CLIMATE SERVICES FROM THE OCEAN

The ocean is the key to predictions for the seasons and decades to come – whether needed for planning agriculture and hydropower production or for cruising the Northeast Passage.

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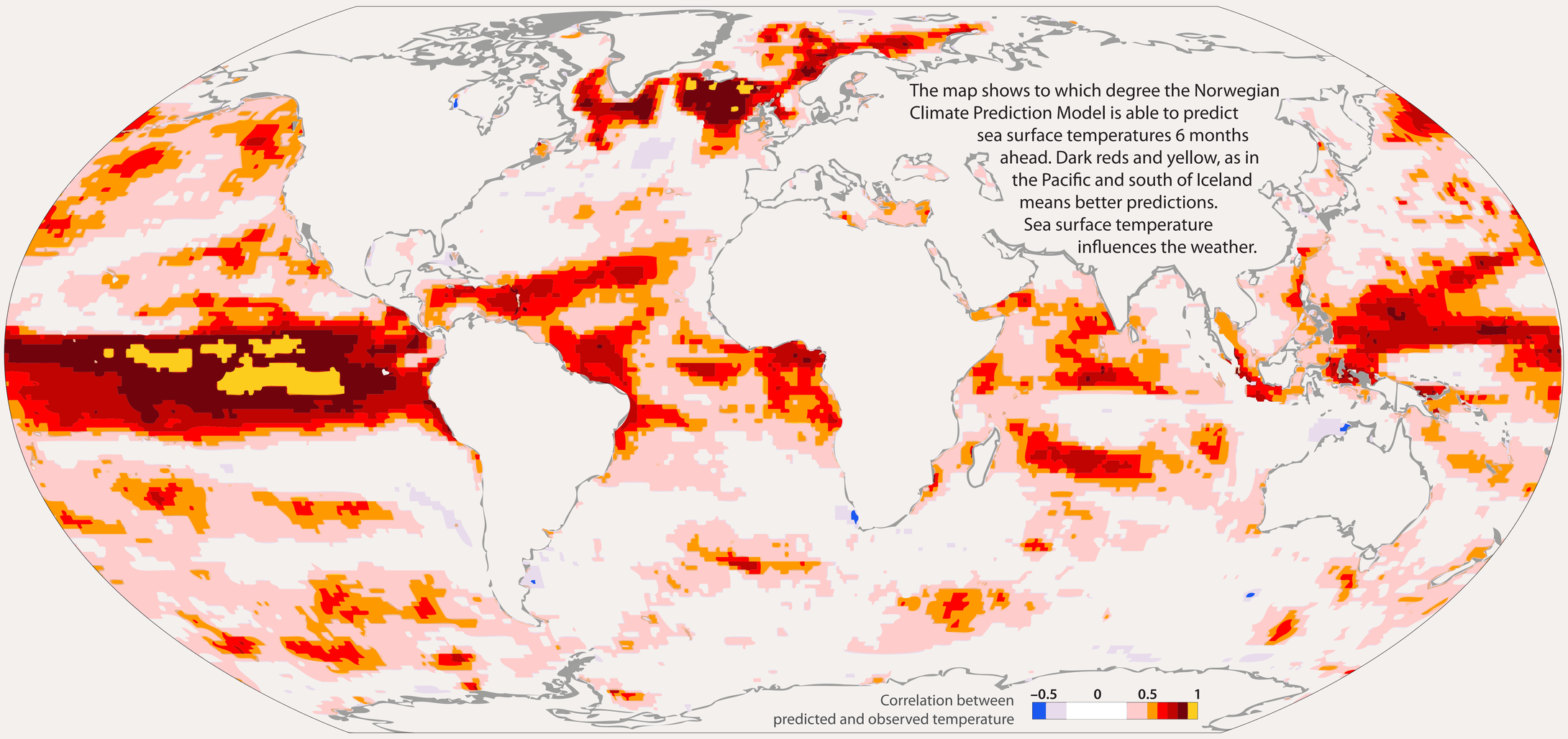
Tomorrow's weather depends on where today's highs and lows move. Knowing today, you can forecast tomorrow. But light air changes swiftly, leaving the atmosphere with a short memory. Predicting next summer or ten years from now, you also need things that change slowly. Sea ice. Currents. Oceans.



Two months ahead, we're lost without the ocean

Connected by the ocean

The temperature at the sea surface of the large oceans affects the weather in regions far away. The El Niño, with higher than normal temperatures in the eastern Pacific, is the most well-known phenomenon. Seasonal prediction systems can now predict El Niño events up to a year in advance. With improved predictions, its dramatic consequences can be gradually mitigated. Other such oscillations in the climate system may give rise to predictability on timescales of decades.

How climate predictions work

Weather forecasts are made by calculating how the weather as it is today will evolve. Climate projections calculate what kind of weather is likely with more energy from greenhouse gases. Climate predictions for seasons and decades incorporate both methods, among other things calculating how today's sea surface temperatures and ocean currents will evolve in a changing climate.

Seasonal Forecasting Engine

Our pilot climate service, the Seasonal Forecasting Engine, will produce tailored climate predictions to the energy sector, the shipping industry and insurance companies. The list of potential end-users includes agriculture, fisheries, ski-resorts and tourism.

IPCC climate predictions

Climate predictions are being developed in the global earth system models used in the IPCC reports. Bjerknes Centre scientists will contribute to the Decadal Prediction Project in the Coupled Model Intercomparison Project Phase 6 (CMIP6).

The next generation may wonder what it was like to live in a world without predictions for the next decade.

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