



Catching Spanish mackerel in New South Wales: preparing for a changing climate

Climate suitability for Spanish mackerel fisheries is expected to remain generally moderate to very high throughout NSW waters by 2050.

Developing industry-informed climate planning information

Climate change is altering the environmental suitability for many harvested marine species throughout NSW waters. Fishing stakeholders need evidence-based information about the changing climate, and the risks and opportunities it may bring.

Through its Vulnerability Assessment Project, the NSW Department of Primary Industries is increasing the resilience of our primary industries by providing information and data to help the sector better plan for, and respond to, climate change. The project has determined climate change impacts for extensive livestock, broadacre cropping, marine fisheries, forestry, horticulture and viticulture, and important cross-cutting biosecurity risks to inform sound planning, risk management and adaptation decisions.



Spanish mackerel in NSW

Spanish mackerel is a valuable, large-bodied fish species targeted by both commercial and recreational fisheries in NSW. The total catch of Spanish mackerel across NSW fisheries is approximately 31 tonnes, with the recreational fishery accounting for approximately 84% of the total catch.

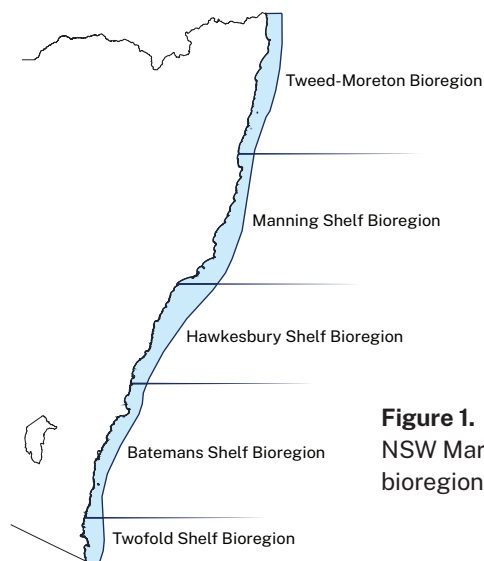


Figure 1.
NSW Marine fisheries bioregions

Climate and Spanish mackerel fisheries

Climate suitability for Spanish mackerel fisheries is expected to remain generally moderate to very high throughout NSW waters by 2050 under both intermediate and high emissions scenarios, with increased opportunities in southern waters and during spring.

Climate risks and opportunities include:



NSW coastal waters are likely to become warmer, which will alter fish distributions according to their habitat preferences.

Climate impacts: what to expect

Summer: The high to very high historical climate suitability for Spanish mackerel in NSW coastal waters during summer is likely to remain by 2050, with southern waters likely to experience minimal positive change (*high confidence*).

Autumn: Historical climate suitability during autumn ranges from moderate in southern waters to high in central and northern waters, and these levels are likely to remain largely unchanged by 2050, with southern waters possibly experiencing minimal positive change, from moderate to high climate suitability (*high confidence*).

Winter: During winter, the historical climate suitability also ranges from moderate to high along the NSW coast, and these levels of suitability are likely to remain largely unchanged by 2050 (*moderate to high confidence*).

Spring: Historical climate suitability for Spanish mackerel along the NSW coast during spring ranges from low in southern waters, moderate in central waters and high to very high along the northern coast. By 2050 northern and central waters are likely to experience minimal positive change, with the climate suitability of central waters becoming moderate to high (*high confidence*).



Adapting to the changing climate

Future changes in fish species distributions and seasonal availability may require adaptation from fisheries industries, such as adjustment of quota shares or changes to targeted species.

Recreational fishers may see changes within their favoured coastal regions, including opportunities for catching different species.

FOR MORE INFORMATION

Please get in touch with vulnerability.assessment@dpi.nsw.gov.au

This work has been produced by the NSW Primary Industries Climate Change Research Strategy funded by the NSW Climate Change Fund.

Methodology and data

Marine climate projections were sourced from the World Climate Research Programme, with historical climate data supplied by the Copernicus Marine Environment Monitoring Service. The climate models differ in their projections, giving rise to uncertainty in our modelling which is reflected in the confidence statements given in brackets in the text. Care should be taken when interpreting these results.

The Vulnerability Assessment Project is intended to highlight potential industry- or regional-level changes. Intermediate and high emissions scenarios were used in the assessments (RCP4.5 and RCP8.5), but these are not the only future scenarios possible. The inclusion of climate variables important to the commodities production was based on published research, expert knowledge and data quality and availability.