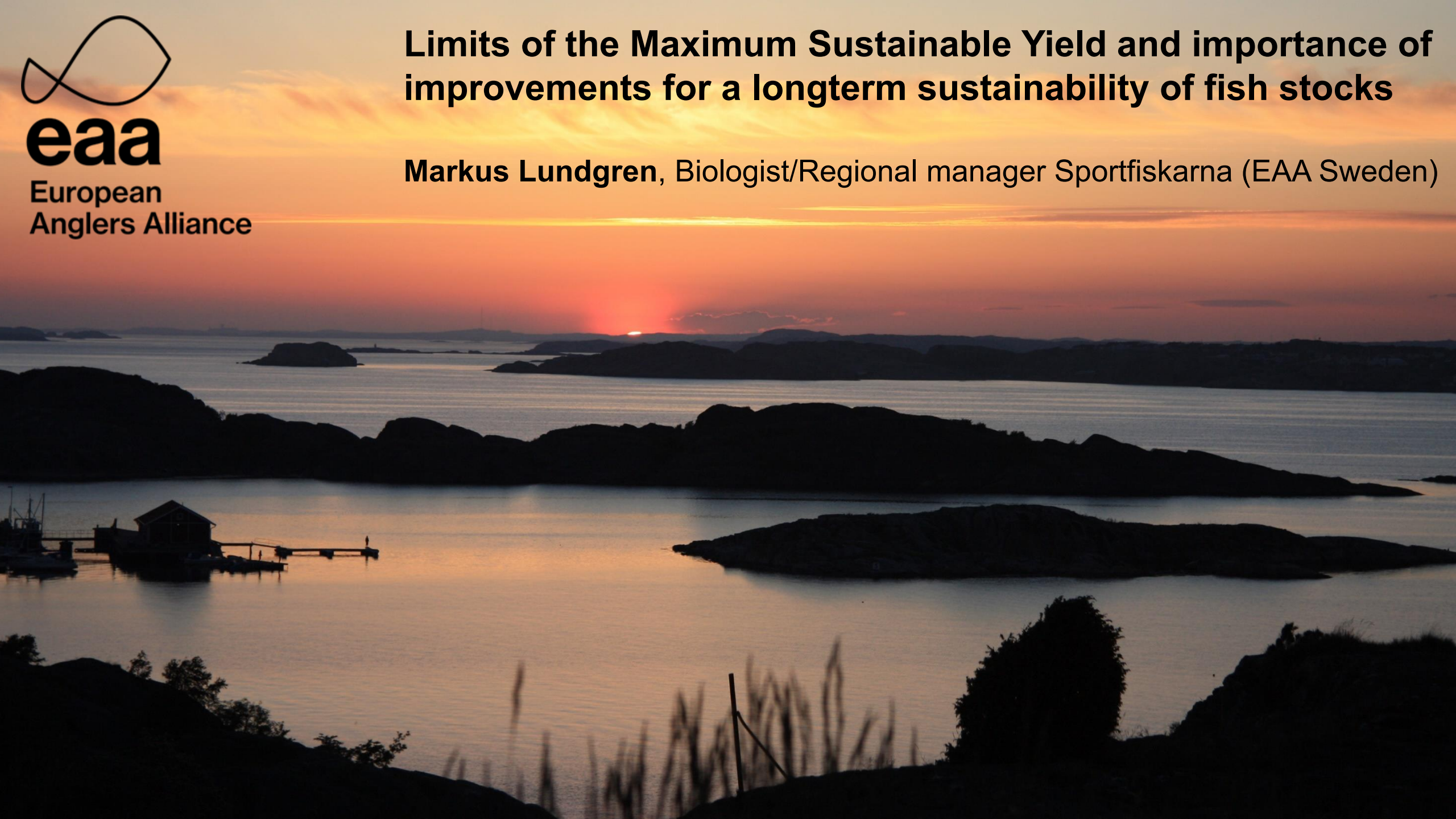




# Limits of the Maximum Sustainable Yield and importance of improvements for a longterm sustainability of fish stocks

Markus Lundgren, Biologist/Regional manager Sportfiskarna (EAA Sweden)





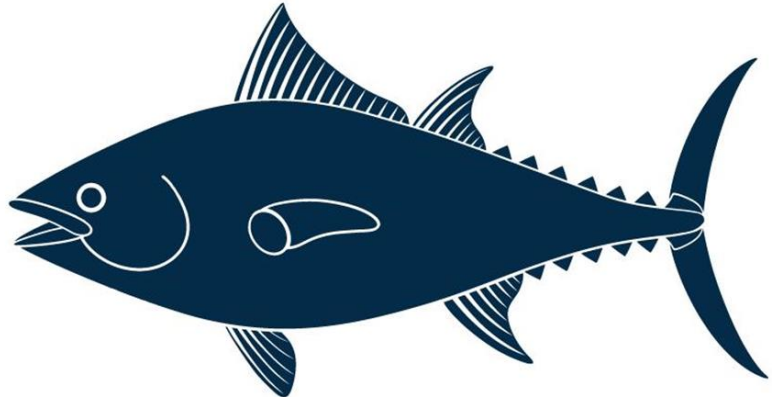


**eaa**

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Anglers Alliance

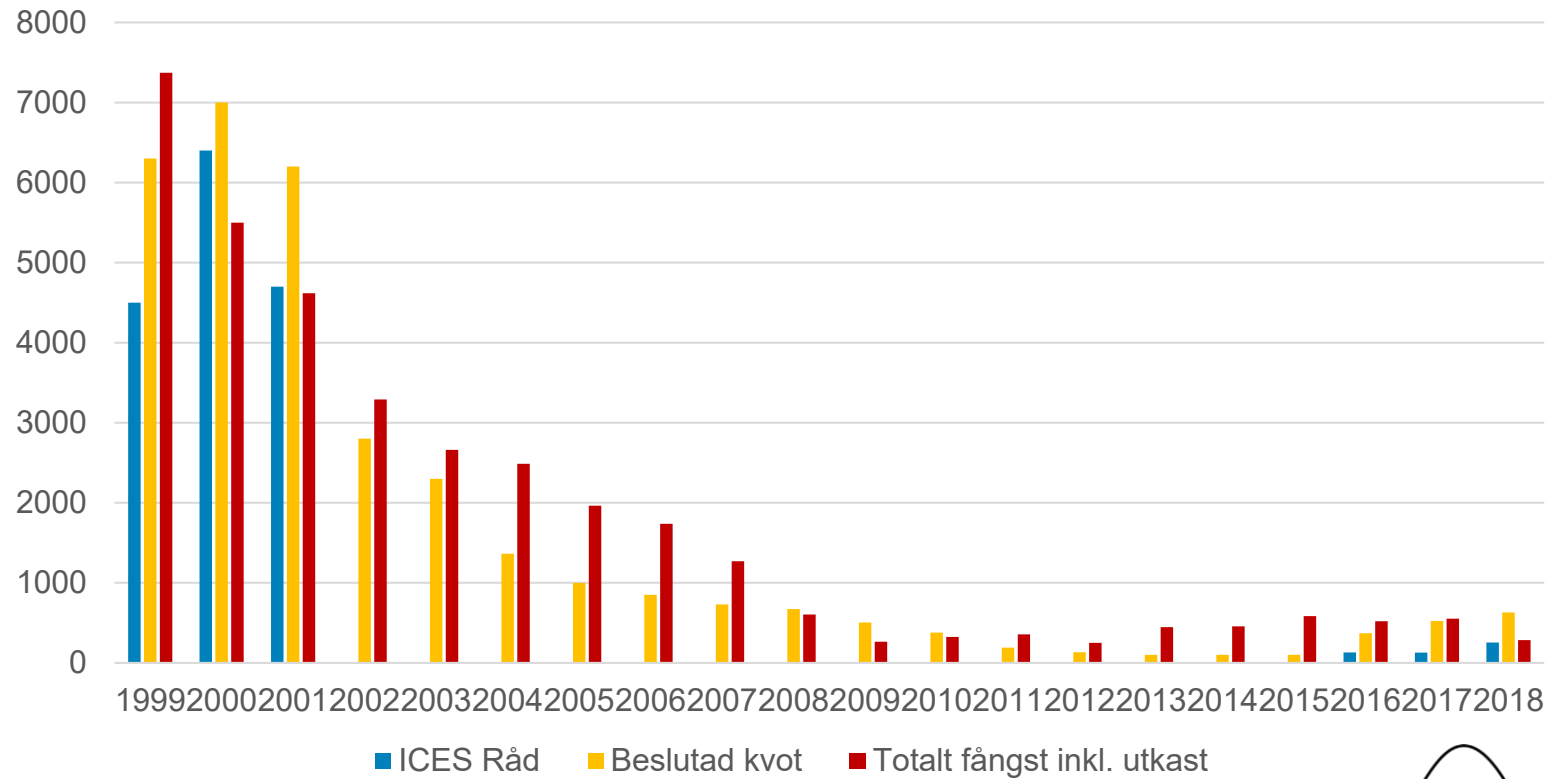






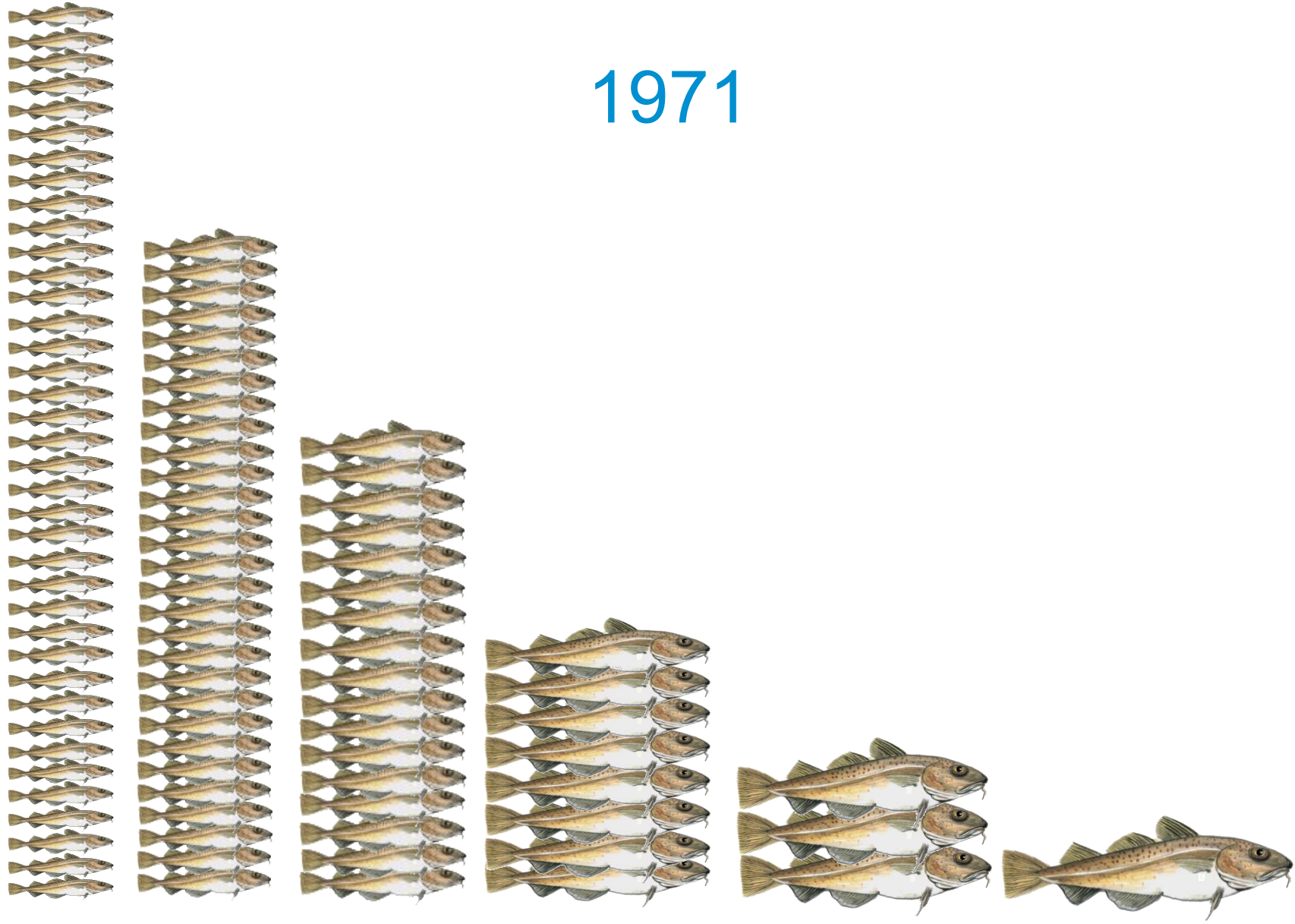
# Overfishing – and the consequences of it...

Kattgat cod stock  
*Markus will update the graph!*

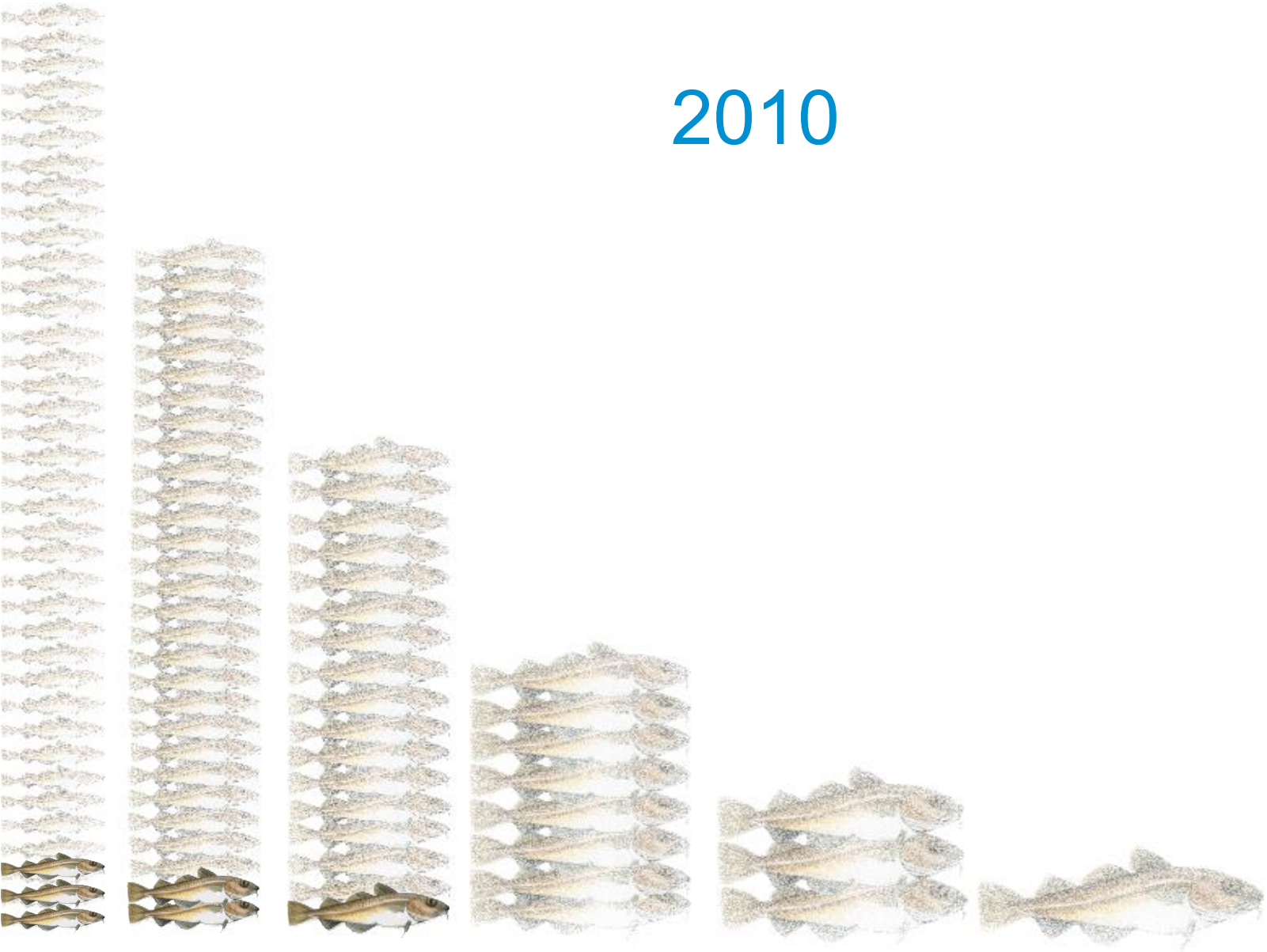




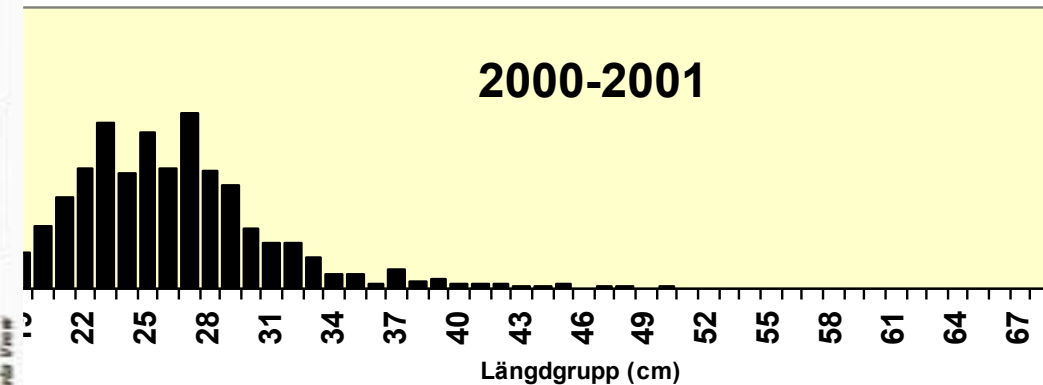
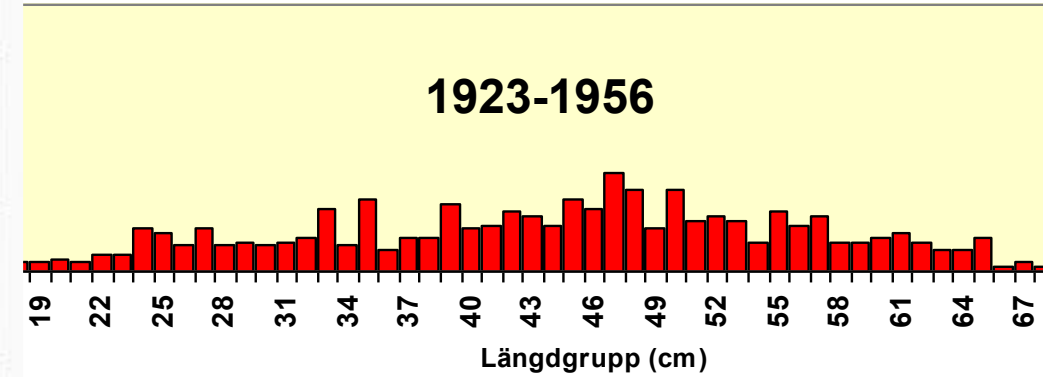
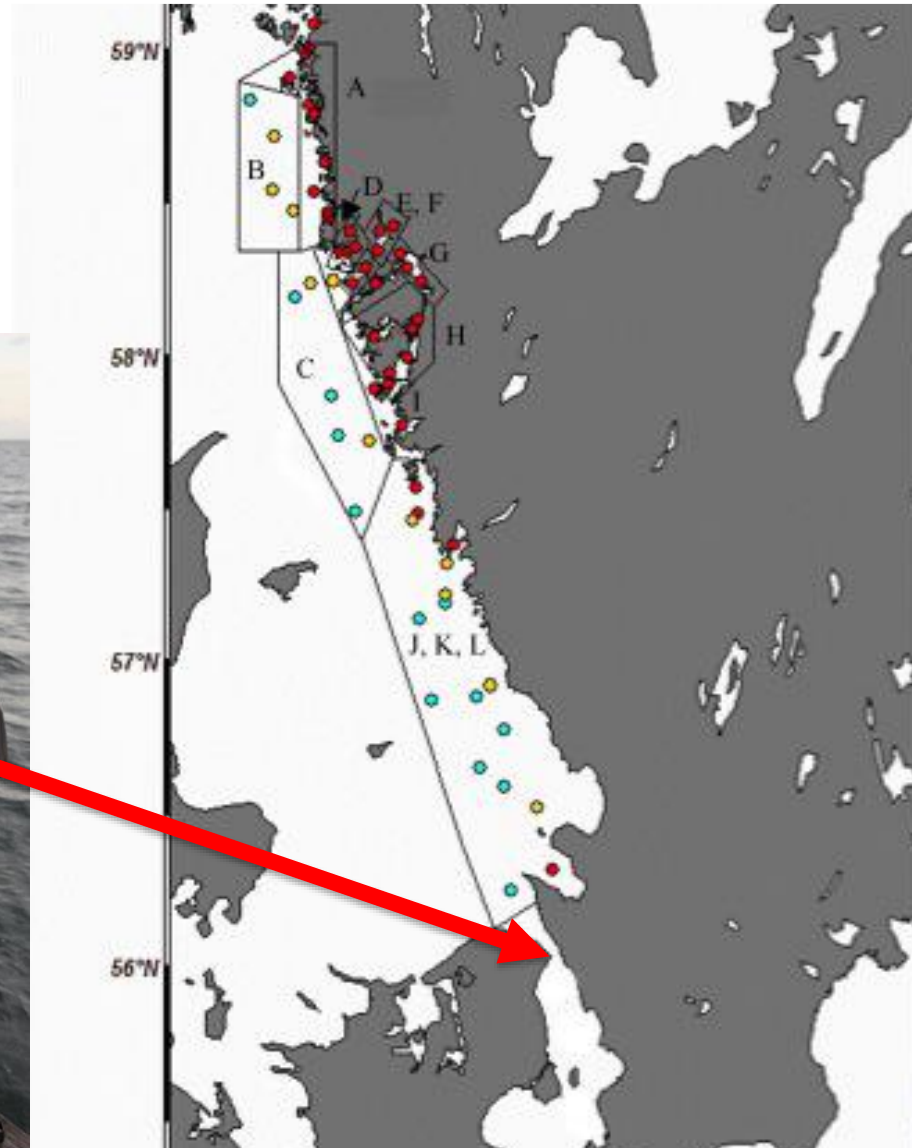
1971



2010



# Swedish trawl surveys – length on cod



Data: Swedish Board of Fisheries



# Baltic and Bothnian herring

- the engine of the ecosystem

4 CM DECREASE IN AVERAGE SIZE



Källa: Institutionen för akvatiska resurser, SLU.

[www.raddaströmmingen.se](http://www.raddaströmmingen.se)

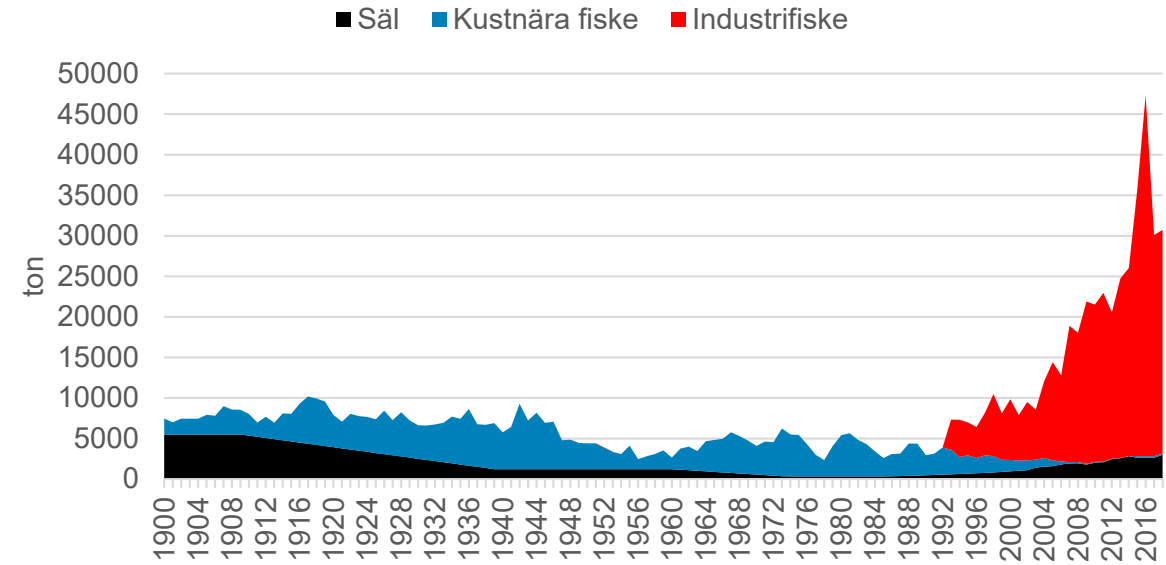


- Large-scale pelagic (fish meal) industry fishing fishing near the coast:
  - Enormously large coastal catches
  - size doesn't matter...
  - neither does effect on local subpopulations...
- Small-scalers:
  - decreased catches
  - almost no larger fish (necessary for human consumption)
- Scientist: disclaimer!



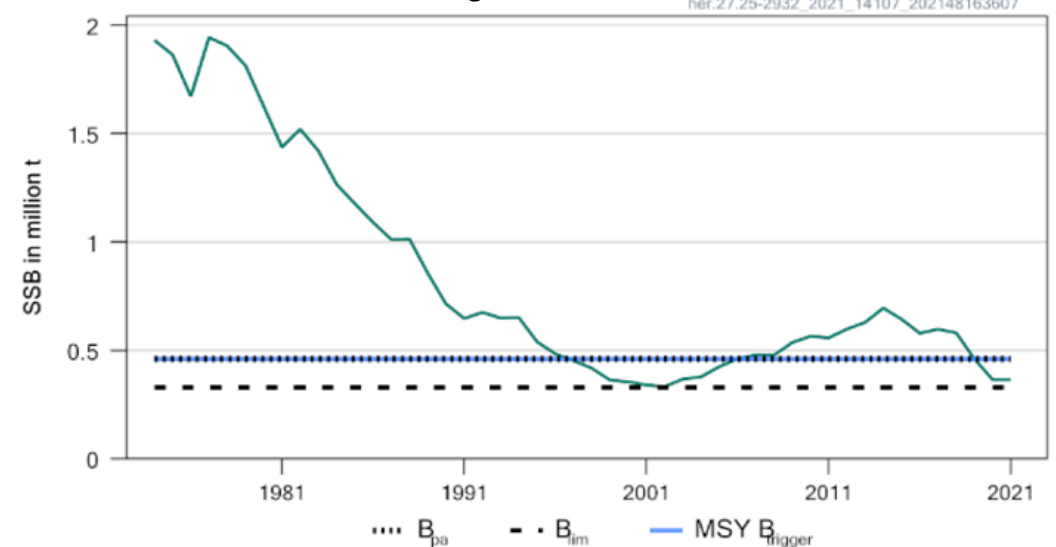
**DISCLAIMER**

Herring catches, southern Bothnian Sea



Graph: Sportfiskarna

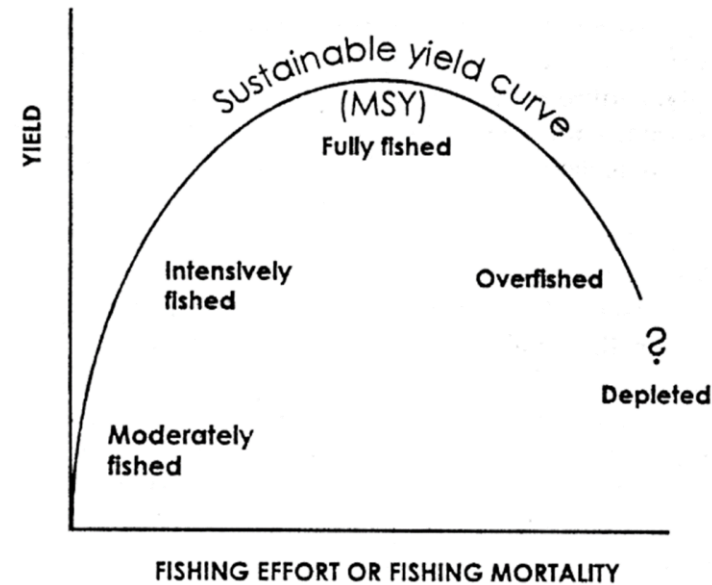
SSB Central Baltic herring





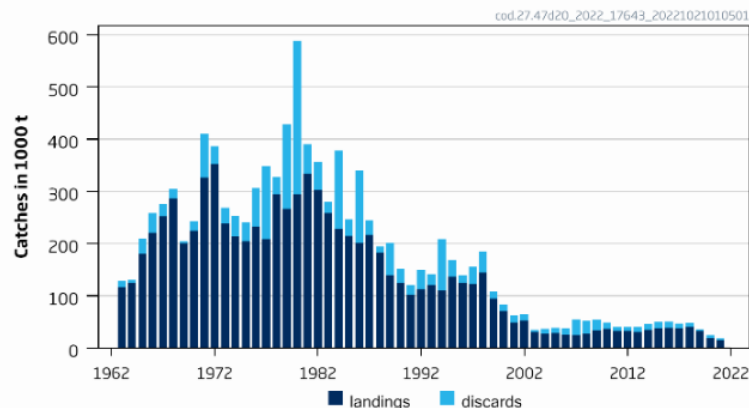
# Maximum "Sustainable" Yield (MSY)

- Production target, maximises yield
- Abundance dependant → culling/cleansing to increase growth
- Decreases size, takes no consideration to size distribution
- Causes goal conflicts with other legislation
- Single-species management
- Reference values change over time, the MSY definition moves...
- Can be called "sustainable" even if stock is weak

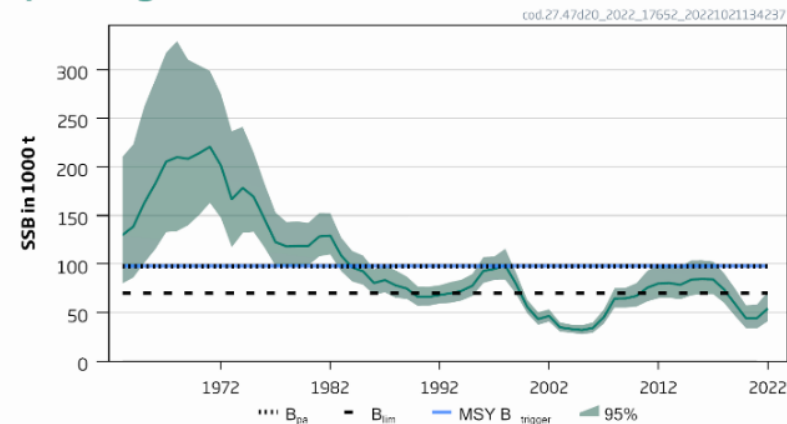


## North Sea cod stock

Catches



Spawning Stock Biomass



“ICES advises that when the MSY approach is applied, catches in 2023 should be no more than 26 008 tonnes.”

# Existing MSY management/advice vs...

- **EU Common Fisheries Policy (CFP)**  
*“The objective of the CFP is to ensure that fishing and aquaculture activities contribute to long-term environmental, economic and social sustainability”, “ecosystem-based approach to fisheries management” and “achieving a good environmental status by 2020”*
- **EU Multiannual Plans (MAPs)**  
*(“sustainable use”, “recovery”)*
- **Marine Strategy Framework Directive (MSFD)**  
*- “achieving a good environmental status by 2020”, age and size distribution, and more...*
- **Precautionary principle**
- **Ecosystem-based fisheries**
- **Local populations**
- **Food web interactions**



The screenshot shows the top navigation bar of the European Commission website. It includes the European Union flag logo, the text "English EN", a search box with a "Search" button, and a "Menu" dropdown. Below the navigation bar is a breadcrumb trail: "European Commission > EU Science Hub > MSFD Competence Centre > D3 Fisheries >". The main content area has a dark blue background with the heading "D3 Fisheries" and a sub-heading "Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock." Below this, there is a paragraph of text: "The Marine Strategy Framework Directive (MSFD) is intended to "...contribute to coherence between different policies and foster the integration of environmental concerns into other policies, such as the Common Fisheries Policy (CFP)". To the right of this paragraph, there is a section titled "Implementation" with the sub-heading "Criteria & methodological standards". At the bottom of the page, there is a link: "The Common Fisheries Policy (CFP) ↗".



# The value of big fish

- ✓ **Biological/ecological**
  - top down-effect, resilience against eutrophication
  - high fecundity, the BOFFF-hypothesis
- ✓ **Genetical**
  - efficient fishery, no big fish, selection on early maturation
- ✓ **Recreational**
  - anglers often want big fish and travel very far for it
- ✓ **Economical**
  - bigger fish = better pay  
(fish meal industry trawlers the exception)
- ✓ **Social**
  - coastal communities, small-scale fisheries





**eaa**

European  
Anglers Alliance



Sportfiskarna

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**WHAT DO WE WANT?!**



**MORE BIG  
FISH IN THE SEA!**



**HOW DO WE GET IT?!**



**USE THE LEGISLATION  
ALREADY IN PLACE!**

