Sea ecoregion



- 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)

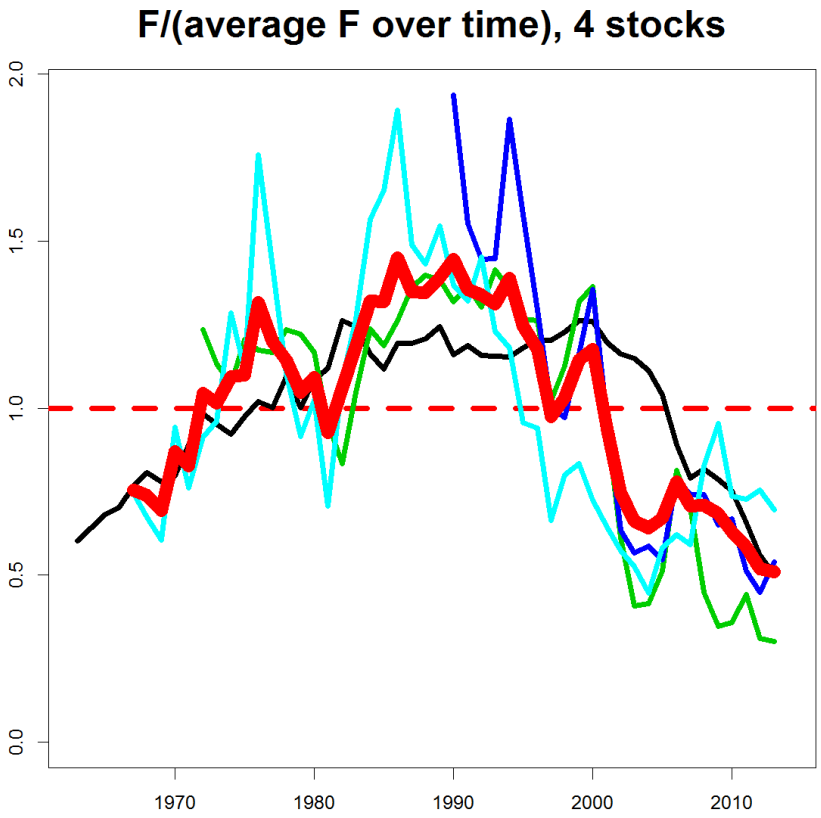
Brill, Dab, Flounder, Lemon sole, Turbot (IV; IIIa), Witch

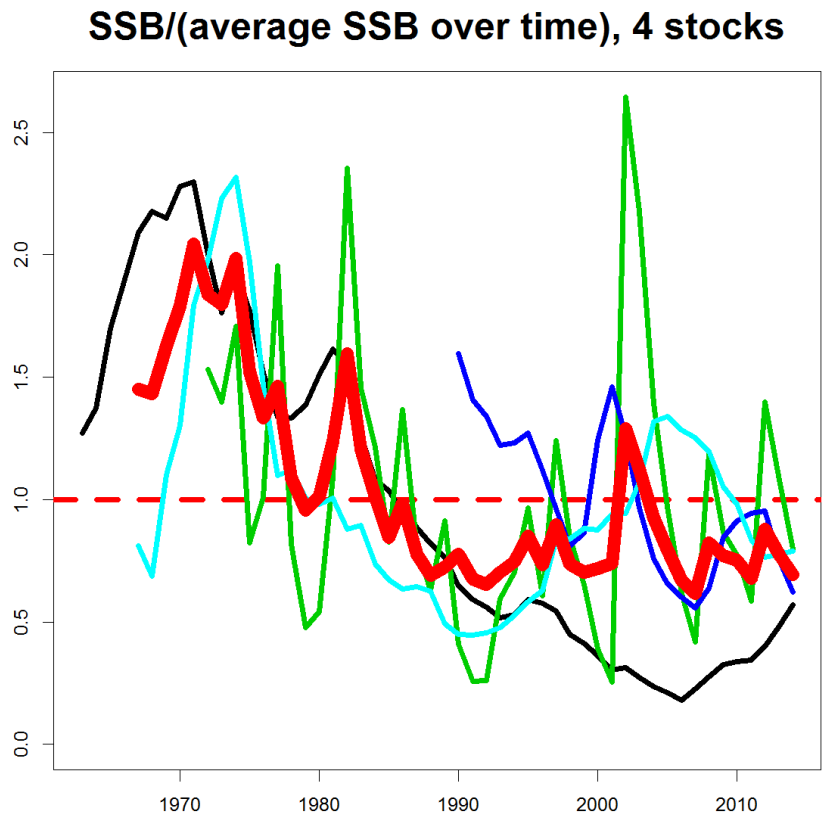
Nephrops

Short lived:

Sandeel, Norway pout, Sprat (IV, IIIa)

Cod, haddock, whiting and saithe





North Sea ecoregion

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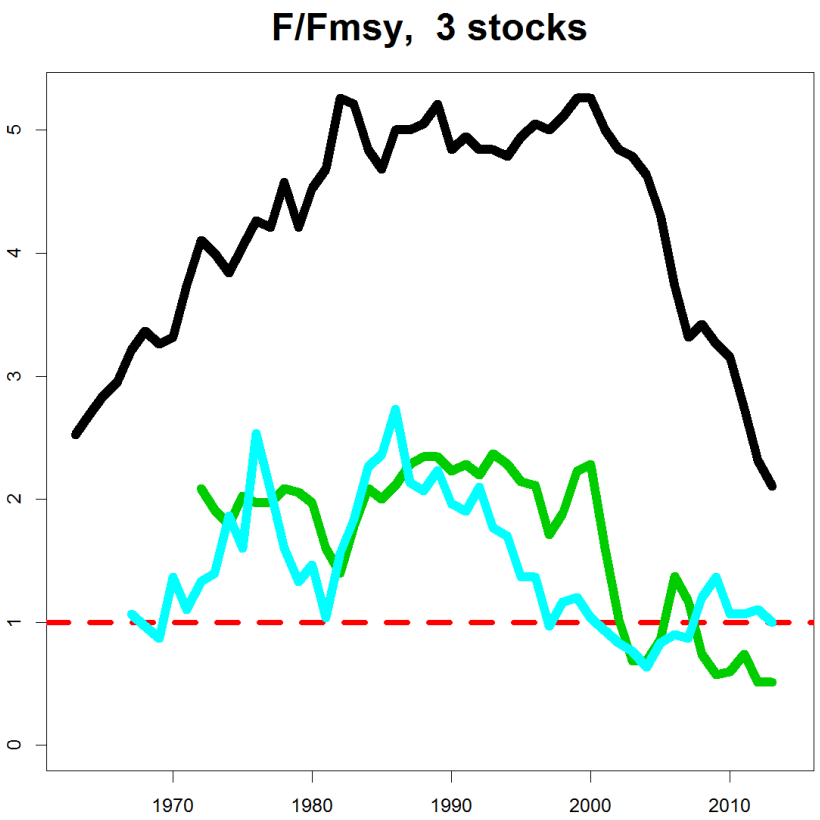
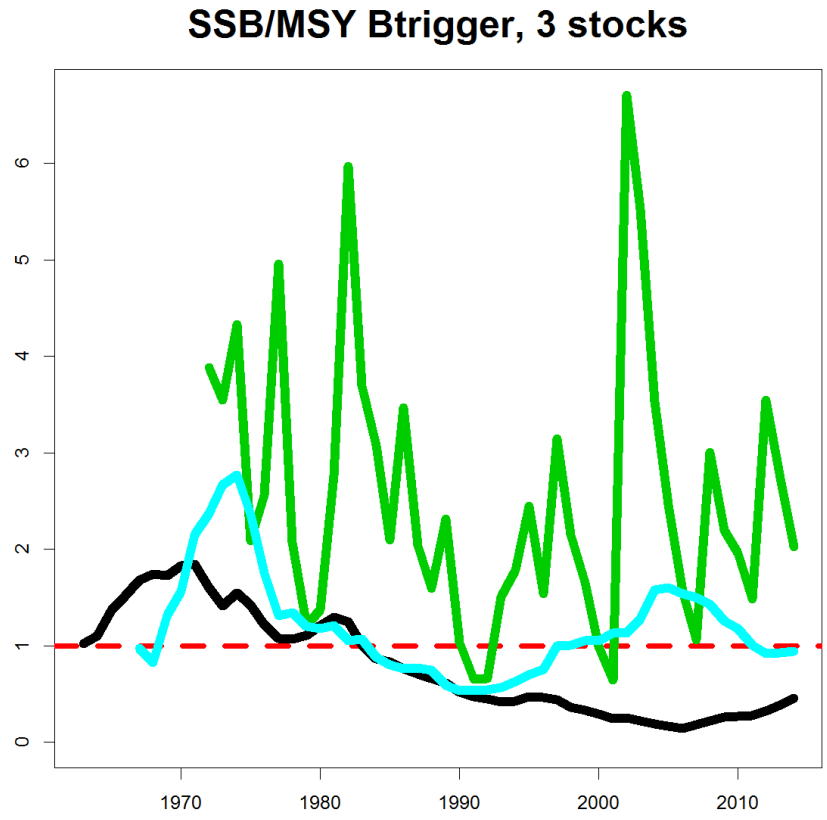
Cod, haddock, whiting and saithe





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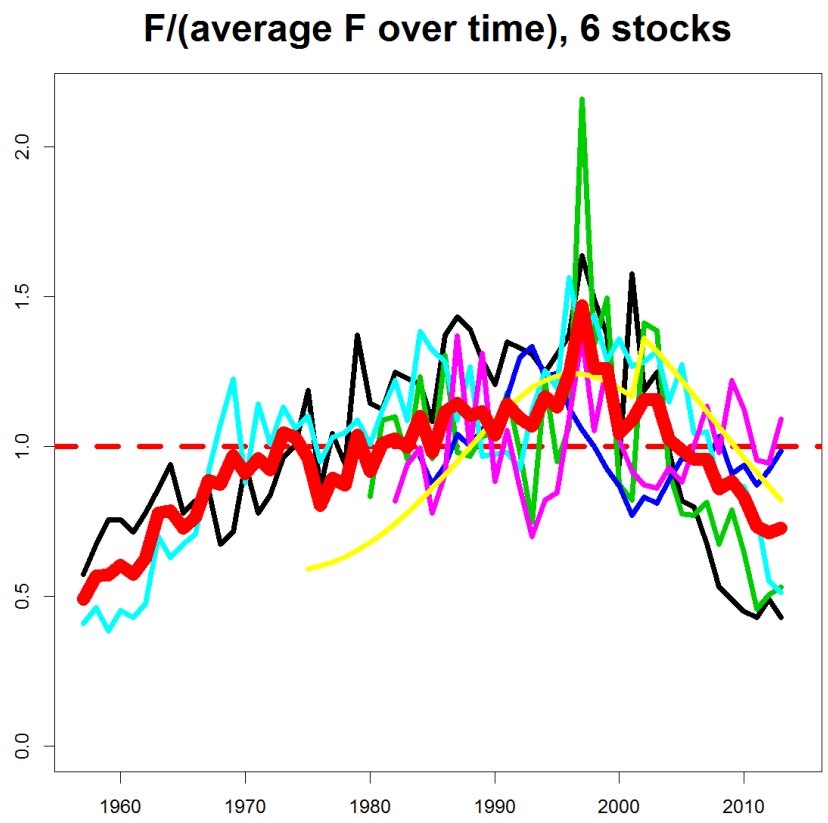
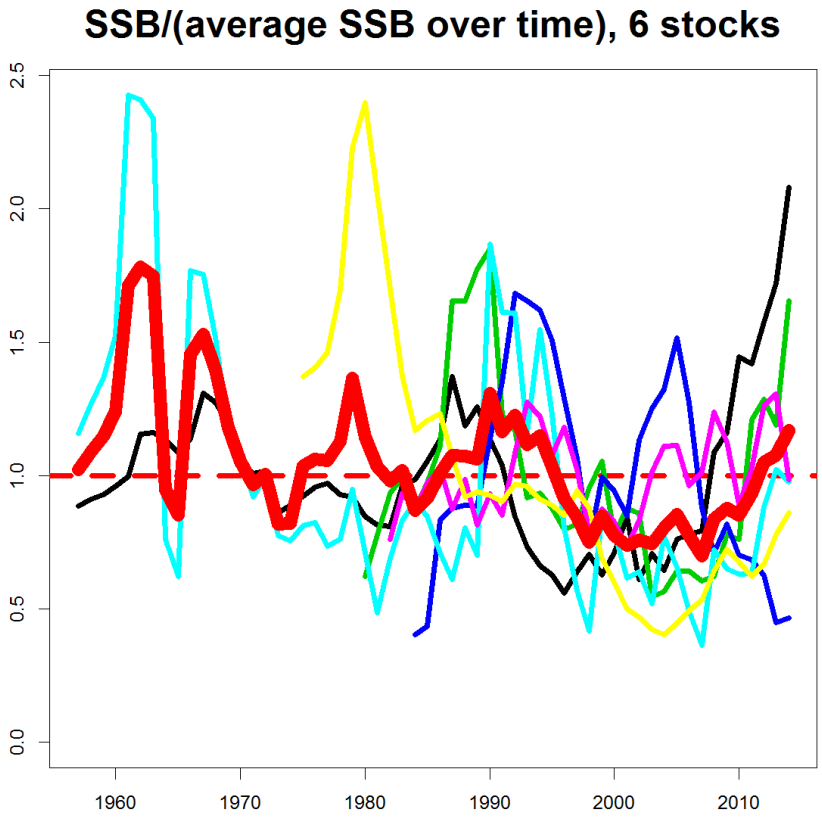
Plaice and sole





North Sea ecoregion

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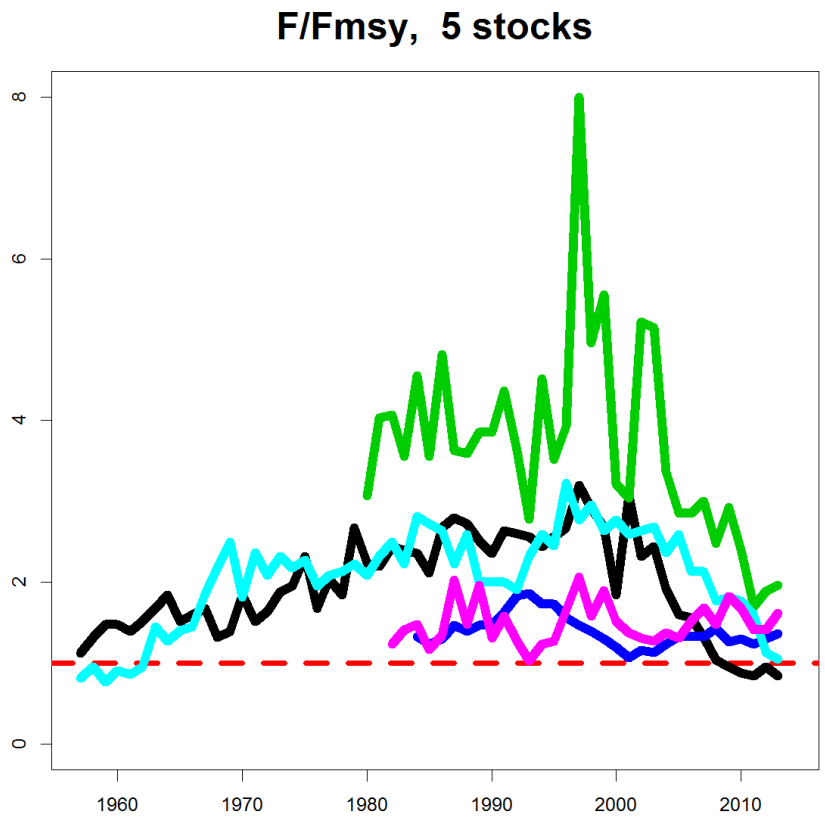
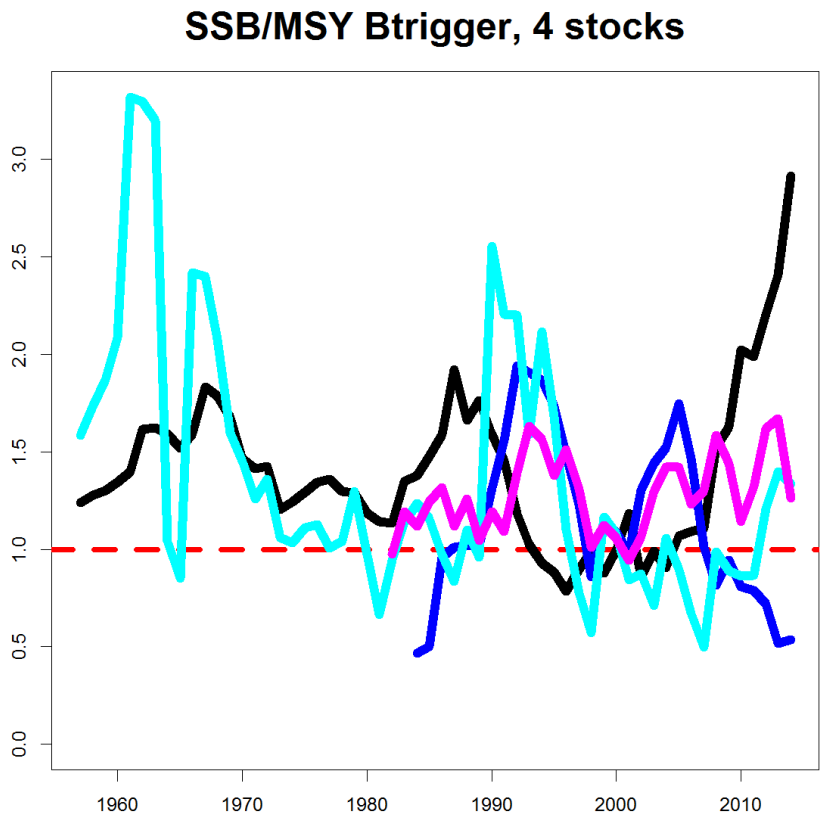
Plaice and sole





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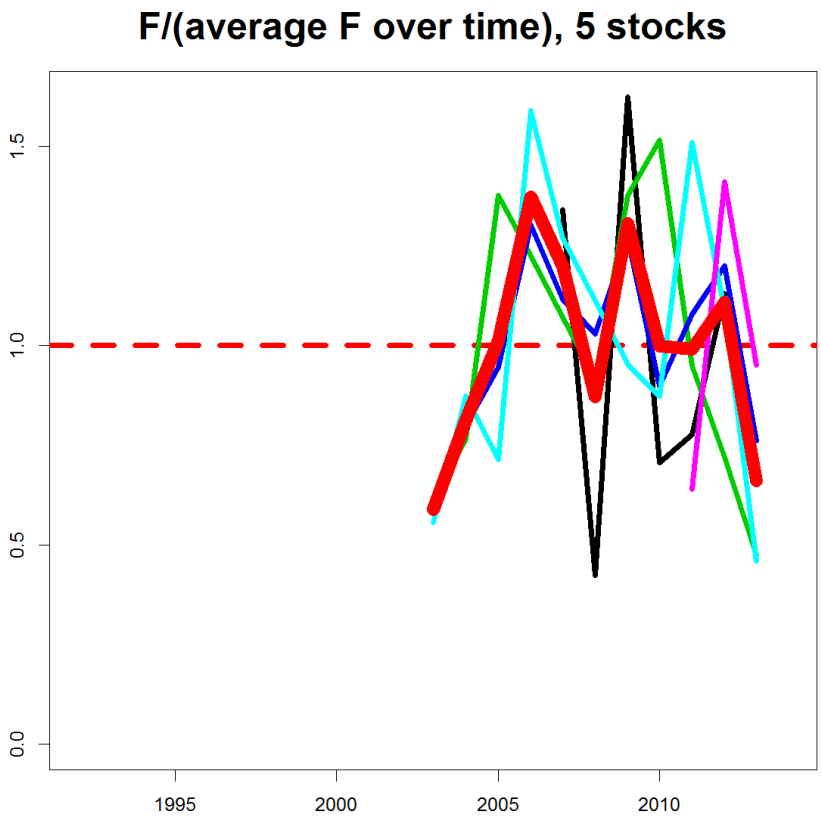
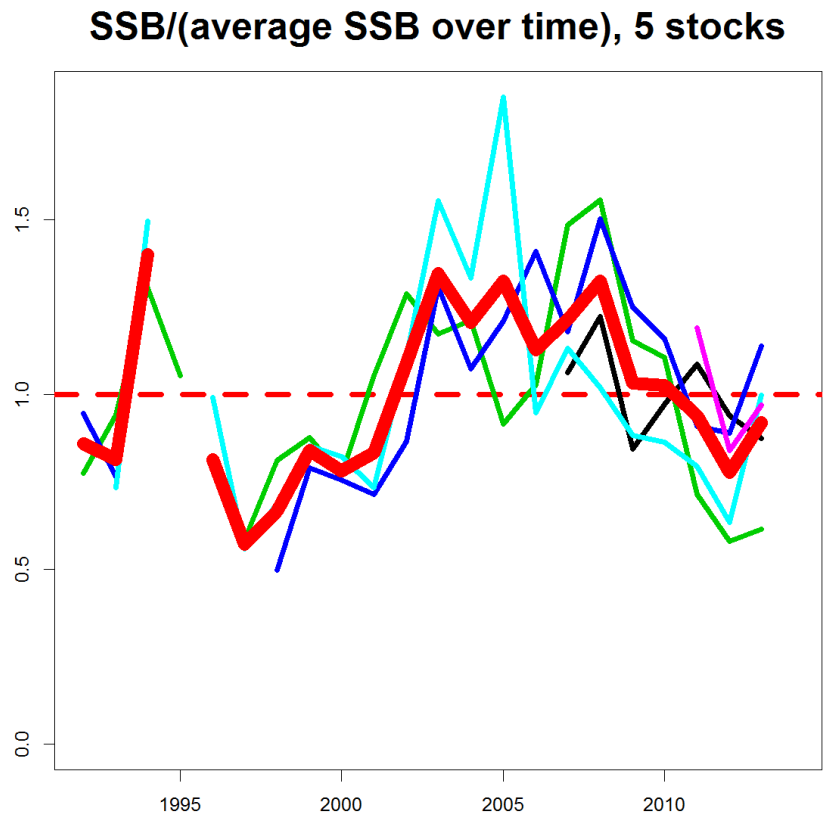
Nephrops





North Sea ecoregion

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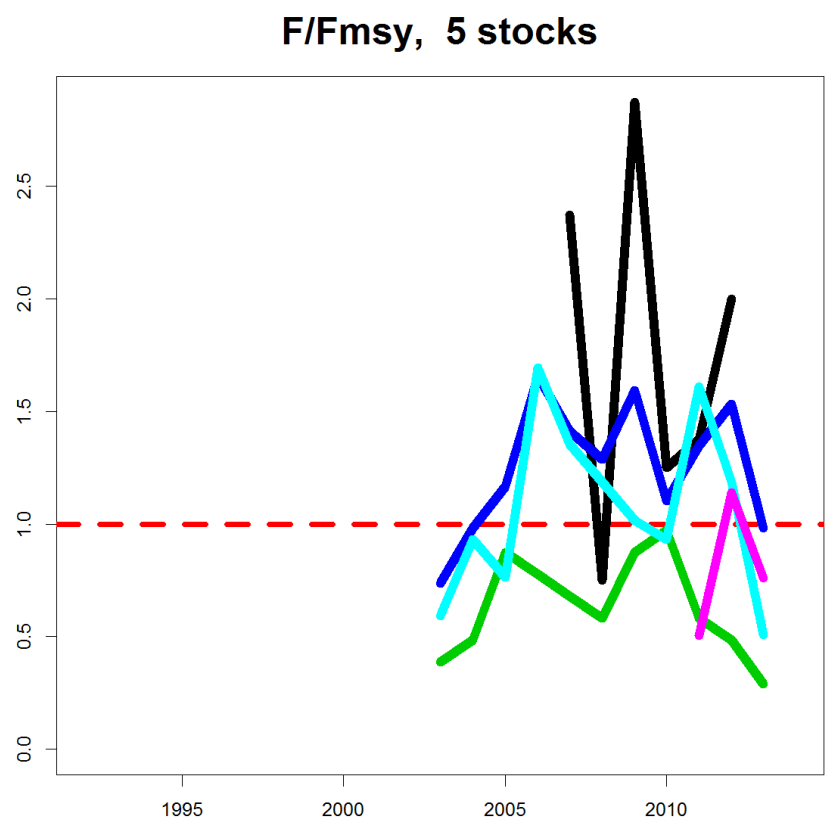
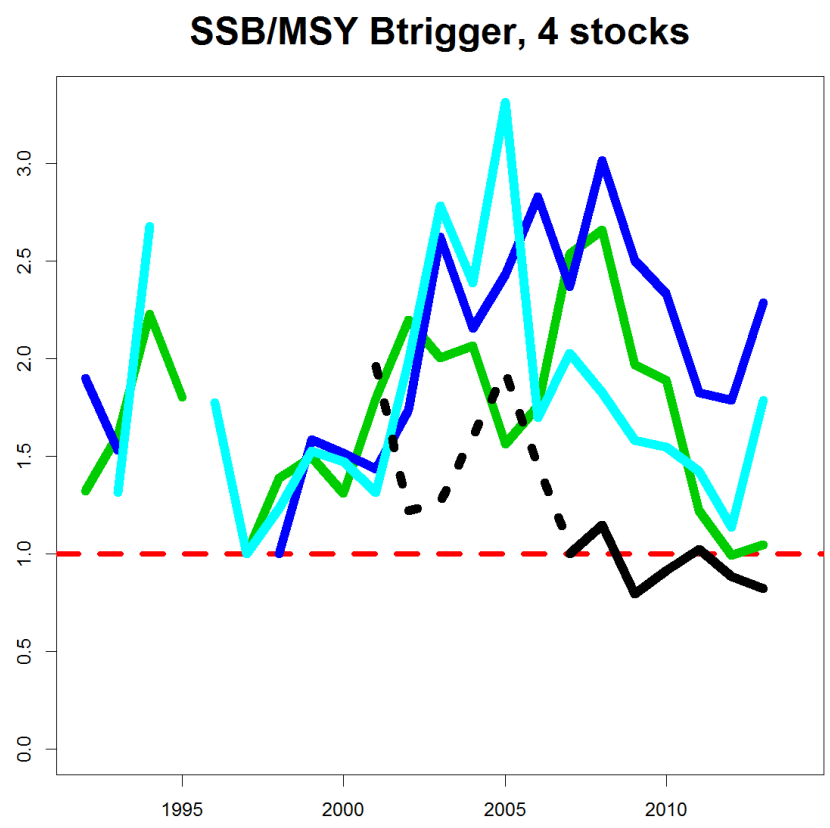
Nephrops





North Sea ecoregion

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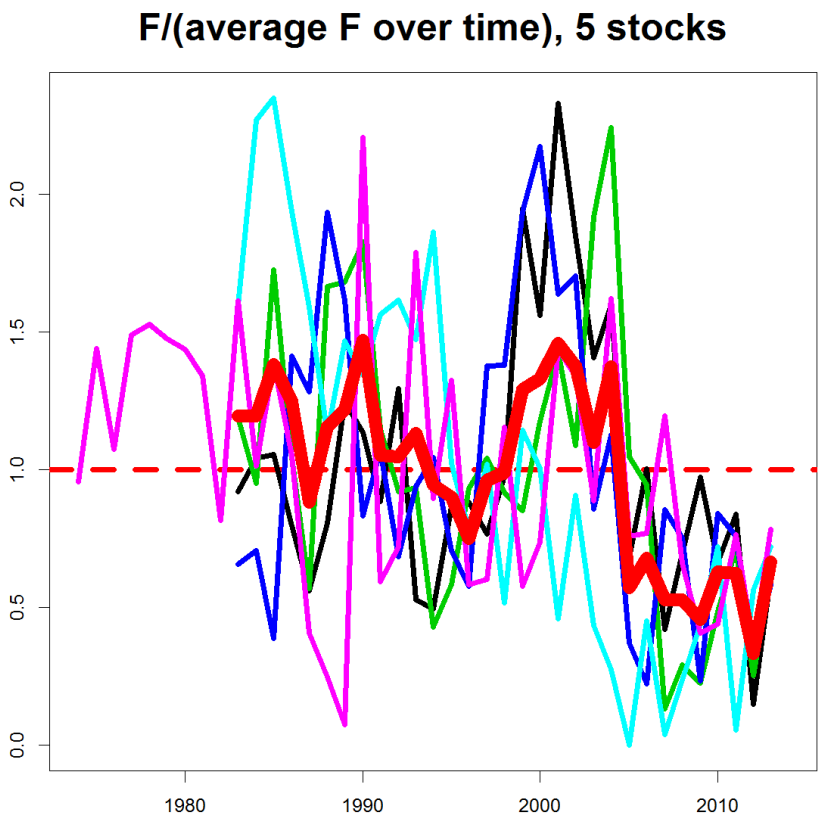
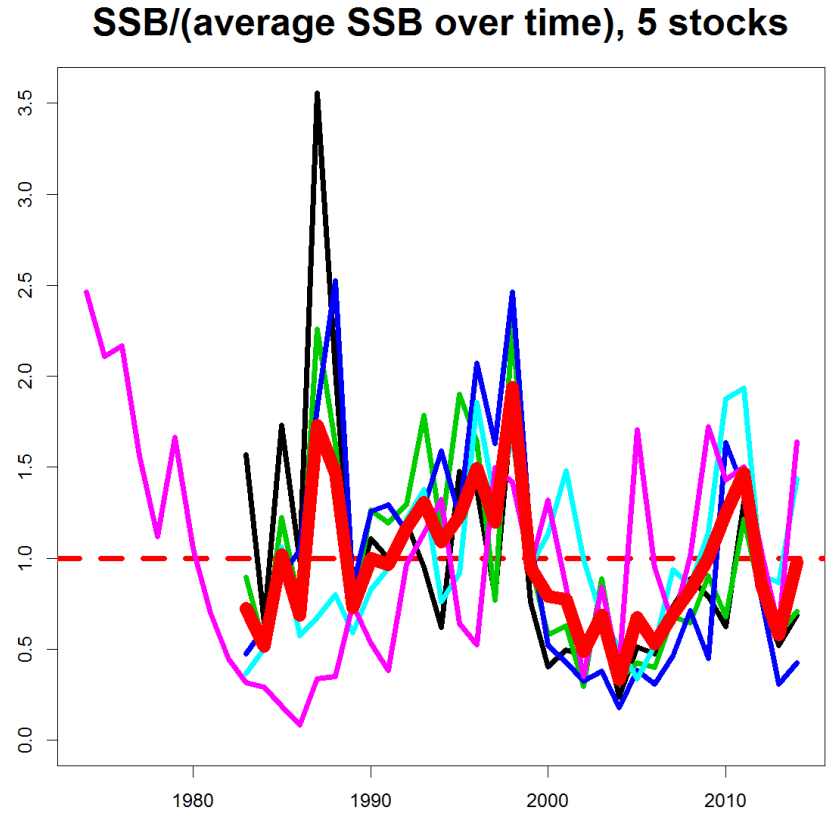
Sandeel, Norway pout and sprat





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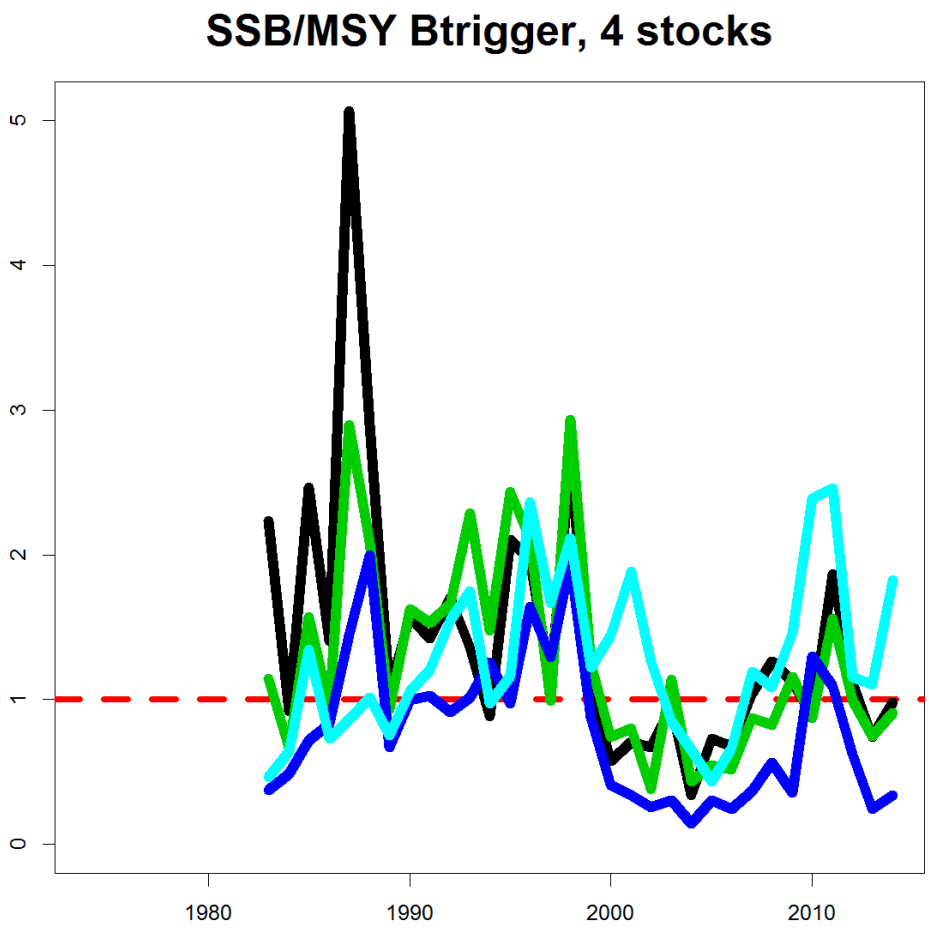

North Sea ecoregion

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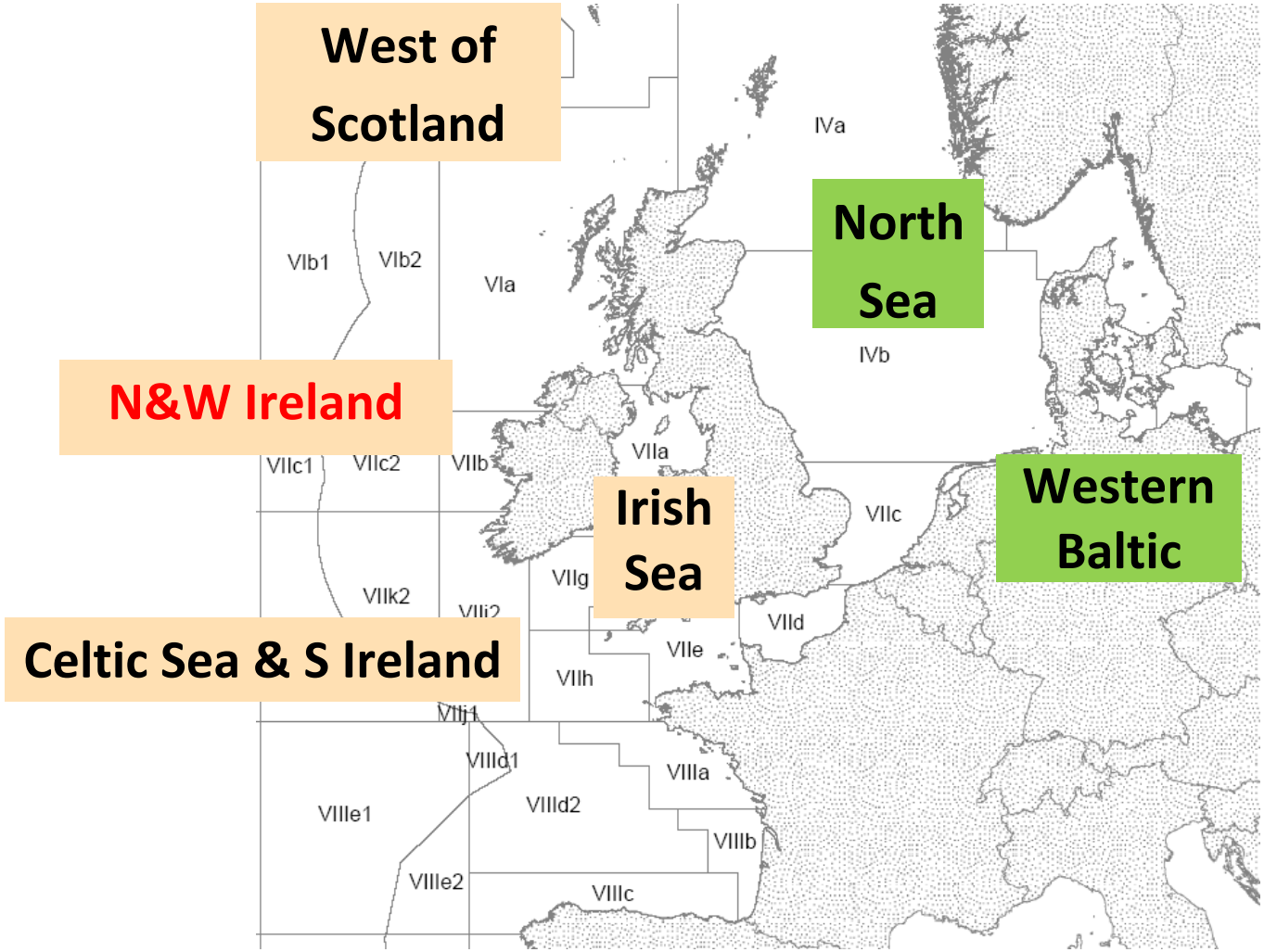
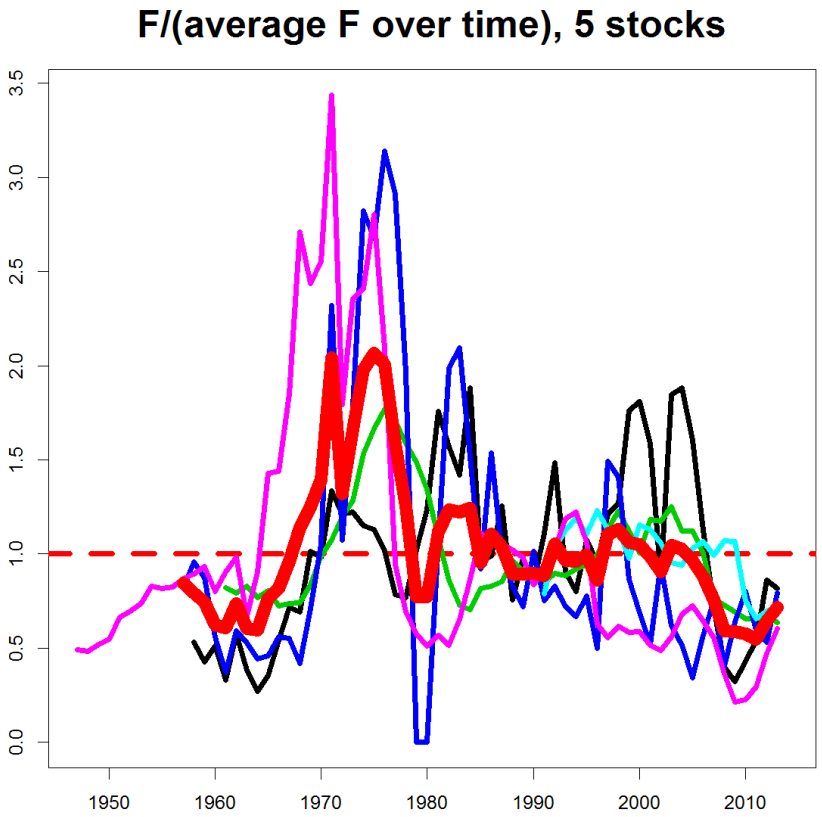
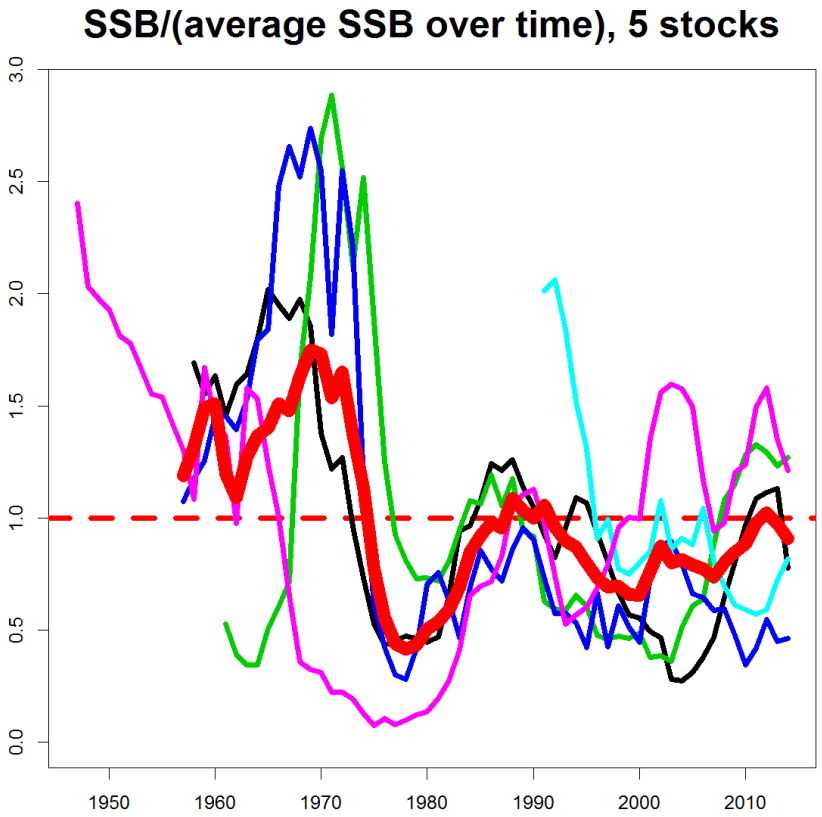
Celtic Seas, N Sea: Herring



Herring





Celtic Seas and North Sea

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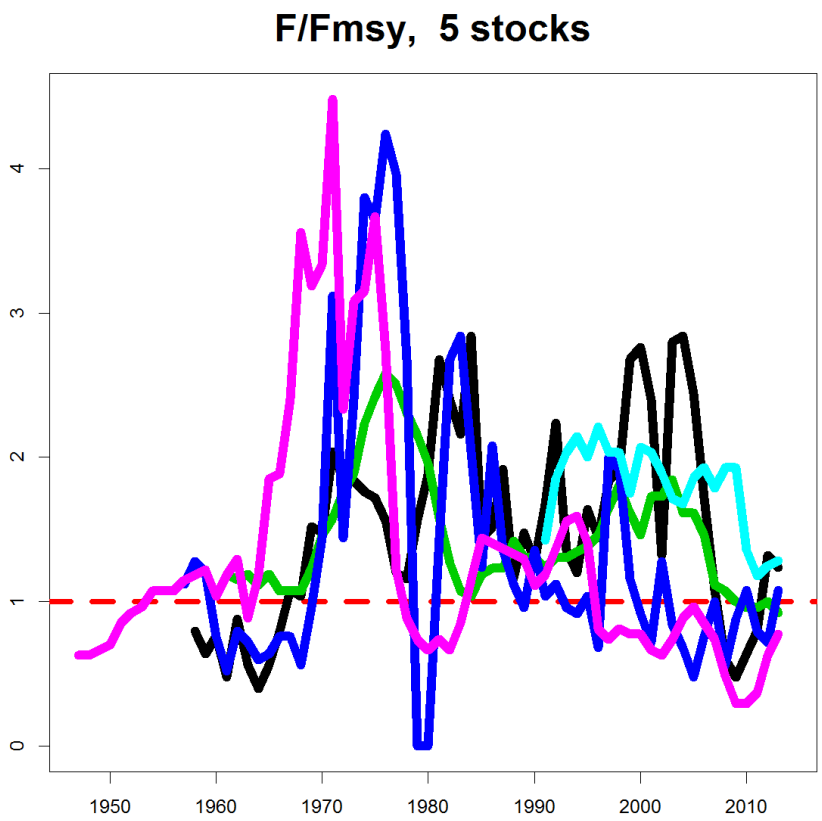
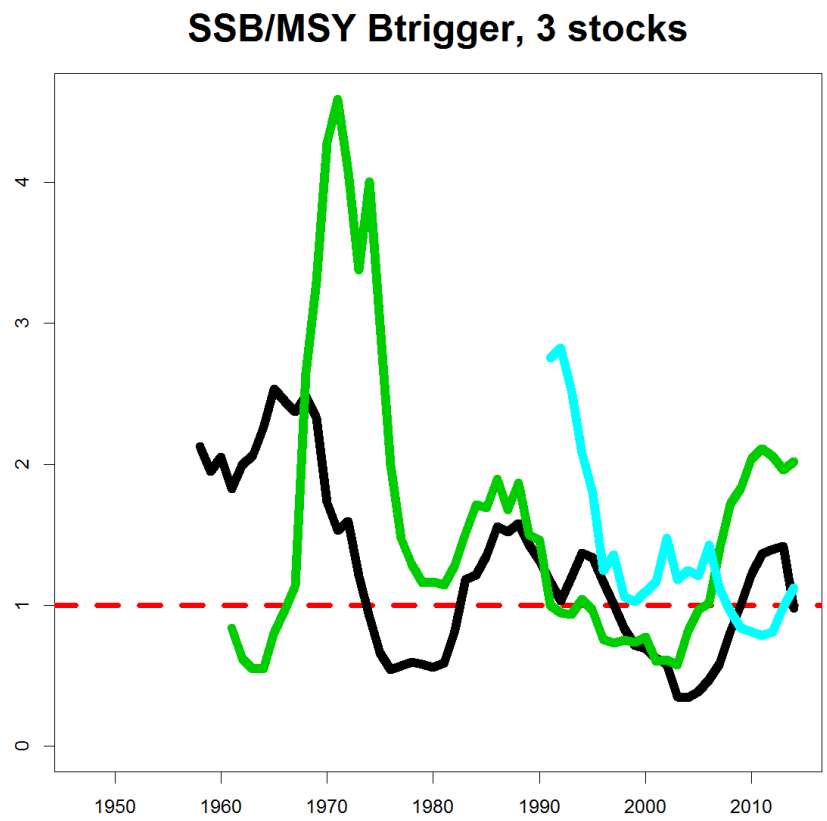
Herring





Celtic Seas and North Sea

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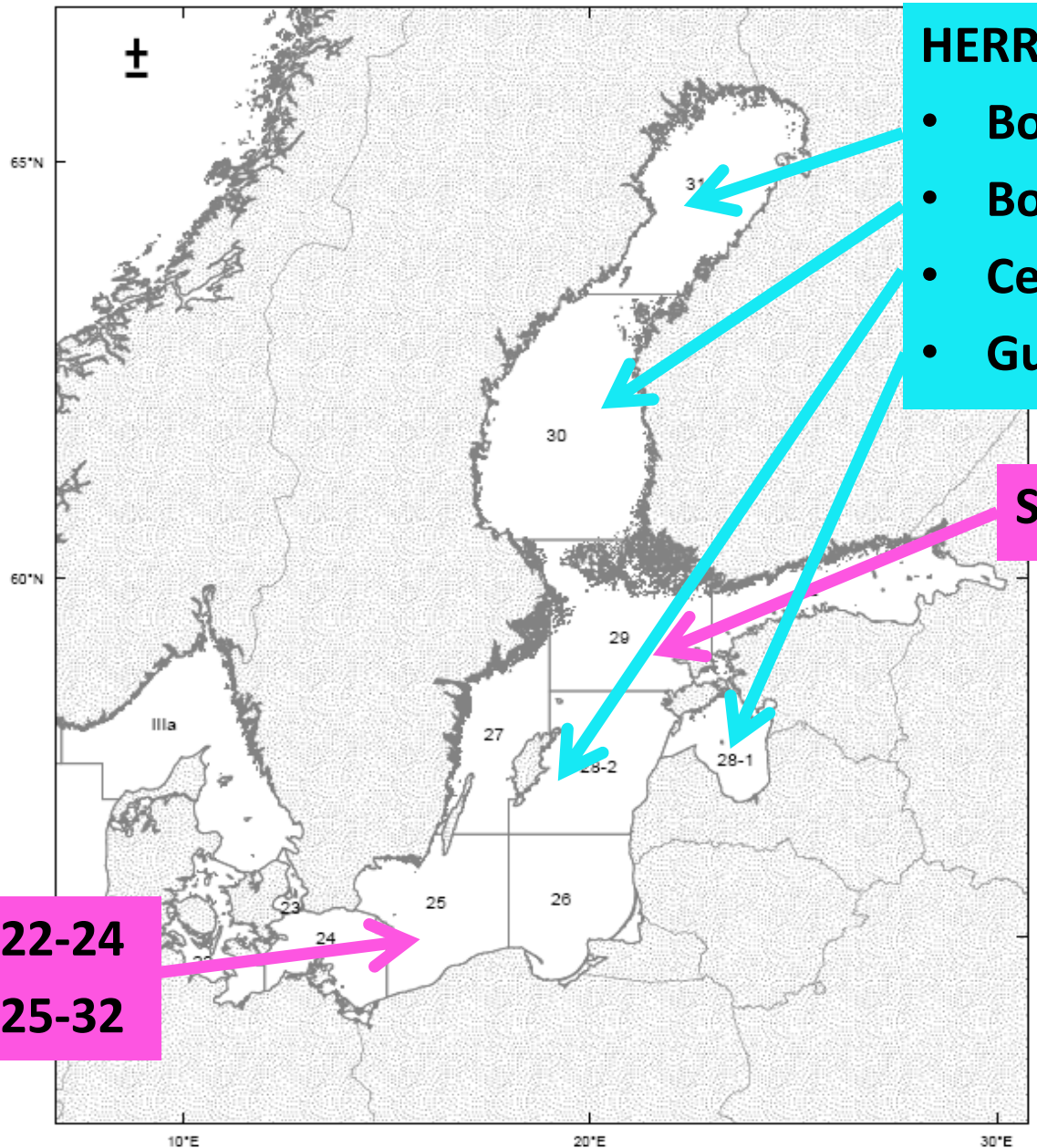
Baltic ecoregion



HERRING:

- **Bothnian Bay**
- **Bothnian Sea**
- **Central Baltic**
- **Gulf Riga**

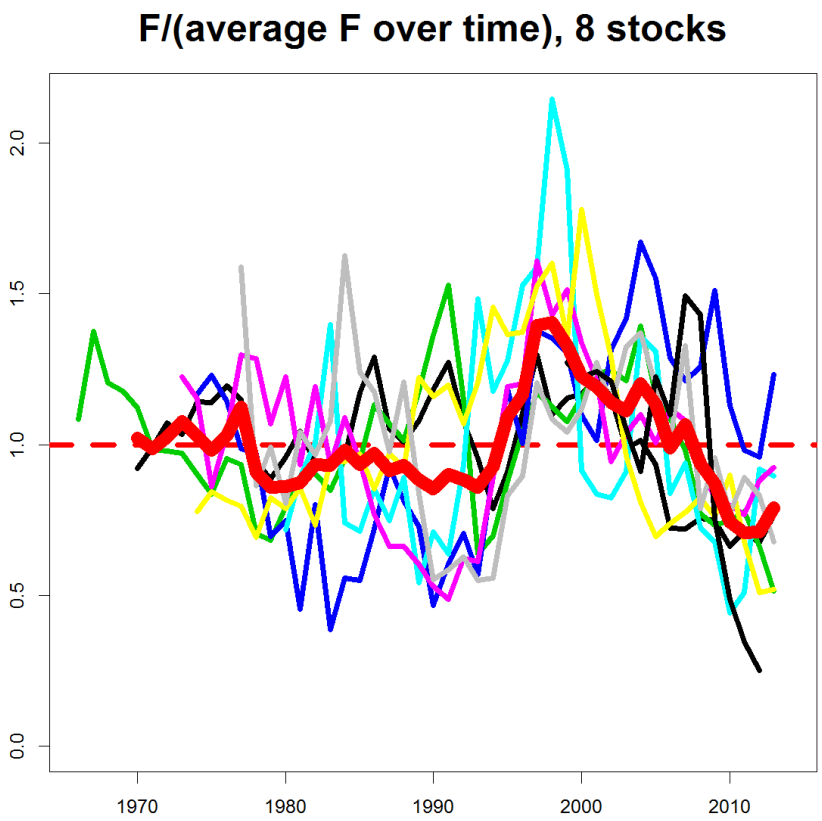
Sprat SD 22-32

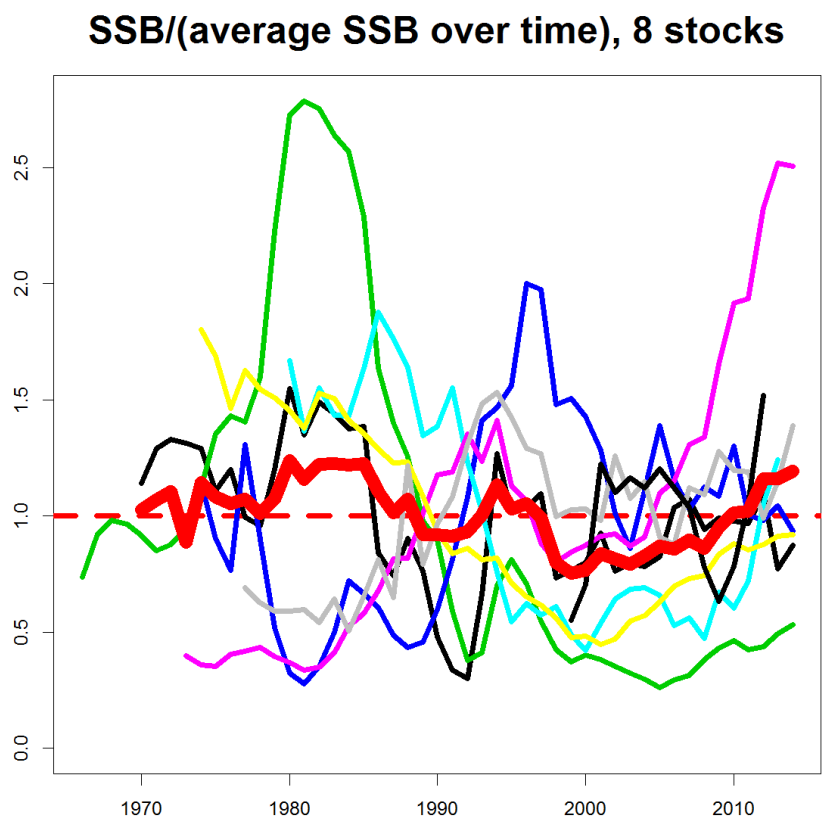
Flatfishes

Plaice, Brill, Dab, Flounder, Turbot

Salmon & Trout

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





Baltic ecoregion

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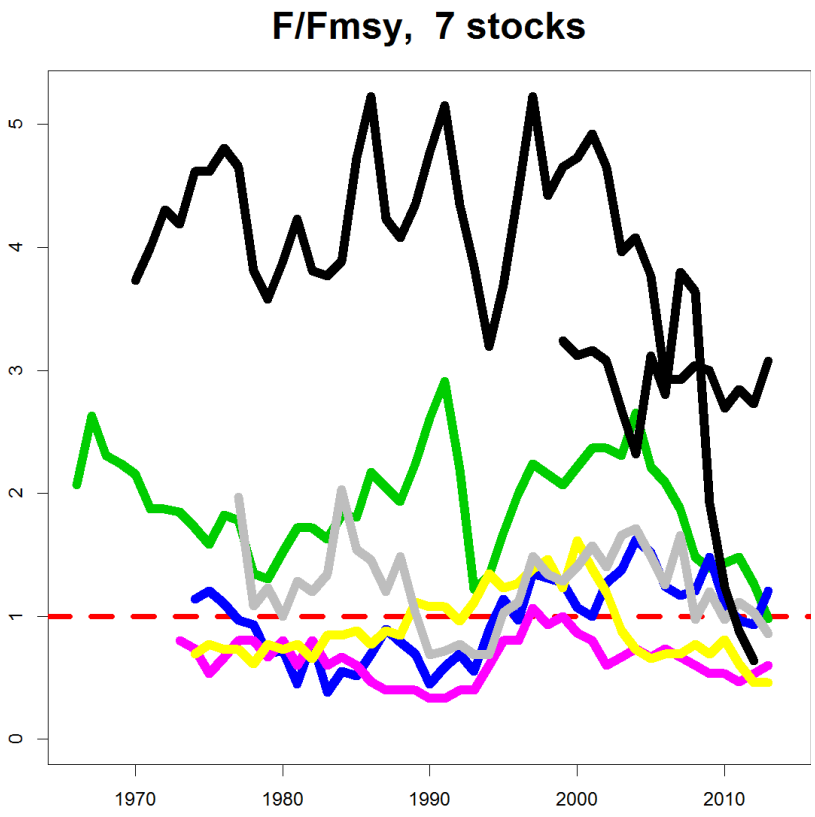

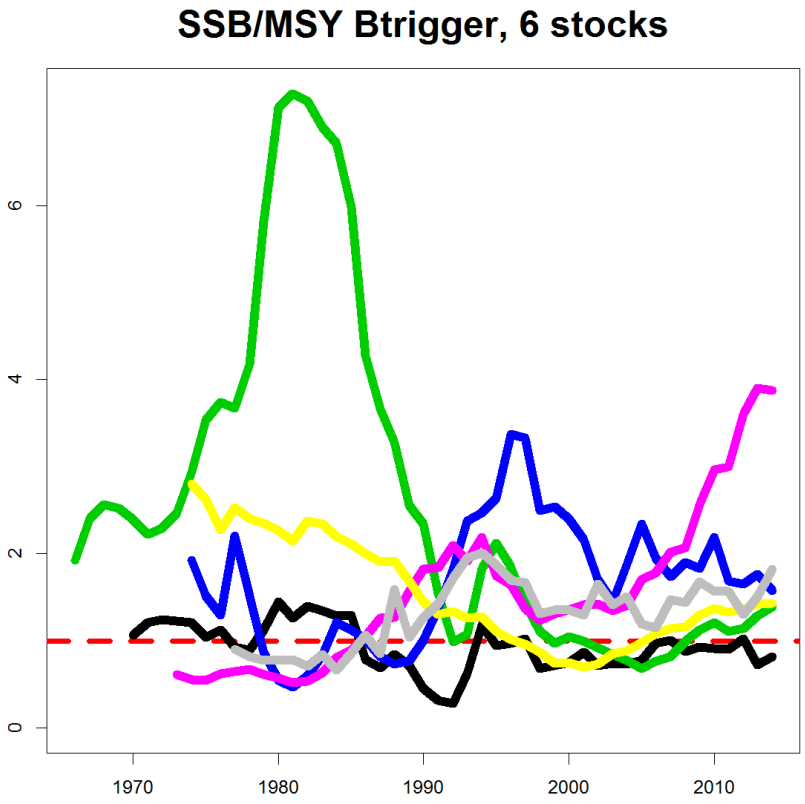

Baltic ecoregion

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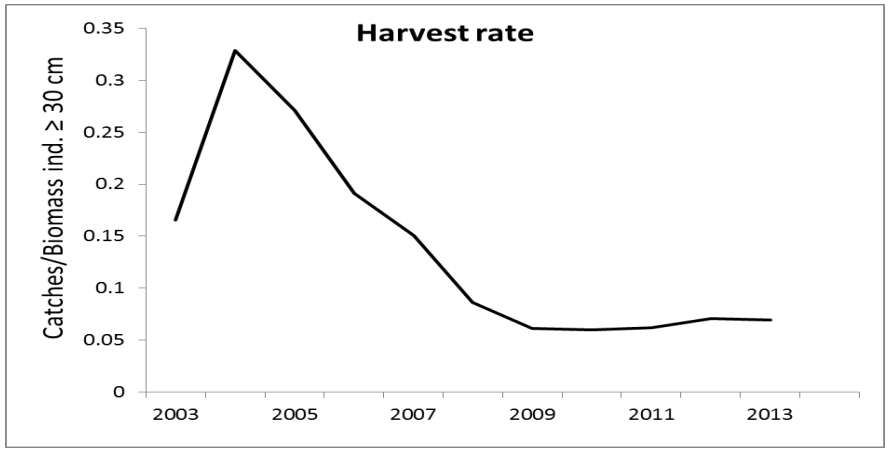
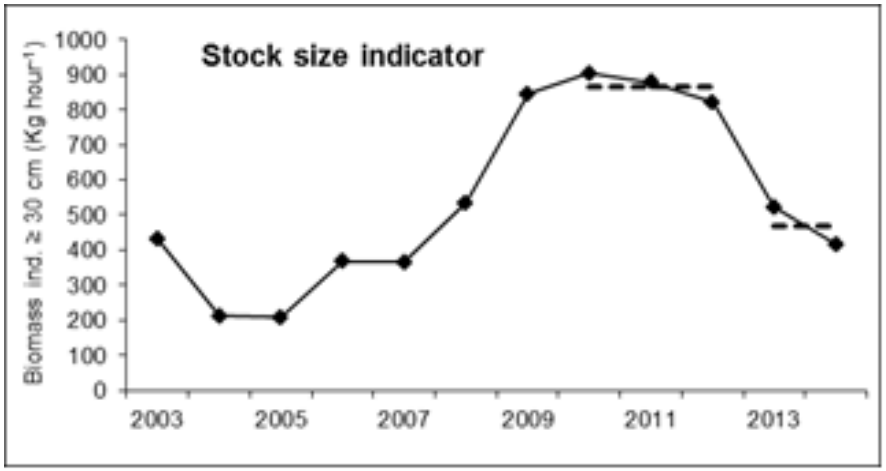
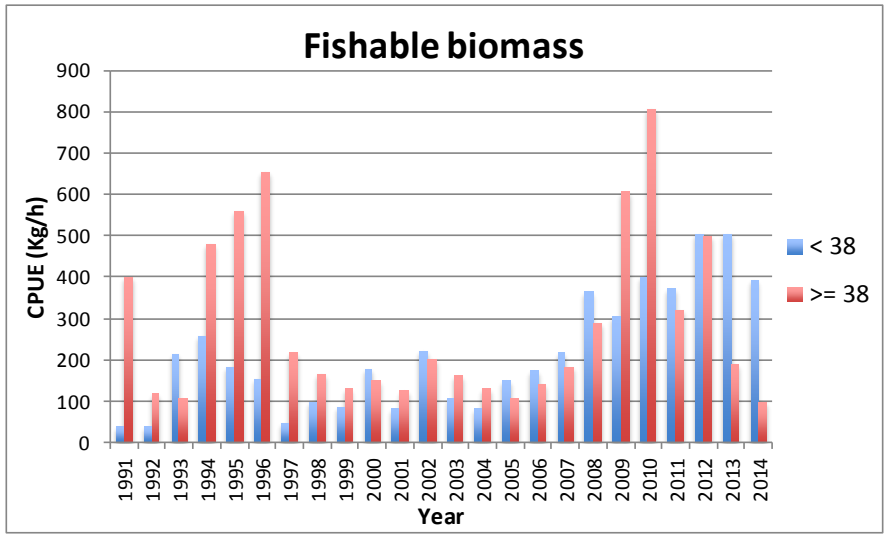
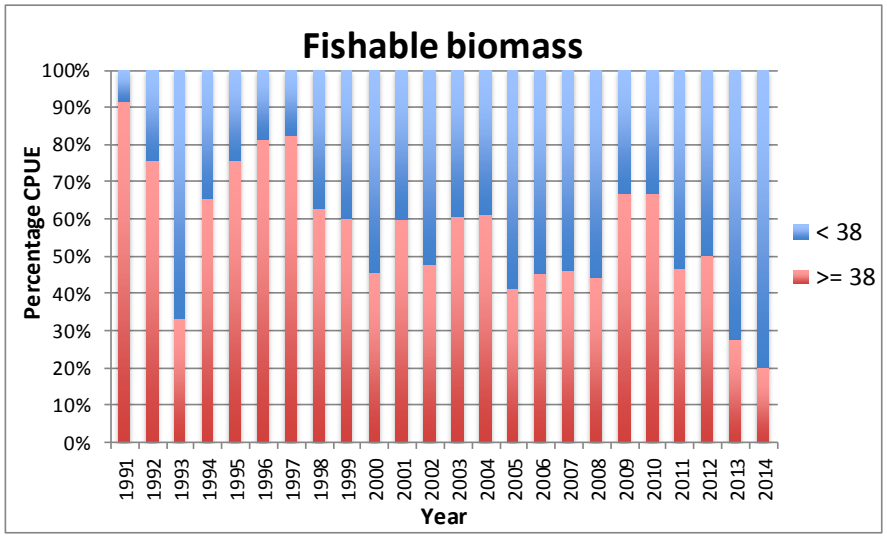
Baltic ecoregion

Eastern Baltic Sea cod

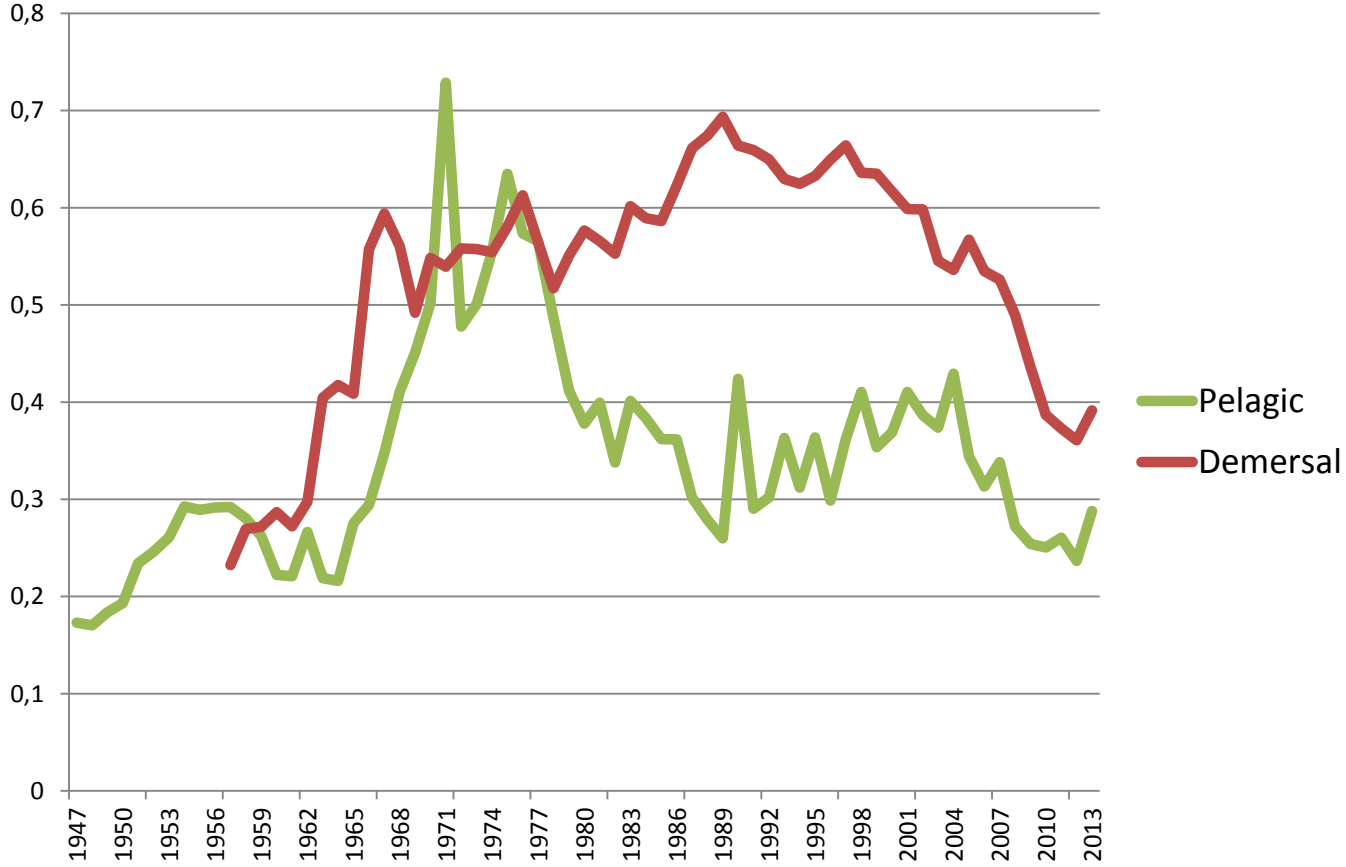








General trends in fishing mortality
EU waters
(42 stocks)



Development in fishing mortality

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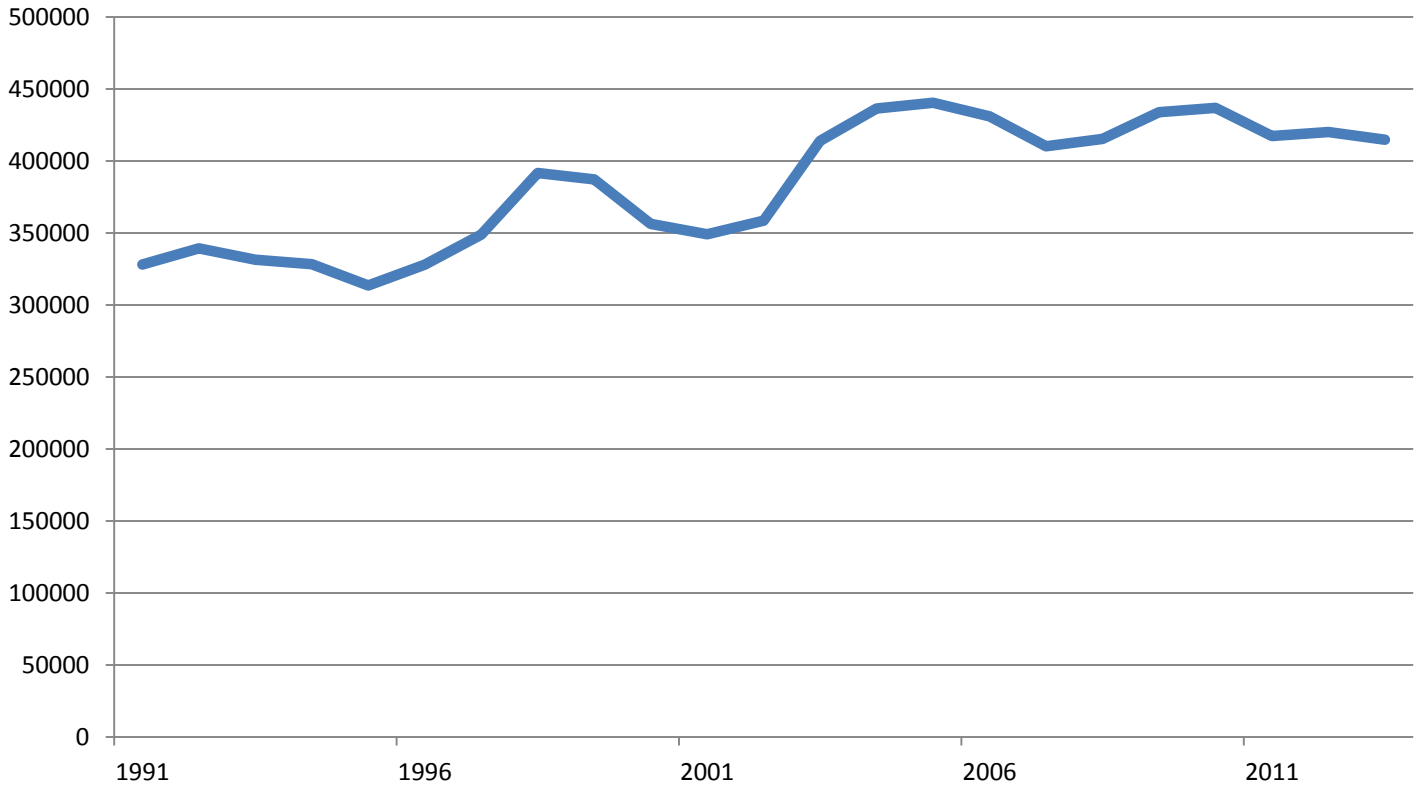
General trends in SSB
EU waters



Development in average SSB

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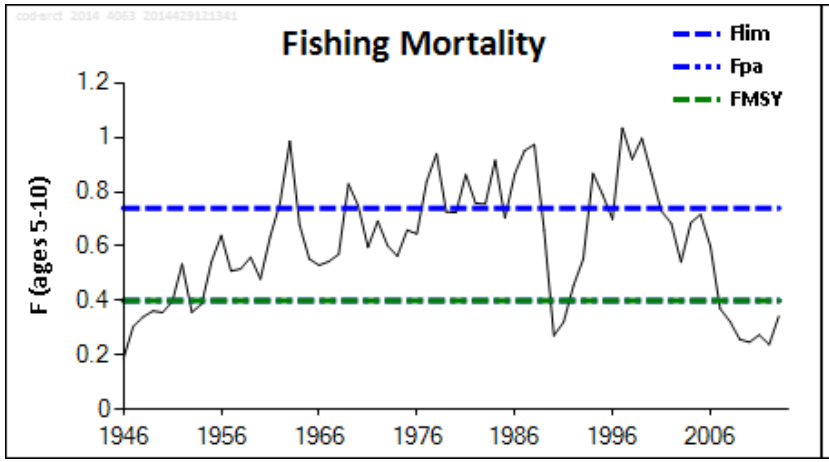
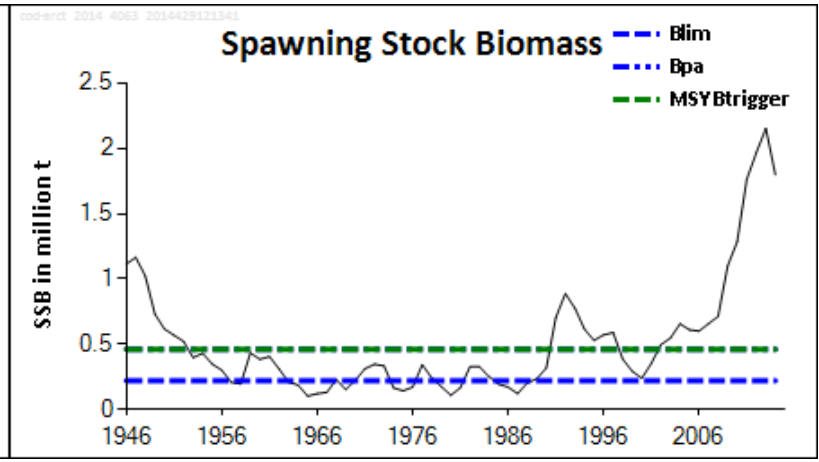
Overall conclusions

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

Northeast Arctic stocks

Cod





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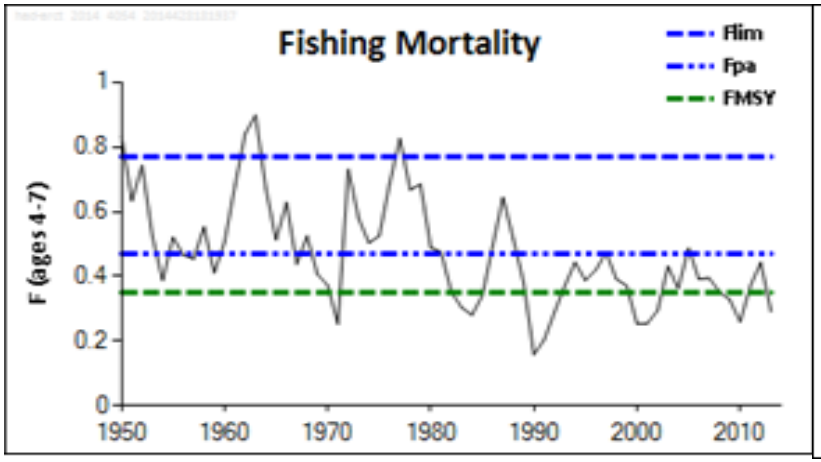

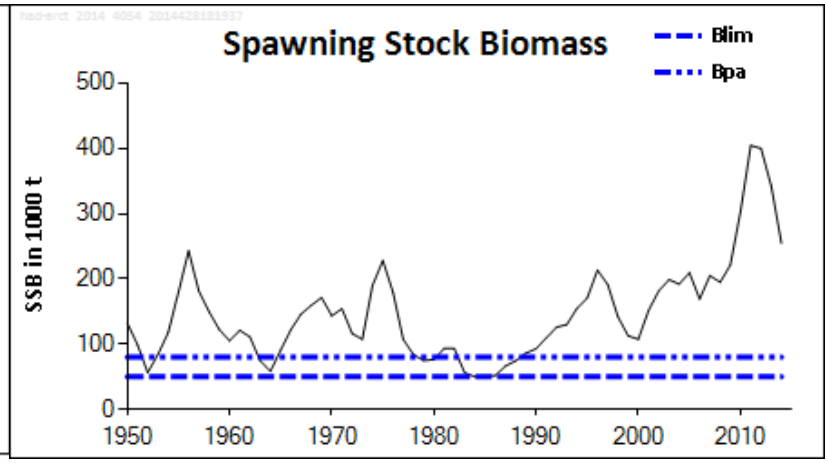

Thank you for your attention

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