4.1 NORTH COMMONWEALTH MARINE RESERVES NETWORK

The North CMR Network, established in 2012, included eight reserves covering 157 483 km^2 of Commonwealth waters from the west of Cape York Peninsula to north of Wyndham in WA (Figure 4.1.1).

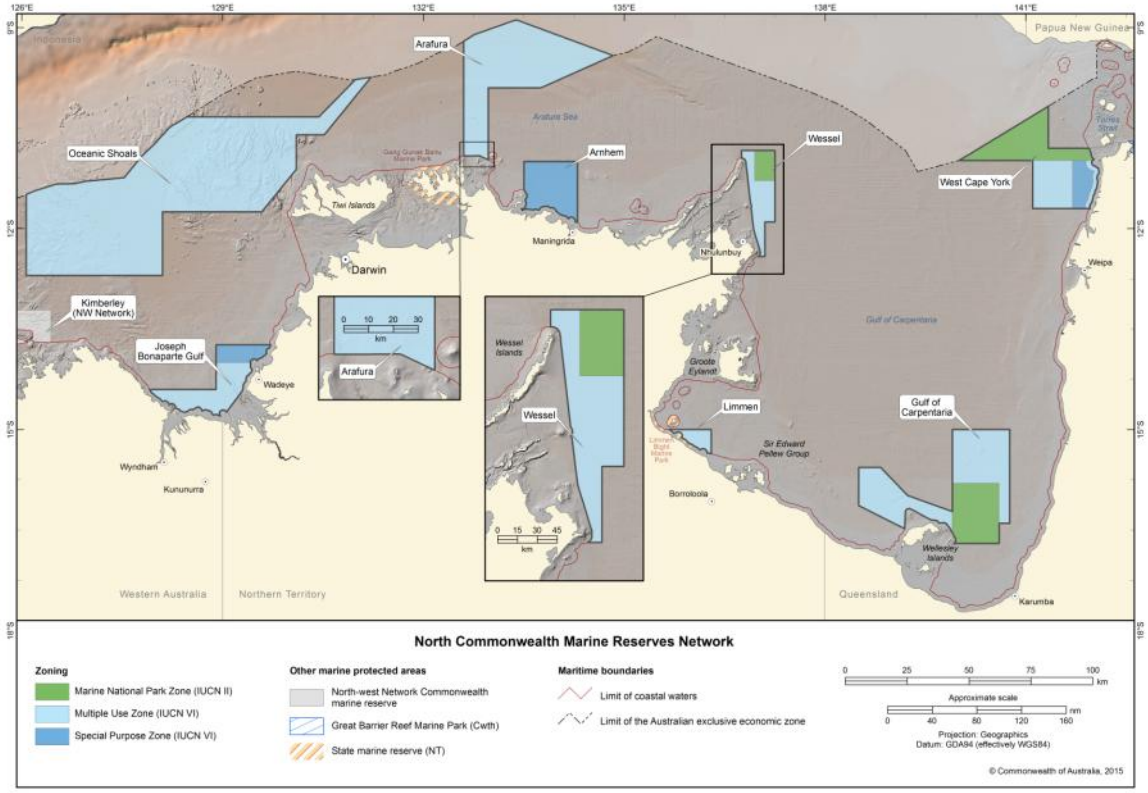

Figure 4.1.1 North CMR Network, as proclaimed

Issues raised during the CMR Review that were generic across the North CMR Network included:

- Mining, including oil and gas and mineral exploration—specifically, allowing exploration in 97% of the region rather than excluding exploration from all reserves
- The lack of high-level protection in most reserves
- Removing destructive fishing practices from reserves—specifically, gillnetting and trawling
- Access to all MNPZs (IUCN II) by recreational anglers
- Economic development including fishing prospectivity—particularly the ability to trial new gear
- Impact of effort displacement—specifically, that unless an appropriate fisheries adjustment policy was put in place the creation of marine reserves had the potential for negative consequences in adjacent areas, including:
    - Reduction of individual fishing business profitability as competition for a scarce resource increases
    - Regional depletion of adjacent fish stocks
    - Increased effort on non-target and protected species in adjacent areas
    - Increased conflict between different sectors (including recreational and commercial) as competition for scarce resources increases.
- Traditional owner interests and aspirations for economic development—specifically, the role of rangers in marine reserve management.

A comprehensive list of issues raised is provided at Appendix G.

North Commonwealth Marine Reserves Network—outcomes

Zoning changes are recommended for the Oceanic Shoals, Arafura, Wessel, Limmen, Gulf of Carpentaria and West Cape York CMRs, while no changes are recommended for the Joseph Bonaparte Gulf and Arnhem CMRs. Recommended zoning changes are shown in Figure 4.1.2 and summarised in Table 4.1.1.

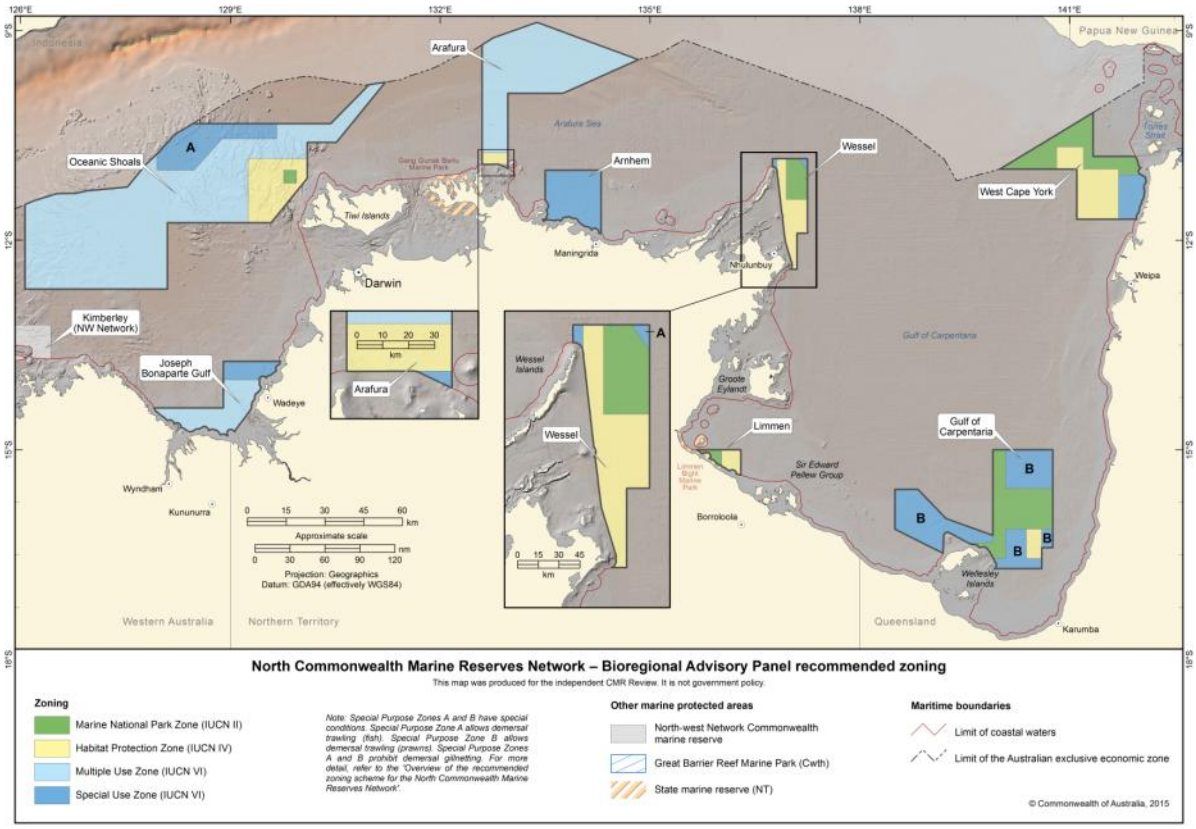

Figure 4.1.2 Recommended zoning for the North CMR Network

Table 4.1.1 indicates how the areas of different zone types (within the outer boundaries of the reserves) will change between the proclaimed and recommended zoning. As a result of changes to several reserves there is a small increase in the area under MNPZ. HPZs are introduced into six reserves which, together with MNPZs, provide a high level of protection for 24% of the network. There is a 28% decrease in MUZ and a 14% increase in SPZ, to accommodate several specific fisheries. The overall area zoned as MUZ and SPZ (IUCN VI) decreases from 89% to 76% of the network.

Table 4.1.1 Comparison of areas of zone types between proclaimed and recommended zoning for North CMR Network

Zone	Proclaimed		Recommended		Difference	
	Area (km²)	% of Network	Area (km²)	% of network	Area (km²)	% of network
MNPZ (IUCN II)	16 977	10.78%	17 861	11.34%	+884	+0.56%
HPZ (IUCN IV)	Nil	Nil	20 057	12.74%	+20 057	+12.74%
MUZ (IUCN VI)	128 946	81.88%	85 561	54.33%	–43 385	–27.55%
SPZ (IUCN VI)	11 560	7.34%	12 092	7.68%	+532	+0.34%
SPZ A (IUCN VI)	Nil	Nil	7 461	4.74%	+7 461	+4.74%
SPZ B (IUCN VI)	Nil	Nil	14 451	9.18%	+14 451	+9.18%
Total	157 483	100%	157 483	100%		

Note: All figures are rounded to the nearest km² (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Conservation outcomes

The recommended zoning changes will provide the following key improvements to conservation outcomes for the North CMR Network:

- The introduction of new or improved MNPZs in five reserves that in aggregate amount to a small overall increase (0.6% increase) in no-take protection. This included:
  - A new MNPZ in the Oceanic Shoals CMR
  - A new MNPZ in the Limmen CMR
  - The reconfiguration of the MNPZ in the Gulf of Carpentaria CMR, to better protect the area to the north of Mornington Island and to create a north–south transect along the length of the reserve
  - The increase in MNPZ area in Wessel CMR
  - The extension of the MNPZ south of Crab Island in West Cape York CMR, to improve protection to important habitat areas for threatened turtle and seabird species.
- The introduction of HPZs, amounting to a significant increase (13%) in high protection in six reserves, including:
  - West Cape York CMR, to better protect benthic habitat in the Gulf of Carpentaria basin
  - Limmen CMR, to improve protection of the Gulf of Carpentaria coastal zone KEF and important habitat areas for sea snakes, aggregations of fish and sharks and inter-nesting habitat for threatened flatback turtles
  - Wessel CMR, to provide greater protection of benthic habitat in the Gulf of Carpentaria basin KEF
  - Arafura CMR, to prohibit activities that interact with the seafloor and provide greater protection to benthic habitat in the Northern Shelf Province Provincial Bioregion

- Oceanic Shoals CMR, to improve protection to the benthic ecosystems of the carbonate banks and terraces of the Van Diemen Rise.

Table 4.1.2 shows how the recommended zoning in the North CMR Network improves the representation of primary conservation features in MNPZ (IUCN II) and HPZ (IUCN IV), providing an indication of performance against the four primary goals. The additional 15 conservation features represented in MNPZ in the North CMR Network are a result of the introduction of new MNPZs in the Oceanic Shoals and Limmen CMRs, and the reconfiguration of the MNPZ in the Gulf of Carpentaria CMR.

The new HPZs in the West Cape York, Limmen, Wessel, Arafura and Oceanic Shoals CMRs provide increased protection to 49 conservation features. Thirty-nine of these features are also represented in MNPZs, which means that 53 of the 93 primary conservation features (57%) in the North CMR Network will be represented in these zones (and therefore 40 are represented in neither zone). A list of these conservation features is provided in Appendix H.

Table 4.1.2 Comparison of representation of conservation features between proclaimed and recommended zoning for North CMR Network

Goal	Primary conservation feature	Total no. in network	Proclaimed		Recommended	
			MNPZ (IUCN II)	HPZ (IUCN IV)	MNPZ (IUCN II)	HPZ (IUCN IV)
1	Provincial Bioregions (PBs)	4	2	0	3	3
	Meso-scale Bioregions	14	6	0	8	11
2	Depth by PB	22	4	0	7	7
3	Key Ecological Features	9	3	0	5	3
	Biologically Informed Seascapes	29	6	0	11	16
4	Seafloor Types	15	7	0	9	9
	Total	93	28	0	43	49

Note: Some features are represented in both MNPZs and HPZs; therefore the total number of features represented in both zones is not the simple sum of their occurrence in each zone.

Socio-economic impacts

Commercial fishing

The recommended zoning of the North CMR Network will reduce the impact on commercial fishing largely due to improvements in access for the Commonwealth managed NPF, the NT Demersal Fishery and Spanish Mackerel Fishery, and the Queensland Gulf of Carpentaria Finfish Fishery.

Recreational and charter fishing

The recommended zoning of the North CMR Network will improve access to some areas in the Gulf of Carpentaria and West Cape York CMRs, but will reduce access to some areas

in the Oceanic Shoals, Limmen and West Cape York CMRs. Based on consultations with recreational and charter fishing representatives, the recommended MNPZs in the North CMR Network largely avoid areas frequently accessed by their sectors, and the socio-economic impacts are considered to be minimal.

Mining and oil and gas development
The area under both MNPZ and HPZ is more than doubled to 24% of the network, reducing the area available for exploration and development for mining and oil and gas. Over three-quarters of the network remain potentially open to these activities.

Native title
Native title is not impacted by the proclamation of CMRs or the development and implementation of management plans for those reserves under the EPBC Act. The existence of native title claims over sea country in the North CMR Network presents significant opportunities for co-management with traditional owners and local Indigenous groups and for improvements in management outcomes. Recommendations relating to involvement of Indigenous groups and traditional owners in the management of CMRs are outlined in Chapters 5 to 7 of this report.

Practicality of implementation
The introduction of HPZs may increase the complexity of zoning for some users in the North CMR Network, although this zone type is widely adopted in other CMR networks. The addition was considered necessary in order to improve protection of benthic habitats while providing for economic activities that do not damage benthic habitat. Zoning boundaries are straight lines (running north–south or east–west where possible), and improvements to ease compliance are expected in some reserves such as West Cape York CMR and Limmen CMR.

Conclusion
The recommended zoning of the North CMR Network represents a balanced approach to addressing the key areas of contention that arose during the consultation. Socio-economic impacts on the commercial fishing sector are reduced through the reconfiguration of zone boundaries and the introduction of further SPZs. These concessions were balanced by new or improved positioning of MNPZs (increased to 11% of the network) and the introduction of HPZs (13% of the network), which together will improve biodiversity outcomes by better targeting and protecting important conservation values in several of the reserves. These recommended changes bring a high level of protection to nearly a quarter of the North CMR Network and 53 of the network's 93 primary conservation features. Attempts to provide high-level protection in more of the nearshore coastal areas of CMRs such as Arnhem, Arafura and Joseph Bonaparte Gulf were stymied by the constraints of moderate to high oil and gas prospectivity.

Table 4.1.3 Overview of recommended zoning scheme for North CMR Network

Activity type[a]		Special Purpose Zone (IUCN VI)	Multiple Use Zone (IUCN VI)	Habitat Protection Zone (IUCN IV)	Marine National Park Zone (IUCN II)
MINING[b]	Mining (including exploration, development and other activities)	✓	✓	×	×
COMMERCIAL FISHING[c]	Handline/rod and reel/trolling	✓	✓	✓	×
	Hand collection	✓	✓	✓	×
	Dropline/trotline	✓	✓	×	×
	Purse seine	✓	✓	✓	×
	Fish traps and pots	✓	✓	×	×
	Nets (including cast, scoop, barrier, drag, skimmer and lift)	✓	✓	×	×
	Set mesh net and pelagic gillnet	✓[d]	×	×	×
	Demersal longline	×	×	×	×
	Demersal trawl (including semi-pelagic trawl and semi-demersal trawl)	×[e]	×	×	×
AQUACULTURE		✓	✓	×	×
RECREATION	Boating	✓	✓	✓	✓
	Scuba diving and snorkelling	✓	✓	✓	✓
	Recreational fishing (including spear-fishing)[f]	✓	✓	✓	×
COMMERCIAL TOURISM	Non-fishing related tourism (including scuba/snorkel tours and nature watching)	✓	✓	✓	✓
	Fishing related tourism (including charter fishing and fishing/spear diving tours)	✓	✓	✓	×
INDIGENOUS ACTIVITIES	Non-commercial Indigenous harvesting and hunting (consistent with the *Native Title Act 1993*)	✓	✓	✓	✓
RESEARCH		✓	✓	✓	✓
GENERAL USE	Defence	✓	✓	✓	✓
	Shipping (general transit)[g]	✓	✓	✓	✓

a. All activities require approval to be undertaken in CMRs; approvals are provided in the management plan or through class approvals or individual permits.

b. Proposed mining operations carried out under usage rights that existed immediately before the declaration of a reserve do not require approval from the DNP.

c. Commercial fishing methods not listed in the table may require assessment.

d. Set mesh netting and pelagic gillnetting are not allowed in the North CMR Network SPZ A.

e. Demersal trawl (fish) is allowed in the North CMR Network SPZ A. Demersal trawl (prawns) is allowed in the North CMR Network SPZ B.

f. Recreational fishing is managed by the states. NT, Queensland or Western Australian rules and regulations (for example size and bag limits) will generally apply in the North CMR Network depending on the reserve location and unless otherwise specified in the management plan.

g. Ballast water exchange is managed under national arrangements. Restrictions may apply in some areas.

4.1.1 WEST CAPE YORK COMMONWEALTH MARINE RESERVE

Background

The West Cape York CMR extends from the boundary of Queensland waters adjacent to the northern tip of the Cape York Peninsula into the Gulf of Carpentaria basin and out to the boundary of the exclusive economic zone (EEZ). The reserve, established in 2012, covers an area of 16 012 km^2 and contains three zone types: Marine National Park (50%); Multiple Use (37%) and Special Purpose (14%) (Figure 4.1.1.1).

Bioregions represented within the reserve include the Gulf of Carpentaria coastal zone, the Gulf of Carpentaria basin, and examples of habitat and ecosystems of the Northern Shelf Province and Northeast Shelf Transition Province. Conservation values include inter-nesting habitat for threatened flatback, hawksbill and olive ridley turtles as well as roosting areas for aggregations of the migratory lesser frigatebird.

The area is important to traditional owners and contains several native title claims that overlap with parts of the marine reserve.

Fisheries operating in the area include the Queensland Gulf of Carpentaria Finfish Fishery (trolling), the NT Offshore Net and Line Fishery (gillnet) and the Commonwealth NPF (trawl). Charter fishing occurs in the area, mostly within state waters, with some activities extending into Commonwealth waters.

Petroleum prospectivity within the marine reserve boundaries is considered to be low or low to medium, and an existing petroleum lease lies to the south-west of the CMR. The CMR overlaps with a major shipping passage. It also overlaps with a military practice and exercise area (military flying).

Issues raised

In addition to the North CMR Network issues outlined above in Section 4.1, West Cape York CMR was canvassed in detail in several submissions as well as in meetings with stakeholders. Issues raised included:

- Loss of access for commercial fisheries, including commercial trolling and gillnetting
- Increased protection around important turtle habitat adjacent to Crab Island.

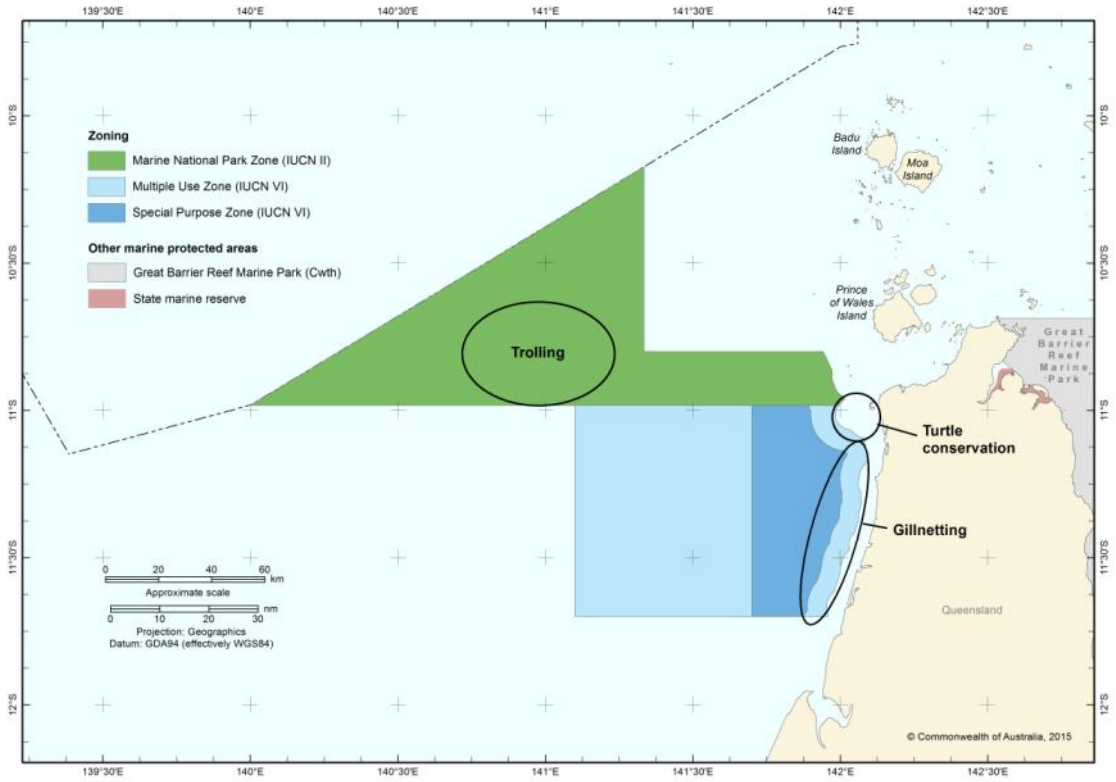

Figure 4.1.1.1 West Cape York CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

The Regional Panel determined that loss of access by established commercial fisheries and the lack of protection around Crab Island were areas of contention in the West Cape York CMR.

Conservation

The coastal area adjacent to Crab Island is important inter-nesting habitat for the world's largest flatback turtle nesting population, habitat for endangered hawksbill turtles and vulnerable olive ridley turtles, and Biologically Important Areas for coastal dolphins.

The Regional Panel recommended an extension of the MNPZ adjacent to Crab Island to provide greater protection to this area.

Gulf of Carpentaria Finfish Fishery (trolling)

The area of particular interest was a series of reefs in the existing MNPZ that included the Carpentaria Shoals (Figure 4.1.1.1). In submissions received from the commercial sector, detailed confidential information was provided to show the location of several reefs in this reserve that were targeted by the fishery. Some of these reefs occurred in the MNPZ while others were to the east of the reserve or were found south of the MNPZ in the SPZ.

This fishery targets Spanish mackerel, *Scomberomorus commerson*, a large mobile pelagic species that is only present in the area at certain times of the year.

The inclusion of a HPZ over the shoals to allow recreational fishing and commercial fishing for pelagic species (trolling) would accommodate the request for access to the Carpentaria Shoals.

This option affords a high level of protection to the benthic habitat over the shoals while at the same time minimising the impact of the reserve on an important fishery. The HPZ

will also allow recreational and charter fishing to occur in the area, addressing concerns relating to both fishing prospectivity and economic development of the region.

The Regional Panel noted that having both an HPZ and an MNPZ in close proximity in this area provided an opportunity for future scientific evaluation of the relative effectiveness of these two zone options in achieving the conservation objectives for the area.

Offshore net and line fishery (gillnetting)
The area of interest was the strip of MUZ east of the SPZ in Figure 4.1.1.1. This affected the grey mackerel fishery in the N3 Gulf of Carpentaria Finfish Fishery and to a lesser extent the N9 fishery that extends from 7 nm to 25 nm offshore.

The fishery targets grey mackerel, threadfins, barramundi and spotted grunter bream.

It is proposed that the MNPZ be extended to 11°04'S, below which the SPZ be extended east over what was previously MUZ.

Recommendations
The recommendations for the West Cape York CMR are to:

- Create new HPZ over the Carpentaria Shoals
- Extend the MNPZ south to 11°04'S and east of 141°42'E to the 3 nm limit
- Remove the MUZ east of the existing SPZ, thereby creating an SPZ from the 3 nm limit south of 11°40'S to a western boundary at 141°42'E.

These changes are shown in Figure 4.1.1.2 and summarised in Table 4.1.1.1.

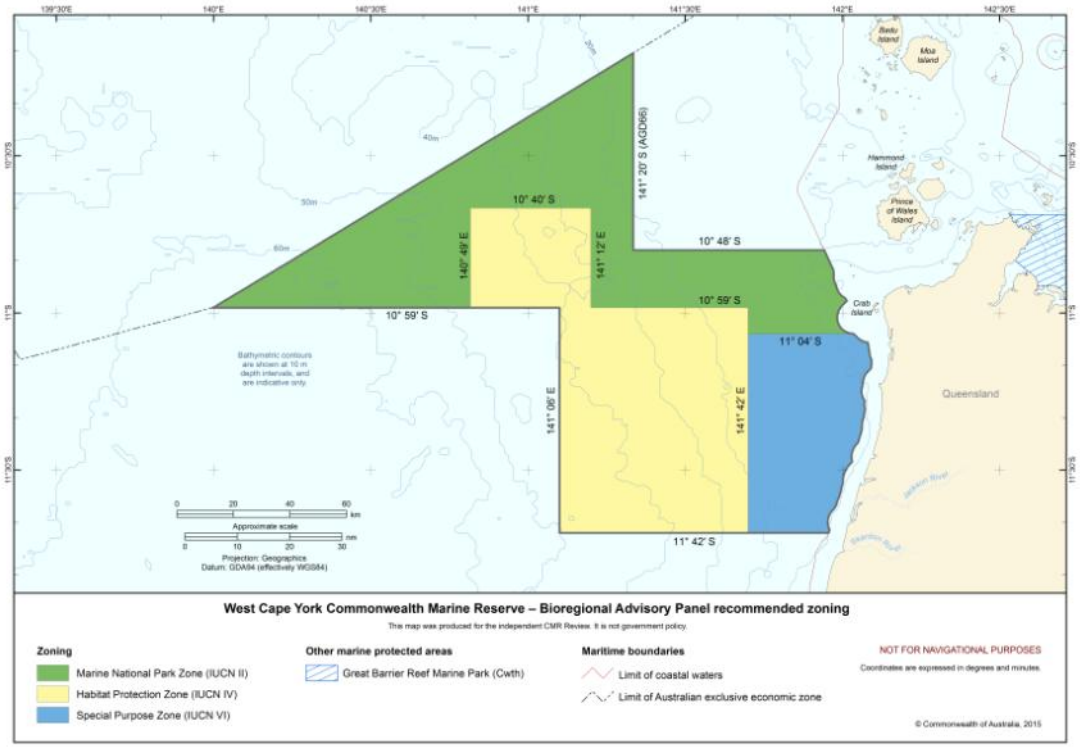

Figure 4.1.1.2 Recommended zoning for West Cape York CMR

Table 4.1.1.1 indicates how the areas under different zone types (within the outer boundaries of the reserve) will change with the recommended zoning. While the area of

MNPZ is reduced, this is offset by the introduction of a new HPZ. In combination with the MNPZ, this provides a high level of protection to 84% of the reserve. There is also a slight increase in the area under SPZ.

Table 4.1.1.1 Comparison of areas of zone types between proclaimed and recommended zoning for West Cape York CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km^2)	% of CMR	Area (km^2)	% of CMR	Area (km^2)	% of CMR
MNPZ (IUCN II)	7 957	49.69%	6 783	42.36%	–1 174	–7.33%
HPZ (IUCN IV)	Nil	Nil	6 660	41.59%	+6 660	+41.59%
MUZ (IUCN VI)	5 871	36.67%	Nil	Nil	–5 871	–36.67%
SPZ (IUCN VI)	2 184	13.64%	2 569	16.04%	+385	+2.40%
Total	16 012	100%	16 012	100%		

Note: All figures are rounded to the nearest km^2 (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning for West Cape York CMR improves conservation outcomes by increasing protection of the area adjacent to Crab Island, which provides important habitat for threatened turtle species, seabirds and coastal dolphins.

The introduction of a new HPZ that covers more than 40% of the reserve will provide greater protection to 15 conservation features in the North CMR Network, including two Provincial Bioregions, three Meso-scale Bioregions, two Depth Ranges (by Provincial Bioregion), one KEF, four Biologically Informed Seascapes and three Seafloor Types (see Appendix H). Twelve of these conservation features are also represented in MNPZ.

The recommended zoning of West Cape York CMR will reduce the overall impact on commercial fishing catch, particularly for trolling over the Carpentaria Shoals and gillnetting in the nearshore waters south of Crab Island. This zoning will improve access and provide a potential economic opportunity for recreational and charter fisheries in the area now zoned as HPZ.

The Commonwealth NPF also operates in or near the marine reserve. There are no recommended changes to the zoning of West Cape York CMR that will reduce the impacts on this fishery, as all forms of trawling will remain prohibited.

The new zoning will introduce one new zone type (HPZ) to make a total of four zones in the marine reserve. The change to a portion of the MNPZ to an HPZ around the Carpentaria Shoals may increase zoning complexity to some extent; however, straight boundary lines have been applied to minimise this complexity. By changing the proclaimed eastern MUZ (adjacent to the Queensland state water boundary), ease of compliance with zoning will improve. The West Cape York CMR overlaps with the Torres Strait Regional Sea Claim native title determination.

The recommended new HPZ in this reserve will increase the restriction on mining activities above the level in the proclaimed zoning. The area covered by the recommended HPZ was rated as having medium-low to low petroleum prospectivity.

4.1.2 GULF OF CARPENTARIA COMMONWEALTH MARINE RESERVE

Background

The Gulf of Carpentaria CMR covers approximately 23 774 km^2 of Commonwealth waters from waters adjacent to the Wellesley Islands and further north into the Gulf of Carpentaria basin. The reserve, established in 2012, was assigned two zone types; Marine National Park (31%) and Multiple Use (69%) (Figure 4.1.2.1).

This marine reserve is representative of several KEFs including the Gulf of Carpentaria coastal zone, the Gulf of Carpentaria basin, the plateaux and saddle north-west of the Wellesley Islands, and submerged coral reefs of the Gulf of Carpentaria. The area provides inter-nesting habitat for threatened flatback and green turtles and foraging areas for breeding aggregations of the lesser frigatebird, brown booby, roseate tern and listed marine crested tern.

The southern part of the reserve overlaps with the sea country zone of the Thuwathu/Bujimulla Indigenous Protected Area (IPA). A native title claim overlaps with parts of the marine reserve, and the area is important to traditional owners.

Several commercial fisheries operate within or adjacent to the marine reserve including the Queensland Gulf of Carpentaria Finfish Fishery (trolling), the NT Offshore Net and Line Fishery (gillnet) and the Commonwealth NPF (trawl). While recreational and charter fishing does extend into Commonwealth waters it mostly occurs within state waters. Petroleum prospectivity within the marine reserve boundaries is considered to be low. Shipping activity occurs in the area and possibly within the marine reserve.

Issues raised

In addition to the North CMR Network issues raised above in Section 4.1, the Gulf of Carpentaria CMR was discussed in several submissions and in several meetings with stakeholders. Issues raised included:

- Mining, including oil and gas and mineral exploration
- Traditional owner interests and aspirations for economic development
- Inadequate protection—specifically, that the area to the north of Wellesley Islands be included in MNPZ to protect important cultural heritage sites and habitat important to seabirds, sea snakes and turtles
- Loss of access for commercial fisheries, especially commercial trolling and the unintended consequence for prawn trawling of the setting aside of the North CMR Network Management Plan
- Need to re-evaluate the FGRA for prawn trawling in the Gulf of Carpentaria
- Access to long-term monitoring sites for the NPF.

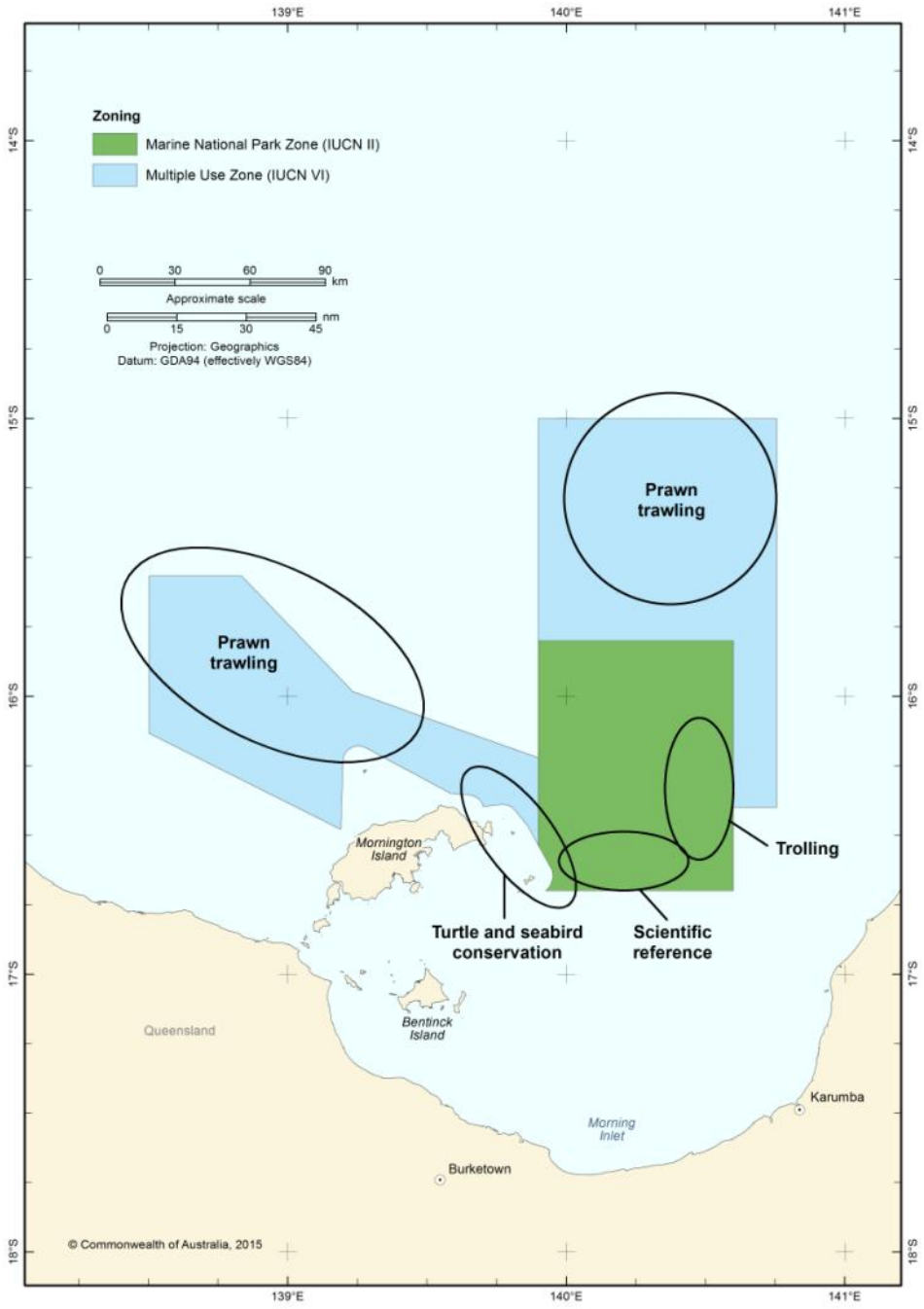

Figure 4.1.2.1 Gulf of Carpentaria CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

Northern Prawn Fishery

The North CMR Network Management Plan (set aside in 2013) recognised the importance of the fishing grounds in the Gulf of Carpentaria to the productivity and economic value of the NPF by categorising the MUZ as a GUZ (Carpentaria) that allowed bottom trawling.

An unintended consequence of setting aside the North CMR Network Management Plan was the loss of access to this important trawl ground.

The ESP advice on the FGRA for the NPF was that:

- Recent research and better identification of the conservation values suggested that NPF operations (demersal trawling) may not impact as significantly on the benthic environment in the Gulf of Carpentaria CMR as previously thought, particularly as operations avoid ecologically important habitats such as sponge gardens, and reefs, which are located in what is considered untrawlable ground and which are protected within fishery spatial closures.
- More recent evaluations of the risks to elasmobranchs suggest that none were at risk because of widespread distributions and/or low overlaps with the fishery.

The BAP accepted this finding and suggested that a SPZ be created (rather than a GUZ) that allows demersal trawling to occur in the Gulf of Carpentaria CMR.

Queensland Gulf of Carpentaria Finfish Fishery and Northern Territory Spanish Mackerel Fishery (trolling)

These fisheries target Spanish mackerel (*Scomberomorus commerson*), a large mobile pelagic species that is only present in the area at certain times of the year. The area of particular interest to Spanish mackerel fishers was a series of reefs in the southern portion of the proclaimed MNPZ (Figure 4.1.2.1). In submissions received from the commercial fishing sector, detailed confidential information was provided to show the location of several reefs in this reserve targeted by the fishery. Some of these reefs occurred in the MNPZ while others were to the north of the MNPZ in the MUZ. The latter did not affect the mackerel fishery as it is allowed in MUZ.

The Regional Panel suggested the MNPZ be shifted further north, to avoid these shoals, and enclose the shoals in an HPZ.

This option retained a high level of protection to the benthic habitat over the shoals while at the same time minimising the impact of the reserve on an important commercial fishery. The HPZ would also allow recreational and charter fishing to occur in the area, addressing concerns relating to both fishing prospectivity and economic development of the region.

The location of the southern boundary of the MNPZ to a position further north avoids as far as possible important long-term NPF trawl monitoring sites established by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) .[12] The inclusion of HPZ in this reserve provides an opportunity for future scientific evaluation of the relative effectiveness of these two zone types in achieving the conservation objectives for the area.

Conservation

Consultation with Indigenous representatives highlighted the importance of this area to the cultural heritage of the Lardil, Yangkall, Kaiadilt and Gangalidda communities. The area of specific interest overlapped with the Thuwathu/Bujimulla IPA to the north of Mornington Island (in the Wellesley Islands group).

[12] Dichmont, C.M. *et al.* (2004) Designing, implementing and assessing an integrated monitoring program for the NPF. Final Report FRDC project 2002/101.

The Regional Panel proposed extending the MNPZ to cover an area north of Mornington Island. This area is important habitat for seabirds, turtles (flatback and green), sea snakes and dugongs as well as containing critical seagrass habitat including *Pisonia grandis*.

Recommendations

The recommendations for the Gulf of Carpentaria CMR are to:

- Change the MUZ to an SPZ and reposition its boundaries to allow prawn trawling over historic trawl grounds
- Reconfigure and shift the MNPZ northwards, include a transect between 139°54'E and 140°05'E to the northern edge of the reserve and extend the MNPZ westwards over an area north of Mornington Island
- Create an HPZ to cover the shoals in the southern part of the reserve.

These changes are shown in Figure 4.1.2.2 and summarised in Table 4.1.2.1.

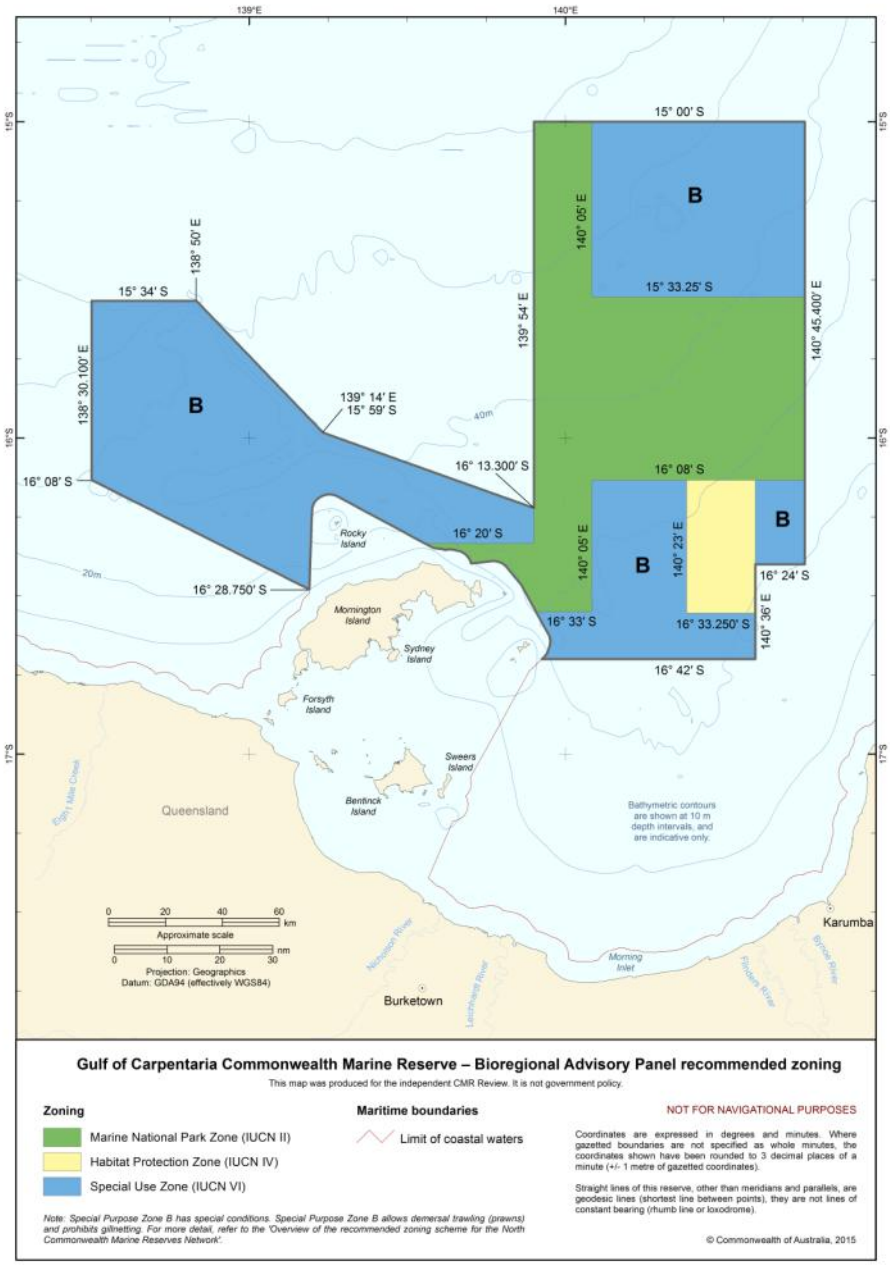

Figure 4.1.2.2 Recommended zoning for Gulf of Carpentaria CMR

Table 4.1.2.1 indicates how the areas of different zone types (within the outer boundaries of the reserve) will change under the recommended zoning. There is a small increase in the area under MNPZ and the introduction of a new HPZ. Together these cover just under 40% of the reserve. The SPZ effectively replaces the MUZ.

Table 4.1.2.1 Comparison of areas of zone types between proclaimed and recommended zoning for Gulf of Carpentaria CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km^2)	% of CMR	Area (km^2)	% of CMR	Area (km^2)	% of CMR
MNPZ (IUCN II)	7 388	31.08%	8 246	34.68%	+858	+3.61%
HPZ (IUCN IV)	Nil	Nil	1 078	4.53%	+1 078	+4.53%
MUZ (IUCN VI)	16 387	68.93%	Nil	Nil	−16 387	−68.93%
SPZ B (IUCN VI)	Nil	Nil	14 451	60.78%	+14 451	+60.78%
Total	23 774	100%	23 774	100%		

Note: All figures are rounded to the nearest km^2 (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning of Gulf of Carpentaria CMR will improve the conservation outcomes of the reserve. The total area of MNPZ will increase and cover a wider range of water depths. The extension of the MNPZ north of Mornington Island will provide protection to important inter-nesting habitat for turtle species, while the HPZ provides protection for rocky reefs and shoals. Combined, these two zone types provide high-level benthic habitat protection to approximately 39% of the CMR (an increase of 8%). The recommended zoning will also improve conservation outcomes by increasing the representation of nine conservation features in HPZ or MNPZ, including one Provincial Bioregion, one Meso-scale Bioregion, one Depth Range (by Provincial Bioregion), two KEFs, two Biologically Informed Seascapes and two Seafloor Types (see Appendix H).

The recommended zoning substantially reduces overall impact on commercial fishing. As proclaimed, the reserve would have excluded prawn trawling from the entire area; however, the recommended zoning, which allows trawling by exception, will result in a substantial reduction in impacts on the NPF. It also removes restrictions on the commercial fisheries for Spanish mackerel and provides access for recreational and charter fishing in the HPZ.

The Gulf of Carpentaria CMR proposal overlaps with the Wellesley Islands Sea Claim native title determination and the Thuwathu/Bujimulla IPA.

The recommended zoning increases the number of zones in the reserve but this complexity is offset by the use of straight internal zoning boundaries and the use of the 139° 54'E line of longitude for its northern and southern arms. The recommended zoning is not expected to present major compliance issues for commercial fishers, apart from the requirement to stow and secure all gear that is not permitted in a particular zone type on transiting vessels. The NPF is a Commonwealth managed fishery, and the requirement for

a vessel monitoring system (VMS) on each operating vessel provides both operators and managers with a high degree of confidence for compliance.

The proposal extends the restriction on mining activities for an additional 8% of the reserve.

4.1.3 LIMMEN COMMONWEALTH MARINE RESERVE

Background

The Limmen CMR covers approximately 1399 km^2 of waters between the Sir Edward Pellew group of islands and Maria Island in the Limmen Bight, and covers a large, shallow bay less than 30 m deep. The reserve, established in 2012, was assigned as a single zone: Multiple Use (Figure 4.2.3.1).

This marine reserve is representative of the Gulf of Carpentaria coastal zone KEF. Nutrients that flow from rivers into the coastal zone support high productivity and some of the most diverse and abundant biota in the North Marine Region. Species found in the area include sea snakes and aggregations of fish and sharks. The waters within the marine reserve provides inter-nesting habitat for threatened flatback turtles.

Several commercial fisheries operate within or near the marine reserve including the Commonwealth NPF (trawling) and NT Offshore Net and Line (mesh netting), Coastal Net and Coastal Line fisheries. Petroleum prospectivity within the marine reserve boundaries is considered to be low; however, the marine reserve overlaps with a number of applications for offshore seabed mining exploration licences.

Issues raised

In addition to the network issues raised above in Section 4.1, Limmen CMR was discussed in a large number of submissions and in meetings with stakeholders. The most common theme in these was in relation to zoning arrangements, specifically to increase the level of protection against the threat of seabed mining. Issues raised included:

- Inadequate protection—specifically, the lack of an MNPZ in the Pellew bioregion
- Threat of seabed mining and oil and gas
- Potential impact of MNPZs on Indigenous livelihoods and traditional owner interests and aspirations for economic development
- Role of rangers in marine reserve management
- Opportunity to link adjacent terrestrial and marine conservation
- Tourism potential
- Displaced fishing effort.

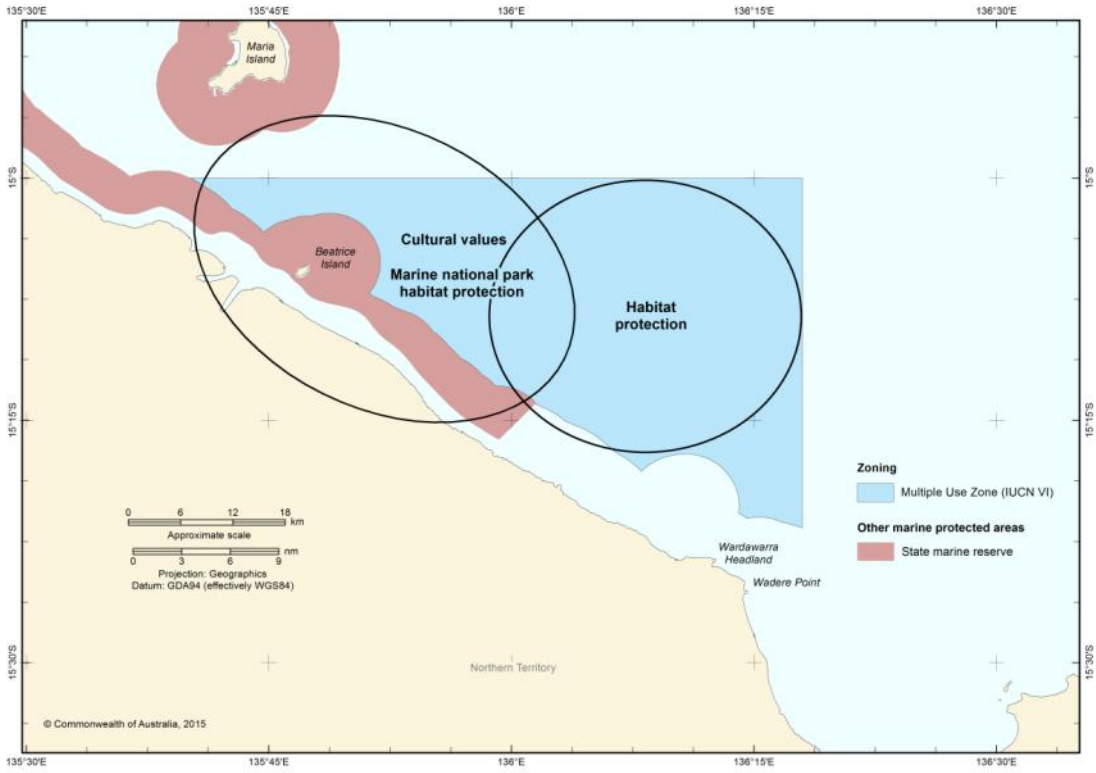

Figure 4.1.3.1 Limmen CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

The Regional Panel determined that inadequate protection of key conservation values was an area of contention.

Conservation values

The area is known for its aggregations of marine life, biodiversity and endemism. It abuts the Marra Aboriginal Land Trust and the Limmen Bight Marine Park (NT waters) and is offshore from the Limmen National Park (terrestrial). It is representative of the near-pristine Gulf of Carpentaria KEF. Species found in this KEF include marine turtles (olive ridley, green, hawksbill and loggerhead), 16 species of sea snakes, colonial and solitary seabirds (such as terns, frigatebirds, white-bellied sea eagle, osprey, brown booby), dugongs, and aggregations of fish and sharks. Small whales (false pilot whales) and bottlenose dolphins are common, and sawfishes (freshwater and green), syngnathids, rare rays and other elasmobranchs are also present.

Recommendations

The recommendations for the Limmen CMR are to:

- Create a new MNPZ on the western side of the Limmen CMR
- Create a new HPZ on the eastern side of the Limmen CMR.

These changes are shown in Figure 4.1.3.2 and summarised in Table 4.1.3.1

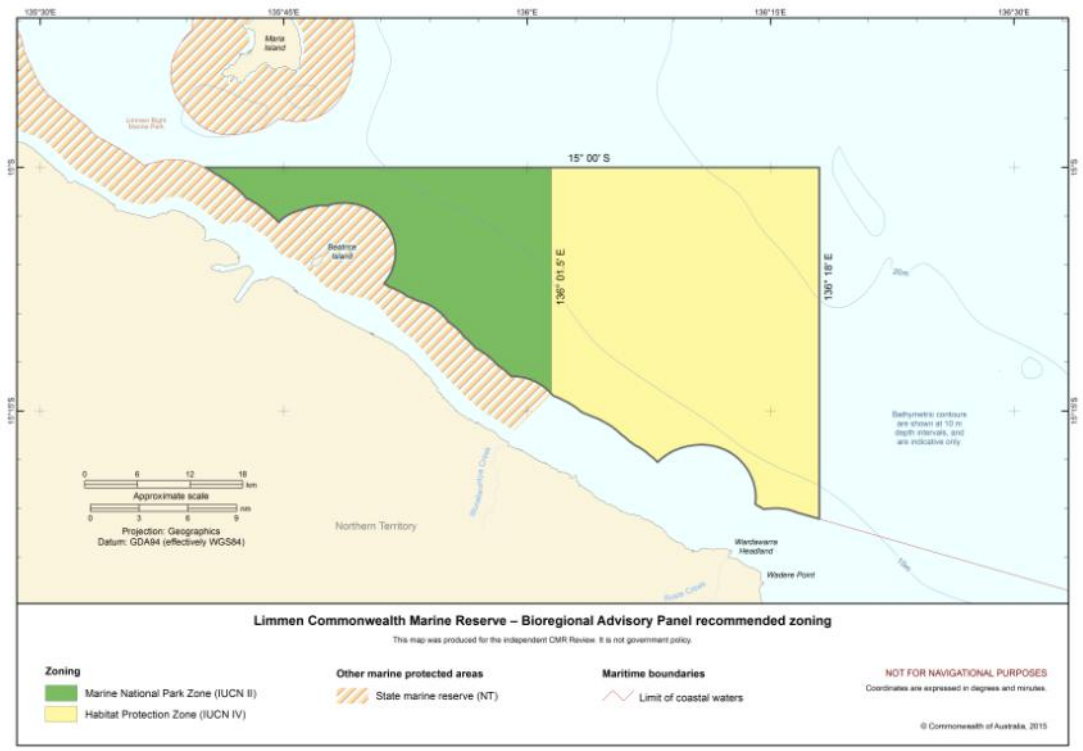

Figure 4.1.3.2 Recommended zoning for Limmen CMR

Table 4.1.3.1 indicates how the areas under different zone types (within the outer boundaries of the reserve) will change under the recommended zoning. The MUZ is replaced by a new MNPZ and HPZ, which places the entire reserve under high-level protection.

Table 4.1.3.1 Comparison of areas of zone types between proclaimed and recommended zoning for Limmen CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km^2)	% of CMR	Area (km^2)	% of CMR	Area (km^2)	% of CMR
MNPZ (IUCN II)	Nil	Nil	431	30.81%	+431	+30.81%
HPZ (IUCN IV)	Nil	Nil	969	69.26%	+969	+69.26%
MUZ (IUCN VI)	1 399	100%	Nil	Nil	–1 399	–100%
Total	1 399	100%	1 399	100%		

Note: All figures are rounded to the nearest km^2 (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning for Limmen CMR will provide a high level of protection to an area of considerable ecological significance and establish a no-take reference site for monitoring change and impacts of human activity. The establishment of the MNPZ creates a significant no-take zone (almost 31% of the reserve) and, combined with the new HPZ for the balance of the reserve, creates a major increase in protection of this reserve. The

recommended zoning will increase the representation of three conservation features in both MNPZ and HPZ, including one Meso-scale Bioregion and two Biologically Informed Seascapes, and provide additional protection to another nine conservation features in HPZ in the North CMR Network, including one Provincial Bioregion, two Depth Ranges (by Provincial Bioregion), one KEF, four Biologically Informed Seascapes, and one Seafloor Type (see Appendix H).

The recommended zoning will not change the impact on commercial fishing, compared to the proclaimed zoning, as the potentially affected fisheries operate gear types that would have been prohibited under the proclaimed zoning. The recommended introduction of an MNPZ has the potential to reduce future access for recreational and charter fishers within the CMR. However, consultations with these sectors showed that these areas are not frequented by either sector and the socio-economic impacts are thus low.

The new recommended MNPZ is located adjacent to the Limmen Bight Marine Park (NT) and includes a straight boundary with the HPZ for ease of compliance. The recommended zoning is not expected to present major compliance issues for commercial fishers.

The overlap of the Limmen CMR with the Yanyuwa (Barni–Wardimantha Awara) IPA will provide opportunities for the local Indigenous people to assist in the management of the area.

The recommended new MNPZ and HPZ in this reserve will prohibit mining activities. The area covered by these recommended zones was rated as having low petroleum prospectivity.

4.1.4 WESSEL COMMONWEALTH MARINE RESERVE

Background

The Wessel CMR covers approximately 5 908 km^2 of waters east of the Wessel Island and Bromby Islands. The reserve, established in 2012, was assigned two zone types: Marine National Park (28%) and Multiple Use (72%) (Figure 4.1.4.1).

This marine reserve is representative of the Gulf of Carpentaria basin KEF and overlaps the Arafura Sill, which is the only feature of its type in the region. The sill is a seafloor barrier that restricts movement of water into the Gulf of Carpentaria basin and forms a distinct biogeographical transition area for sessile invertebrate and fish species. The reserve provides inter-nesting habitat for threatened flatback, green, hawksbill and olive ridley turtles as well as foraging habitat for breeding aggregations of the migratory common noddy and roseate tern and the listed marine crested tern.

The southern part of the reserve overlaps with the sea country zone of the Dhimurru IPA. The Wessel and English Company islands groups, Gove Peninsula and the north-east Arnhem coast are all recognised by the NT Government as Sites of Conservation Significance, and they lie within approximately 25 km of the marine reserve.

A number of commercial fisheries operate in or near the marine reserve including the Commonwealth NPF and the NT Spanish Mackerel, Offshore Net and Line, Demersal and Coastal Line fisheries. While charter fishing does extend into Commonwealth waters it mostly occurs within state waters.

Petroleum prospectivity within the marine reserve boundaries is considered to be low. Shipping activity occurs within the marine reserve.

Issues raised

In addition to the North CMR Network issues raised above in Section 4.1, Wessel CMR was canvassed in a number of submissions as well as in meetings with stakeholders. Issues raised included:

- Allowed uses in reserves—especially areas where future management plans may impact on fishing related tourism and recreational fishing
- Loss of access for commercial fisheries, including commercial trawling and gillnetting
- Validity of the FGRAs—particularly semi-demersal trawl
- Traditional owner interests and aspirations for economic development—specifically, the role of rangers in marine reserve planning and management and the protection of the cultural values of sea country
- Displaced effort—specifically, a potential increase in prawn trawling east of the reserve in Browns Cove.

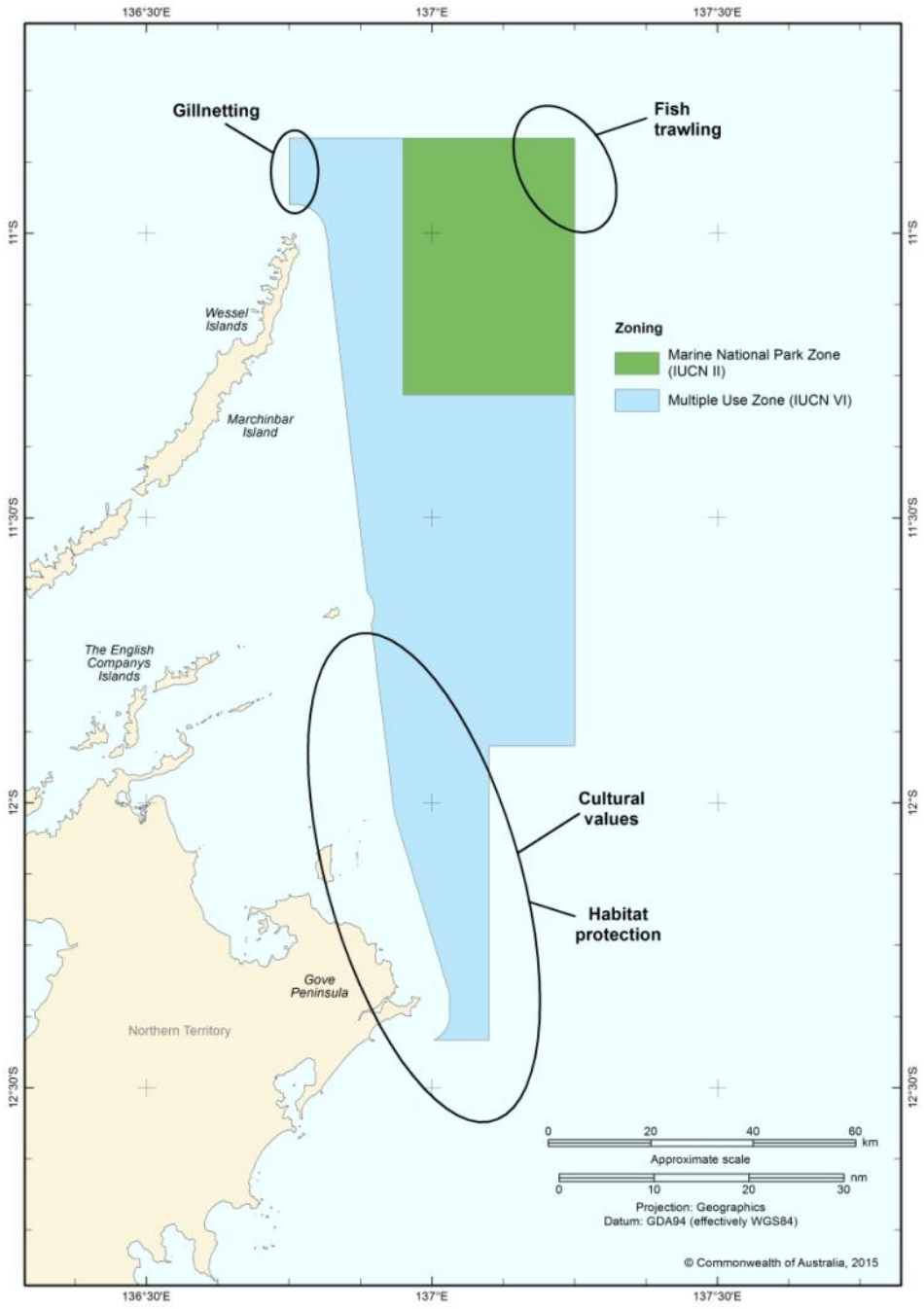

Figure 4.1.4.1 Wessel CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

The Regional Panel determined that loss of access by commercial fisheries, potential mining impacts and traditional owner interests were areas of contention.

Offshore net and line fishery (gillnetting)

The fishery currently targets black-tip sharks and grey mackerel (*Scomberomorus semifasciatus*). The area of particular concern was north of Wessel Island in the MUZ, which prohibits gillnetting.

The Regional Panel suggested the establishment of a small SPZ (IUCN VI) in the north-western corner of the Wessel CMR to improve access for the gillnet fishery and reduce the socio-economic impact of this reserve on the fishery.

Demersal fishery (trawling)
The demersal fishery operations overlap the north-eastern corner of the proclaimed MNPZ in the Wessel CMR.

The Regional Panel recommended the establishment of a small SPZ in the north-east corner of the reserve to reduce the impact on the operational efficiency of the Demersal Fishery Trawl Sector. To balance this, the MNPZ is extended further south to 11°25'S, and the MUZ is rezoned as HPZ to provide higher protection for the benthic habitats of the CMR.

The ESP advice on the FGRA for the NPF was that:

- Recent research and better identification of the conservation values suggested that NPF operations (demersal trawling) may not impact as significantly on the benthic environment in the Gulf of Carpentaria CMR as previously thought, particularly as operations avoid ecologically important habitats such as sponge gardens, and reefs, which are located in what is considered untrawlable ground, and which are protected within fishery spatial closures
- More recent evaluations of the risks to elasmobranchs suggest that none were at risk because of widespread distributions and/or low overlaps with the fishery
- It is highly likely that a similar situation may apply to other areas of the North and North-west such as the Wessel CMR and the Joseph Bonaparte Gulf CMR. However, consideration must be given to ensure that sufficient areas are protected from the impacts of trawl, especially where there is an absence of MNPZs.

Conservation and Indigenous interests
Consultation with Indigenous representatives highlighted the importance of this area for the cultural heritage and aspirations of the Dhimurru, Yirralka and Gumurr Marthakal communities to look after their country. The area of specific interest was the overlap of the southern part of the CMR with the Dhimurru IPA sea country. Discussions with the representatives of the IPA indicated that the proposed zoning of the area as HPZ did not create any impediments to their aspirations to protect and manage natural and cultural values in this area and to explore economic opportunities that respected and protected environmental quality.

Recommendations
The recommendations for the Wessel CMR are to:
- Rezone the MUZ as a HPZ (IUCN IV) that includes the overlap between the CMR and the Dhimurru IPA
- Shift the southern boundary of the MNPZ southwards to 11°25'S
- Create new SPZs (IUCN VI) in the North-west and North-east corners of the existing reserve that allows gillnetting and trawl respectively.

These changes are shown in Figure 4.1.4.2 and summarised in Table 4.1.4.1.

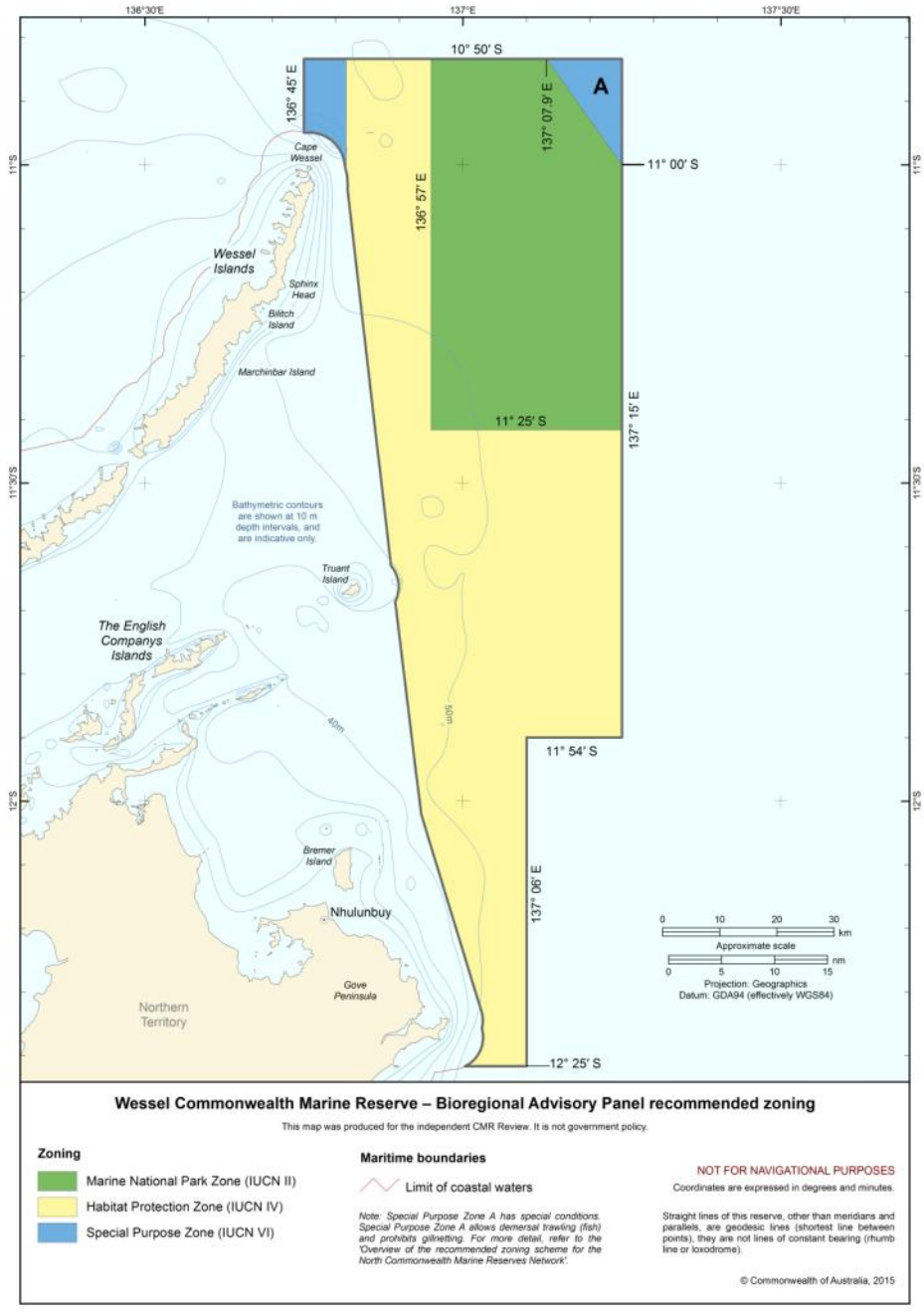

Figure 4.1.4.2 Recommended zoning for Wessel CMR

Table 4.1.4.1 indicates how the areas under different zone types (within the outer boundaries of the reserve) will change with the recommended zoning. There is an increase in the area of MNPZ which is complemented by the introduction of a new HPZ and the elimination of the MUZ. Two small new SPZs are created.

Table 4.1.4.1 Comparison of areas of zone types between proclaimed and recommended zoning for Wessel CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km²)	% of CMR	Area (km²)	% of CMR	Area (km²)	% of CMR
MNPZ (IUCN II)	1 632	27.62%	1 995	33.77%	+363	+6.14%
HPZ (IUCN IV)	Nil	Nil	3 690	62.46%	+3 690	+62.46
MUZ (IUCN VI)	4 276	72.38%	Nil	Nil	−4 276	−72.38%
SPZ (IUCN VI)	Nil	Nil	103	1.74%	+103	+1.74%
SPZ A (IUCN VI)	Nil	Nil	119	2.01%	119	+2.01%
Total	5 908	100%	5 908	100%		

Note: All figures are rounded to the nearest km² (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning for the Wessel CMR will result in a higher level of protection (MNPZ and HPZ) for 96% of the reserve and a reduction in socio-economic impacts through the creation of small SPZs that accommodate localised operational and access needs of the trawl and gillnet sectors. The introduction of an HPZ to cover more than 60% of the reserve improves the protection of benthic habitats in the CMR while retaining opportunities for Indigenous community participation and economic activity. The HPZ also provides an increased level of protection to 13 conservation features, including one Provincial Bioregion, three Meso-scale Bioregions, one Depth Range (by Provincial Bioregion), one KEF, two Biologically Informed Seascapes, and five Seafloor Types (see Appendix H). Nine of these conservation features are also represented in MNPZ.

The two new SPZs are expected to decrease socio-economic impacts on commercial gillnetting and trawl sectors.

The recommended zoning for the Wessel CMR will result in a small increase in the MNPZ area. This is not considered to impact on recreational and charter fishers within the CMR, the majority of whom operate closer to shore and in the southern portion of the reserve.

The overlap of the Wessel CMR with the Dhimurru IPA should be accommodated within the CMR's management arrangements, and create opportunities for local engagement in planning and managing this part of the reserve. The HPZ should support the protection of Indigenous cultural values.

The recommended zoning for this reserve takes the total number of zone types from two to three, and the increased complexity in zoning boundaries may slightly increase the difficulty of compliance for users.

The recommended increased MNPZ and the new HPZ in this reserve will further limit potential mining activities above that set out in the proclaimed zoning. The area covered by these recommended zones was rated as having low petroleum prospectivity.

4.1.5 ARAFURA COMMONWEALTH MARINE RESERVE

Background

The Arafura CMR covers approximately 22 924 km^2, from north-west of Croker Island to the tributary canyons of the Arafura Depression. The reserve includes waters between 5 m and 250 m deep and it includes a continuous transect from the edge of NT waters to the limit of Australia's EEZ. The reserve established in 2012 was assigned entirely as Multiple Use because most of the area was prospective for oil and gas and it overlaps with a range of existing fisheries (Figure 4.1.5.1).

This marine reserve includes the tributary canyons of the Arafura Depression KEF, which is considered to be a region of high biodiversity and provides foraging habitat for the migratory roseate tern and inter-nesting areas for the threatened flatback, green, hawksbill and olive ridley turtles.

A native title claim overlaps with parts of the marine reserve and the area is important to traditional owners.

Several commercial fisheries operate within or near the marine reserve including the Commonwealth NPF and the NT Demersal, Spanish Mackerel, Offshore Net and Line, Coastal Net and Coastal Line fisheries. The marine reserve overlaps with areas identified as important for recreational and charter fishing. Petroleum prospectivity within the marine reserve boundaries ranges across low, medium and high but the reserve does not overlap with any existing lease or acreage release areas. The southern end of the marine reserve overlaps with a military practice and exercise area and shipping activity occurs across the marine reserve.

Issues raised

In addition to the North CMR Network issues raised above in Section 4.1, the Arafura CMR was canvassed in detail in several submissions as well as in meetings with stakeholders. Issues raised included:

- Traditional owner interests and aspirations for economic development—specifically, the role of rangers in marine reserve management and the potential impact of MNPZs on Indigenous livelihoods
- Concerns over the potential impact of mining, including oil and gas and mineral exploration
- Unprotected habitats—particularly the lack of MNPZs over the tropical Arafura Canyons and the lack of higher levels of protection in the reserve
- Loss of access for commercial fisheries, including commercial trawling and gillnetting
- Threat of illegal, unreported and unregulated fishing
- Validity of the FGRAs—particularly semi-demersal trawl.

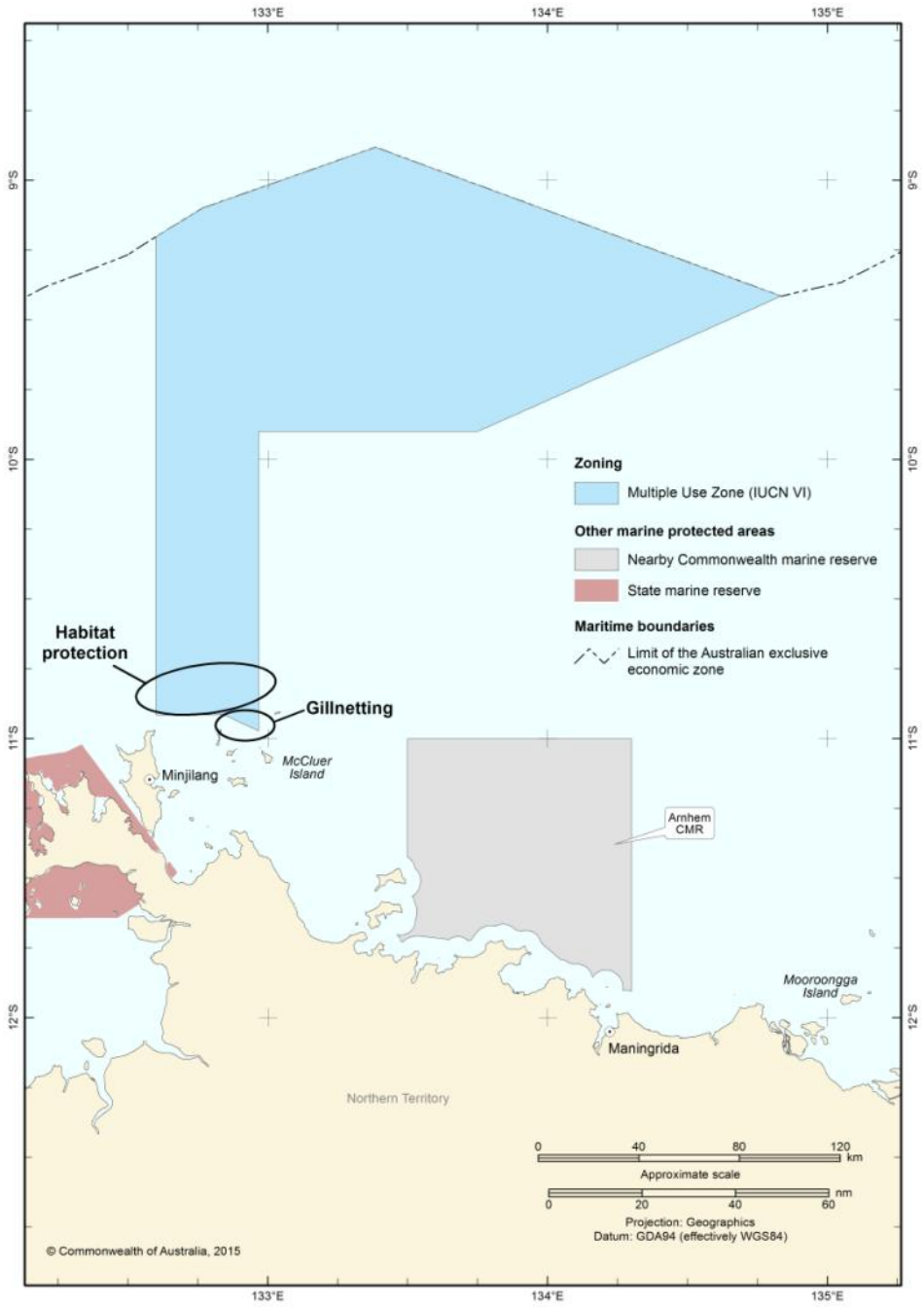

Figure 4.1.5.1 Arafura CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

The Regional Panel determined that loss of access by commercial fisheries and the lack of an MNPZ or HPZ were areas of contention.

Conservation status

All of the submissions received from the conservation sector discussed the establishment of an MNPZ in the Arafura CMR, which would satisfy a commitment to create marine national parks within each bioregion, in this case the Timor Transition Provincial Bioregion and Cobourg Meso-scale Bioregion.

Noting that the reserve covered an area of moderate to high prospectivity for oil and gas, siting a new MNPZ in the CMR was considered by the Regional Panel but not pursued.

They did, however, propose an HPZ over the southern part of the reserve in an area that was not highly prospective.

Offshore net and line fishery (gillnetting)
The fishery currently targets black-tip sharks and grey mackerel (*Scomberomorus semifasciatus*). The area of particular concern to the gillnet fishery sector was in the south-eastern tip of the Arafura CMR around McCluer Island and New Year Island, where the proclaimed zoning as MUZ excludes gillnetting.

The Regional Panel proposed a small SPZ to allow gillnetting to continue in the area.

Demersal fishery (trawling)
The Regional Panel noted the overlap between the existing area of operation of the trawl fishery and the Arafura CMR, but noted previous negotiations with the fishing industry that accepted a loss of access to the southern parts of the reserve, which was reflected in the proclaimed zoning.

The ESP advice on the FGRA for the former NT Finfish Fishery (now amalgamated into the NT Demersal Fishery) was that:

- Recent research, an improved understanding of the habitat, a better identification of the conservation values of the area and improvements in gear type and management suggested that Demersal and Developmental Fishery operations (semi-demersal trawling) may not impact as significantly on the benthic environment as previously thought
- More recent evaluations of the risks to elasmobranchs suggested that none were at risk because of widespread distributions and/or low overlaps with the fishery. A National Recovery Plan was being developed to address threats to these species.

Recommendations
The recommendations for the Arafura CMR are to:

- Establish a small SPZ (IUCN VI) in the southern tip of the reserve
- Establish an HPZ in the southern section of the reserve above the SPZ, with a northern boundary at 10°45' S.

These changes are shown in Figure 4.1.5.2 and summarised in Table 4.1.5.1.

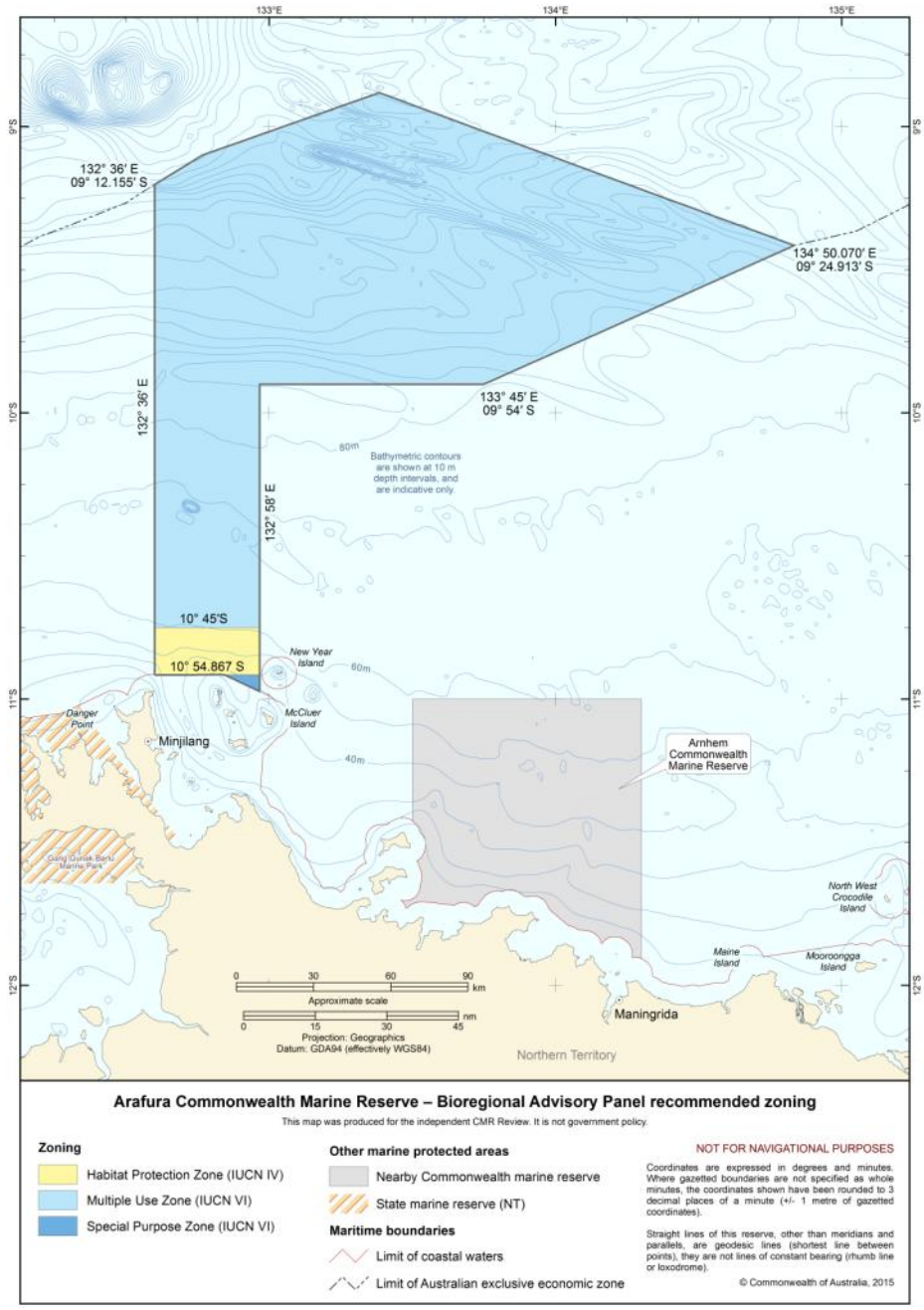

Figure 4.1.5.2 Recommended zoning for Arafura CMR

Table 4.1.5.1 indicates how the areas under different zone types (within the outer boundaries of the reserve) will change with the recommended zoning. There is a small decrease in the area of MUZ and corresponding introduction of a small new SPZ and small new HPZ.

Table 4.1.5.1 Comparison of areas of zone types between proclaimed and recommended zoning for Arafura CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km^2)	% of CMR	Area (km^2)	% of CMR	Area in km^2)	% of CMR
HPZ (IUCN IV)	Nil	Nil	731	3.19%	+731	+3.19%
MUZ (IUCN VI)	22 924	100%	22 149	96.62%	–775	–3.38%
SPZ (IUCN VI)	Nil	Nil	44	0.19%	+44	+0.19%
Total	22 924	100%	22 924	100%		

Note: All figures are rounded to the nearest km^2 (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning for Arafura CMR will slightly improve the conservation outcomes of the reserve through the introduction of a new HPZ to protect benthic habitats while retaining opportunities for existing recreational and commercial fishing activity. The new HPZ will provide an increased level of protection for 10 conservation features, including one Provincial Bioregion, two Meso-Scale Bioregions, one Depth Range (by Provincial Bioregion), four Biologically Informed Seascapes, and two Seafloor Types (see Appendix H).

The recommended zoning of Arafura CMR will reduce the overall impact on commercial gillnetting as a result of the new SPZ.

The recommended zoning of the Arafura CMR will not change access for recreational and charter fishers within the CMR.

The recommended zoning for the Arafura CMR introduces a new SPZ and a new HPZ to make a total of three zone types in the reserve. The zone configuration is relatively simple, with the new zones being below the 10°45'S line of latitude and bordered by the southernmost outer boundaries of the reserve, which abut NT waters. The recommended zoning is not expected to present major compliance issues for commercial fishers.

The recommended new HPZ in this reserve will restrict mining activities to a small extent above the level of restriction set out in the proclaimed zoning. The area covered by this recommended zone was rated as having low petroleum prospectivity.

4.1.6 OCEANIC SHOALS COMMONWEALTH MARINE RESERVE

Background

The Oceanic Shoals CMR covers 71 743 km^2 of Commonwealth waters. The reserve lies within the Timor Sea, with its north boundary on the edge of Australia's EEZ. East of the reserve are Bathurst and Melville Islands (Tiwi Islands) The reserve was established in 2012 and assigned entirely as a MUZ (Figure 4.1.6.1).

The marine reserve represents a significant area of the Bonaparte Basin and includes some of the deepest waters found in the North Marine Region, at approximately 300 m. The reserve includes ecosystems of two Provincial Bioregions, the North West Shelf Transition and the Timor Transition bioregions, and contains a number of shoals, channels and valleys in the carbonate bank and terrace systems of the Van Diemen Rise and Sahul Shelf. These two large KEFs support rich sponge gardens, octocorals, pelagic fish, sharks and sea snakes. The reserve provides inter-nesting habitat for threatened flatback, olive ridley and loggerhead turtles.

The Commonwealth managed NPF and the NT managed Timor Reef, Demersal and Offshore Net and Line fisheries operate within or near the marine reserve. Waters within the Oceanic Shoals CMR overlap with areas identified as holding potential for recreational and charter fishing.

Petroleum prospectivity within the marine reserve boundaries is considered to vary from low and high. The marine reserve has shipping activity within it and overlaps with a military practice and exercise area.

Issues raised

In addition to the North CMR Network issues raised above in Section 4.1, the Oceanic Shoals CMR was discussed in detail by several submissions as well as in meetings with stakeholders. Issues raised included:

- Inadequate protection—specifically, that an area be designated as MNPZ
- Mining, including oil and gas and mineral exploration—specifically, the risk of subduction to carbonate banks arising from the extraction of oil and gas
- Loss of access for commercial fisheries—specifically, including commercial trawling and fishing prospectivity
- Validity of the FGRAs—particularly semi-demersal trawl
- Potential impact on ability to install oil and gas infrastructure.

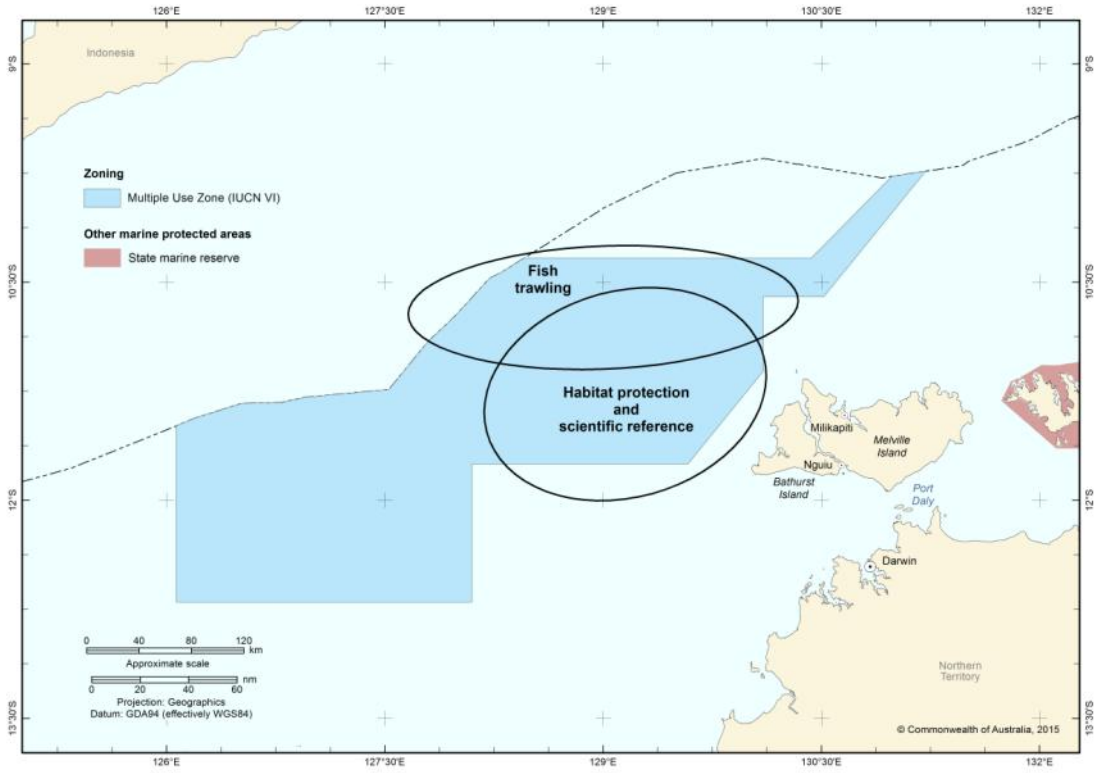

Figure 4.1.6.1 Oceanic Shoals CMR as proclaimed, showing key issues and drivers for change identified during the CMR Review

Areas of contention

The Regional Panel determined that access for commercial fisheries and the lack of high-level protection were areas of contention.

Conservation status

Submissions received from the conservation sector discussed the establishment of an MNPZ in the reserve, which would satisfy a commitment to represent each bioregion within at least one MNPZ. The potential impact of mineral extraction on shallow water ecosystems that have built up on the carbonate banks utilising hydrocarbon seeps was noted.

Several areas were recently surveyed by Geoscience Australia through a MBH project. These were shown to contain significant ecological features and communities (for example, Van Diemen Rise carbonate banks) and held potential as reference sites and areas of higher protection.

The ESP advice about new information on the conservation values for the Oceanic Shoals CMR was that:

- The carbonate banks and terraces of both the Sahul Shelf and Van Diemen Rise were associated with high biodiversity and feeding aggregations, and suggested that a higher level of protection could be provided for a representative sample of these KEFs
- The survey sites established by the MBH study of the Oceanic Shoals CMR warranted protection as scientific reference sites as they could provide valuable baseline information for the reserve.

Demersal fishery (trawling)
The Oceanic Shoals CMR overlaps with part of the NT Demersal Fishery. This uses baited traps and vertical lines (handline and dropline), both of which are allowable uses in the MUZ. However, this fishery also includes two multi-gear areas where semi-demersal trawl may be used, one of which overlaps with the reserve. The fishery is trialling semi-demersal trawl in the Timor Reef Fishery, an area that also overlaps with the Oceanic Shoals CMR. Semi-pelagic trawl operations are a non-permissible activity in the North CMR Network, based on the FGRA done in 2010.

The ESP advice on the FGRA for the former NT Finfish Fishery (now amalgamated into the NT Demersal Fishery) was that:

- Recent research, an improved understanding of the habitat, a better identification of the conservation values of the area and improvements in gear type and management suggested that Demersal and Developmental Fishery operations (semi-demersal trawling) may not impact as significantly on the benthic environment as previously thought
- More recent evaluations of the risks to elasmobranchs suggested that none were at risk because of widespread distributions and/or low overlaps with the fishery. A National Recovery Plan was being developed to address threats to these species.

Recommendations
The recommendations for the Oceanic Shoals CMR are to:

- Create a new MNPZ which covers one of the recent Geoscience Australia survey sites, surrounded by a larger HPZ to improve protection of the benthic habitat without impacting on recreational and charter fishers and some of the commercial fisheries operating in the area
- Create a new SPZ which will allow trawling and accommodate the developmental fishery.

These changes are shown in Figure 4.1.6.2 and summarised in Table 4.1.6.1.

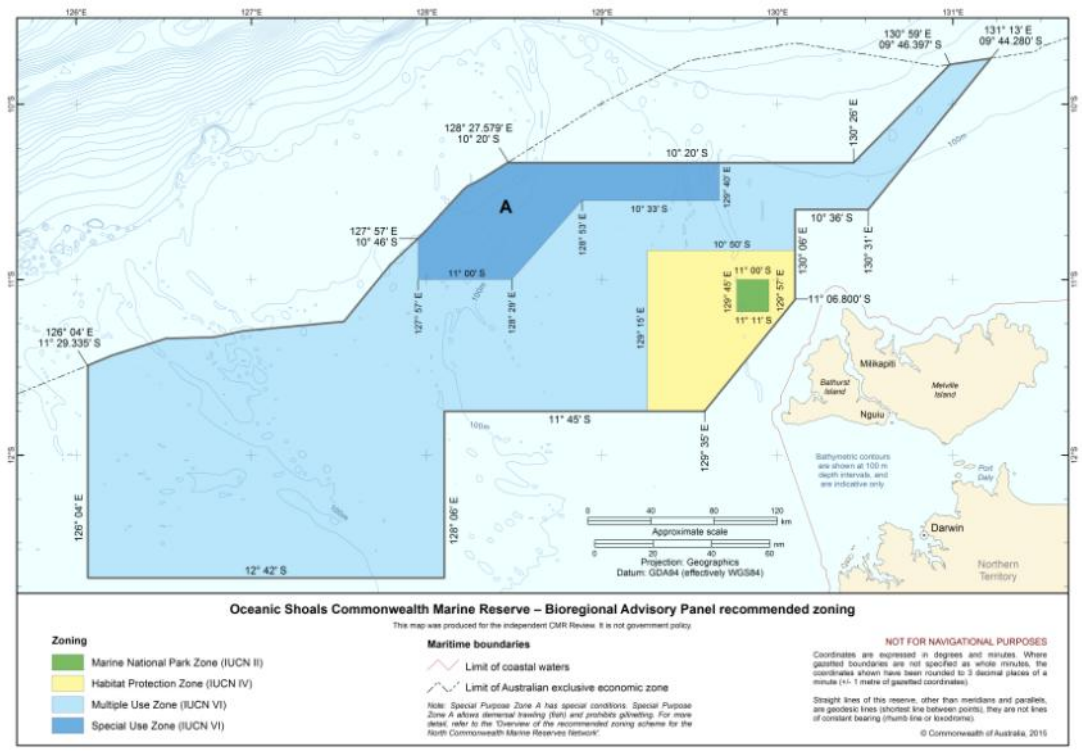

Figure 4.1.6.2 Recommended zoning for Oceanic Shoals CMR

Table 4.1.6.1 indicates how the areas under different zone types (within the outer boundaries of the reserve) will change with the recommended zoning. There is an increase in high-level protection for one of the KEFs through the introduction of a new MNPZ and a new HPZ, which combined make up 10% of the reserve. This, with the introduction of a new SPZ, reflects a balance of uses and protection in the reserve, reducing the MUZ by over 20%.

Table 4.1.6.1 Comparison of areas of zone types between proclaimed and recommended zoning for Oceanic Shoals CMR

Zone	Proclaimed		Recommended		Difference	
	Area (km²)	% of CMR	Area (km²)	% of CMR	Area (km²)	% of CMR
MNPZ (IUCN II)	Nil	Nil	406	0.57%	+406	+0.57%
HPZ (IUCN IV)	Nil	Nil	6 929	9.66%	+6 929	+9.66%
MUZ (IUCN VI)	71 743	100%	57 066	79.54%	–14 677	–20.46%
SPZ A (IUCN VI)	Nil	Nil	7 342	10.23%	+7 342	+10.23%
Total	71 743	100%	71 743	100%		

Note: All figures are rounded to the nearest km² (and therefore in some instances can appear to not add up to the totals supplied). No changes have been made to the outer boundaries and total area of the reserves. Percentages are calculated based on the rounded figures.

Outcomes

The recommended zoning of Oceanic Shoals will establish a large area of benthic protection for the carbonate bank and terrace system of the Van Diemen Rise KEF and creates an MNPZ over one of the recently surveyed sites that could function as a long-term scientific reference site.

The changed zoning will increase the representation of 12 conservation features in both MNPZ and HPZ, including one Provincial Bioregion, one Meso-scale Bioregion, three Depth Ranges (by Provincial Bioregion), one KEF, three Biologically Informed Seascapes and one Seafloor Type. The changed zoning will also provide additional protection to another 13 conservation features in HPZ in the North CMR Network, including two Meso-scale Bioregions, one Depth Range (by Provincial Bioregion), seven Biologically Informed Seascapes, and five Seafloor Types. These conservation features are listed in Appendix H.

The recommended zoning of Oceanic Shoals is expected to improve socio-economic outcomes for semi-demersal trawling in the NT Timor Reef Fishery. No other change in impact is expected for fisheries operating in this area.

The WA managed Northern Shark Fishery currently operates in the marine reserve. There are no recommended changes to the zoning of the Oceanic Shoals CMR that will reduce the impacts on this fishery, as gillnetting will remain prohibited in all zones of the reserve under the recommended zoning.

The introduction of a new MNPZ may slightly reduce access for recreational or charter fishers; however, as the location is only accessible by larger vessels this impact is expected to be minor. The HPZ allows continued access for the growing recreational and tourism values of the region, as well as several fisheries that are also compatible with HPZ.

The introduction of three new zones in the recommended configuration for the Oceanic Shoals CMR will take the total to four zone areas and four zone types. The recommended zoning is not expected to present major compliance issues for commercial fishers, apart from the requirement to stow and secure all gear types that are not permitted in a particular zone type on transiting vessels.

The recommended new MNPZ and HPZ in this reserve will restrict mining activities above the level of restriction set out in the proclaimed zoning. The area covered by these recommended zones was rated as low-level petroleum prospectively.