

JUNE 1 - 3
SKAGEN
DENMARK

Ken Haste
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National Institute of Aquatic
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**Challenges for European Pelagic
Fisheries**

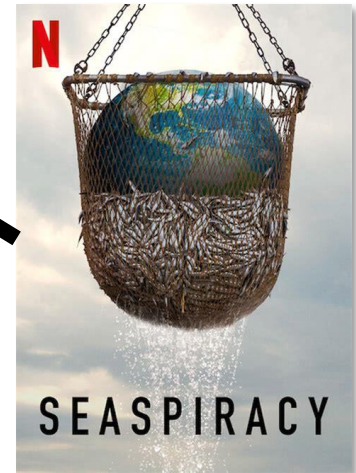
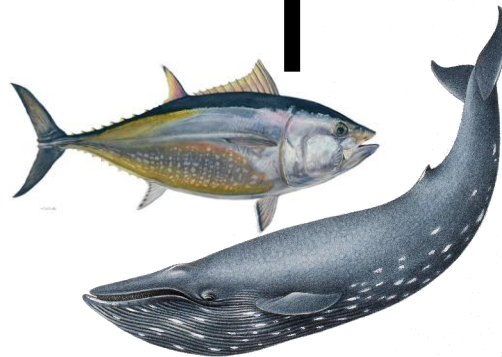


Challenges for European pelagic fisheries

Ken H. Andersen

Prof. in theoretical marine ecology

Technical University of Denmark (DTU Aqua)





Herring (*Clupea harengus*) in Subarea 4 and divisions 3.a and 7.d, autumn spawners (North Sea, Skagerrak and Kattegat, eastern English Channel)

ICES advice on fishing opportunities

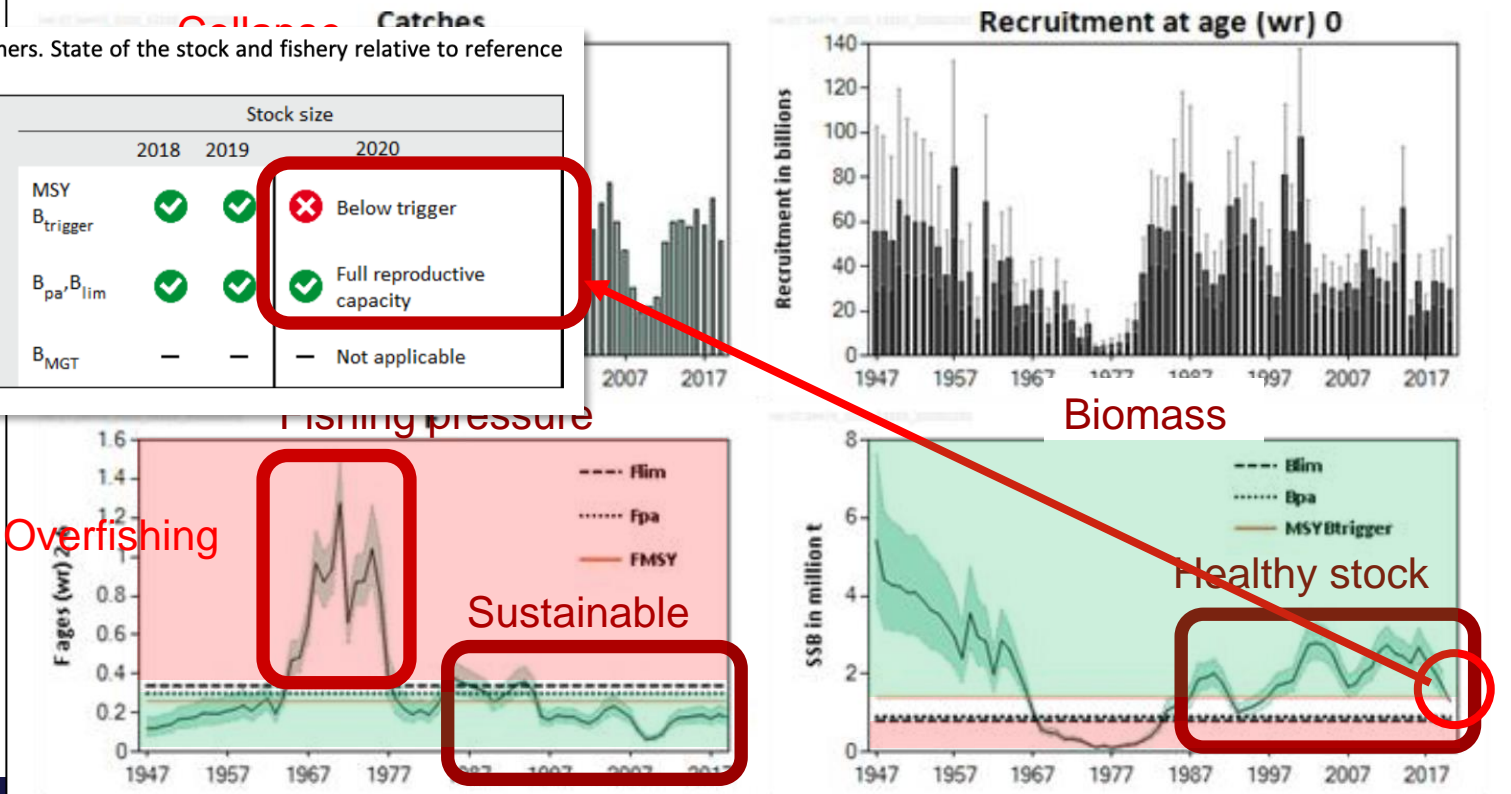
ICES advises that when the MSY approach is applied, catches in 2021 should be no more than 365 792 tonnes.

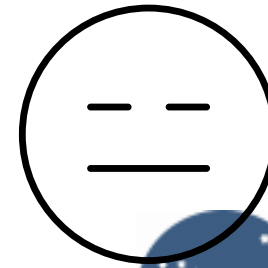
Note: This advice sheet is abbreviated due to the Covid 19 disruption. Last year's advice is attached as Annex 1.

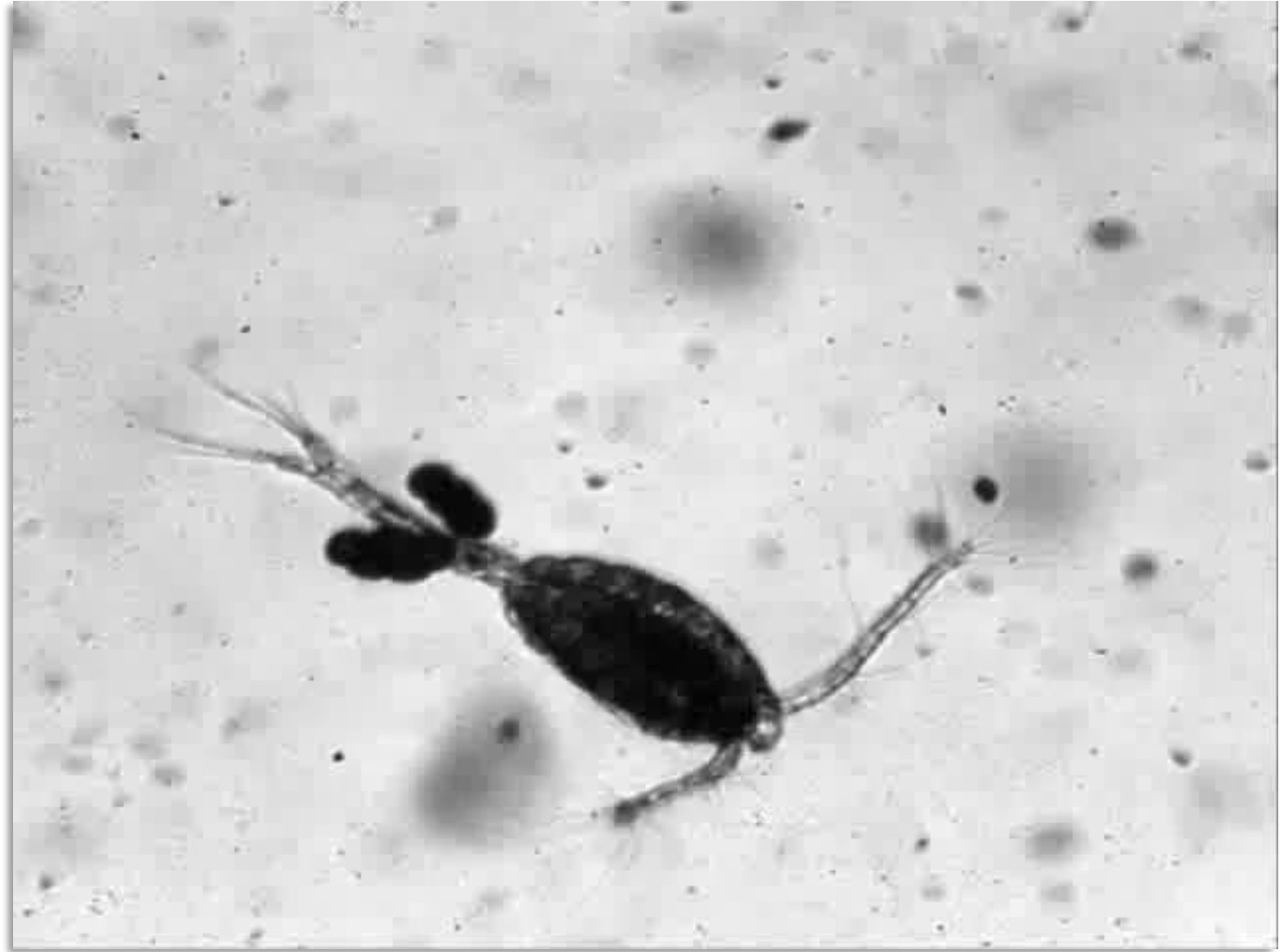
Stock development over time

Table 1 Herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2017	2018	2019		2018	2019	2020	
Maximum sustainable yield	F_{MSY}	✓	✓	✓	Below	MSY	✓	✓	✗ Below trigger
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓	Harvested sustainably	B_{pa}, B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	— Not applicable



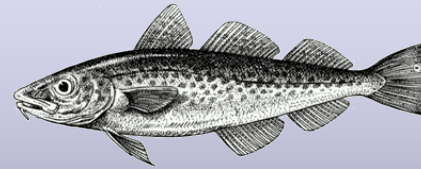
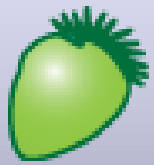
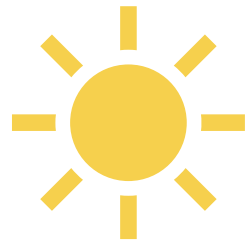
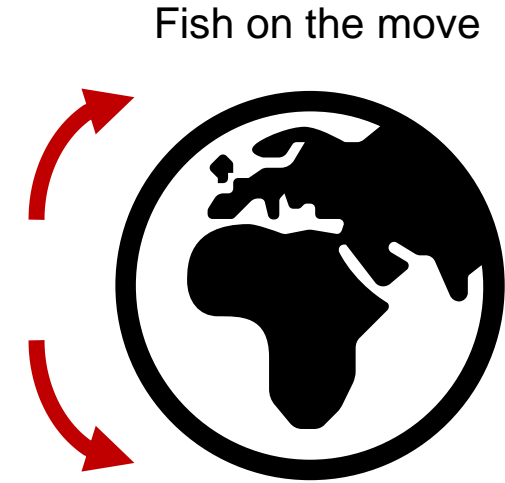




Xu et al.: Unpalatable Plastic: Efficient Taste Discrimination of Microplastics in Planktonic Copepods. *Environmental Science and Technology* (2022).



Climate change and fish



Stronger storms

Faster turn-over

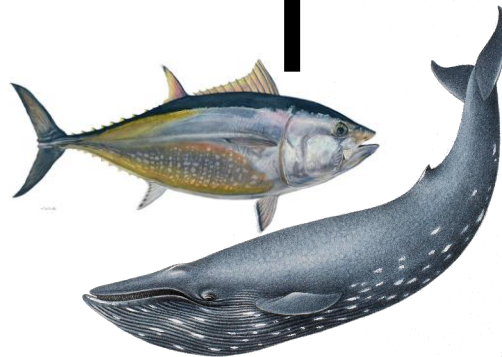
Stronger stratification

Faster metabolism

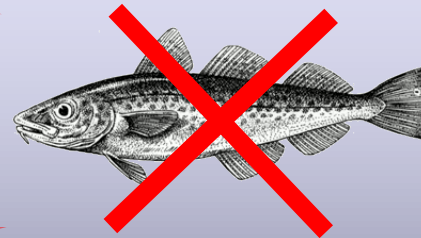
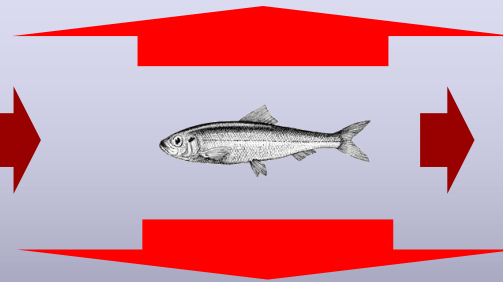
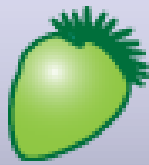
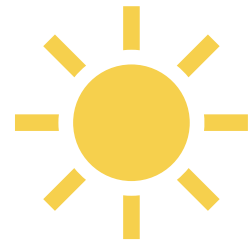
Less nutrients
More nutrients



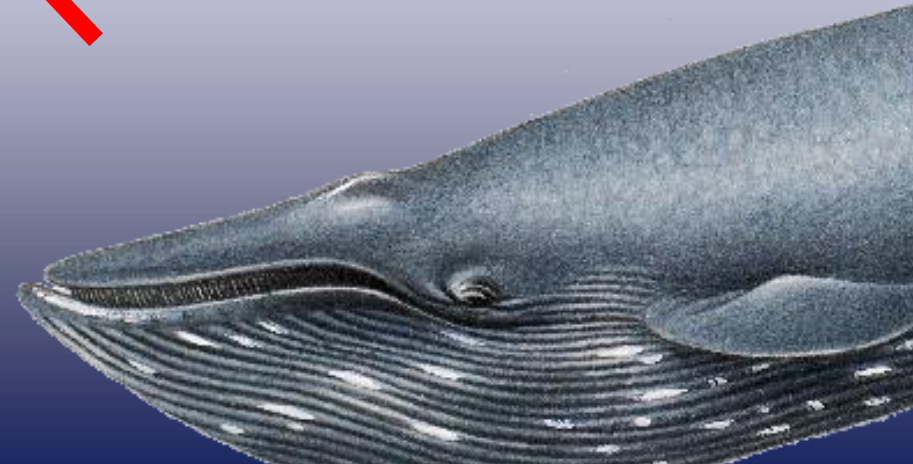
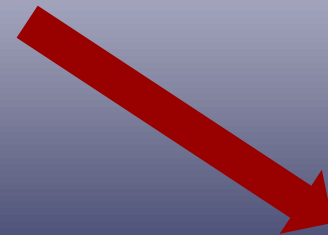
Nutrients

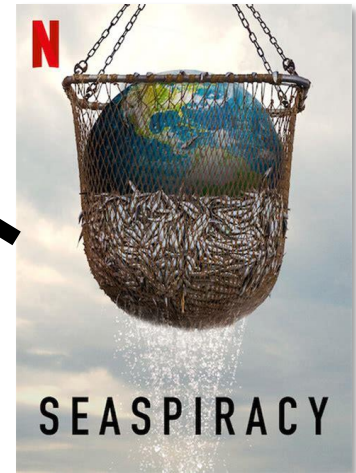
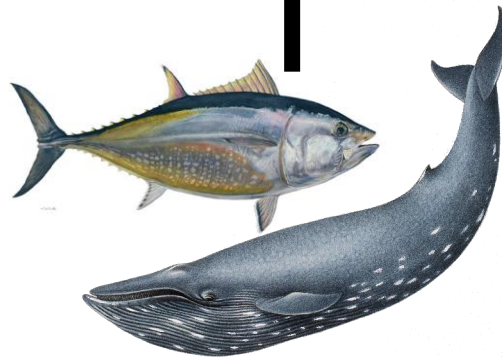


Predators on fish



Næring





The battle for the story



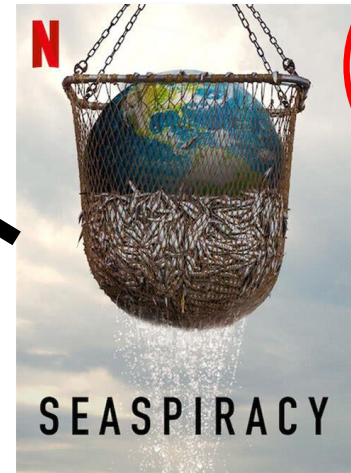
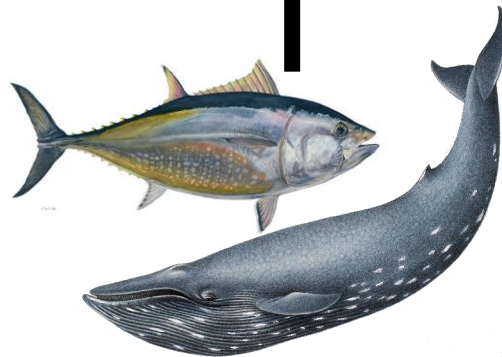
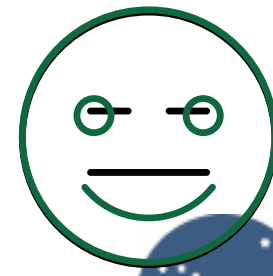
Don't kill fish!

VERSUS



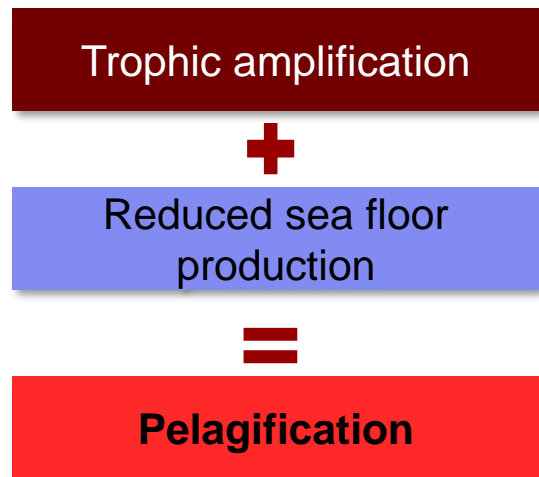
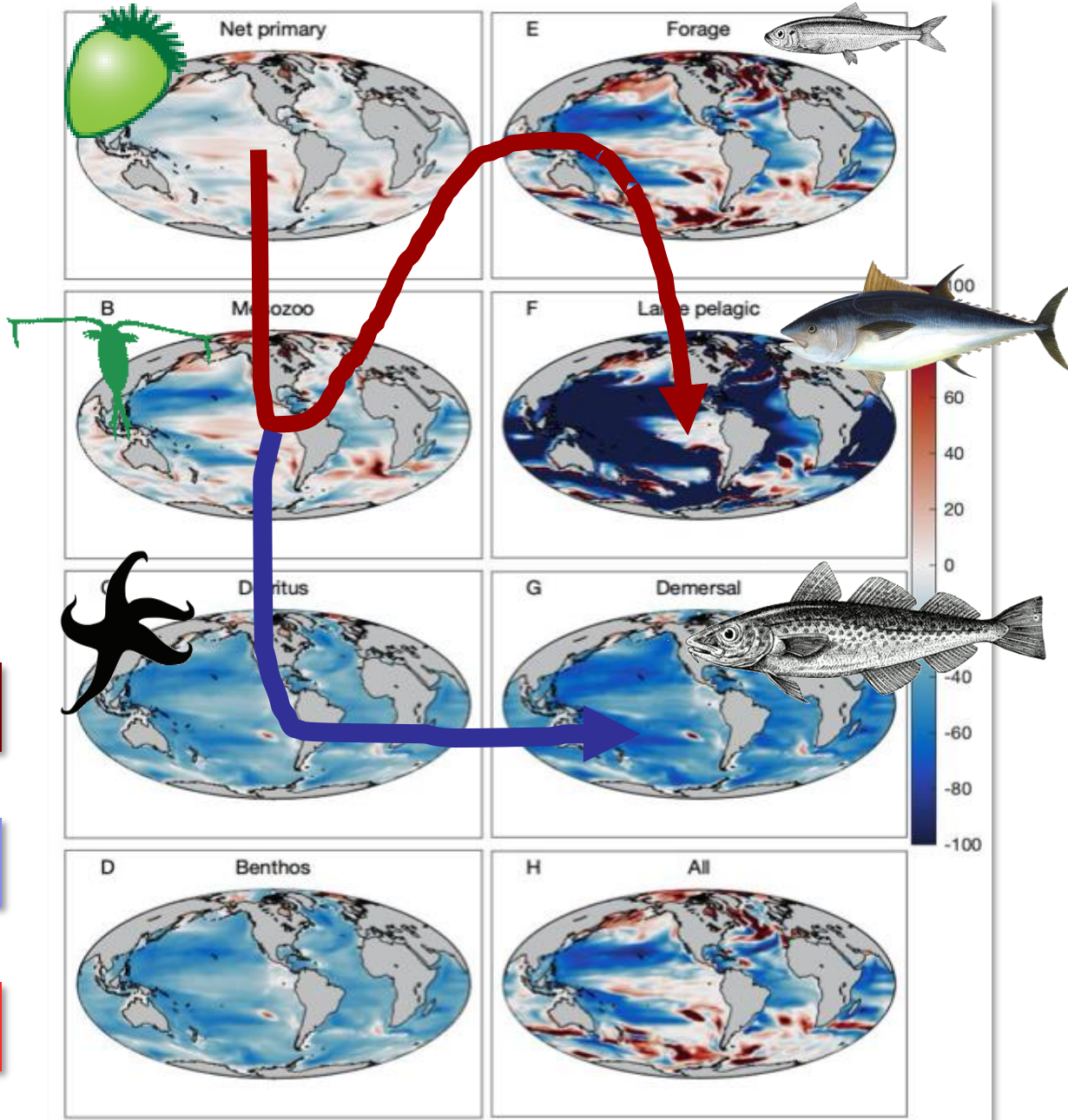
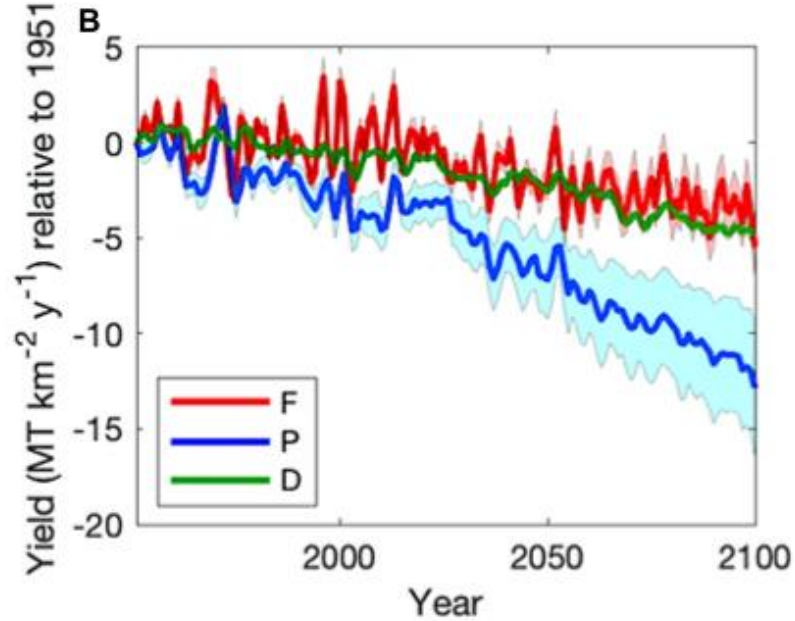
**DANSKERNES
FISKERE** – kursen mod en fælles fremtid

“Danish fishery must become one of the world’s most sustainable fisheries – economically, socially, and environmentally”



Projected production 2051-2100 under high emissions scenario (RCP 8.5)

DTU



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Coffee Break

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