JCB
Joint Collaboration Board

Bridging Meteorological and Oceanographic Approaches

Ocean Predict Science Team
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Michel Jean
Fraser Davidson

Objectives JCB

- **The Joint WMO-IOC Collaborative Board** will maximize opportunities to co-design, co-develop and implement joint scientific and technical work, across oceanography and meteorology, that ultimately will improve the provision of information and services for societal benefit.

- **In brief JCB helps:**
  - initiate and sustain exchange between WMO Weather communities and ocean communities.
  - Identify topics of mutual interest between atmosphere and ocean which can produce tangible outcomes

- JCB Memership: equal IOC/WMO representation
- Areas covered
  - Observing System
  - Data Processing and Management
  - Forecasting Systems
  - Services
  - Research

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JCB Subgroup on Data Management (example)

(Simon McLellan/Lotta Fyrberg/Joanna Post)

Proposed deliverables in 2026:

- Develop a structured branch of the WIS topic hierarchy for ocean data.
  Working with GOOS OCG, initial WIS topic hierarchy for ocean proposed and agreed.
- Develop a guide to publishing on the ODIS and WIS2.0, including interoperability between the data systems and the principle of publishing once.
  Pending formation of team
- Propose an updated joint governance process for the MCDS.
  MCDS regulatory material planned to be moved between WMO Manuals, but waiting for team to be formed before making changes to text.
- Propose consistent guidelines on licensing / terms of use for oceanographic and marine meteorological data.
- Consider potential pilot projects based on the offer from BMKG at the JCB 4 meeting in October 2025. New

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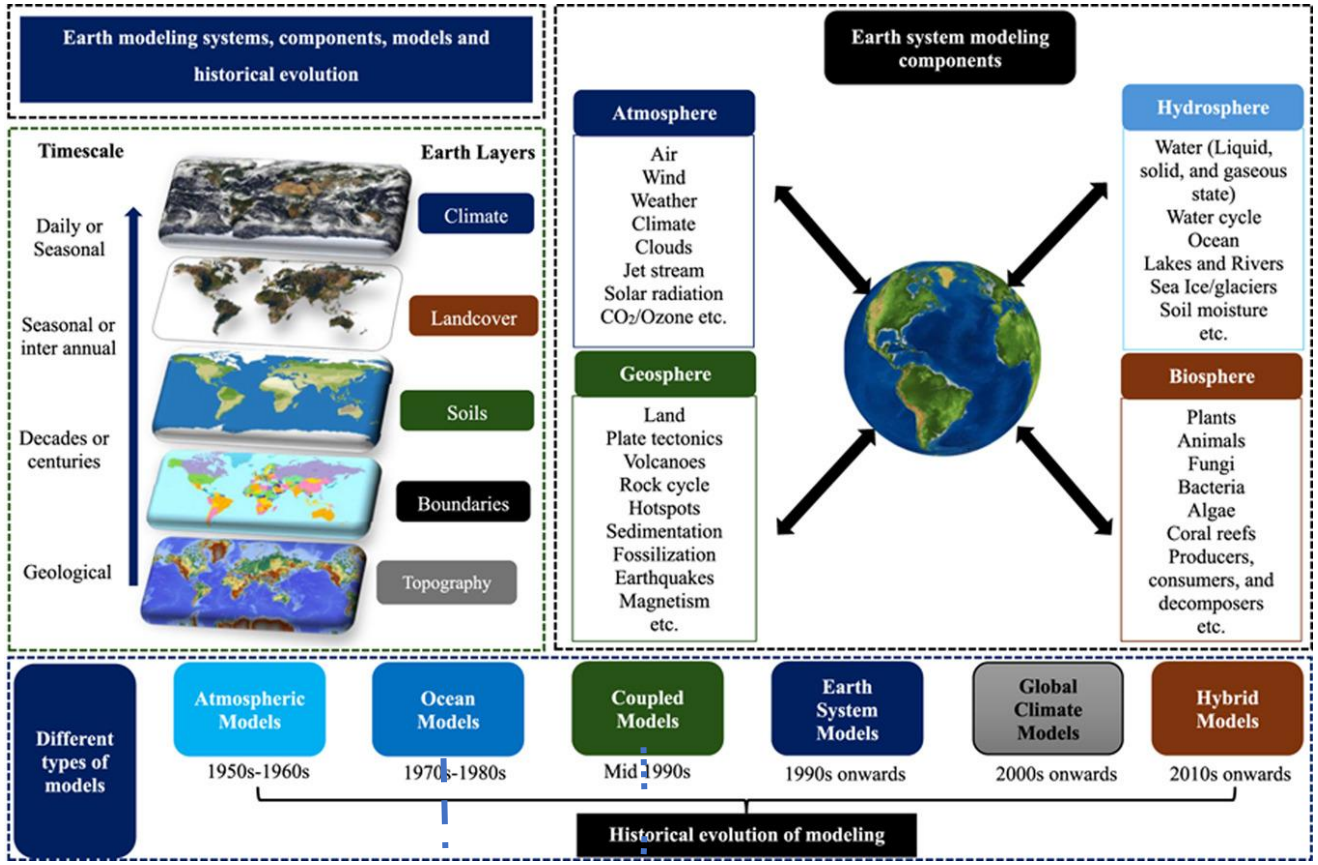
Weather and Ocean Prediction continue to evolve

From: Waquas et al https://doi.org/10.1016/j.nhres.2025.10.003



Operational from: 2000s-> 2016->

Evolution of Operational Coupled Systems:

From

needing to improve atmospheric forecast

To

Needing to forecast all components of earth system

Verification of weather prediction systems continue to evolve from just looking at Atmospheric impact to better evaluation of atmospheric systems at the surface: precipitation, surface winds, surface temperature, surface humidity …

Ocean-Ice-land Coupling can have a big impact:

Severe weather events

Where pack ice is involved (ie. Arctic)

Where there are strong gradients

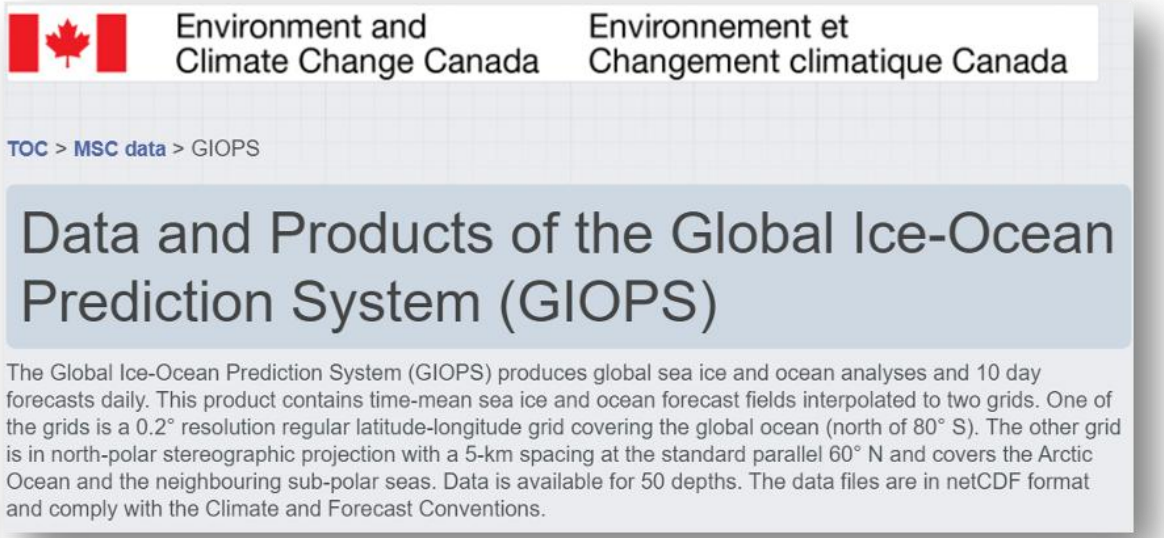
WMO: World Meteorological Centres

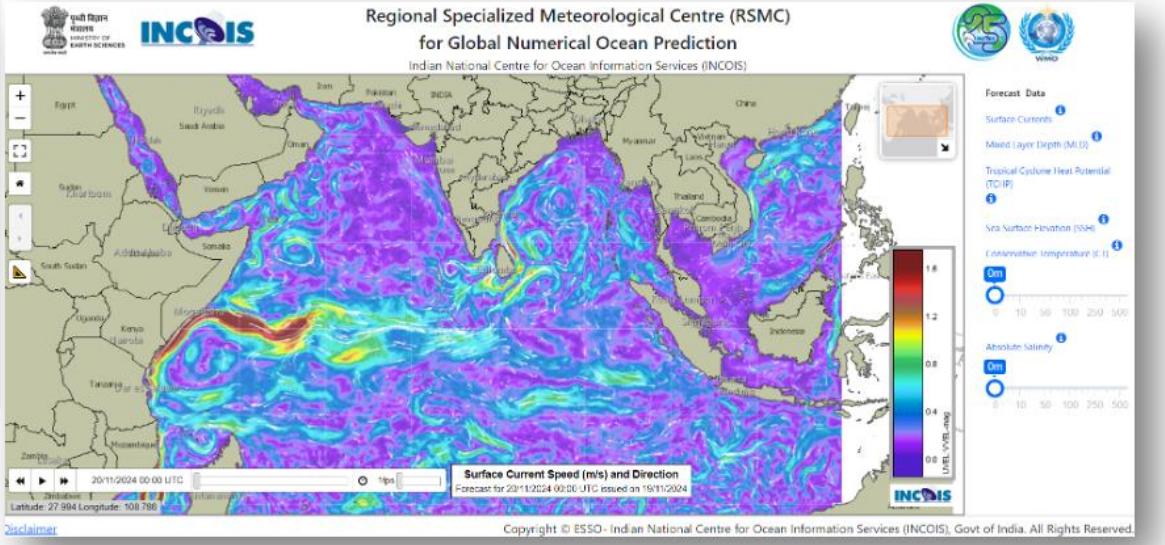
- 10 WMCs produce a set of mandatory products from short to seasonal time range and disseminate through WIS.
- Most Centres operate numerical Earth system models coupling atmospheric and ocean models
- Operational products focus on surface/atmospheric variables
- But the ocean prediction output could also be considered

WMO global ocean prediction

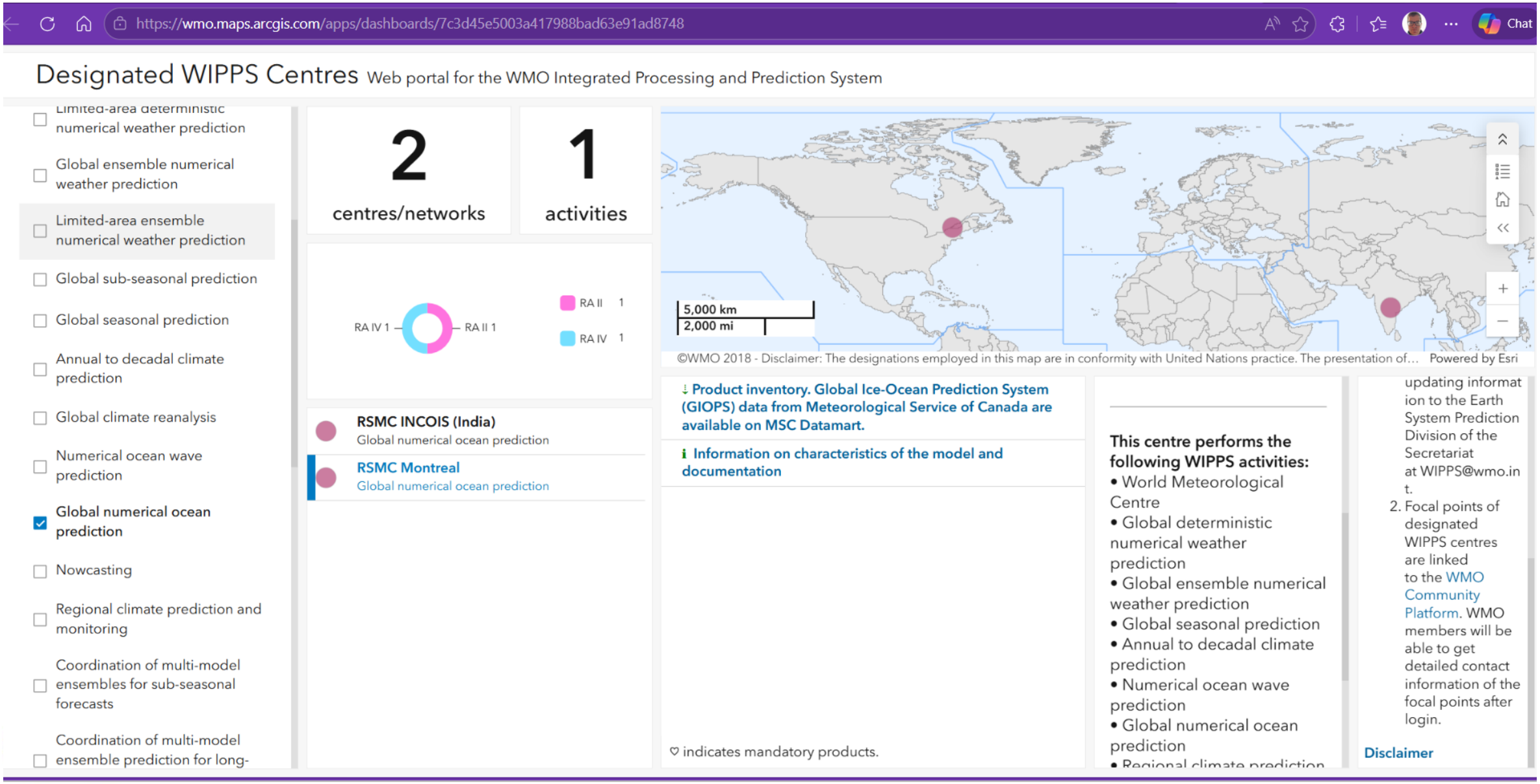
- Only 2 Centres designated so far
  - Canada (ECCC) and India (INCOIS)
- Standard operational verification has not been developed yet

Parameter	*Level*	*Minimum resolution*	*Forecast range*	*Minimum time steps*	*Frequency*
Sea-surface elevation	Surface	0.25° × 0.25°	Up to 6 days	Every 24 hours	Once a day
SST	Surface (mixed layer)				
Surface u, v	Surface				
Sea-surface absolute salinity	Surface				
u, v	Depth to be determined				
Conservative temperature	10/50/100/250/500 (m)				
Absolute salinity	10/50/100/250/500 (m)				
Mixed layer depth					





WMO WIPPS Centres Dash board



Predicted Ocean DCC Ocean ATLAS

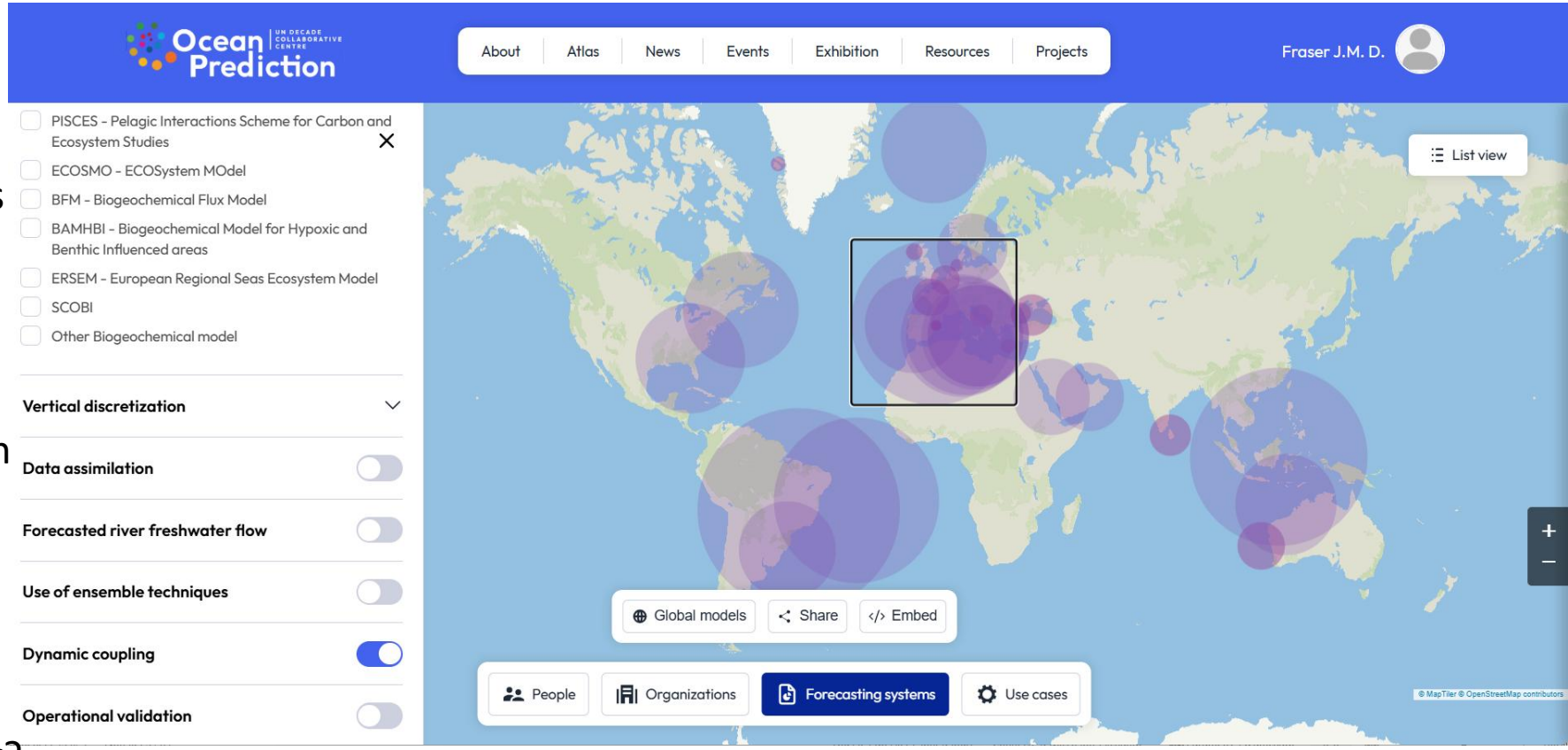
Developing and applying operational readiness level index

Tracks evolution in maturity of systems

Atlas: Filter has a Dynamic Coupling option (applied here)

Could WMO designation (Global Ocean Prediction) (and links to WMO webpage) be added to this data base?

Can we align the Ocean DCC Atlas with the WMO ocean component so they both leverage/complement each other?



ECCC NOAA UKMET METNO DMI INCOIS JMA ABM NMEFC

Discussion

- What is an ideal relation ship between Ocean Predict and WMO?

- How do we enable further knowledge exchange between WMO and OceanPredict/DCC?

WIPPS dashboard	←→	**Ocean Atlas**
WMO requirements of Ocean Forecasting Centers	←→	**DCC Ocean Readiness Level Index**