

The Exmouth mystery: Where science has barely grazed the surface

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Sand flats, Bay of Rest, Exmouth Gulf, Dr. Ben Fitzpatrick.

A globally significant diversity of wildlife teems beneath the blue surface of Western Australia's Exmouth Gulf, a landmark report has revealed – but the push to industrialise the holiday region could threaten these species before science even finishes documenting them.

The Gulf, cupped by the North West Cape peninsula on which Exmouth lies 1200 kilometres north of Perth, sustains thriving commercial and recreational fishing and ecotourism industries.

The Oceanwise Australia Report overviews all existing knowledge on the Gulf and is endorsed by the International Union for Conservation of Nature.

It identifies a data deficiency so severe it suggests companies could not guess, nor governments properly assess, any proposed development's impact.

Yet, it says, even this inadequate existing body of research identifies the Gulf - home to almost 2000 species, many of which are only found in WA - as a globally outstanding area qualifying for World Heritage status.

The report comes as the state considers global engineering company Subsea 7's proposal to fabricate 10-kilometre pipelines for offshore oil rigs.

The report identifies the Gulf as a globally significant humpback whale nursery, the most successful example of whale population recovery in the world, and its commercial prawn fishery is one of WA's most valuable.

It says the Gulf is home to endangered sea cucumbers, diverse seahorses, critically endangered hawksbill turtles, dugongs and snubfin, humpback and bottlenose dolphins; and to baby giant shovelnose rays, leopard whiplays and manta rays.

These are the same mantas that migrate to Shark Bay and support ecotourism at Ningaloo and Coral Bay, such as Freckles, whose film debut last week was championed by Tourism WA, attracted print coverage across the UK, was picked up by 50 news channels in the US and got millions of online views.

The Gulf is the only known site worldwide where green sawfish, one of the planet's most endangered species, give birth to their pups.

Unseen along its coast are 'stygo fauna' found nowhere else but in WA, such as the blind cave eel and blind gudgeon fish, living deep underground in a complex terrain of limestone caves, rivers and lakes.



Humpback whale mother and calf



Blind Cave Eel, Exmouth Gulf region
DR BEN FITZPATRICK

The Gulf's cornucopia of habitats includes wetlands, a globally significant, extensive, undisturbed and unique mangrove ecosystem; modern coral reefs, seagrass beds, reef and sand flats, soft coral and sponge beds; oyster beds, undisturbed islands and sandy beaches.

The peninsula on which the town of Exmouth sits also has fossilised coral reefs that date back to the last Ice Age and whose very form has contributed to the proliferation of species.

The sea levels dropped during ice ages then rose again in the interglacial periods, said the report's principal author, UWA researcher Ben Fitzpatrick.

With each rise and fall, coral reefs formed, so the landscape was actually a series of fossil reefs. When the ocean dropped, this natural barrier stopped animals migrating south.

“When it rises, a waterway forms at the base of the gulf, and that is when all the shells and small animals, your starfish and cowrie shells, can migrate south,” Dr Fitzpatrick said.

“You end up with a population isolated from one another, one north, one south, and they evolve separately and turn into separate species.”



Exmouth Gulf has around 800 species of fish, for example, compared to Ningaloo's 550. It has 831 species of snails and molluscs.

It has at least 63 species of sharks and rays and at least 15 species of sea snakes, some critically endangered, but there could be many more – the sharks, rays and reptiles are one of the biggest knowledge gaps. Even basic knowledge of the biology and habitat requirements for a large majority of the shark and ray species is lacking.

Another gap is what conditions and processes maintain the system's productivity.



The fishing and tourism industries' economic or other values have no formal recognition in anything like a formal management plan such as those marine parks have.

Most of the Gulf is unallocated Crown land that has not yet seen large-scale industrial development, but as well as the Subsea 7 proposal lodged with the Environmental Protection Authority, there is now industrial rezoning proposed along the western coast.

Dr Fitzpatrick was so concerned about the Gulf's lack of "visibility" he obtained philanthropic funding for the preliminary baseline surveys presented in the report.

The 16 authors, from UWA, James Cook and Curtin universities and Sharks and Rays Australia, have volunteered time for almost two years to work on it.



“There is an immediate need to implement a large-scale, multidisciplinary Exmouth Gulf Marine Research Program,” says the completed report.

“This would inform a Strategic Assessment (a mechanism under federal environmental law) of past, current and future cumulative impacts on the entire system and set limits on development.”

Protect Ningaloo spokesman Jeremy Tager said the state government should legislate protections for the Gulf.

“Offshore oil and gas in the far north has been rapidly moving south – Port Hedland, Onslow, Karratha and the attempt at James Price Point,” he said.

“Western Australians are perhaps not all aware of the extent of offshore oil and gas rigs and how close they are to Ningaloo.

“If they continue to build their land infrastructure at the closest possible point to their rigs and wells, the entire coast is potentially opened up.

“There is no reason the public should pay for this, with the loss of these areas along the West Australian coast.”



This article can be viewed in the Sydney Morning Herald at:

<https://www.smh.com.au/national/the-exmouth-mystery-where-science-has-barely-grazed-the-surface-20190718-p528ly.html>