Marine fisheries

Climate Vulnerability Assessment
Bonito Factsheet

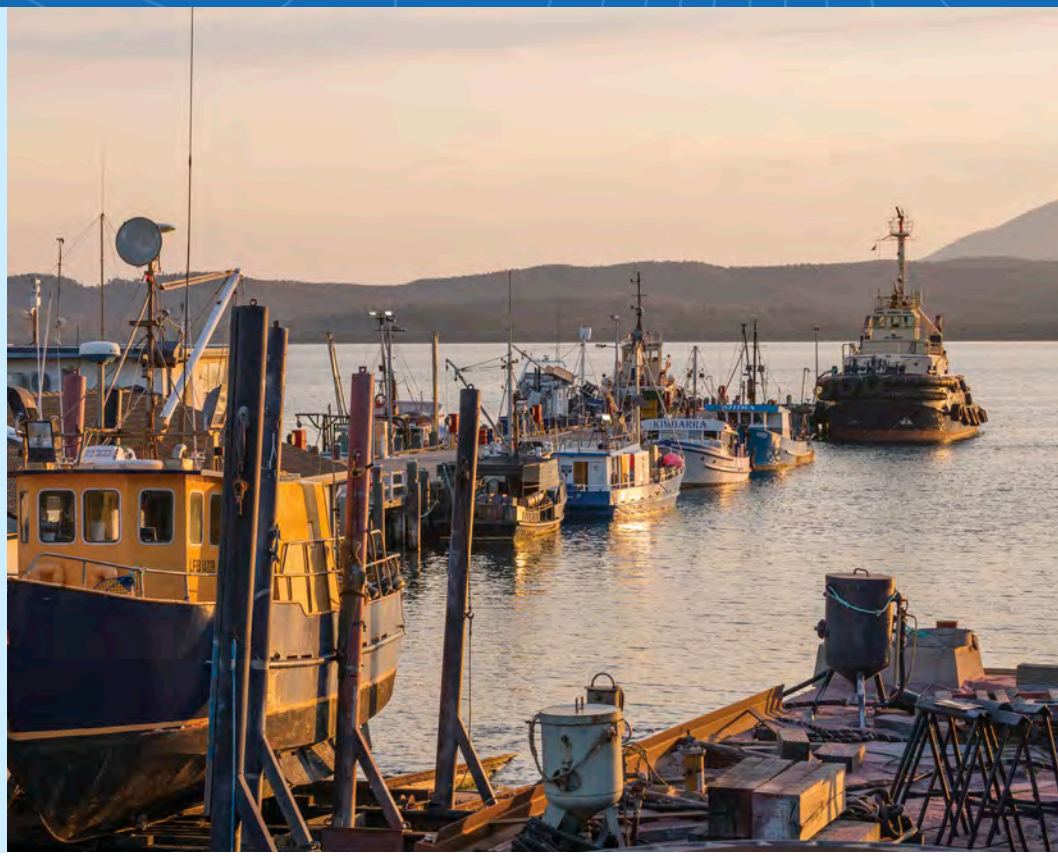
Catching bonito in New South Wales: preparing for a changing climate

Climate suitability for bonito fisheries is expected to remain generally moderate to 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.



Bonito in NSW

Bonito is a migratory, medium-bodied marine fish species that occurs in greatest abundance along the NSW coastline between late spring and autumn.

Bonito is a significant species for the NSW fishing industry due to its high value to both commercial and recreational fishing sectors.

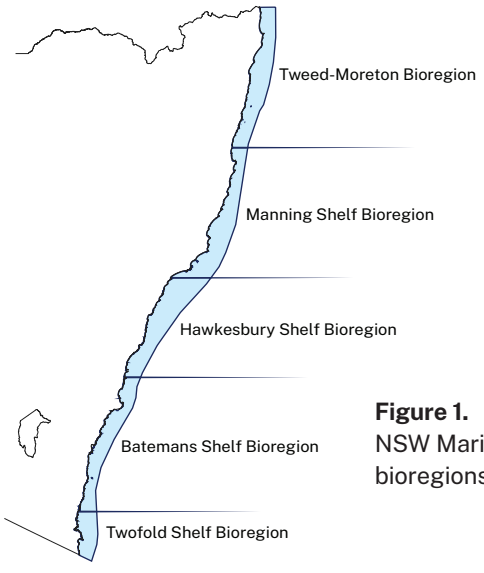


Figure 1.
NSW Marine fisheries bioregions

NSW GOVERNMENT

Climate and bonito fisheries

Climate suitability for bonito fisheries is expected to remain moderate to high throughout NSW waters by 2050 under both intermediate and high emissions scenarios, with increased opportunities 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: Climate suitability for bonito in summer, which ranges from moderate in northern coastal waters to high in southern waters, is expected to remain at these historical levels by 2050, with minimal negative change expected in the climate suitability of central NSW waters (*high confidence*).

Autumn: During autumn, climate suitability within the entire NSW coast is expected to remain moderate by 2050 (*moderate confidence*).

Winter: Historical climate suitability during winter is likely to experience negligible change by 2050, continuing to range from high in northern coastal waters to moderate in southern waters (*moderate confidence*).

Spring: The historical climate suitability during spring is likely to remain high to very high in northern coastal waters by 2050. Within central and southern NSW waters, historical climate suitability ranged between moderate and high. Minimal positive change in climate suitability for bonito is projected for these regions by 2050 (*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.