

Marine Heatwave Forecasts

Delivery of forecasts is part of a complex decision space

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Forecasts of marine heatwave conditions are now possible at a range of time scales, from nowcasts to forecasts over seasonal and longer time frames.

Forecasts can reduce climate risk

A clear understanding of impacts, forecasting, and risk management for extreme events is critical for marine industries, where many coastal communities rely on the ocean for food, transport, and livelihoods. The effects of extreme events like marine heatwave leads to a range of business and community impacts (Figure 1).

Engagement between forecast developers and marine users can improve responses, while at the same time, improving the agility of businesses can enhance overall resilience to extreme events and lower their risk.

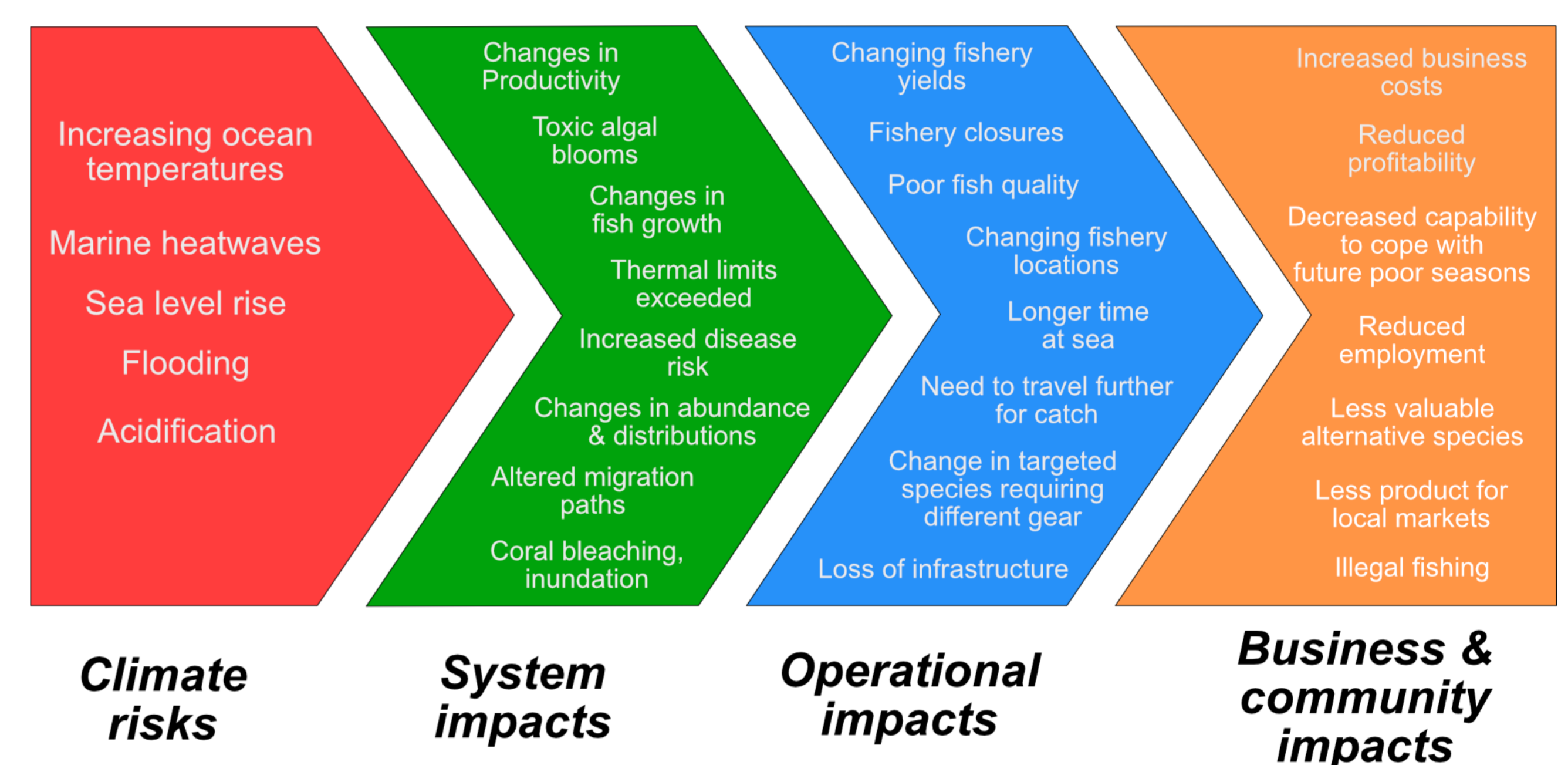


Figure 1: Climate risks result in impacts on marine systems which flow through to affect operational aspects of marine businesses and ultimately marine industries and coastal communities.

What does the future look like?

Using the Australian Bureau of Metrology's ACCESS-S2 model we are developing a range of marine heatwave forecast products. The skill of these forecasts varies around the world, but in general, lead-times of 3 months are useful for marine industries.

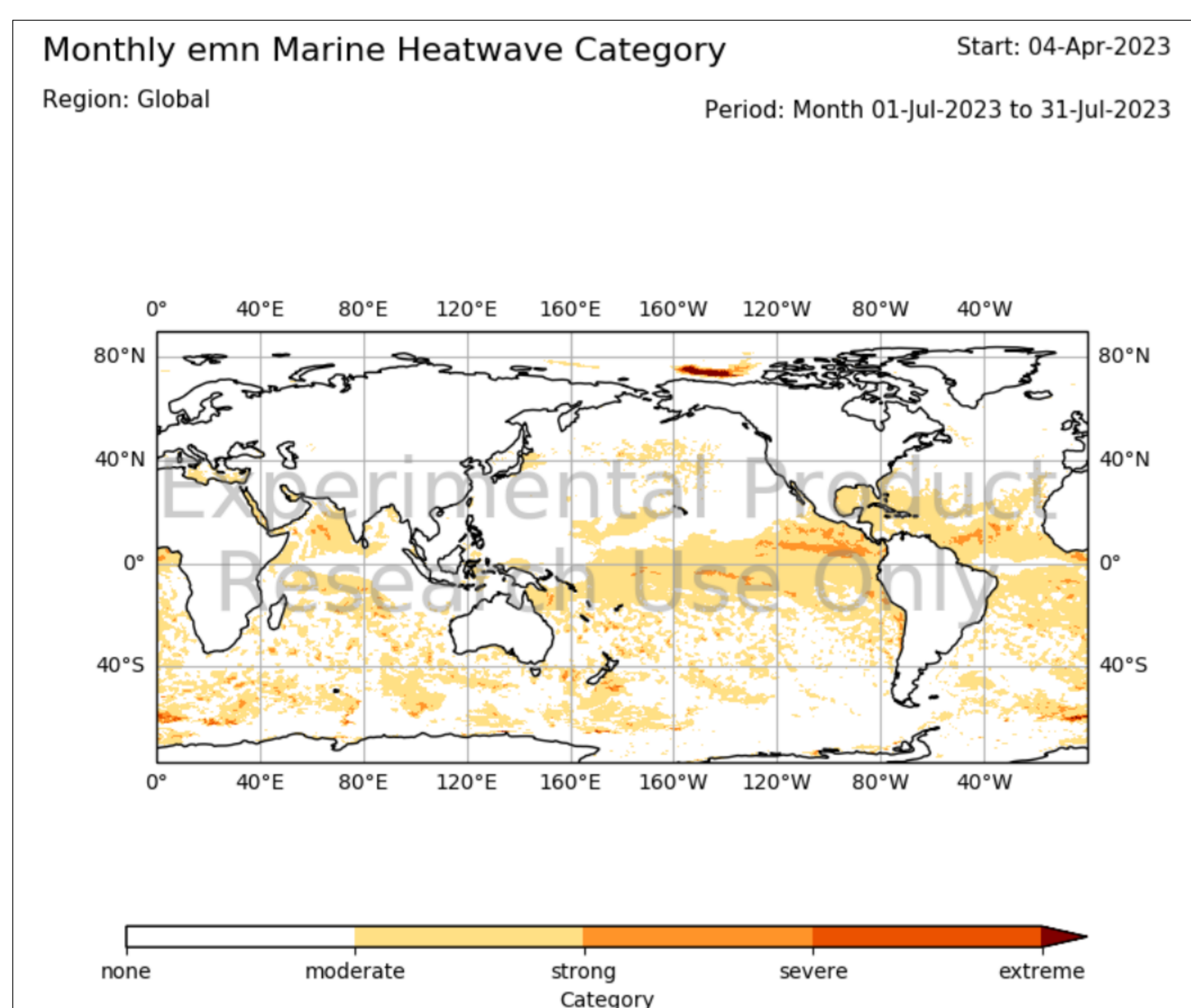


Figure 2: Marine heatwave forecast product – in this case initiated April 4, and projecting 3 months into the future. The global product is shown here.

Using a forecast takes agility

To benefit from a forecast, a marine business will need to be agile to respond to changing information and response options. The management agility of different marine businesses in fisheries, aquaculture, and tourism can influence their ability to use seasonal forecast information effectively.



Figure 3: Factors affecting marine industry agility to respond to climate extremes, such as marine heatwaves, and long-term climate change, such as gradual warming.