Conservation Council of WA (ABN 35982476107)
PO Box 883, West Perth, WA, 6872
T 08 6558 5155 | **E** conswa@ccwa.org.au

Submitted to:
Sue McCarry
Chief executive Officer
National Offshore Petroleum Safety and Environmental Management Authority

By email: environment@nopsema.gov.au

Sauropod 3D Marine Seismic Survey
North West Shelf – Roebuck Basin
CGG Services (Australia) Pty Ltd

Submission by Conservation Council of WA

21 October 2025

The Conservation Council of WA (CCWA) is the state's foremost non-profit, non-government conservation organisation representing close to 100 environmental organisations across Western Australia, with tens of thousands of engaged individuals state-wide. This broad collective of like-minded groups and individuals creates a vibrant and passionate community, dedicated to the conservation of our unique and diverse state.

CCWA has been a prominent and forthright voice for conservation for more than 50 years working directly with the government, media, industry, community groups, and political parties to promote a more sustainable WA and to protect our natural environment.

Background

Relevant Person status

In the publicly available copy of the EP, CGG acknowledges that CCWA is a relevant person within the meaning of r25(1) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (Cth).

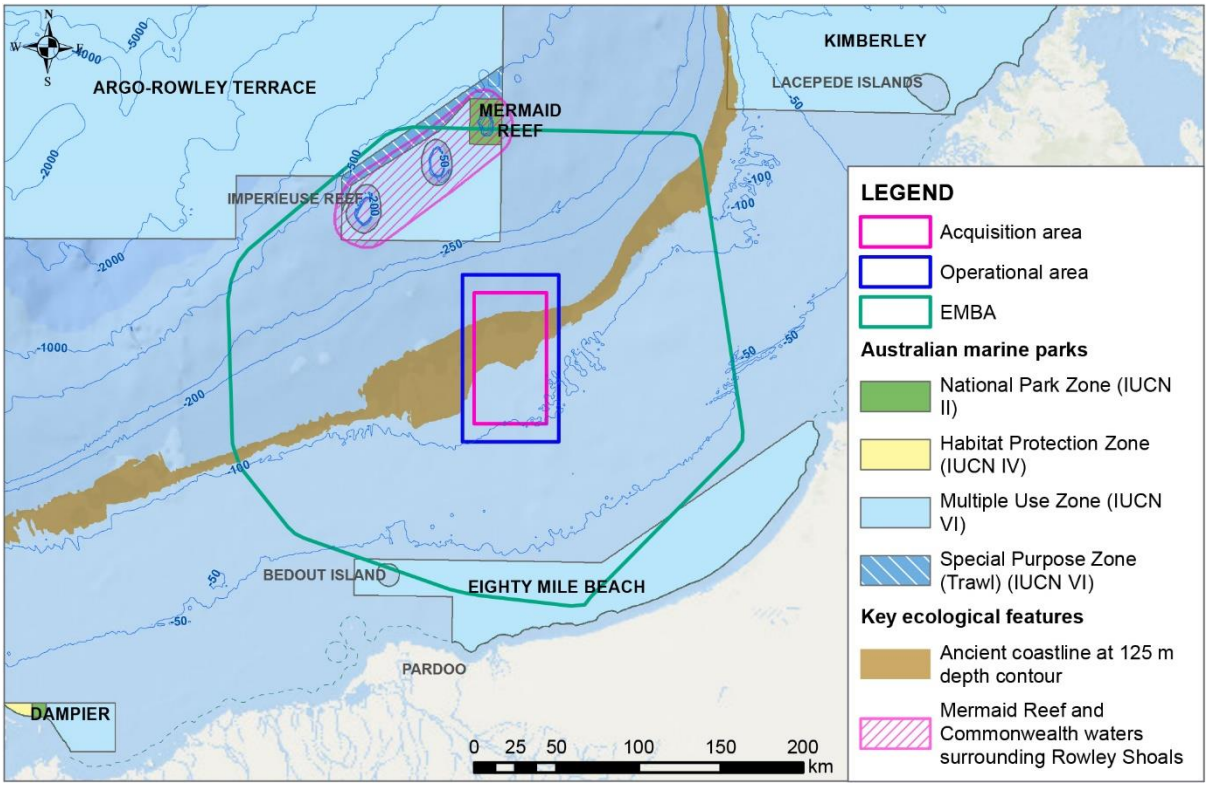
The Proposal

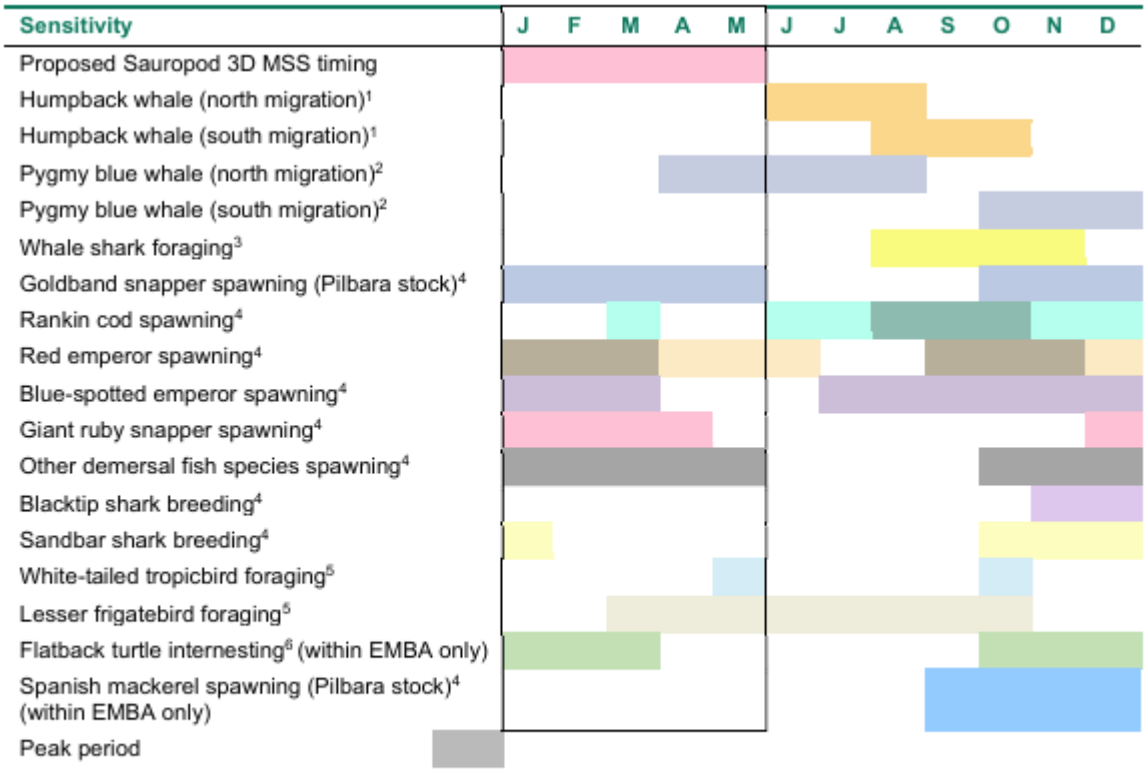
CGG Services (Australia) Pty Ltd proposes to conduct the Sauropod 3D marine seismic survey in exploration permit area WA-527-P (under SPA - application number LWZLKT), located on the North West Shelf within the Roebuck Basin off the coast of Western Australia (WA). This survey aims to acquire three-dimensional geophysical data to inform oil and gas exploration activities by imaging subsurface rock formations.

The survey will be conducted within Commonwealth waters approximately 120 km from the WA coast near Pardoo and 230 km from Broome. The operational footprint includes an Acquisition Area of up to 3,500 km^2 where the seismic data collection will take place, surrounded by a broader Operational Area of approximately 6,000 km^2 to accommodate vessel manoeuvring, such as line turns, run-ins, run-outs, seismic source testing, and soft-start procedures. Water depths within these areas range between 65 and 170 meters.

The Sauropod 3D MSS is planned to occur between early January and the end of May in 2026 or 2027, with a maximum duration of 60 days including downtime for weather, maintenance, marine fauna avoidance, and stakeholder notifications. Data acquisition will operate 24 hours a day with scheduled shutdowns for maintenance, transit, line turns, and environmental considerations.

Supporting activities will include refuelling, resupply, use of support vessels, and crew changes within the Operational Area. This revised Environment Plan updates the survey timing but retains the original survey methods and location as previously approved by NOPSEMA in April 2024.





1 (Source: DoEE 2019); 2 (Source: DoE 2015, McCauley & Jenner 2010; McCauley & Duncan 2011; Double et al. 2012; Double et al. 2014) 3 (DoE, 2015; CALM 2005, Environment Australia 2002); 4 (Source: DPIRD 2019); 5 (Source: DoEE 2015); 6 (Source: DoEE 2017, CALM 2005, DSEWPaC 2012).

CCWA's submission points

CCWA presents the following grounds for its submission:

1. The Proposal will produce unacceptable impacts to Marine Protected Areas and marine wildlife

CCWA reiterates the concerns it has raised in previous submissions to NOPSEMA relating to offshore seismic surveys in northwest WA. This Proposal, however, is especially significant because it covers a large area, overlapping with or in close proximity to several significant environmental receptors[1], including:

- three Commonwealth Marine Areas;
- five Australian Marine Parks;
- three State Reserves;
- one Nationally Important Wetland;
- 21 Biologically Important Areas;
- habitat critical to the survival of marine turtles;
- 27 Listed Threatened Species;
- 52 Listed Migratory Species;
- 94 Listed Marine Species;

[1] This data derives from a Protected Matters Search for the EMBS area, undertaken 16 October 2025.

- 28 cetaceans; and
- the potential for impact to offshore, near shore, and onshore environmental receptors, including, coral reefs, seagrass communities and mangroves.

The mechanisms for impacts to these environmental receptors include:

- noise impacts causing physical and behavioural changes to marine fauna;
- data gaps, resulting in the downplaying of impacts or under-estimation of risk; and
- other threats, including vessel collisions with marine fauna, and cumulative impacts.

The impacted species list includes several Critically Endangered species, the area of potential impact is large, and the area contains other oil and gas proposals, which could produce cumulative impacts to the environment.

Risks to fauna

The Proposal will impact a large number of conservation significant species. In particular, the Proposal area is likely habitat for two Critically Endangered sea snakes, Endangered marine turtles, an Endangered sawfish and an Endangered whale, amongst a long list of other threatened species likely to use the area (see Protected Matters Search data). The area also contains migratory routes for several species. The risks to these fauna will need to be carefully considered for residual impact, as measured against a range of criteria, including direct and indirect impact, and cumulative impact.

Risks to ecological communities

The Proposal area contains, or will likely produce indirect impacts to, several Marine Parks, habitat critical to the survival of a marine turtle, and a Nationally Important Wetland (Mermaid Reef). The Proposal also contains foraging grounds, which support rich planktonic communities, critical to ecological function of the marine environment.

Overlapping activities causing cumulative impact

Relevant persons consultation listings by CGG (EP pp80-81, 204-205) highlight the possibility of cumulative impact from other overlapping or adjacent oil and gas operators, fisheries, or tourism. It is, therefore, feasible that the Proposal area will include multiple projects or closely scheduled projects. It is also noted that in the Proponent's consultations with other oil and gas operators, timing overlap and even operational area overlap could occur and will need to be negotiated with other operators. Simultaneous activities have the potential to produce additional and cumulative risks that will need to be further assessed.

Migratory route and other critical breeding activity timing

The Proposal is set to commence January and conclude end of May. This period of activity coincides with the Pygmy Blue Whale April-May migration, peak spawning of several demersal fish[2], seabird foraging, Flatback Turtle internesting, and nesting periods of Loggerhead Turtle.

[2] DPIRD data, presented at the Fishing Futures Forum 20 October 2025, shows key indicator species spawning biomass to have dropped below acceptable threshold levels and that the Kimberley demersal scalefish resource is in decline and at high risk. Current management of the resource is producing unsustainable outcomes.

Impact to wildlife during critical migratory or breeding periods needs to be carefully assessed and strategies to eliminate risk applied.

Noise impacts

The Proposal will include seismic blasting producing sound pressures up to 255 dB SPL (EP p150). This level is sufficient to cause impacts to a wide range of species. A more comprehensive evaluation of the impacts to different species over distance is necessary to define risk. Nevertheless, other seismic surveys have presented modelling to show that sound pressures can remain relatively high over significant distances (e.g., at 100km). The impacts to immobile or slow-moving species will require more careful consideration in any site-specific risk assessment.

CCWA has previously presented scientific evidence demonstrating that seismic testing can impact species that will be using the Proposal's acquisition area, operational area or other nearby zones of potential impact. The impact to wildlife is not in dispute by the Proponent, however, CCWA asserts that the risks continue to be downplayed, cumulative impacts are inadequately considered, and the measures proposed to avoid or mitigate harm are insufficient. CCWA is particularly concerned that data gaps are being overlooked and uncertainties of knowledge disregarded.

In summary, the literature (post 2017; and as previously presented to NOPSEMA) establishes:

- There are risks to many species of marine mammals from seismic activities due to their reliance on acoustics to communicate, locate food, and navigate.[3]
- Humpback whales exposed to vessels towing seismic air gun arrays showed a reduction in their social interactions. Current mitigation strategies and recommendations were insufficient to prevent detrimental effects.[4]
- Humpback whales avoided non-threatening noise stimulus from seismic air gun noise. That is, they were changing their movement behaviours in response to seismic noise.[5]
- There are uncertainties in the magnitude of impacts from seismic testing to cetaceans, fish, and invertebrates.[6]
- Higher noise intensities and shallower waters increased the risks to immobile invertebrates (e.g., molluscs).[7]

[3] Hückstädt et al. (2020). A dynamic approach to estimate the probability of exposure of marine predators to oil exploration seismic surveys over continental shelf waters. *Endangered Species Research 42*: 185–199.

[4] Dunlop et al. (2020). Ships and air guns reduce social interactions in humpback whales at greater ranges than other behavioural impacts. *Marine Pollution Bulletin 154*.

[5] Dunlop et al. (2018). A behavioural dose-response model for migrating humpback whales and seismic air gun noise. *Marine Pollution Bulletin 133*, pp 506-516.

[6] Przeslawski et al. (2018). An integrated approach to assessing marine seismic impacts: Lessons learnt from the Gippsland Marine Environmental Monitoring project. *Ocean & Coastal Management 160*, pp 117-123.

[7] Webster, F J, Wise, B S, Kemps, H, and Fletcher, W. (2018). *Risk Assessment of the potential impacts of seismic air gun surveys on marine finfish and invertebrates in Western Australia.* Department of Primary Industries and Regional Development, Perth. Report 288.

- Exposure to air gun signals damaged rock lobsters mechanosensory organs, impairing complex reflexes, including righting reflex.[89]
- Seismic survey operations can result in acute and chronic impacts to a variety of marine taxa.[1011]
- Synergistic, additive, or antagonistic interactions between seismic sound impacts and other stressors have not been studied. Single stressors related to sound exposure may show no effects in isolation but when combined with other stressors (e.g., temperature, food competition) effects may become pronounced.[12]
- Sea snakes are sensitive to low frequency sounds. More research is required to further assess the vulnerability of sea snakes to anthropogenic noise.[13]
- Visual monitoring for large marine fauna during seismic surveys is unreliable and further targeted research on the effects of seismic surveys to marine fauna is needed.[14]

Moreover, Affatati and Camerlenghi's (2023)[15] systematic literature review on the effects of marine seismic surveys on free-ranging fauna established that most studies focused on the effects on marine mammals, but with a lack of research on diverse animal taxa, and no research to compare the effects on different taxa along the food chain. CCWA is particularly concerned by the findings of impact to zooplankton and the possible risks to ecosystem dynamics, and the scarcity of data for impact to sea snakes. Impact to sea snakes from seismic blasting could be especially pertinent given the likely presence of several species of sea snake in the EMBA, two of which are listed as Critically Endangered, and the relative absence of data on the causes of decline in these species.[16]

CCWA asserts that it is likely that some species will be unacceptably impacted by seismic blasting, at the noise levels anticipated, and particularly if the species migration, breeding, or foraging grounds are in close proximity to the operational areas.

[8] Day, R.D.; McCauley, R.D.; Fitzgibbon, Q.P.; Hartmann, K.; Semmens, J.M. (2019). Seismic air guns damage rock lobster mechanosensory organs and impair righting reflex. *Proc. R. Soc. B., 286*

[9] Day et al. (2022). The impact of seismic survey exposure on the righting reflex and moult cycle of Southern Rock Lobster (Jasus edwardsii) puerulus larvae and juveniles. Environmental Pollution 309.

[10] McCauley, Robert D., Mark G. Meekan, and Miles J. G. Parsons. (2021). Acoustic Pressure, Particle Motion, and Induced Ground Motion Signals from a Commercial Seismic Survey Array and Potential Implications for Environmental Monitoring. *Journal of Marine Science and Engineering* 9, no. 6: 571.

[11] Kavanagh, A.S.; Nykänen, M.; Hunt, W.; Richardson, N.; Jessopp, M.J. (2019). Seismic surveys reduce cetacean sightings across a large marine ecosystem. *Sci. Rep. 9*.

[12] Carroll, A.; Przeslawski, R.; Duncan, A.J.; Gunning, M.; Bruce, B. (2017). A critical review of the potential impacts of marine seismic surveys on fish & invertebrates. *Mar. Pollut. Bull. 114*, pp9–24.

[13] Chapuis, L.; Kerr, C.C.; Collin; Hart, N.S.; Sanders, K.L. (2019), Underwater hearing in sea snakes (Hydrophiinae): First evidence of auditory evoked potential thresholds. *J. Exp. Biol. 222*.

[14] Elliott, B. W. et al. (2019). Critical information gaps remain in understanding impacts of industrial seismic surveys on marine vertebrates. *Endangered Species Research 39* pp 247–254.

[15] Affatati, A. and Camerlenghi, A. (2023). Effects of marine seismic surveys on free-ranging fauna: a systematic literature review. *Front. Mar. Sci. 10*: 1222523. doi: 10.3389/fmars.2023.1222523

[16] Somaweera R, Udyawer V, Guinea ML, Ceccarelli DM, Clarke RH, Glover M, Hourston M, Keesing J, Rasmussen AR, Sanders K, Shine R, Thomson DP and Webber BL. (2021). Pinpointing Drivers of Extirpation in Sea Snakes: A Synthesis of Evidence From Ashmore Reef. *Front. Mar. Sci. 8:*658756. doi: 10.3389/fmars.2021.658756

Data gaps and use of the precautionary principle

The Proponent acknowledges data gaps in regard to benthic biological communities in the deeper parts of the bioregion (EP p32). Without this data, it is impossible to accurately define the risks from the proposed activities. Furthermore, CCWA highlights the data gaps as identified in the cited literature, especially for sea snakes and wider ecosystem effects.

Australian environmental law operates with precaution as a guiding principle. Accordingly, where there are knowledge gaps and uncertainties in the risks or impacts to the environment, and where all the information needed to make a decision is limited, a conservative approach should be applied to environmental assessment and decision-making. That is, where science is unable to provide the necessary insights needed to adequately protect the environment, action should be taken to avoid the possibility of environmental harm. Within the context of the Proposal, this would equate to delaying decision-making until such time as more data becomes available; until such time that risks can be conclusively established as insignificant; or until such time as alternative technologies or practices are available to mitigate harm.

CCWA highlights the unknown and uncertain impacts to a wide range of marine wildlife and the broader ecosystem-wide effects from the Proposal and asserts the need to apply the precautionary principle.

Emergency response times

The Proposal emergency response is guided by the NatPlan criteria (Fig 2-2 of the EP). While this response plan is designed primarily for the oil and gas extraction phase of operations and to address oil spills, CCWA was not able to clearly ascertain from the information provided the response time frames that would apply, in the event of a significant environmental event, or how an adverse wildlife event, for example, due to the seismic activities, would be reported or managed.

Vessel collisions with marine fauna

The Proposal includes the provision for pre-start visual and acoustic monitoring, soft starts and stop work procedures if marine fauna is sighted. However, as CCWA has previously noted, Elliot et al., (2019)[17] state that visual monitoring for large marine fauna during seismic surveys is unreliable.

> *Important issues exist with these standards [for wildlife avoidance], such as the ineffectiveness of visual monitoring in poor visibility conditions (e.g. low light, fog) and the practicability of exclusion zones due to difficulties detecting animals below the ocean's surface, in rough seas, or as a result of observer bias (Compton et al. 2007, Weir & Dolman 2007). Passive acoustic monitoring can be used to detect the presence of vocalizing cetaceans near airguns (Weir & Dolman 2007); however, cessation of vocalization is one of the documented responses to airguns (Blackwell et al. 2015). (p250)*

CCWA rejects visual monitoring as a reliable method for the protection of marine fauna from the Proposal's operations and highlights the need for review of the method.

[17] Elliott, B. W. et al. (2019). Critical information gaps remain in understanding impacts of industrial seismic surveys on marine vertebrates. *Endangered Species Research 39* pp 247–254. n039p247 (1).pdf

Cumulative and holistic assessments

In its consultations with other oil and gas industry proponents, CGG highlighted that the Proposal could also be operating in proximity to other proponent led seismic survey operations. The cumulative impacts of these and other aspects of offshore projects (e.g., from drilling operations, spills, emissions, etc.) are not discussed in any detail in the EP.

Furthermore, synergistic, additive, or antagonistic interactions between seismic sound impacts and other stressors has not been studied. Single stressors related to sound exposure may show no effects in isolation but when combined with other stressors (e.g., temperature or food competition) effects may become pronounced (Carroll et al, 2017). CCWA argues that additional pressures to reef and other ocean ecological systems, including sea level rises; changes in sea temperature; and ocean acidification, resulting from climate change, marine debris, physical habitat modification, oil production, and invasive species (in accordance with DCCEEW 'sprat' identified pressures), should also be considered in environmental assessments for all offshore oil and gas activities.

2. The Proposal is to support the extraction of oil and gas or for carbon storage activities

The Proposal is for a marine seismic survey to inform oil and gas exploration activities.

Climate change is having profound consequences for flora and fauna across multiple taxa and trophic levels in WA, with mortality thresholds increasingly surpassed and threatening the persistence of populations.[18] [19] [20] The WA EPA acknowledges that "some WA ecosystems, including coral reefs, kelp forests, Karri and Jarrah forests, are already at critical thresholds and further warming will result in damage and loss that is irreversible."[21]

To confront climate change in an urgent and decisive manner, there should be a rapid phase out of fossil fuels and no new approvals for new or extended fossil fuel projects. The IPCC states that "projected CO_2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C",[22] while the International Energy Agency notes that no new oil and gas fields are needed on the path to net-zero emissions by 2050.[23]

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[18] Ruthrof, K., Breshears, D., Fontaine, J., Froend, R., Matusick, G., Kala, J., Miller, B., Mitchell, P., Wilson, S., van Keulen, M., Enright, N., Law, D., Wernberg, T. and Hardy, G., (2018). 'Subcontinental heat wave triggers terrestrial and marine, multi-taxa responses'. *Scientific Reports*, 8(1).

[19] Enright, N., Fontaine, J., Bowman, D., Bradstock, R. and Williams, R., (2015). Interval squeeze: altered fire regimes and demographic responses interact to threaten woody species persistence as climate changes. *Frontiers in Ecology and the Environment*, 13(5), pp.265-272.

[20] Breshears, D., Fontaine, J., Ruthrof, K., Field, J., Feng, X., Burger, J., Law, D., Kala, J. and Hardy, G., (2021). 'Underappreciated plant vulnerabilities to heat waves'. *New Phytologist*, 231(1), pp.32-39.

[21] WA Environmental Protection Authority (2023). *Environmental Factor Guidelines: Greenhouse Gas Emissions.* Available at: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-GHG-Emissions%20-%20April%202023.pdf

[22] IPCC (2023). *AR6 Synthesis Report: Climate Change 2023.* Available at: https://www.ipcc.ch/report/ar6/syr/.

[23] International Energy Agency (2021). *Net Zero by 2050: A Roadmap for the Global Energy Sector.* Available at: https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf

The WA EPA has stated that it is in the public interest to mitigate greenhouse gas (GHG) emissions, noting that global warming should be limited to no more than 1.5°C and that WA requires deep, substantial and sustained emissions reductions this decade.[24] Despite this, some of the biggest fossil fuel projects in the world continue to be recommended for approval in WA.[25]

The implementation of Australia's obligations under the Paris Agreement requires that closer consideration be given to development proposals that contribute to climate change (both directly and indirectly) and that will produce environmental conditions that impact biodiversity.

OUTCOMES SOUGHT

The Proposal is in proximity to a number of sensitive environmental receptors. The risks from seismic blasting in proximity to marine mammal migratory routes, fish spawning areas, coral reefs and threatened species' habitat are insufficiently addressed, and data gaps exist for the effects of seismic activities on some species and ecological systems. In light of this and the other concerns raised, CCWA submits that NOPSEMA not accept the current EP.

CCWA thanks NOPSEMA for the opportunity to provide comment on Sauropod 3D Marine Seismic Survey by CGG Services (Australia) Pty Ltd.

Please do not hesitate to contact CCWA should you wish to discuss this submission further.

Yours sincerely

Dr Kelly Duckworth
Policy and Research Manager
Conservation Council WA Inc.

[24] WA Environmental Protection Authority (2023). *Environmental Factor Guidelines: Greenhouse Gas Emissions.* Available at: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-GHG-Emissions%20-%20April%202023.pdf

[25] For example see, Environmental Protection Authority (2022). *EPA Report 1727 North West Shelf Extension Project - Assessment Report.* Available at: https://www.epa.wa.gov.au/sites/default/files/EPA_Report/EPA%20Report%201727%20-%20North%20West%20Shelf%20Extension%20Project%20-%20assessment%20report.pdf