GREENPEACE

BLASTING OUR OCEAN: WOODSIDE'S DANGEROUS SEISMIC PLAN

GREENPEACE AUSTRALIA PACIFIC

NOVEMBER 2022

Acknowledgements

Greenpeace Australia Pacific acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to land, waters, and culture. We pay our respects to their Elders past and present.

We also acknowledge the Indigenous peoples of the large ocean states of the Pacific, and their continuing connection to the Pacific ocean, their lands and their cultures, and recognise the great injustice of the climate crisis on Indigenous peoples across the entire Australia-Pacific region.

TABLE OF CONTENTS

KEY FINDINGS 4

INTRODUCTION 5

WHAT IS SEISMIC SURVEYING? 6

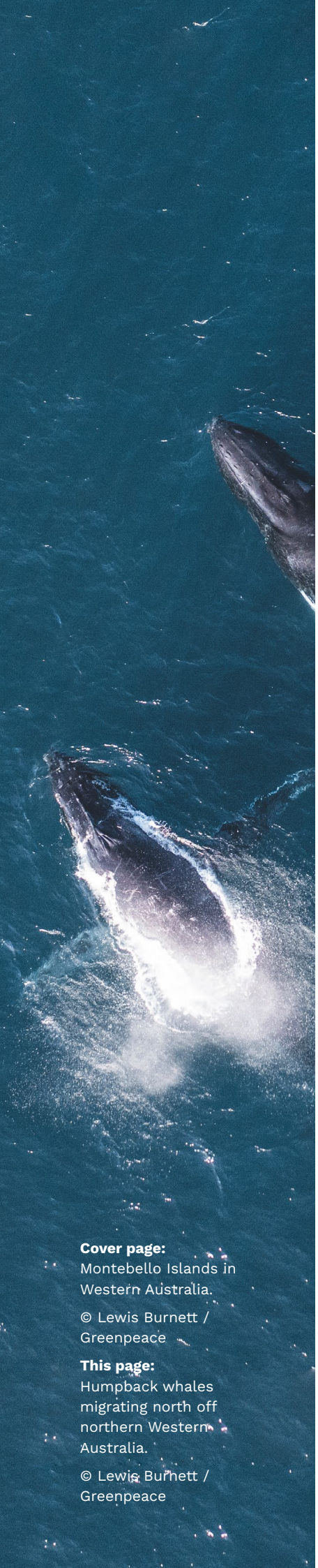
THE THREAT TO WHALES 7

Pygmy Blue Whales at Risk 8

INADEQUATE COMMUNITY CONSULTATION 9

CONCLUSION 10

ENDNOTES 12



Cover page:
Montebello Islands in Western Australia.

This page:
Humpback whales migrating north off northern Western Australia.

KEY FINDINGS

1. Woodside Energy aims to start risky seismic surveying for its Scarborough gas project before the end of 2022. The process uses underwater airguns to blast powerful sound waves towards the seabed to assess fossil fuel reservoirs beneath the ocean floor.

2. The area Woodside plans to conduct seismic surveying in is in proximity to whale migration routes and close to the UNESCO-protected Ningaloo Reef.

3. Seismic surveying can seriously injure whales and potentially kill other marine life. A growing body of research indicates that this noise pollution can damage, sometimes permanently, the hearing of whales and fish, as well as kill important prey species like plankton.

4. Greenpeace believes that Woodside's plan poses a particular threat to pygmy blue whales. This includes conducting seismic blasting activities during the endangered pygmy blue whale migration periods.

5. A worst-case scenario accident during seismic surveying could impact marine wildlife almost 1,000km away, potentially affecting four Marine Protected Areas.

INTRODUCTION

Woodside Energy is seeking to greatly expand its offshore gas drilling operations in Western Australia. It wants to develop the Burrup Hub gas project, which is the most climate-polluting project currently proposed in Australia.[1]

An integral component of the Burrup Hub is the Scarborough offshore gas project, located about 375 km off the coast of the Burrup Peninsula in Northwest WA. According to Woodside's own analysis, the project has the potential to impact seven Marine Parks, including the Dampier Archipelago and Ningaloo Coast World Heritage Area.[2]

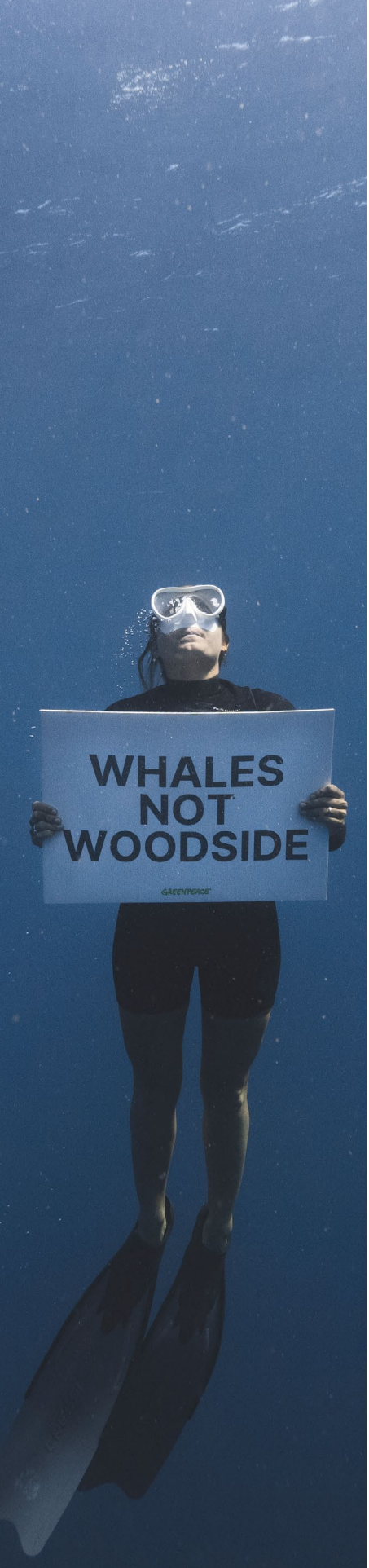
The development of the Scarborough gas field is reliant on Woodside conducting seismic surveys, which are repeated blasts from underwater airguns day and night, and have been described as "one of the loudest sounds in the ocean".[3]

Woodside's seismic surveying could begin before the end of 2022, but is reliant on approval by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

The loud noises generated by seismic surveying can seriously injure whales and potentially kill other marine life.

Woodside's Pluto LNG gas plant on the Burrup Peninsula in Western Australia

© Luke Sweet / Conservation Council Western Australia / Greenpeace



Greenpeace volunteer holds a banner in 1000m deep water in Gascoyne Marine Park.

WHAT IS SEISMIC SURVEYING?

Seismic surveying involves large seismic vessels towing underwater airguns that blast powerful sound waves towards the seabed, in order to assess fossil fuel reservoirs beneath the ocean floor.

The airguns used in these seismic surveys are one of the loudest sounds in the ocean. In fact, a recent Australian Senate inquiry heard that with the right conditions, seismic blasts from Australian waters can be heard in Antarctica.[4]

Woodside Energy plans to conduct seismic surveying for gas at its offshore Scarborough site for 80 days over an area of 5,650 square kilometres. During this time, the airgun array will blast powerful sound waves every 5 seconds, during day and night, for up to 12 hours at a time.[6]

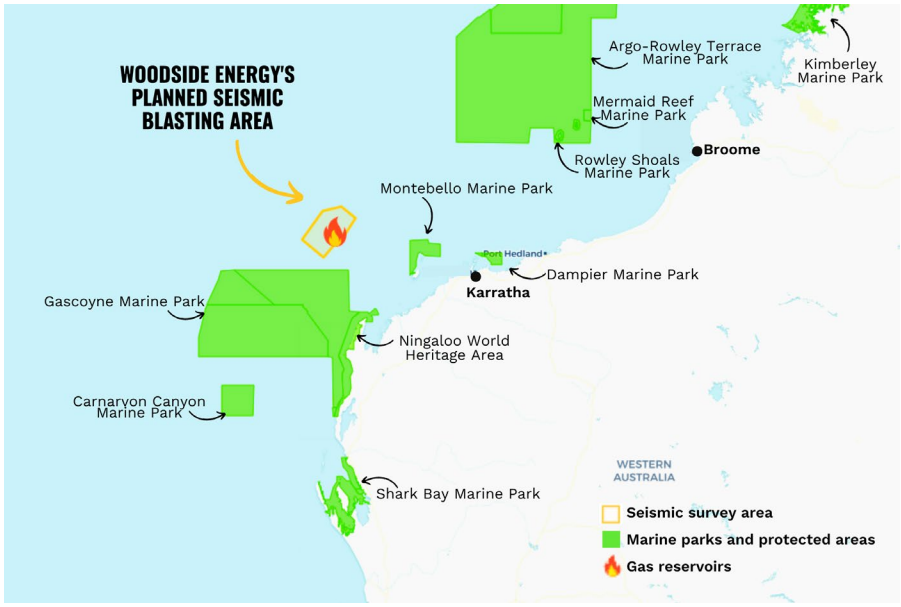
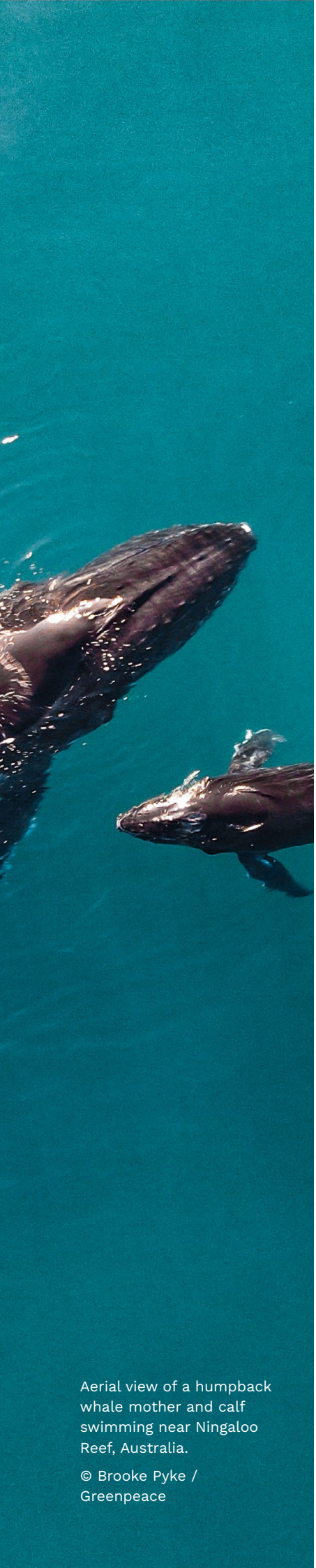


Figure 1: Map of North Western Australia showing the proximity of Woodside's planned operational area for the Scarborough seismic survey in yellow, with important marine parks and protected areas in green.



Aerial view of a humpback whale mother and calf swimming near Ningaloo Reef, Australia.

© Brooke Pyke / Greenpeace

THE THREAT TO WHALES

A number of threatened and migratory whale species migrate through or feed within the Scarborough project area including pygmy blue, Antarctic blue, humpback, sperm, sei, fin and Antarctic minke whales. These whales and other cetaceans are highly sensitive to underwater noise pollution, as they use sound and sonar to communicate, navigate, and locate food.[7]

Greenpeace Australia Pacific's 2022 peer-reviewed report *Moby Sick: the cost of Woodside's Burrup Hub for Whales* outlined a number of potential impacts of seismic surveying on whales.[8] These findings echo those identified in the Australian Government's *Conservation Management Plan for the Blue Whale*, which states:

> **The effects of elevated noise levels on marine mammals is known to include: avoidance of an area, tissue rupture, hearing loss, disruption of echolocation, masking (the inability of a whale to detect sounds important to it), habitat abandonment, aggression, calf abandonment, and behavioural disturbance.**
> **It is the high intensity signals with high peak pressures received at very short range that can cause acute impacts such as injury and death.... Impulsive sounds such as [seismic surveys] present a greater risk than most continuous sounds because of the high peak levels and frequent repetition.[9]**

Even short bursts of auditory trauma can lead to temporary hearing loss (referred to as a 'temporary threshold shift'), which may render whales and other cetaceans unable to navigate, feed and communicate.[10]

Seismic surveying also has the potential to mask whale vocalisations, which may be important for foraging, breeding and communicating.[11] For instance, migrating mother whales and their calves rely upon quiet contact calls to stay together and avoid detection from predators – this communication is "likely fundamental for calf survival".[12]

Pygmy Blue Whales at Risk

In Spring and Autumn, pygmy blue whales migrate along the western coast of Australia. Whale numbers usually peak off the West Australian coast in May and June (during northward migration) and November and December (during southward migration).[13]

Their migration path, known as the Biologically Important Area, runs approximately 30 kilometres away from the area where Woodside plans to conduct its seismic testing. Modelling commissioned by Woodside demonstrates that pygmy blue whales would sustain temporary hearing injuries if they were within 60 kilometres of the seismic survey for 24 hours.[14]

The Federal Government's *Conservation Management Plan for the Blue Whale* states that "seismic guidelines advise that seismic surveys should be undertaken outside of biologically important areas at biologically important times", such as migratory periods.[15] Also, that noise must be managed so that "any blue whale [can continue] to utilise the area without injury".[16]

Woodside has made no allowances for pygmy blue whale migration seasons in its seismic plan.[17] It is taking no steps to avoid conducting seismic surveying during this period. This could put whales in the area at significant risk.

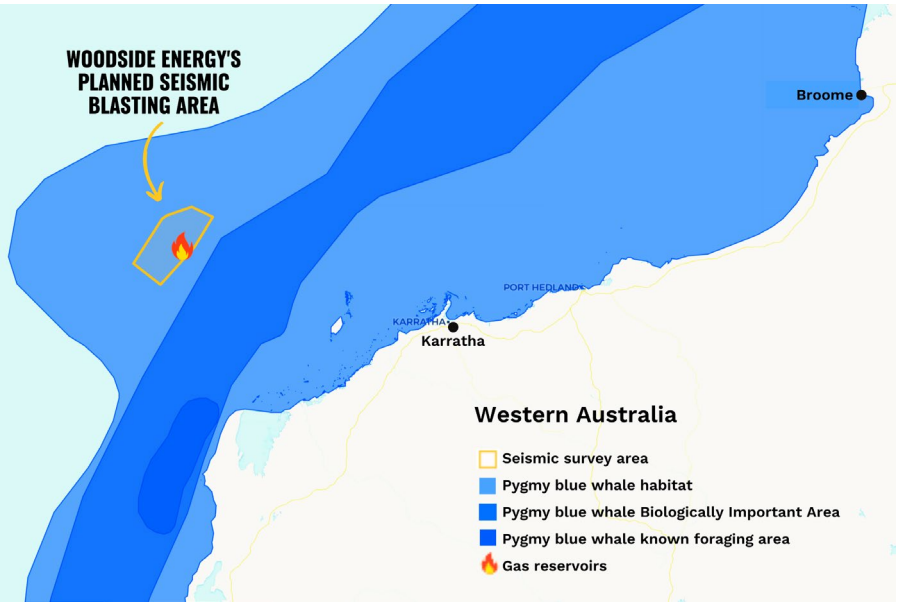
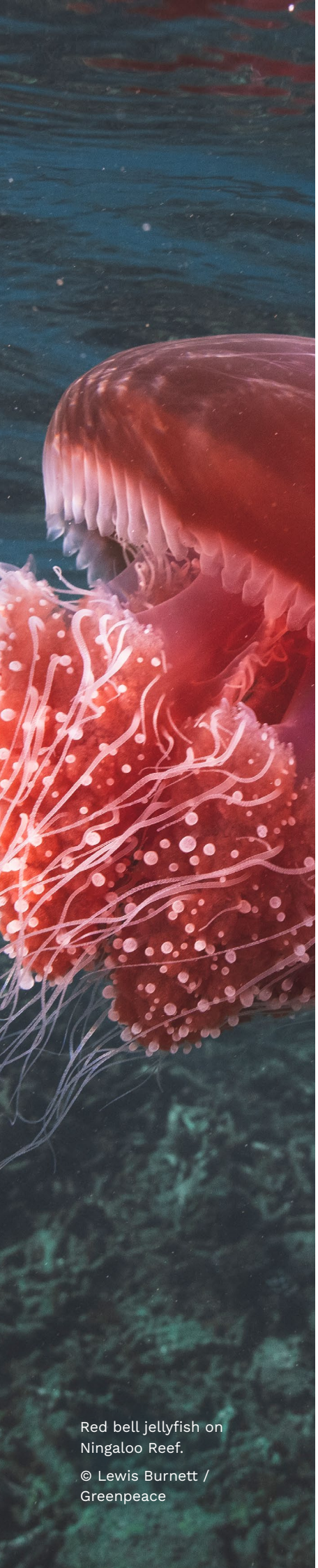


Figure 2: Operational area for the Scarborough seismic survey in yellow, and pygmy blue whale Biologically Important Area for migration in blue. The seismic air guns will be used about 30km from the Biologically Important Area.[18]



Red bell jellyfish on Ningaloo Reef.

INADEQUATE COMMUNITY CONSULTATION

Woodside is required by law to consult on the impacts of its seismic surveying, as per reg 11A of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. However, while Woodside has consulted some peak bodies it has made little effort to engage with local communities.[19]

Beyond the direct impacts of seismic testing, there is the risk of a 'worst case' spill scenario, which Woodside has identified as a rupture to the fuel tank on the seismic vessel in the event of a collision. If this were to occur, modelling commissioned by Woodside demonstrates that the spilled diesel fuel could persist over designated concentration thresholds up to 921 kilometres from the accident site.[20] This could affect the Gascoyne, Montebello, Carnarvon Canyon and/or Abrolhos Australian Marine Parks,[21] impacting a wide range of marine-dependent species, including whales, turtles, seabirds and sharks.

Many communities along the coastline in the area are economically reliant on fishing and marine tourism. The damage from a spill from one of Woodside's gas projects could have devastating financial and environmental consequences for local communities such as Exmouth, Onslow, Dampier and Karratha.

CONCLUSION

Greenpeace contends that Woodside's plan to conduct seismic surveying at Scarborough poses an unacceptable and unnecessary risk to the oceans, marine wildlife and coastal communities. Its Environmental Plan should not be accepted by the federal regulator, NOPSEMA. Not only is Woodside's plan to conduct seismic surveying harmful in and of itself, but the purpose for the surveying - locating fossil fuels in the Scarborough gas field - would cause even greater harm.

The latest Intergovernmental Panel on Climate Change (IPCC) report shows that existing fossil fuel infrastructure alone will push the world over 1.5˚C of warming.[23] Opening up new fossil fuel basins like Scarborough is clearly incompatible with limiting warming to 1.5˚C, and would accelerate the damaging climate impacts of warming for marine ecosystems.

A Greenpeace sign placed on a dead coral reef in Ningaloo World Heritage Area, Australia.

© Lewis Burnett / Greenpeace

Humpback mother protecting its newborn whale calf as it takes its first breath, off North Western Australia.

1. Climate Analytics, *Impact of Burrup Hub on Western Australia's Paris Agreement Carbon Budget*, 2020, p16, https://climateanalytics.org/media/climateanalytics-burruphubwacarbonbudget-report-feb2020.pdf, (accessed 6 October 2022).

2. Woodside, *Scarborough Offshore Project Proposal*, 2021, p. 33, https://www.nopsema.gov.au/sites/default/files/documents/2021-03/A724553.pdf (accessed 5 October 2022).

3. International Fund for Animal Welfare, Submission 30, cited in Australian Senate Environment and Communications References Committee, *Making waves: the impact of seismic testing on fisheries and the marine environment*, 2021, p. 14, https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024482/toc_pdf/Makingwavestheimpactofseismictestingonfisheriesandthemarineenvironment.pdf;fileType=application%2Fpdf (accessed 21 October 2022).

4. McCauley, R. cited in Australian Senate Environment and Communications References Committee, *Making waves: the impact of seismic testing on fisheries and the marine environment*, 2021, p. 13, https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/SeismicTesting/Report (accessed 21 October 2022).

5. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 35, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

6. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 39, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

7. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 108, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

8. Greenpeace Australia Pacific, *Moby Sick: the cost of Woodside's Burrup Hub for Whales*, 2022, https://www.greenpeace.org.au/wp/wp-content/uploads/2022/07/Moby-Sick-Whales-Report-6-July-2022-Greenpeace.pdf.

9. Department of Agriculture, Water and the Environment, *Conservation Management Plan for the Blue Whale: 2015-2025*, 2015, pp. 24-25, https://www.awe.gov.au/environment/biodiversity/threatened/publications/recovery/blue-whale-conservatioN-management-plan (accessed 20 October 2022).

10. C. Peng et al., 'Noise in the sea and its impacts on marine organisms', International Journal of *Environmental Research and Public Health*, vol. 12, 2015, p. 2, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4626970/ (accessed 10 October 2022).

11. Department of Agriculture, Water and the Environment, *Conservation Management Plan for the Blue Whale: 2015-2025*, 2015, p. 3, https://www.awe.gov.au/environment/biodiversity/threatened/publications/recovery/blue-whale-conservatioN-management-plan (accessed 20 October 2022).

12. K.L. Indeck et al., 'Humpback whale adult females and calves balance acoustic contact with vocal crypsis during periods of increased separation', *Ecology and Evolution*, vol. 12, no. 2, 2022, p. 2, https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.8604 (accessed 8 October 2022).

13. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 66, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

14. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 128, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

15. Department of Agriculture, Water and the Environment, *Conservation Management Plan for the Blue Whale: 2015-2025*, 2015, p. 25, https://www.awe.gov.au/environment/biodiversity/threatened/publications/recovery/blue-whale-conservatioN-management-plan (accessed 20 October 2022).

16. Department of Agriculture, Water and the Environment, *Conservation Management Plan for the Blue Whale: 2015-2025*, 2015, p. 25, https://www.awe.gov.au/environment/biodiversity/threatened/publications/recovery/blue-whale-conservatioN-management-plan (accessed 20 October 2022).

17. As of October 2021 when Woodside's *Scarborough 4D B1 Marine Seismic Survey Environmental Plan* was released, and as per correspondence between Woodside and Greenpeace Australia Pacific on 12/9/22.

18. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p. 60, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

19. As of October 2021 when Woodside's *Scarborough 4D B1 Marine Seismic Survey Environmental Plan* was released.

20. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p180, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

21. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan,* 2021, p180, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

22. Woodside, *Scarborough 4D B1 Marine Seismic Survey Environmental Plan*, 2021, p45, https://info.nopsema.gov.au/environment_plans/559/show_public (accessed October 7 2022).

23. Intergovernmental Panel on Climate Change, *Climate Change 2022: Mitigation of Climate Change*. Working Group III Contribution to the IPCC Sixth Assessment Report, 2022, p20, https://www.ipcc.ch/report/ar6/wg3/ (accessed October 12 2022).

DISCLAIMER

The information in this report is for general information purposes only. Neither Greenpeace Australia Pacific nor the authors are liable for any loss caused, whether due to negligence or otherwise arising from the use of, or reliance on, the information provided directly or indirectly. The opinions expressed in this report are based on the documents referenced in this document. Greenpeace Australia Pacific encourages readers to review those documents. This report contains summary information about Woodside and its activities and the views, opinions and beliefs of Greenpeace Australia Pacific in relation to those matters which are current only as at the date of publication. Greenpeace Australia Pacific reserves the right to change or modify any of its opinions expressed herein at any time and for any reason and expressly disclaims any obligation to correct, update or revise the information contained herein or to otherwise provide any additional materials.

COPYRIGHT

Greenpeace activists painting the words 'No New Gas' on a ship in Germany that was hired to deliver pipes for a planned 430 kilometre long gas pipeline, which is part of Woodside's Burrup Hub Project.

GREENPEACE

www.greenpeace.org.au