

What Can We Do with 'A Predicted Ocean'? Applications and Opportunities



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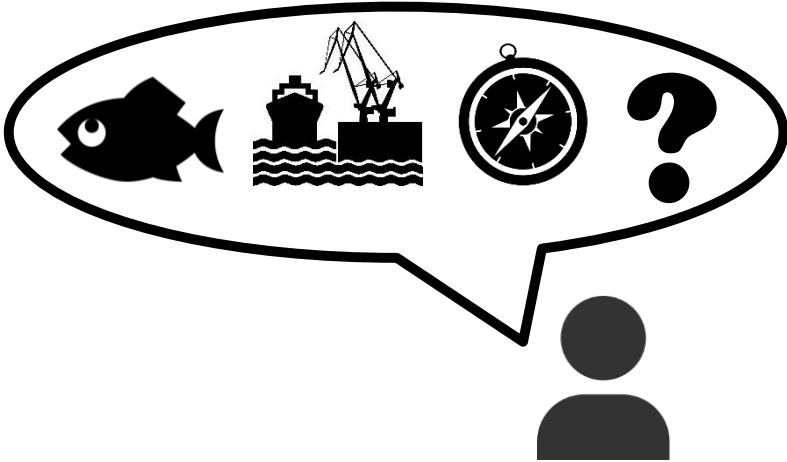
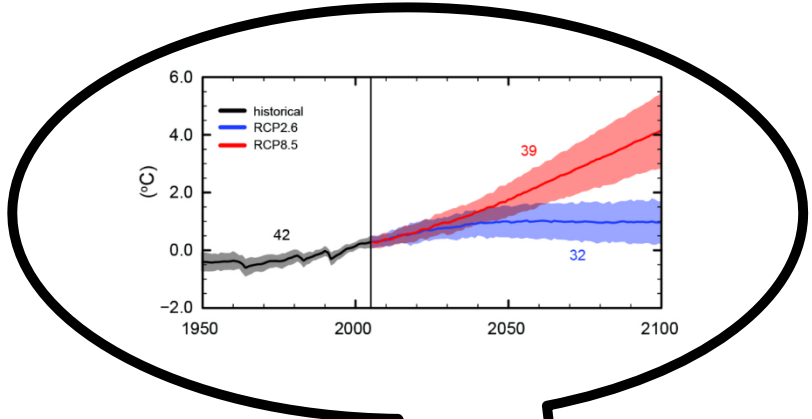








A revolution is taking place...





Ocean Prediction is now possible

Sea Surface Temperature Forecasts, February, March, April 2021

C3S multi-system seasonal forecast

Mean forecast SST anomaly

Nominal forecast start: 01/11/20

Variance-standardized mean

ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA

FMA 2021

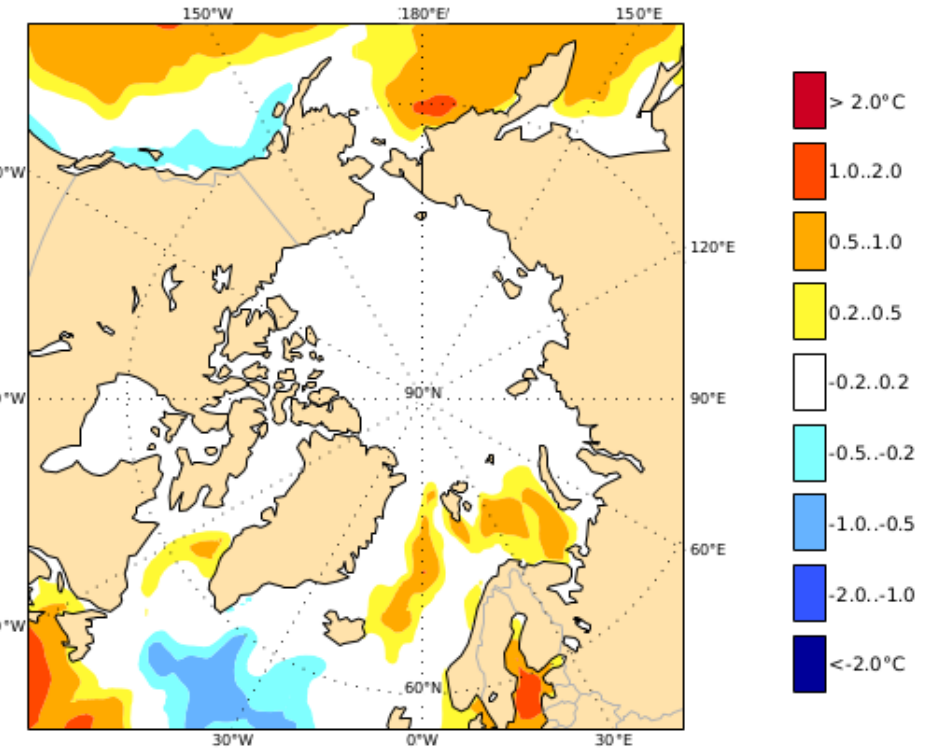
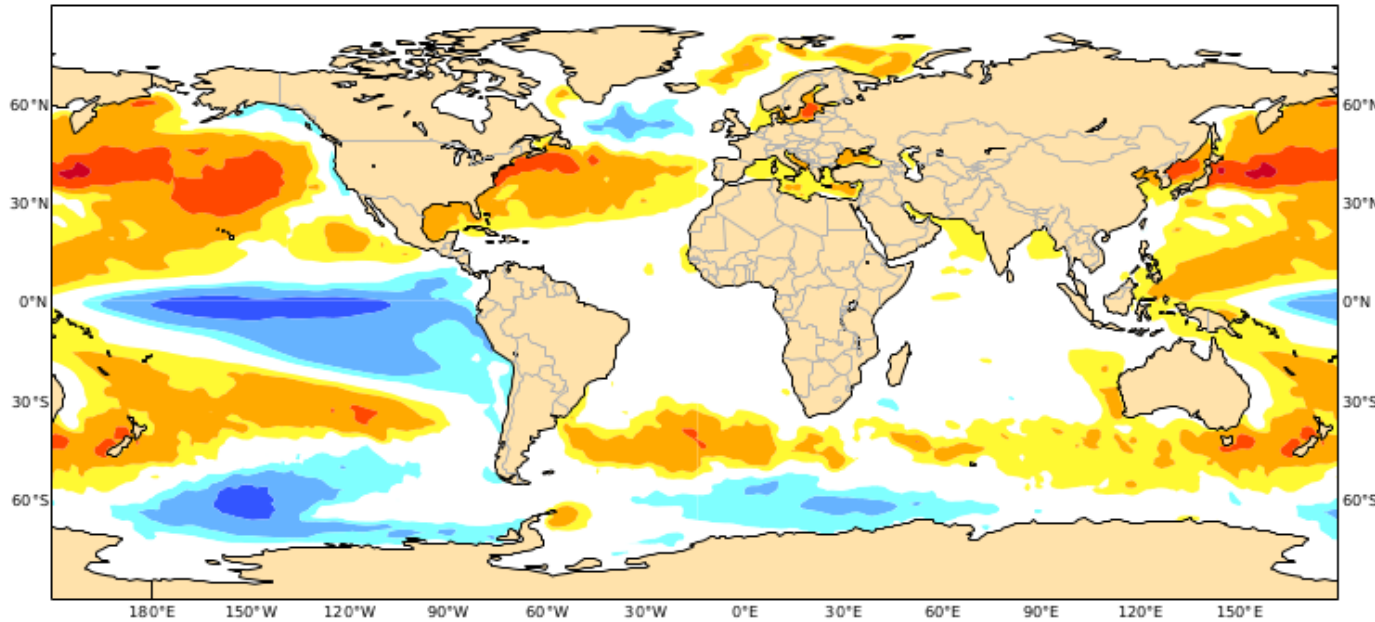
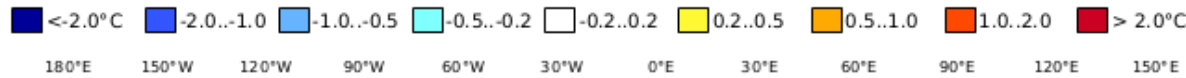
C3S multi-system seasonal forecast

Mean forecast SST anomaly

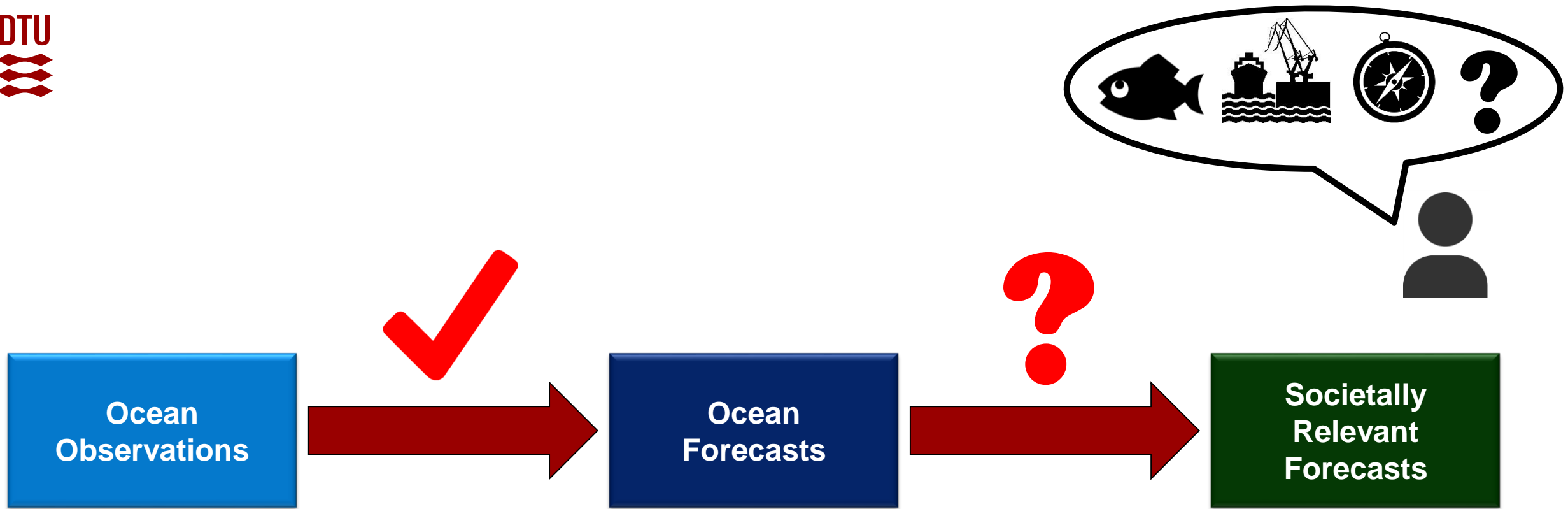
Nominal forecast start: 01/11/20

Variance-standardized mean

FMA 2021



Can make skillful forecasts up to 10 years ahead
 North Atlantic is the most predictable ocean on the planet

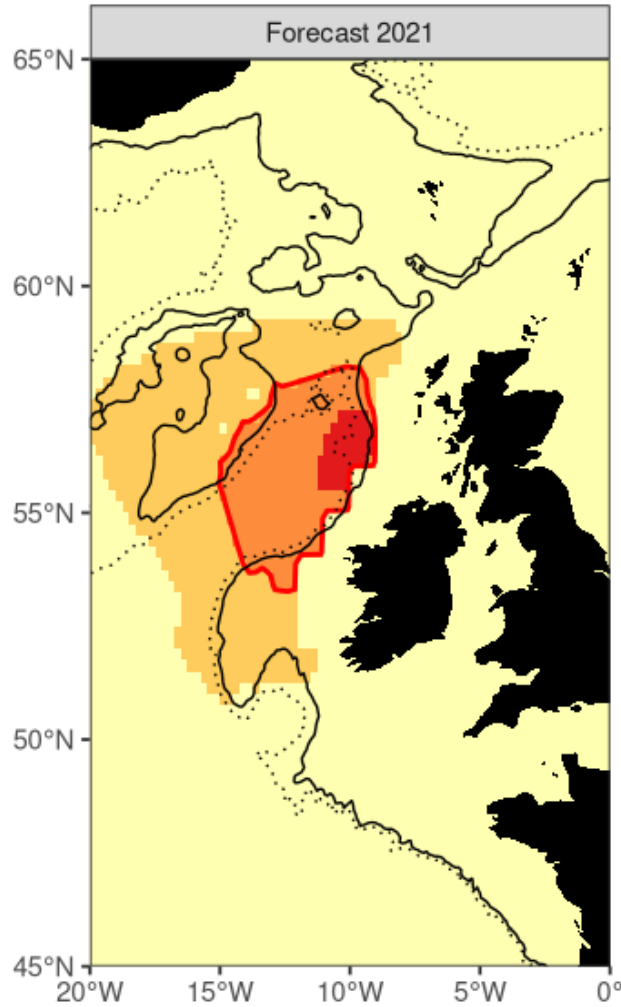


Yes!!!!

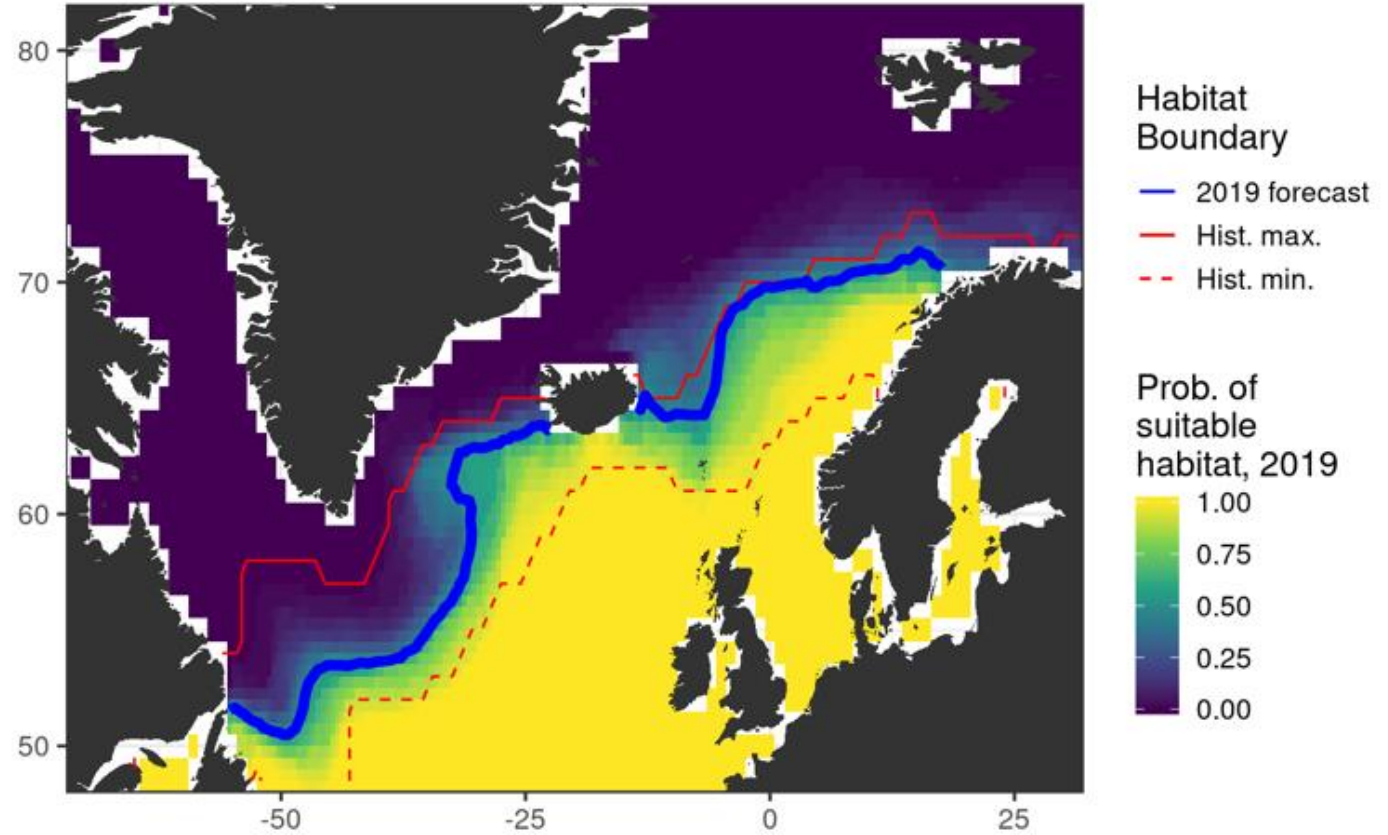
The Challenge

Can we make our forecasts relevant to society?

Marine ecological forecasts and climate services



Blue Whiting Distribution Forecast, 2021



Bluefin Tuna Habitat Forecast

<http://fishforecasts.dtu.dk>

UN Decade of Ocean Science for Sustainable Development

- A clean ocean
- A health and resilient ocean
- A predicted ocean
- A safe ocean
- A sustainably harvested and productive ocean
- A "transparent and accessible" ocean

Action Plan for Arctic Region currently under development



The United Nations
Decade of Ocean Science
for Sustainable Development
(2021-2030)





Strike the balance between
what is *feasible* and what is *useful*



Users are the judge of whether a forecast has value



Collaboration is needed right from the start

We can predict the Ocean

We can predict biological responses

But only users determine whether a forecast is useful

We need society to guide us



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Arctic Impact on Weather and Climate

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