



Considered risks and impacts on recreational fishing within the declaration area proposed for offshore renewable energy infrastructure development in the Indian Ocean off Bunbury, Western Australia.

**Recfishwest**

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## Executive summary

Recfishwest recognise offshore wind energy is one method governments can use to help meet carbon reduction targets. Recfishwest believe recreational fishing can co-exist with offshore wind energy provided these projects recognise fishing as a key value when planning, designing, constructing and operating projects. Recfishwest will only support offshore wind energy projects that improve recreational fishing experiences with no net loss of amenity.

Recfishwest will not support any offshore energy projects that impose access restrictions and the advice provided in this submission is based on the proviso the government develop a clear policy explicitly supporting ongoing unrestricted fishing access to declared areas as a base case.

As a matter of priority, offshore wind energy projects must provide clarity as to their impacts on fishing access and must avoid important habitats such as spawning areas, nursery grounds and popular fishing locations. While Recfishwest acknowledge and supports the need for renewable energy production Recfishwest has a number of significant concerns in relation to the proposed declaration area in the Indian Ocean off Bunbury, Western Australia.

This submission outlines risks to fishing experiences and the environment posed by the proposed declaration area, in particular.

- The area contains important fishing areas including Naturaliste reef and FAD grounds.
- The area overlaps 3 of the 13 known key ecological features of the southwest marine region.
- The area contains significant habitat and low relief outcroppings up to a depth of 120 meters.
- The area supports a significant recreational lobster fishery.
- The area is a known hot spot for dhufish spawning aggregations.
- FADs and the convergence of the Leeuwin and Capes currents provide popular pelagic fishing areas.
- 95% of fishing activity within the proposed determination area occurs in waters less than 200m deep.

### **Recfishwest recommended the eastern boundary of the proposed determination area is moved west beyond the 200-meter isobar.**

The advantages of confining the determination area to deeper waters includes.

- Reduced conflict with fishers and important fishing areas
- Avoidance of all documented Key Ecological Features
- Avoidance of impacts on corals, seagrass, seaweed and sponge gardens
- Avoidance of all known dhufish aggregation areas

Our recommendation

- Retains the area of greatest wind speed and consistency for offshore energy projects.
- Allows for 2,582 km<sup>2</sup> for utilisation by offshore wind energy projects.
- Is large enough to enable the government's desired generation of 20GW.
- Conforms to requirements as detailed in the Blue Economy CRC report on offshore wind energy.

In addition, it is recommended the government provide greater transparency about the known ecological impacts of offshore wind and resolve inconsistencies in government policy related to plastics and marine protected areas. While not covered in this submission our recommendation is also likely to reduce impacts on other non-fishing impacts such as visual amenity.

## Purpose

The purpose of this submission is to provide information to the Department for Climate Change, Energy, the Environment and Water (DCCEEW) concerning recreational fishing issues related to the proposed declaration of a renewable energy area in the Indian Ocean off Bunbury, Western Australia.

This submission does not in any way infer infrastructure development associated with renewable energy development in the final declared area would be supported by Recfishwest. Individual developments will be assessed separately through the appropriate legislative frameworks based on specific project details.

## About Recfishwest

Recfishwest is the peak body for recreational fishing in Western Australia, recognised by government to provide advice on recreational related issues. An estimated 700,000 Western Australians go fishing every year making participation in fishing comparable to cycling, jogging or playing team sports.

Fishing an integral part of Western Australia's culture and lifestyle and is vital to the economies of several regional locations including towns adjacent to the proposed declaration area. Western Australians spend \$2.4 billion on their fishing every year adding more than \$1.1 billion to WA's GDP and creating 9,680 full time jobs.

As the voice of recreational fishing Recfishwest are leaders in aquatic conservation. Recfishwest work tirelessly to improve the health of our aquatic environments ensuring abundant and resilient fish stocks. We strive to ensure fishers are provided a reasonable share of available fish and are given the opportunity to access this share. We support fisheries management that optimises the social and economic value our publicly owned fish stocks provide.

Recfishwest recognise offshore wind energy is an option the government can use to meet their carbon reduction targets. Recfishwest believes recreational fishing can be largely compatible with offshore wind projects provided fishing is recognised as a key value when planning, designing, constructing, and operating such projects.

Recfishwest will only support offshore energy projects that improve recreational fishing experiences with no net loss of amenity. This includes avoiding important habitats such as spawning and nursery areas as well as popular fishing locations and not placing access restrictions on fishers within a declared area once projects are in operation.

## Ongoing access is a primary concern

Recreational fishers continue to suffer from a loss of access to important fishing areas through infrastructure development, competing uses of the marine environment and the continued expansion of marine protected areas. This ongoing spatial squeeze places increased pressure on remaining accessible areas as fishing effort is displaced and concentrated. This spatial squeeze results in increased conflict with other fishers and other marine users reducing the significant wellbeing value fishing provides.

In our submission on the Offshore Electricity Infrastructure (Regulatory Levies) Bill 2021 and Offshore Electricity Infrastructure Bill in 2021 we raised concerns over potential exclusion of fishers in proximity to offshore renewable energy infrastructure. We advised the Senate Standing Committees on Environment and Communications that recreational fishers are likely to oppose offshore infrastructure if it results in reduced access to areas that have been sustainably fished for generations.

Impacts on fishing amenity from offshore energy projects are likely to include displacement of fishing activity, habitat loss, hydrology changes affecting fish feeding, breeding and migration patterns as well as

visual and chemical pollution. These impacts can all significantly impact fishing values and experiences, however, impacts on access remain the greatest concern in relation to the development of an offshore renewable energy industry.

It is claimed the Offshore Electricity Infrastructure Act 2021 (OIE Act) was developed in line with the principle of coexistence however, in the more than two years since the OIE Act was passed the Commonwealth Government has yet to provided clarity on whether there will be exclusion zones around turbines in declared areas. This is critical information required to assess the suitability of any proposed area.

Recfishwest has repeatedly raised access concerns with DCCEEW and the Offshore Industry Regulator and earlier this year wrote to the Minister for Climate Change and Energy seeking clarification on access. It would be easy to believe offshore wind energy will not restrict access for recreational fishers given;

- The [Blue economy CRC report](#) on Offshore Wind energy in Australia states *In general, passive fishing and recreational fishing has been permitted in OSW zones...*
- Information on the [DCCEEW website](#) acknowledges *Experience in the UK and Europe, where offshore wind has been operating for many years, demonstrates that offshore wind farms can exist alongside other industries and activities,...* and
- A [fact sheet](#) from the Offshore Infrastructure Regulator states *international experience indicates that the offshore renewables sector can co-exist with other offshore industries and activities, with many examples of fishing continuing around operational offshore wind farms.*

However, when announcing consultation on the proposed declaration area the Minister for Climate change and Energy stated, *Fishing and offshore wind can co-exist, but it's not automatic that it can.* It is unclear if his comments were in reference to all fishing or only certain types of commercial fishing such as trawling. The Offshore Energy Infrastructure Act provides for exclusions zones of up to 500 meters in and around specific offshore renewable infrastructure, and draft regulations allow for protection zones of 1,852 meters (one nautical mile) from infrastructure. The fishing community are rightly concerned the development of an offshore wind industry may result in a loss of access to their favourite fishing grounds.

The development of offshore energy projects involves the construction of hundreds of skyscraper sized turbines each weighing hundreds of tonnes. If offshore infrastructure of this size poses a risk to fishers, then it should not be approved and similarly if a recreational vessel poses a risk to renewable energy infrastructure of this size it brings into question the appropriateness and quality of the infrastructure.

While the recreational fishing community broadly understand and accept there is likely to be some form of access restrictions during construction and maintenance of offshore infrastructure there is no reasonable ground to exclude recreational fishers from declared areas when offshore energy projects are in operation. Such restrictions would be akin to banning cars from within a City's Central Business District due to the risk buildings pose to people or the risk cars pose to buildings.

Recfishwest will not support any offshore energy projects that impose access restrictions and the advice provided in this submission is based on the proviso the government develop a clear policy explicitly supporting ongoing unrestricted fishing access to declared areas as a base case.

Recfishwest believe a clear government policy supporting ongoing unrestricted access would go a long way in providing the fishing community with the comfort they need to participate in the planning process in a constructive way. A clear policy direction protecting fishing access would also reduce the risk of delays when applications are assessed under the EPBC act given this act defines environment to includes *people and communities* as well as *social, economic and cultural aspects* such as access.

## A focus on fishing

With 80 percent of the population living in the coastal zone, it is not surprising a quarter of the Western Australians go fishing each year. Fishers represent a general cross section of the community so some fishers will support the development of offshore energy projects believing the infrastructure could act as artificial reefs, potentially enhancing fish abundance while others will never support these projects believing they will adversely impact environmental and social values through habitat damage, pollution and exclusion zones displacing and concentrating fishing effort.

As the recognised peak body for fishing this submission only focuses on impacts to fishing although we note fishers are also likely to have concerns unrelated to their fishing activities. Although non fishing concerns related to other impacts such as impacts on whales, migratory birds, sea lions and sharks as well as concerns related to visual impacts or national security are not covered in this submission this should not detract or minimise these non-fishing concerns.

## About the proposed declaration area

The proposed determination area covers offshore waters 20 kilometres from shore between Dawesville and Cape Naturaliste. The western area of the proposed zone extends beyond the continental shelf. Western Australia has many unique marine areas including within the proposed declaration area. By global standards, the marine environment of the southwest marine region has high biodiversity. This region is also increasingly being recognised as an area of global conservation significance with high levels of endemism [Parks Australia](#).

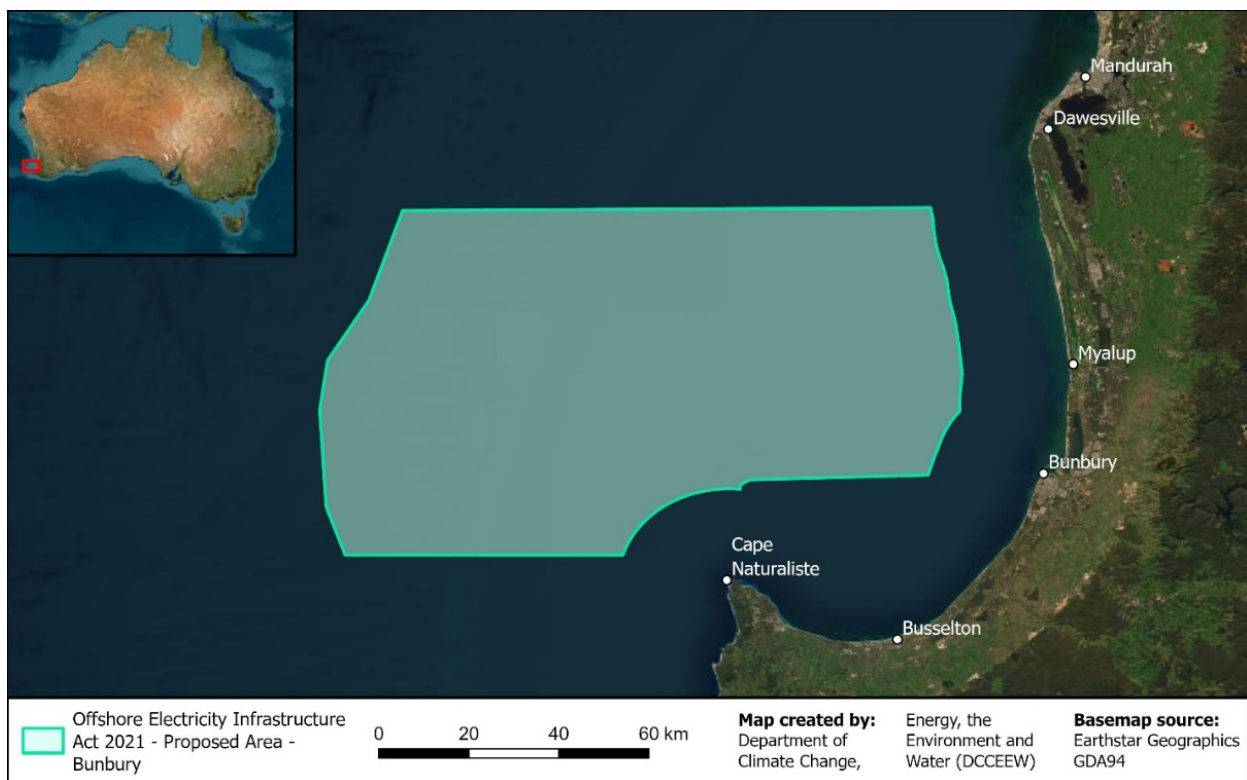
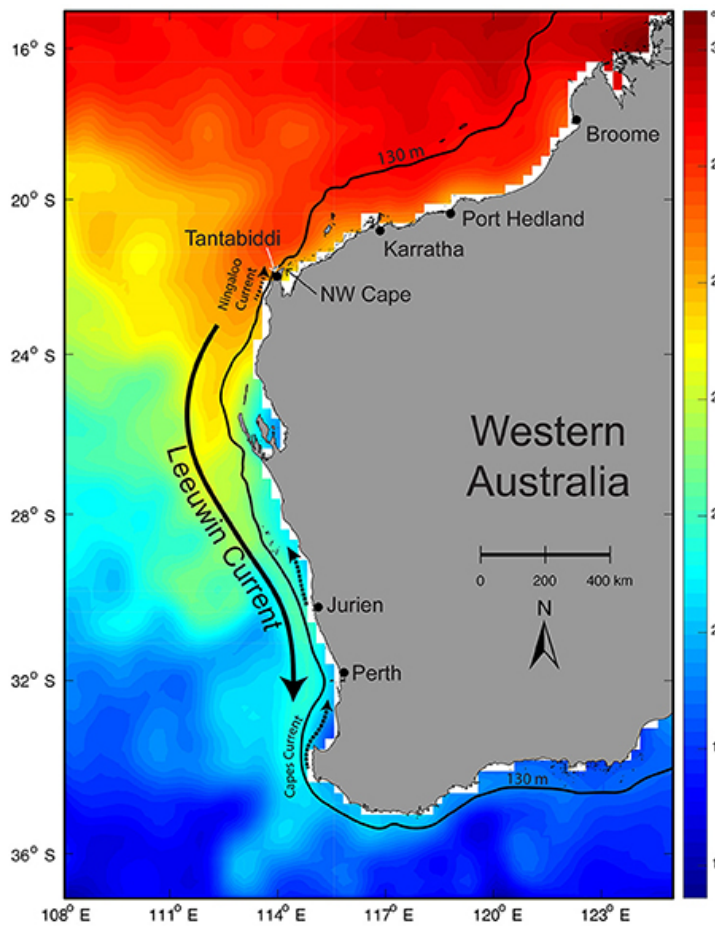


Figure 1: Map of proposed determination area provided by DCCEEW.

While biodiverse, the biological productivity of the South-west Marine Region is low by global standards due to the absence of significant rivers contributing nutrients into the marine environment and the presence of the Leeuwin current. This low productivity results in clear waters and high levels of light penetration that results in a high diversity of seagrass and algal species and benthic communities that provide habitat for a large variety of species.



The most significant known influence on ecosystem structure and function in the southwest marine region is the Leeuwin Current. The Leeuwin Current is a globally unique eastern boundary current, flowing poleward year-round. The Leeuwin Current is intrinsically unstable being stronger in winter than in summer and warmer in La Nina years. The Leeuwin current originates in the warm, low-saline waters of the Indonesian archipelago, and brings warm waters south along the west coast of Australia before rounding capes Leeuwin and flowing east across the south coast.



The Leeuwin current maintains warm-water communities much further south than they would normally occur, and drives inter annual variability in settlement of important species such as the western rock lobster. While the Leeuwin current contributes to the low productivity of the region by suppressing upwellings, eddy fields spin off the Leeuwin Current creating seasonal upwellings and hotspots of productivity. These eddies have a disproportionate influence on the region's ecosystems.

Leeuwin current eddies are more ubiquitous than previously thought and are known to occur in the proposed determination area. These eddies can be either upwelling or downwelling; upwelling eddies enhance local biological productivity where they form, and downwelling eddies concentrate and transport communities away from the coast. The Leeuwin current has the highest eddy energy level of any eastern boundary current in the world.

Figure 2: Convergence of the Leeuwin and Capes currents.

On the eastern side of the Leeuwin current runs the Capes current which delivers cooler waters sourced from the base of the Leeuwin Current in a northerly direction driven by persistent and strong southerly winds during summer. The Leeuwin and Capes currents converge in the proposed determination area creating a significant influence on biodiversity distribution and abundance of numerous species including popular pelagic species caught at the nearby FAD grounds. The convergence of these currents is usually centred over the shelf adjacent ancient coast line (90-120m) although it varies within and between years which is why the FADs in the proposed determination area are deployed across a wide region.

### Habitat

The habitat in the proposed determination area is similar to habitat described by the National Environmental Science Program in the nearby marine protected area on the southern boundary of the proposed determination area [Parks Australia](#). The proposed determination area consists of significant areas of seagrass, seaweed, hard and deepwater corals, sponges, rhodolith beds and bryozoan communities. The shallow regions (30-70 m) support seagrass and macroalgae communities with significant areas of hard corals and large sponges. The consolidated reef becomes patchier between the 90-120 meter depth with reef outcrops interspersed with areas of coarse sandy sediment. These areas support a variety of communities dominated by black and octocorals, hydroids and bryozoans. The substrate in depths greater than 120 meters transitions to soft sediments dominated by silty mud.





Figure 3: Examples of habitat within the proposed determination area.



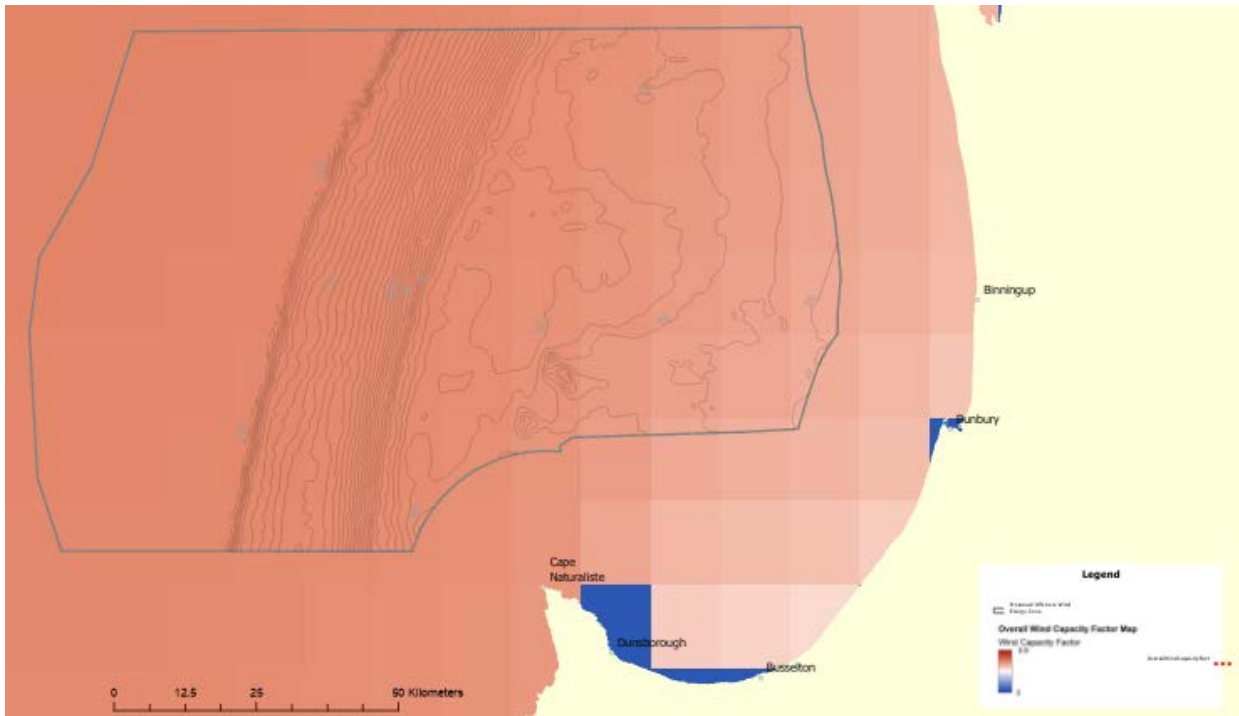


Figure 4: Wind strength and topography in the proposed determination area.

The topography of the proposed determination area is dominated by low relief outcroppings with occasional high relief areas such as Naturaliste Reef rising to break on the surface at certain times. The eastern side of the proposed determination area ranges from 30-60 meters with noticeable reef lines dominated by small relief ledges less than 1m high at regular intervals. Medium (2m) and large (4m+) relief structures are a regular feature of the seafloor in depths from 0-80m. The depth begins to drop away quickly at around 100m as the sea floor moves towards the continental shelf. The average wind speed within the proposed determination area is strongest on the western boundary of the proposed determination area.



Figure 5: 1-2m relief reefs covered in coral are common in waters up to 30m.



Figure 6: 1-2 meter high reef relief is common in the proposed determination area.



Figure 7: 4m+ relief reef is common in the proposed determination area.



Figure 8: High relief areas within the proposed determination area continues as water depth increases.







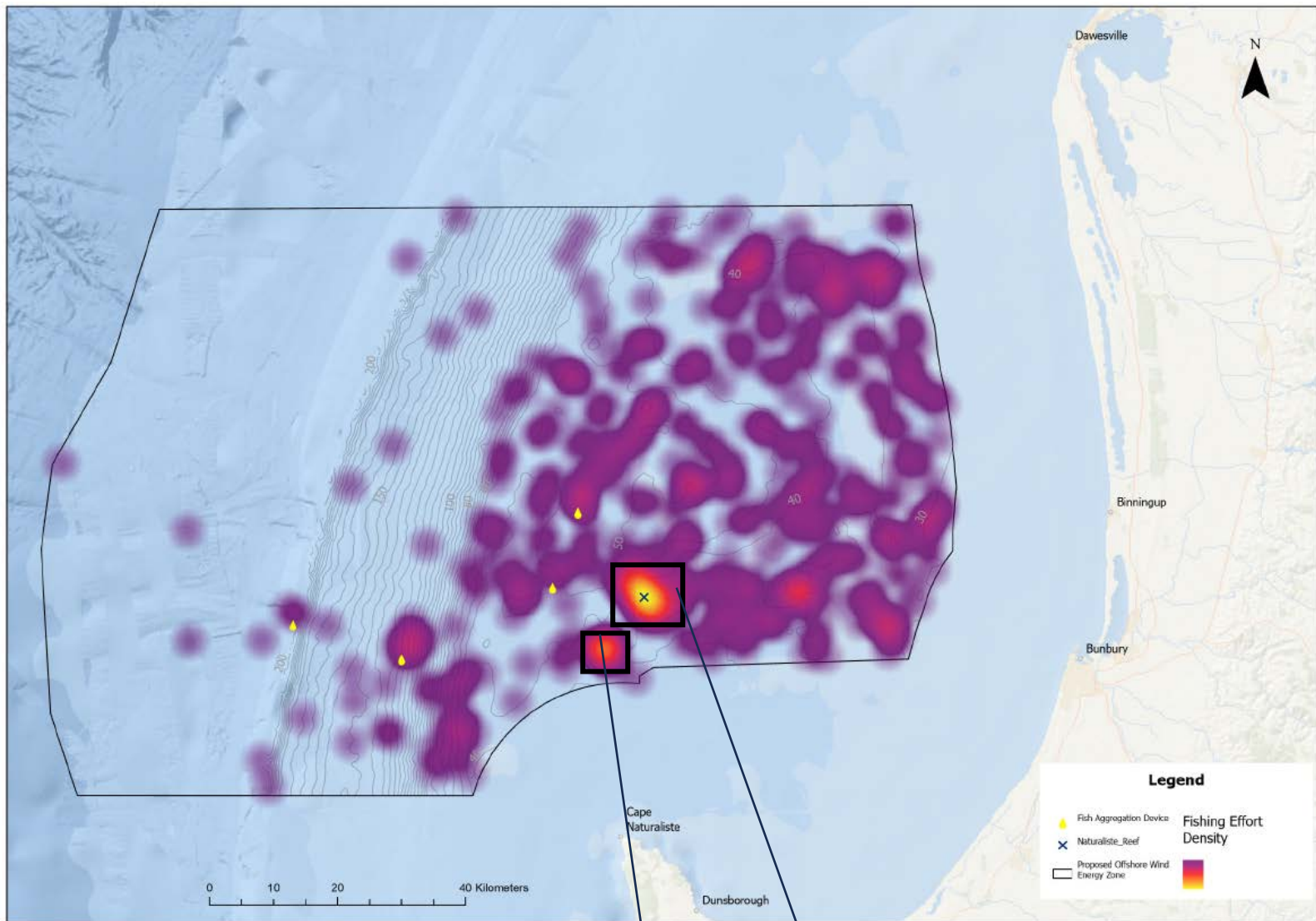


Figure 8: Popular fishing locations in the proposed determination area.

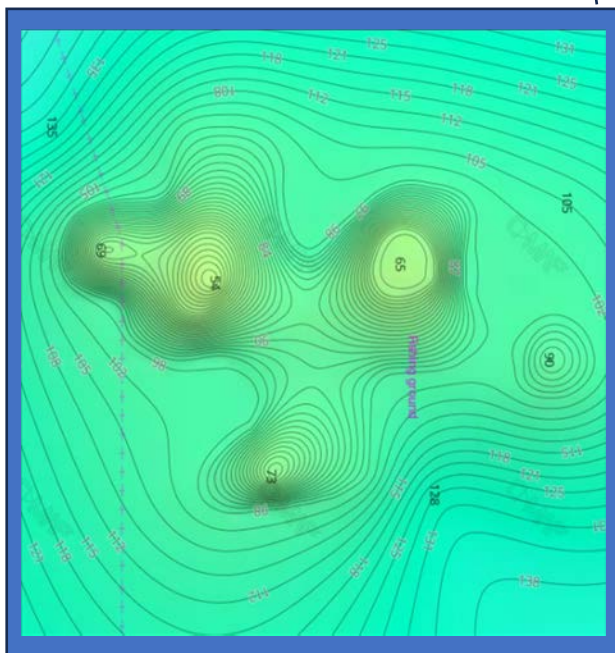


Figure 9: Topography of area north of Wrights bank

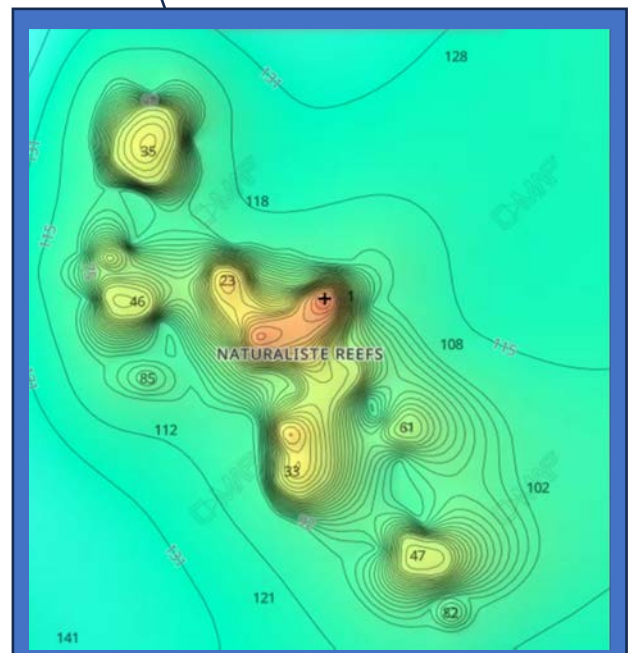


Figure 10: Topography of Naturaliste reef

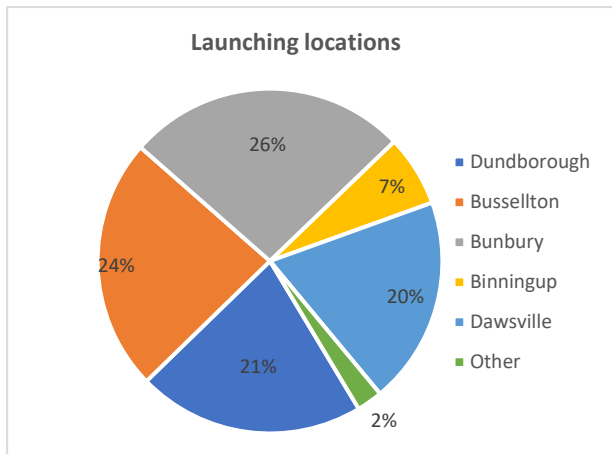


Figure 11: Boat launching locations.

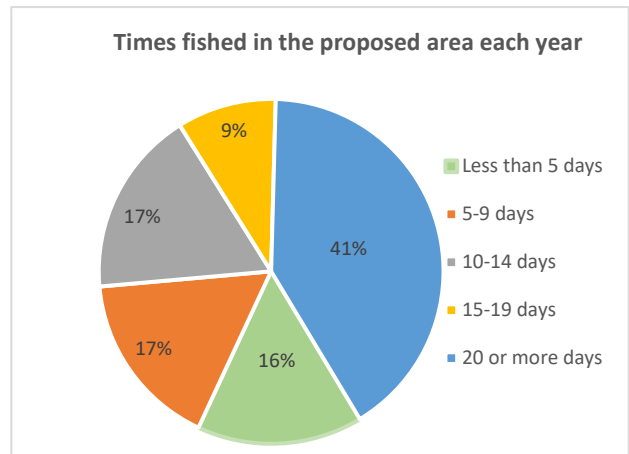


Figure 12: Fishing frequency in the proposed determination area

The survey also showed that fishers access the proposed area from a range of locations demonstrating the area's importance to fishers in a range of towns. Furthermore, the survey was able to demonstrate the importance of the area with 84% of survey respondents fishing in the proposed area more than 5 times every year and 40% fishing in the proposed area more than twenty times every year.

While fishing occurs predominantly throughout the eastern half of the proposed determination area the heat maps identify several areas of extreme importance including Naturaliste reef and the FAD grounds,

#### Naturaliste Reef

Naturaliste Reef is a favoured fishing spot due to its size, productivity and prominence amongst fishers [Naturaliste Reef YouTube](#). Located west of Bunbury the reef is a notable example of complex, high profile limestone reefs in relatively shallow water (< 50 m). These reefs provide important structures for marine life and is thought to be enriched by localised summer upwellings associated with the Capes counter-current [Department of Environment and Water Resources](#).

#### FAD grounds

Fish aggregating devices (FAD)s consist of buoys or floats anchored to the ocean floor. FADs attract baitfish which use the FAD as shelter which consequently attract pelagic fish such as mahi-mahi, tuna, and marlin. FADs provide recreational fishers with the opportunity to target pelagic fish and the Western Australian government had currently invested \$1.5 million in expanding FADs as part of a package to aid recovery of demersal species such as dhufish [WA Government](#).

The proposed determination area is home to four FADs which comprise part of the state government's statewide FAD program. The Cape Naturaliste FADs are marked on nautical charts and can be found up to 100 kilometres from shore in water depths ranging from 50 - 220 meters. The [Cape Naturaliste FAD grounds](#) are a popular fishing location for fishers wanting to target pelagic species.

It is documented that offshore wind farms change the stratification of the water column [Hamburg University](#) it is unknown how this change will impact on pelagic fish that aggregate at the FADs or alter the migration pattern of schooling baitfish, which in turn will alter the pattern of the pelagic species that follow. Will turbines and substations draw baitfish and target species away from FADs? This is especially important given the lack of clarity about access restrictions around offshore infrastructure.

## Key ecological features

[Marine key ecological features](#) are the parts of the marine ecosystem that are considered to be of importance for a marine region's biodiversity or ecosystem function and integrity. The [Marine bioregional plan for the South-west Marine Region](#) encompasses the proposed determination area and has identified [Western Rock Lobster](#), [Commonwealth marine environment within and adjacent to Geographe Bay](#) and [Ancient coastlines \(90-120m\)](#) as 3 key ecological features that overlap with the proposed determination area.

### Western Rock Lobster

The commonwealth government have defined the Western Rock Lobster as a key ecological feature due to its important ecological role. Western Rock Lobster are the dominant large benthic invertebrate within the proposed determination area and can be found to a depth of 150 meters. Rock Lobsters are an important part of the food web on the inner shelf, particularly as a juvenile as they are preyed upon by octopus, cuttlefish, baldchin groper, blue groper, dhufish, pink snapper, wirrah cod and breaksea cod. The high biomass of western rock lobsters and their vulnerability to predation makes them an important trophic pathway for a range of species.

The Western Rock Lobster is an iconic species that supports an incredibly important recreational fishery and is the basis of Australia's most valuable commercial fishery. In western Australia more than 50,000 fishers purchase a recreational fishing licence for rock lobster each year making it amongst the largest recreational fisheries in Western Australia. During consultation DCCEEW confirmed concerns about impacting the commercial lobster fishery resulted in areas in the mid-west north of Perth not being considered for a proposed declaration area. The Geographe Bay area has more recreational lobster fishing activity than the mid-west largely due to the significantly greater number of fishers who live in Mandurah, Bunbury and Busselton.

Specific areas of concern with respect to the impacts an offshore energy development may have on Rock Lobster include impacts of displaced fishing effort, settlement and movement changes due to underwater noise and vibrations, electromagnetic field impacts and habitat loss. It should be noted [a recent study](#) by the Western Australian Department of Primary Industry and Regional Development concluded seismic testing used in offshore oil, gas and energy industries left lobsters 'concussed and dazed' increasing their vulnerability to predation.

**A determination area shallower than 150 meters will impact on this key ecological feature.**



Figure 13: Western Rock Lobster are a key ecological feature of the area.



Commonwealth waters within and adjacent to Geographe Bay

The Commonwealth marine environment within and adjacent to Geographe Bay is defined as a key ecological feature for its high productivity and aggregations of marine life, and high levels of biodiversity and endemism. These values apply to both the benthic and pelagic habitats within the feature.

The spatial boundary of this key ecological feature as defined on the Commonwealth governments [conservation values atlas](#), is largely based on information available on the extent of seagrass in Geographe Bay which is known to occur in waters up to 50 meters due to the low nutrient waters. This ecological feature provides important habitat for a range of species, including nursery habitat for a number of commercially and economically valuable fish species.

**A determination area shallower than 50 meters will impact on this key ecological feature.**



*Figure 14: Seagrass is a feature in Commonwealth waters adjacent to Geographe Bay*

### Ancient coastlines (90-120m)

The continental shelf of the South-west Marine Region contains several terraces and steps which reflect the gradual increase in sea level across the shelf that occurred over the past 12 000 years. The Ancient coastline between 90 and 120 m depth are defined as a key ecological feature for their potential high productivity and aggregations of marine life, biodiversity and endemism.

Although their elevation and distinctness of these escarpments vary throughout the region. Where they are prominent, they create topographic complexity, for example through exposure of rocky substrates, that facilitate small, localised upwellings due to local acceleration of water movements, benthic biodiversity and enhanced biological productivity. The conservation value of both the benthic habitats and associated demersal communities associated with these ancient coastlines is recognised.

### **A determination area between 90-120 meters will impact on this key ecological feature.**

The [Commonwealth marine environment report card](#) which supports the [marine bioregional plan for the South-west Marine Region](#) identified sources of pressure of concern and potential concern for each key ecological feature with *offshore construction* and *installation of infrastructure* identified as a source of physical habitat modification for the key ecological features found in the proposed determination area.

The findings of the [regional pressure analysis](#) undertaken by the commonwealth government for the South-west Marine Region show renewable energy operations and/or onshore and offshore construction was a source of chemical pollution/contaminants, marine debris, noise pollution, light pollution, physical habitat modification, collision/entanglement and could potentially change hydrological regimes.

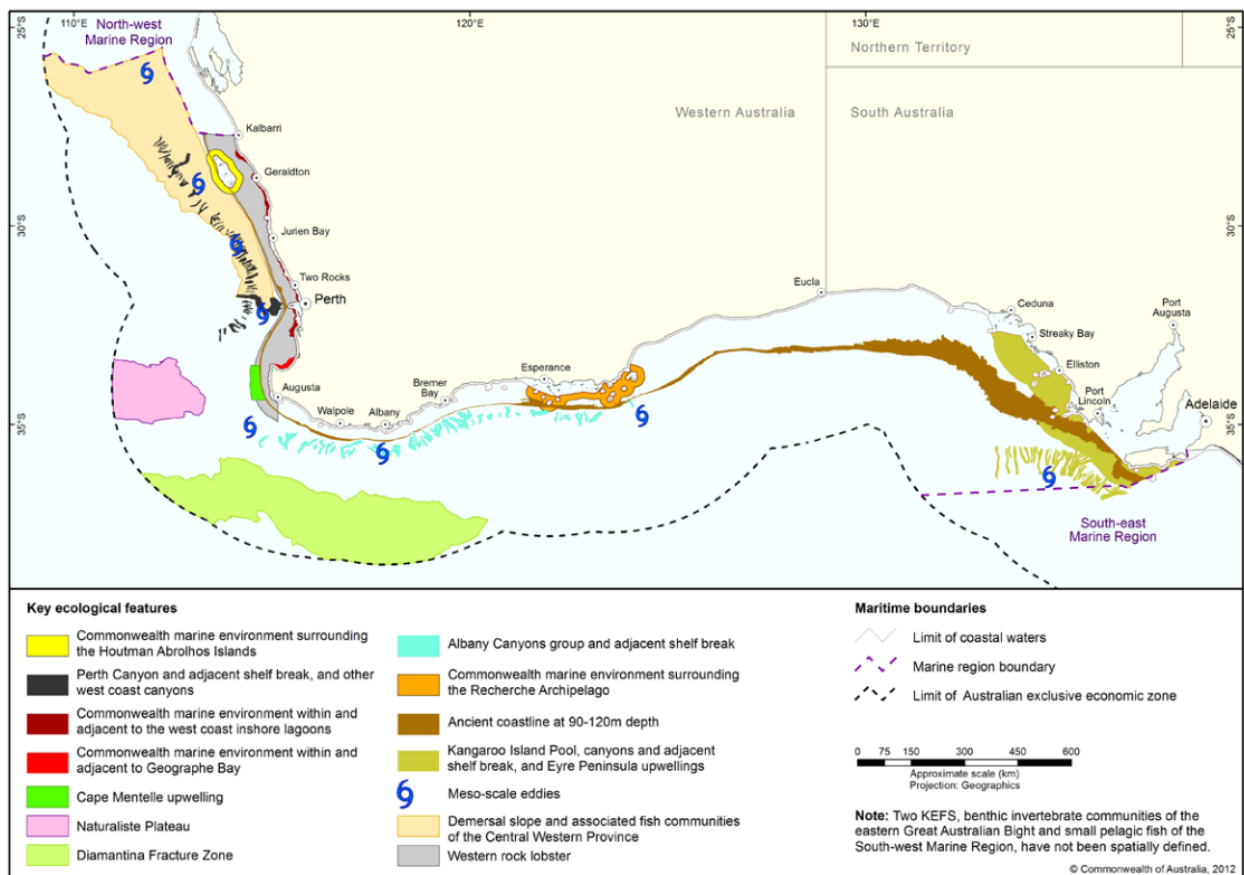


Figure 15: Key Ecological features of the southwest marine region



## Other important ecological features

While there are three key ecological features of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) within the proposed declaration area there are also a number of other ecological features that are equally or more important for fishers. These include demersal and pelagic fish, spawning areas and extensive sea grass and coral meadows. It should be noted that while there are a number of important demersal fish in the proposed determination area the main demersal species of concern is the Western Australian Dhufish.

### Dhufish

The WA Dhufish (*Glaucosoma hebraicum*) is only found in the southern half of Western Australia. It is Western Australia's most iconic and arguably best tasting fish. Dhufish are largely an offshore species commonly caught in depths of 20-100m. Ask any offshore angler in the southern half of the State what they most want to catch and almost all will say: "a big dhufish". Dhufies can exceed 20kg, but any fish tipping the scales at more than 10kg is a meritorious specimen.

Whether it is boats named after the humble dhufish, tattoos, clothing or artwork no other fish captures the imagination of Western Australian fishers quite like the Dhufish.



Figure 16: Dhufish is Western Australia's most iconic fish.

The proposed determination area is a known hot spot for Dhufish with [new research](#) suggesting Dhufish from WA's South West region have a more important role in reproduction and sustainability than previously thought.

Dhufish stocks are currently considered to be recovering and following an interim stock assessment. In 2022 the WA Premier Mark McGowan said without drastic change "there won't be any fish". His comments echoed that of the Fisheries Minister who on radio when asked whether it might be a fishery that goes extinct replied "Absolutely". The Fisheries minister said *in a couple of years there might be no fish left to fish unless urgent action was taken*.

As a result of this interim stock assessment there is now a six-month ban on taking dhufish for recreational fishers including a two-month closure that coincides with the peak spawning time for Dhufish. Such is the



importance of Dhufish that fishers have also thrown their support behind a grass roots stewardship campaign to engender behaviour change called [Dhufish Forever](#).

There is no doubt the proposed determination area is a hotspot of dhufish activity with a [Fisheries report on spawning aggregations](#) considering the *area west of Cape Naturaliste to be particularly favoured for spawning by this species*. Interviews with fishers supported these findings with fishers finding that the sex ratios of dhufish varies substantially, in the lead up to spawning in the Cape Naturaliste area.

Prior to the commencement of spawning activity (~ October/November), sex ratio of dhufish catches can be highly skewed towards males, because of their migration into coastal waters ahead of the females. However, following migration by females into the same area around December, the sex ratio of catches generally becomes female biased.

Interviews with two ex-commercial fishers who fished grounds from Cape Naturaliste to Shark Bay, identified the *Cape Naturaliste area as the main aggregating area for Dhufish*. The frequent observation by interviewed fishers that dhufish aggregate in the area west of Cape Naturaliste over relatively flat habitat covered by a particular type of seagrass, and that the aggregations typically do not form at the same specific location each year [WA Fisheries](#).

As the proposed determination area overlaps with the *main aggregation area* for dhufish and given the significant societal importance of Dhufish fishers have serious concerns about the impact any offshore energy developments is likely to have on Dhufish stocks.



Figure 17: The area has been identified as a main dhufish spawning aggregation area.

### Pelagic species

The fish fauna of the southwest marine region is diverse, with more than 900 species occupying a large variety of habitats. [The Species group report card - bony fishes](#) that supports the marine bioregional plan for the region reports against the three species of bony fish known to occur in the southwest region that are listed under the EPBC Act as threatened or protected. This report card identified noise pollution from renewable energy infrastructure as a pressure of potential concern for Southern Bluefin Tuna. It is reasonable to extend this concern to a wider range of other pelagic finfish given the high degree of biodiversity and endemism that occurs within the proposed determination area.

## Seagrass

Geographe Bay also supports the most extensive seagrass meadows in temperate Western Australia. These meadows provide vital habitat for more than 70 species of fish and other marine life. The seagrass meadows support 10 different species of seagrass, some of which are found at unusually great depths of up to 50 meters [Parks Australia](#). Within the determination area there exists extensive seagrass meadows creating complex, highly productive and biologically rich habitats.

Seagrass has been declining globally since the 1930s, with the most recent census estimating that 7% of this key marine habitat is being lost worldwide per year [United Nations](#). Seagrass provides food and shelter to thousands of species and improve water quality by filtering, cycling and storing nutrients and pollutants, reducing contamination in seafood.

Seagrass are highly efficient carbon sinks storing up to 18% of the world's oceanic carbon, making them a powerful nature-based solutions to tackle climate change. Because seagrass buffers ocean acidification, it contributes to the resilience of marine ecosystems and species. As seagrass covers only 0.1% of the ocean floor and given it was recently noted that 21% of seagrass species are categorized as Near Threatened, Vulnerable and Endangered Species under the IUCN Red List of Threatened Species, any impact on seagrass is of significant concern [United Nations](#).

## Coral reefs

Coral reefs are the most biodiverse ecosystem in our ocean and whilst they cover less than 1 per cent of the seafloor, they support at least 25 per cent of marine species. The United Nations Environment program identified coral reefs as the marine ecosystem most at risk from climate change impacts and estimates that 25 to 50% per cent of the world's coral reefs have been destroyed and another 60 per cent are under threat [United Nations](#).

Due to the low nutrient waters of Geographe Bay corals are found deeper than in other areas. The importance of these deep corals are likely to take on an even more significant role as a coral repository as our changing climate continues to impact corals in shallower water.

Examples of environments within the proposed determination area

[Coral bommies within the proposed determination area](#)

[Coral meadows of Geographe Bay](#)

[Deep reef in the Southwest of the proposed determination area](#)

## Issues to note:

There are several other issues relating to a general lack of available information and some apparent policy conflicts that should be noted as they have impacted on the ability to inform submissions.

## A general lack of information

The dissatisfaction with the consultation process was well documented in local media with most frustration occurring due to a general lack of information provided at public consultation sessions. Questions about the number of turbines likely to occupy a determination area, decommissioning process, likely impacts on the environment, access restrictions, compensation for loss of access, impacts of seismic activity, noise, vibrations or electromagnetic fields on fish and interactions with birds and whales were met with promises of more details once an area had been declared.

The community were frustrated they were not provided more detailed information with which to form an opinion on the suitability of the proposed area. The community was also concerned about a lack of information about likely impacts outside the proposed area such as required developments at local ports. The decision to omit substations from the visualisations was also never adequately explained and

resulted in questions about the impartiality of the government department tasked with undertaking public consultation.

While the closest boundary of the proposed area is twenty kilometres from shore any project will require direct infrastructure connections in Western Australia and there is also no information on where this connection is likely to occur or what impact it is likely to have on the benthic environment, coastal processes or amenity values of the area.

The revelation that the proposed determination area had been largely based on, industry aspirations and energy demand came as a shock to many people who had expected any proposed area to also be informed by environmental considerations. To many people the plans to rely on research from developers to address environmental concerns equates to putting the fox in charge of the hen house.

## Policy conflicts

As mentioned previously uncertainty around access restrictions has also seen a lot of fishers apprehensive about developing an offshore wind industry in Western Australia. While there is a lack of clear policy in relation to restrictions on access there are other apparent conflicts of policy which should be addressed before an offshore wind industry is progressed. This includes policy inconsistencies related to marine protected areas and plastics in the marine environment.

### Marine parks

During the public consultation it was explained the decision to exclude marine protected areas from consideration as a determination area was made based on the opinion by the Director of National Parks that offshore wind farms in marine parks would be inconsistent with Australia's international obligations.

It should be noted the Guidelines for applying the IUCN protected area management categories to marine protected areas clearly demonstrates that renewable energy generation is considered a permitted activity in IUCN categories IV to VI [IUCN Guidelines 2nd edition](#). During the consultation period it was repeatedly claimed offshore wind farms are likely to have limited environmental impact and may result in biodiversity improvements. The community find it hard to reconcile statements claiming offshore wind developments will not adversely impact the environment when they have been deemed a threat to the conservation value of a marine park.

### National Plastics plan

Launched in 2021 the [National Plastics Plan](#) aims to avoid using unnecessary and problematic plastics and contains a whole section on plastics in our ocean and water ways. This plan has led to a number of other policies aimed at reducing plastics in our waterways such as DCCEEW's draft policy on [plastics in artificial reefs](#). Under this draft policy the Australian Government is unlikely to provide approvals for artificial reefs which include plastic fibres in their designs preferring steel reinforcement or other natural fibres are used in concrete reinforcement.

The use of plastic fibres in marine grade concrete is becoming increasingly preferred over the traditional use of reinforcing steel bars as it eliminates the most common failure of concrete structures in marine environments which is concrete cancer. Concrete cancer is caused by seawater penetrating into the concrete structure over time and causing the steel reinforcing bars to corrode and expand. This expansion causes the concrete to crack and fail. By removing the reinforcing bar, the risk of concrete cancer is eliminated.

The use of fibres instead of traditional reinforcing bar increase the design life of the concrete structures significantly improving the structures capacity to withstand higher and more numerous impact loads in comparison to unreinforced structures. These fibres are extensively used in breakwater armour units



throughout Australia and offshore energy projects throughout the world. In addition, the use of fibres as an alternative to steel mesh reduces CO2 emissions by 90%, ozone depletion by 76%; eutrophication by 90%; fossil fuel usage by 93%; and water consumption by 90% compared to using steel bars.

It is highly likely the development of an offshore energy industry will require the use of fibre reinforced concrete which would go against the current draft policy on the use of plastics in artificial reefs.

The blades of wind turbines also contain a significant proportion of plastics and fiberglass which wears over time releasing microplastics into the marine environment. A [2021 study](#) based on 4.2MW turbines which are smaller than the turbines planned for use in offshore wind projects in Australia estimate that each turbine would annually emit approximately 62 kilograms of microplastics into environment. It is well documented that offshore wind turbines will wear 40-50% more due to salinity [The Turbine Group](#) therefore the actual level of micro plastics likely to be released in the ocean annually from each turbine could be significantly higher.

Another Norwegian study claims the level of microplastics release from turbine blades would be less however, both studies show the annual level of microplastics released from an offshore wind field large enough to generate the 20GW of energy the government is seeking to produce from the proposed determination area would be more than the total amount of plastic used to construct a 500-module artificial reef. The contradiction between the acceptable use of fibre re-enforced plastic in wind turbines and the unacceptable use of similar materials in artificial reefs should be explained or addressed to ensure consistency across government policy.

## Conclusion

The proposed declaration area was selected based on input from Australian and WA Government agencies, interest from industry and technical limitations identified in the Blue Economy CRC report into offshore wind in Australia [DCCEEW - FAQ](#). While the entire proposed area may be able to technically support the development of an offshore wind industry much of this area is already being used for fishing on a frequent basis. While confusion around coexistence and the cumulative impacts of offshore wind developments remain development of this industry in these important fishing areas cannot be supported.

The number of fishers completing our survey and the significant media generated during the consultation period demonstrate fishers are concerned about the industrialisation of the ocean through the development of an offshore wind industry. This submission highlights areas of importance to fishers as well as identifies important ecological features contained within the proposed determination area. Fishers remain unsure how the development of an offshore wind industry is likely to impact on their fishing experiences or the environment that supports the fish that provide these experiences. The continued lack of clarity in relation to coexistence has hampered the ability and willingness of fishers to provide feedback on the suitability of the proposed determination area.

It is clear a general lack of information has detracted from the consultation period and policy conflicts have served to reduce the social licence of an offshore wind industry in the southwest of Western Australia.

It is unacceptable to consider privatisation and industrialisation of the marine environment when there are so many uncertainties about how the development of an offshore wind industry will impact on fishing experiences and the environment that supports these experiences.

## Recommendation

### **Relocate the eastern boundary of the proposed determination area westward beyond the 200 meter isobar.**

There are several advantages to moving the eastern boundary of the determination area west including;

- Less conflict with fishers who frequent the deeper water (200m +) areas less often than the shallower waters closer to shore.
- Avoidance of all documented Key Ecological Features which should reduce the complexity of assessments under the EPBC act.
- Avoidance of impacts on key habitats such as corals, seagrass and sponge gardens as the habitat at this depth is primarily silt.
- Avoidance of known dhufish aggregation areas
- Reduced interactions with fishers who fish in areas where the Leeuwin and Capes current converge.
- Reduced interactions with FAD fishers although one of the FADs will remain within a determination area that starts at the 200-meter isobar.
- The area of greatest wind speed in the proposed determination is retained.
- The 200-meter isobar aligns with the accepted baseline of the continental shelf allowing an ecological feature to define the boundary rather than an arbitrary point on a map.
- The characteristics of the recommended area fall within the acceptable conditions for the development of an offshore wind industry as identified by the Blue Economy CRC report on offshore wind energy.
- The recommended area is 2,582 km<sup>2</sup> in size which allows for enough turbines spaced 1-2 kilometre apart to meet the Commonwealth's desire for the area to generate 20GW of energy.

In addition, it is recommended the government provide greater transparency about the known impacts of offshore wind industry and resolve inconsistencies in government policy related to plastics and marine protected areas. While not covered in this submission locating the determination area beyond the 200-meter isobar is also likely to reduce impacts on visual amenity, and other non-fishing values. Should you require any further information in this regard, please do not hesitate to contact me on 9246 3366.

Yours sincerely



Dr Andrew Rowland  
Chief Executive Officer  
8 May 2024