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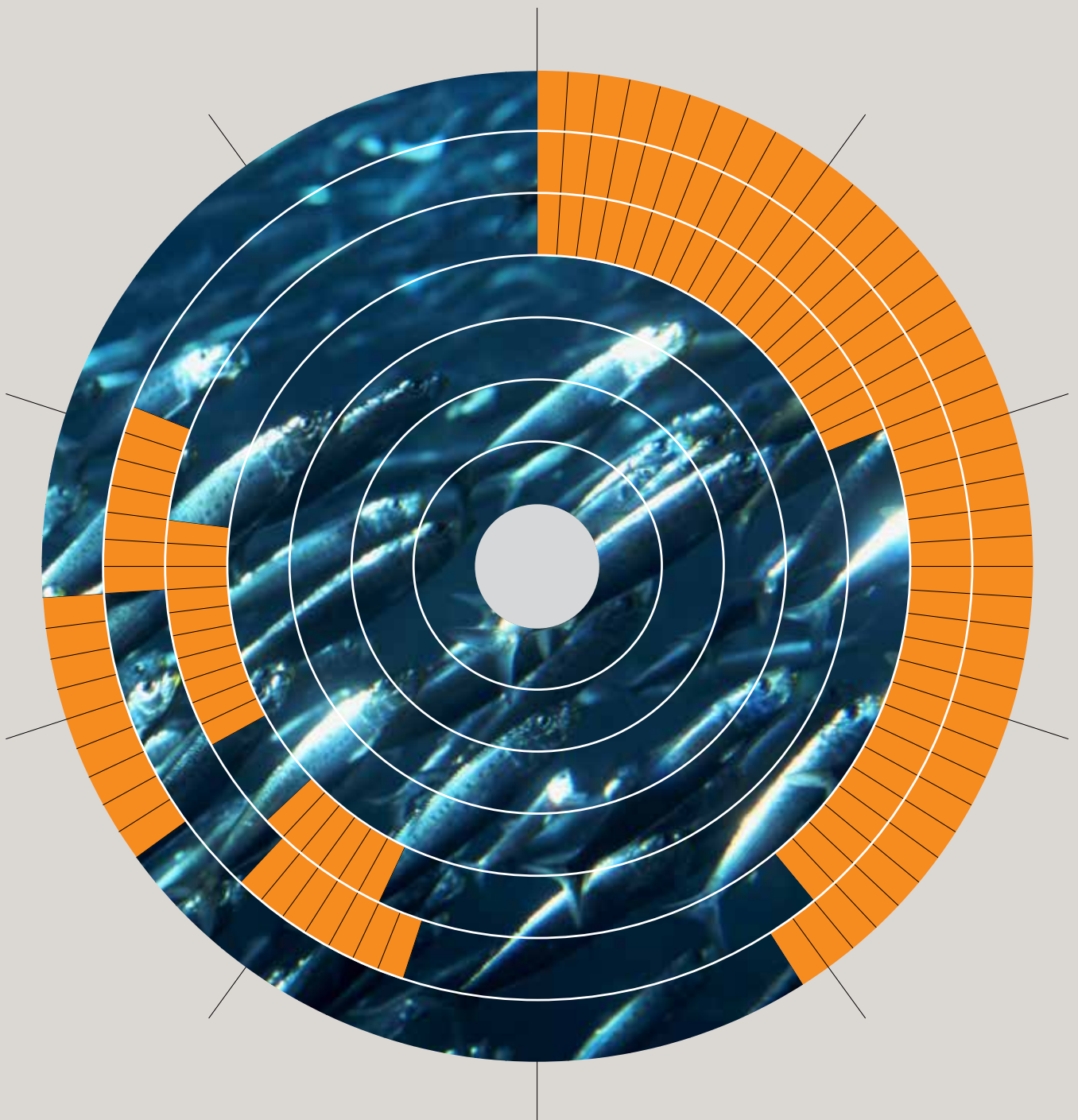
Department of Agriculture, Fisheries and Forestry
ABARES

Final Commonwealth marine reserves network proposal: ABARES social and economic assessment

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Research by the Australian Bureau of Agricultural
and Resource Economics and Sciences

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Introduction

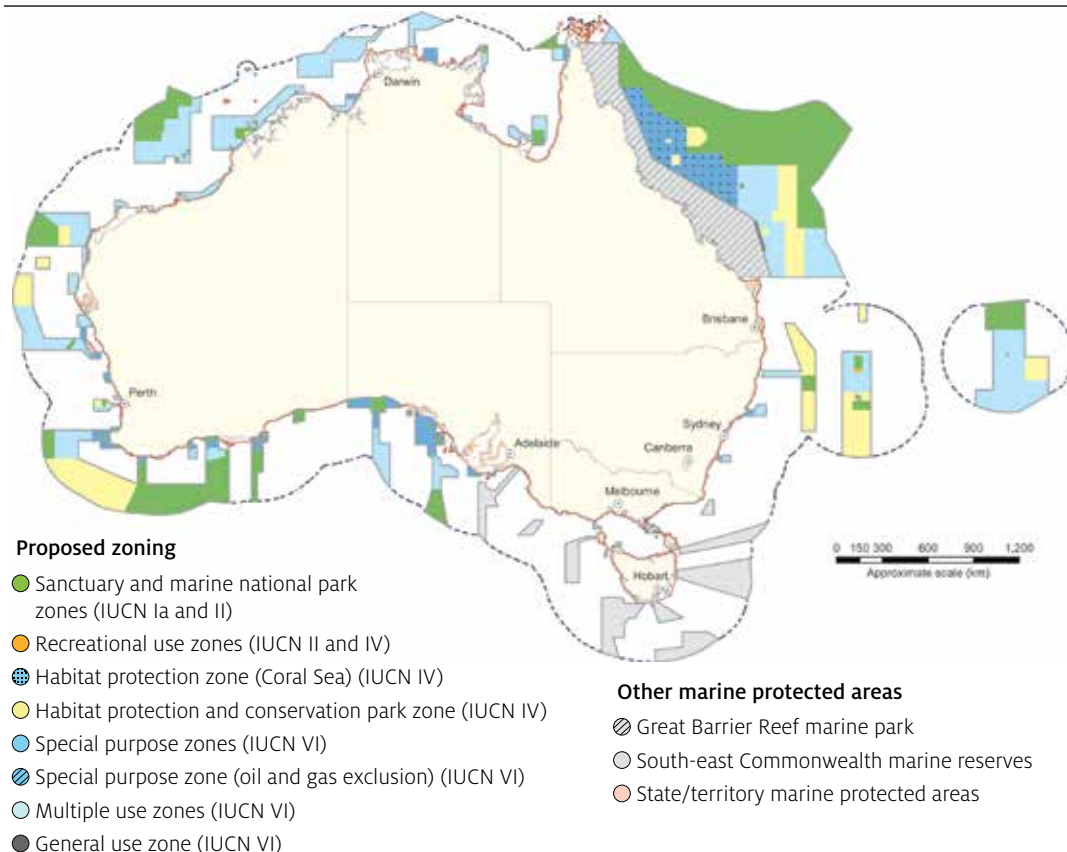
The Australian Government is undertaking marine bioregional planning in Commonwealth waters. This includes identifying areas for inclusion in the National Representative System of Marine Protected Areas. The Department of Sustainability, Environment, Water, Population and Communities (SEWPaC; lead Australian Government agency) commissioned the Australian Bureau of Agricultural and Resource Economics and Sciences to assess the impacts of the proposed marine reserve networks on commercial and charter fishing in each marine region.

This *Science and Economic Insights* paper is a summary of the social and economic assessments ABARES undertook and presents key findings for the final Commonwealth marine reserves network proposal (all regions, Map 1) released on 14 June 2012. It is a summary of the five ABARES regional assessments, details of which can be found at environment.gov.au/marinereserves. The five regions are South-west, North-west, North, Temperate East and Coral Sea.

The social and economic assessments for each marine region employed a range of statistical analyses, social impact assessment and economic modelling to provide a variety of perspectives on potential impacts. ABARES drew on data from fisheries logbooks, a survey of fishing businesses, interviews and focus groups. Assessments of each region examine large-scale aggregate impacts across the entire marine reserves network, as well as at a finer scale covering the potential impacts on towns, businesses and people. Case studies specific to each region are included. Assessments were undertaken in two stages that relate to the draft regional reserves networks released for public comment at various times during 2011 and 2012, and then the final proposed reserve networks released on 14 June 2012. ABARES was not in a position to undertake additional surveys of or interviews with commercial and charter fishing businesses for the final proposed network. However the nature of potential impacts identified by the earlier survey are expected to be similar.

Details of methods used and a discussion of their limitations and caveats are in the ABARES regional reports.

MAP 1 Final Commonwealth marine reserves network proposal



Note: Go to environment.gov.au/marinereserves for information on the activities allowed in the different zone types in the region.
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The scope of work did not include potential impacts on recreational fishing, customary fishing and tourism; it did not attempt to cost or quantify any loss of asset values (such as fishing access rights, boats and shore-based infrastructure); nor were the costing and design of any Australian Government assistance (structural adjustment) included.

ABARES consulted and was guided by a working group in each region comprising representatives from fishing industry peak bodies, state and territory governments and SEWPaC.

Key findings

The potential impacts of the final marine reserves network proposal (14 June 2012) are generally small to moderate relative to the gross value of production (GVP) of affected fisheries. Some impacts would be borne disproportionately by some fisheries, businesses, communities and individuals. The proposed marine reserves have increased uncertainty in the fishing industry and the potential impacts should be considered in the context of other factors affecting fishing businesses and

communities (such as fishery management changes, state and territory marine reserve initiatives, price of inputs and foreign exchange rates).

Displacement of fishing

The final proposed network would displace an estimated annual average 1482 tonnes to 1531 tonnes (ranges represent an upper and lower bound where there was uncertainty) with a GVP of \$10.1 million to \$11.1 million from commercial fisheries. This is around 1 per cent of Australia's total wild-catch fisheries production (Table 1).

Assessment reports use historical GVP as a relatively simple aggregate measure of the level of commercial fishing activity. GVP does not account for the costs involved in generating that revenue or net revenues generated by downstream industries.

The potential displacement of commercial GVP is less under the final proposed network (\$10.1–11.1 million) compared with the draft network (\$11.6–13.7 million).

TABLE 1 Potential displacement of commercial fisheries GVP

Jurisdiction	Displaced GVP (\$m)	Percent of jurisdiction wild-catch GVP displaced
New South Wales	0.23	0.3
Queensland	0.67	0.3
South Australia	0.27	0.1
Western Australia	2.66–2.73	1.0
Northern Territory	0.37	1.2
Commonwealth	5.95–6.86	1.9–2.2
Total	10.1–11.1	0.76–0.83

Note: Percentages are calculated on the basis of 2009–10 wild-catch fisheries production by jurisdiction. The percentage impact figures may differ from those contained in *Completing the Commonwealth Marine Reserves Network Regulatory Impact Statement* (released 25 June 2012) which used average production for the period 2001–2010.

In absolute GVP terms, the largest effects (in descending order of impact) would be on the:

- Commonwealth Eastern Tuna and Billfish Fishery (\$3.81 million; 9.7 per cent of fishery GVP)
- Commonwealth Northern Prawn Fishery (\$1.21–2.11 million; 1.4–2.4 per cent of fishery GVP)
- Western Australian West Coast Rock Lobster Fishery (\$1.2 million; 0.4 per cent of fishery GVP)
- Western Australian Southern Demersal Gillnet and Longline Fishery (\$516 900; 5.8 per cent of fishery GVP).
- Commonwealth Coral Sea Fishery (\$406 300; 55.7 per cent of fishery GVP)

In percentage terms, the greatest effects (in descending order of impact) would be on the:

- Commonwealth Coral Sea Fishery (55.7 per cent of fishery GVP; \$406 300)
- Queensland Fisheries Joint Authority Line Fishery (12.8 per cent of fishery GVP; \$70 500)
- Western Australian South West Trawl Fishery (10.6 per cent of fishery GVP; \$37 000)
- Commonwealth Eastern Tuna and Billfish Fishery (9.7 per cent of fishery GVP; \$3.81 million)
- Western Australian South Coast Trawl Fishery (8.4 per cent of fishery GVP; \$152 000)
- Northern Territory Offshore Net and Line Fishery (longline method; estimates of displacement are confidential as they come from fewer than five vessels).

The potential impacts to the charter sectors are estimated to be low. The most significant charter impacts would be in the final proposed Coral Sea reserve and relate to specific reefs.

Towns

Potentially displaced GVP was linked to towns and communities where product is landed. Towns potentially most affected by displacement of fishing by the final proposed network were identified (Table 2 and Table 3).

TABLE 2 Locations with total GVP impacts greater than \$100 000

Location	Displaced GVP (\$'000)
Cairns (Qld)	3621.4
Mooloolaba (Qld)	1501.4
Karumba (Qld)	1050.0
Darwin (NT)	793.5
Esperance (WA)	428.1
Geraldton (WA)	311.3
Fremantle (WA)	260.8
Hamelin Bay (WA)	236.0
Port Lincoln (SA)	212.6
Busselton (WA)	133.5
Bunbury (WA)	126.6
Eucla (WA)	124.0
Brisbane (Qld)	110.3
Kalbarri (WA)	108.5
Jurien Bay (WA)	107.3
Broome (WA)	103.3
Bundaberg (Qld)	102.5

TABLE 3 Locations with GVP impact per person greater than \$20

Location	Displaced GVP per person (\$)
Karumba (Qld)	2023
Windy Harbour (WA)	803
Cervantes (WA)	168
Eucla (WA)	116
Point Samson (WA)	113
Coffin Bay (SA)	81
Kalbarri (WA)	78
Streaky Bay (SA)	74
Lancelin (WA)	73
Augusta (WA)	65
Mooloolaba (Qld)	50
Jurien Bay (WA)	37
Esperance (WA)	33
Cairns (Qld)	30
Hamelin Bay (WA)	23



Smaller communities, such as Windy Harbour, Cervantes and Point Samson, may have greatest difficulty adjusting because of their social and economic circumstances. Karumba is likely to be seriously affected by the final proposed North network due to its relatively low capacity to adapt. Cairns and Mooloolaba will be relatively heavily affected by the final proposed networks in the North, Coral Sea and Temperate East but both have a reasonable capacity to adapt.

Economy and jobs

The estimated net economic impact of the final proposed network is reduced regional economic activity of between \$17.7 million and \$19.4 million in the short term and displacement of around 42 to 46 jobs in directly affected regions. Other regions are likely to experience flow-on effects but changes in economic activity at the state level are expected to be negligible in terms of the size of those economies.

These estimates are derived from ABARES economic modelling. They include estimates from the affected regions as well as the Northern Territory but do not include estimates from total state and national economies because these were assessed as negligible relative to the size of those economies. Total regional economic effect, therefore, represents the sum of the effects on regional and Northern Territory economies and employment. The *Completing the Commonwealth Marine Reserves Network Regulatory Impact Statement* (released on 25 June 2012) used figures based on unfiltered model outputs, which included state and national figures, resulting in estimates larger than presented here and in the ABARES final assessment reports.

Independent of the modelling, potential job losses from the commercial fisheries catching and processing sectors was estimated at approximately 111 full-time jobs in the short term, based on survey responses from fishing businesses.

Business and personal

Surveys were conducted in each of the five regions to assess perceptions of potential impact of the draft networks. Across the five regions, ABARES sent survey questionnaires to 1515 fishing businesses that would potentially be impacted; 395 responded. Of those that responded, 257 indicated they would be impacted and would need to change their fishing activity as a result of the draft reserves. Their responses were as follows:

- 160 indicated they would stay in the fishing industry but would either make up the shortfall elsewhere or downsize their fishing operation
- 50 indicated they would leave the fishing industry
- 47 were unsure.

These results would likely be different under the **final** proposed network.

The survey, focus groups and interviews identified a range of potential business, community and personal impacts relating to the draft marine reserves network in each region. The nature of those potential impacts and the broader issues exacerbating impacts identified for the **draft** network are likely to be analogous to those for the **final** proposed network.

Effects on specific fisheries and towns

The potential impact of the final proposed South-west network on the Western Australian West Coast Rock Lobster Fishery is relatively

large in dollar terms (\$1.2 million) but is a small percentage of the fishery as a whole (0.4 per cent). The impact would focus on a small area, and probably a small number of fishing businesses, in the Abrolhos Islands.

The final proposed North network is thought to have a substantial impact on an individual operator in the Queensland N9 Fishery (offshore gillnet sector targeting mackerel), and one operator in the Northern Territory Offshore Net and Line Fishery (longline method). In both cases, potential displacement estimates are confidential as they come from less than five vessels.

The final proposed North network would have a substantial impact on Karumba, due to the large amount of catch flowing to it and its low adaptive capacity (small population and high dependency on fishing).

The impact of the final proposed reserve on Commonwealth fisheries in the Coral Sea is large, both in terms of the absolute GVP and the percentage of fishery GVP displaced. The GVP displacement from the Eastern Tuna and Billfish Fishery was estimated at \$3.6 million, representing 9.1 per cent of fishery GVP, and GVP displacement from the Coral Sea Fishery was estimated at \$406 300, representing 55.7 per cent of total fishery GVP.

A vertically integrated company that accounts for most tuna production in Cairns, is likely to be

substantially impacted by the final proposed Coral Sea Marine Reserve. The owner's expectation, expressed in ABARES consultation, is that the draft reserve would result in closure of the business.

Cairns (flow of GVP \$3.62 million) and Mooloolaba (\$1.50 million) would be relatively heavily impacted by the final marine reserve network proposals. Cairns would be predominantly affected by the final Coral Sea reserve proposal and also by the final North Commonwealth Marine Reserves Network proposal. Mooloolaba would be predominantly impacted by the final Coral Sea reserve proposal and potentially by the final Temperate East Commonwealth Marine Reserves Network proposal. Given their size and economic diversity, both should have reasonable capacity to adapt.

The fishing industry has consistently raised potential impacts of the proposed reserves on prospective fishing. This is particularly relevant to the North Marine Region in northern Australia where a number of fisheries are in a developmental phase.

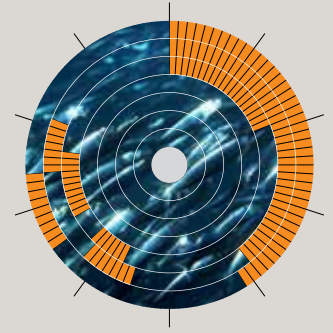
Further Information

Further information on the proposed Commonwealth marine reserves, including the public consultation and proclamation process, is available on the Department of Sustainability, Environment, Water, Population and Communities website—environment.gov.au/marinereserves.



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