20 June 2022

Sauropod Marine Seismic Survey

Environment Plan Revision - Invitation for Consultation

Introduction

CGG Services Australia (CGG) is proposing to undertake the Sauropod 3D marine seismic survey (MSS), which covers an approximate area of 6,000 km^2 off the north-west coast of Western Australia. The purpose of the Sauropod 3D MSS is to collect 3D geophysical data about the underlying rock types to inform oil and gas exploration in exploration permit area WA-527-P, which is located on the North West Shelf in the Roebuck Basin (Figure 1).

An Environment Plan (EP) for this activity was accepted by NOPSEMA on 16 February 2022. The accepted EP determined that the survey would be completed between the 1 January and 31 May 2022. However, CGG is now planning to conduct the survey between the 1 January and 31 May 2023 or 2024.

The EP revision therefore comprises a change in year. The time of year (survey window) and other survey details, including location, survey acquisition parameters and control measures to mitigate potential environmental and social impacts will not change. These are summarised below for reference. The EP revision will also incorporate any change to relevant legislation and other considerations.

CGG is inviting inputs from relevant persons regarding this revision to the proposed activity, in particular how it may affect your functions, interests and activities in the area. Notification of any change to contact details would also be appreciated.

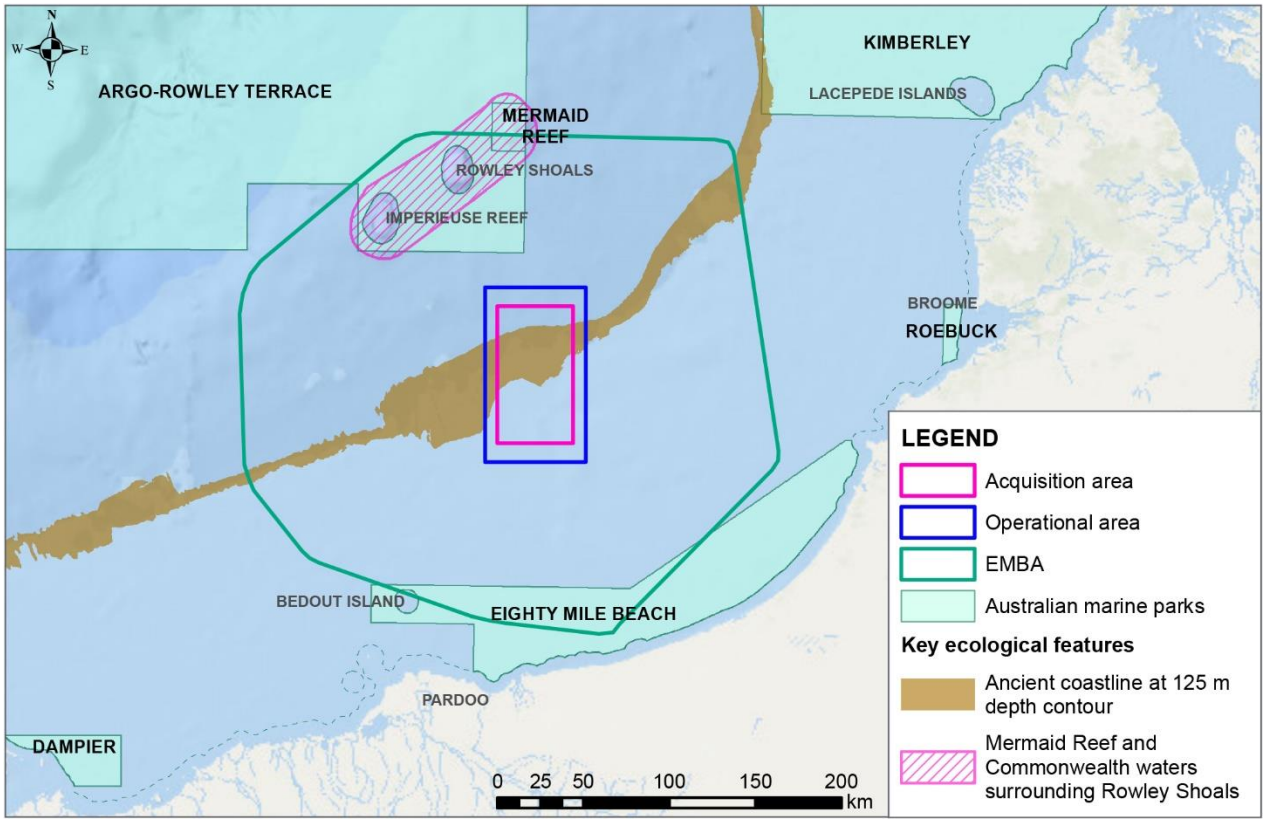

Figure 1 The Sauropod MSS Acquisition and Operational Areas

Table 1 Proposed changes to the Environment Plan

Aspect	Accepted EP	Proposed by CGG
Activity window	1 January – 31 May 2022	1 January – 31 May 2023 or 2024
Source volume	2820 in^3 (approx. 10% smaller array volume)	No change
Distance between sail lines	675 – 716 m (approx. 35-40% reduction in line density)	No change
Distance between streamers	112.5 m (broader receiver array to reduce line number)	No change
Distance from seismic vessel bow to tail	8,000 m	No change
Acquisition Area (area where the seismic source will operate at full volume)	Approximately 3,500 km^2	No change
Operational Area (area where vessel commences run-in and acoustic soft-start procedure)	Approximately 6,000 km^2	No change

Timing

The Sauropod 3D MSS will take a maximum of 60 days to acquire. The precise timing of the survey within the survey window is subject to vessel availability, weather conditions and other operational considerations. The final timing of the survey will be communicated to stakeholders in advance of the survey commencing. The proposed schedule and temporal window for the Sauropod 3D MSS takes into account:

- The timing of sensitive periods for key environmental and socio-economic receptors;
- The hearing ability and sensitivity of those receptors to sound from the seismic survey;
- The proximity of sensitive areas to the seismic survey area;
- The likely presence of all life stages of protected species, based on their known distribution and range;
- Species vulnerability / conservation status;
- The potential for impacts to protected, commercially and ecologically important species, at an individual level and at a population level;
- Potential for effects on existing fishing activities in the survey area.

The proposed survey timing was selected primarily to avoid the humpback whale migration through the region (June to October), as well as to reduce potential exposure of pygmy blue whales during their migrations through the Operational Area (April – August and October – December). The spawning periods of the many different key indicator fish species for the commercial fisheries active in the region extend throughout the majority of the year but can vary significantly between species. It is noted that most indicator species spawn between October and March, April or May. Analysis of DPIRD FishCube data for the fisheries monthly catch and effort since 2014 indicates very low levels of fishing effort in the survey area. Where available the latest year of fisheries data will be included in the EP revision.

Survey details

The seismic survey vessel will tow the seismic source array with a total volume up to approximately 2,820 in^3 at 5-10 m beneath the sea surface. Twelve hydrophone streamers, each up to 7.05 km long and spaced 112.5 m apart, will be towed behind the vessel at a depth of approximately 18 m beneath the sea surface. When acquiring data, the vessel will travel at approximately 4.5 knots, discharging the seismic source approximately every 12.5 m (5.4 seconds).

The seismic survey vessel will typically acquire seismic data along a series of adjacent and parallel lines in a “race-track” pattern. At the end of each line, the vessel will turn in a wide arc to position for another parallel line in the opposite direction, offset approximately 1,350 – 1,432 m from the previous line. This pattern is repeated until the required coverage is completed. The vessel will sail lines that have a north-south orientation.

Environment Plan

In accordance with the OPGGS (E) Regulations, CGG will submit the revised EP to NOPSEMA for reassessment. The revised EP will include all records of stakeholder consultation and an assessment of the environmental impacts and risks of the activity, control measures to manage the potential environmental impacts and risks to levels that are as low as reasonably practicable (ALARP) and acceptable.

Environmental Impact Assessment

The EP revision will include a review of potential impacts, risks and associated management measures described in the accepted EP. Key environmental management measures previously adopted for the survey are summarised below.

Environmental Sensitivities

The biological sensitivities for marine fauna that are expected to occur within the Operational Area and wider environment that may be affected by hydrocarbon spills (EMBA) are shown in Table 2.

Table 2 Timing of Key Biological Sensitivities Relevant to the Operational Area and Wider EMBA

Sensitivity	J	F	M	A	M	J	J	A	S	O	N	D
Proposed Sauropod 3D MSS timing												
Humpback whale (north migration)[1]												
Humpback whale (south migration)[1]												
Pygmy blue whale (north migration)[2]												
Pygmy blue whale (south migration)[2]												
Whale shark foraging[3]												
Goldband snapper spawning (Pilbara stock)[4]												
Rankin cod spawning[4]												
Red emperor spawning[4]												
Blue-spotted emperor spawning[4]												
Giant ruby snapper spawning[4]												
Other demersal fish species spawning[4]												
Blacktip shark breeding[4]												
Sandbar shark breeding[4]												
White-tailed tropicbird foraging[5]												
Lesser frigatebird foraging[5]												
Flatback turtle internesting[6] (within EMBA only)												
Spanish mackerel spawning (Pilbara stock)[4]												
Peak period												

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).

Underwater sound

No change in survey acquisition parameters will be made to the proposed survey and therefore no change in noise emission profiles are expected. Associated management measures previously adopted include mitigation recommended in the Department of Fisheries (2013) *Guidance statement on undertaking seismic surveys in Western Australian waters*:

- Precaution and observation zones, pre-start observations, soft-start procedures, low-power and shut-down procedures and night-time and low visibility procedures, in compliance with Environment Protection and Biodiversity Conservation (EPBC) Act Policy Statement 2.1
- Marine fauna observers on board the survey vessel during the survey
- Notifications and regular updates on the location of the seismic survey vessel to assist fishers in avoiding the temporary area of ensonification.

Cumulative impacts of seismic surveys

Cumulative impacts from seismic surveys could occur when the spatial footprint of impacts from another survey overlaps that of the Sauropod 3D MSS, thereby affecting the same receptors on multiple occasions. Associated management measures previously adopted in the accepted EP include:

- Development of a concurrent operations plan for any concurrent surveys identified within 40 km of the Acquisition Area
- Minimum separation distance of 40 km shall be maintained between the Sauropod 3D MSS seismic sources and other operating seismic sources (none identified at this point).

Interactions with commercial fishing, shipping and other marine users

Measures previously adopted for management of interactions with other marine users include:

- Stakeholder consultation and notifications prior to commencement of the survey, during the survey and upon completion of the survey.
- Notice to Mariners issued prior to the survey.
- Maintaining a 24-hour visual, radio and radar watch.
- Tail buoys of the towed hydrophone streamers fitted with lights and radar reflectors and AIS.
- Vessels will maintain appropriate lighting and communication at all times, in compliance with Navigation Act 2012 and associated Marine Orders.
- Making regular vessel operations ‘look-ahead’ reports available to stakeholders throughout the survey to advise the location of the operating survey vessel and where it is planned to go next.
- Use of a support vessel when safe to do so.

Interactions with marine fauna

Measures previously adopted for management of interactions with marine fauna include:

- Vessels will not exceed a speed of six knots within the caution zone of a cetacean, in accordance with EPBC Regulations 2000 – Part 8 Division 8.
- Tail buoys on towed hydrophone streamers will be fitted with turtle guards.

Biosecurity management

Measures previously adopted for management of biosecurity risks include:

- Biofouling and ballast discharges will be managed in accordance with International Maritime Organisation guidelines and Australian government requirements.

Vessel Waste and discharges

Measures previously adopted for management of vessel waste and discharges include:

- Waste discharges and emissions will be managed in accordance with the requirements of the Protection of the Sea (Prevention of Pollution from Ships) Act 1983 and the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).
- All vessels will have Shipboard Oil Pollution Emergency Plans.
- Oil spill contingency planning will be managed in accordance with AMSA requirements under the National Plan for Maritime Environmental Emergencies.

Relevant persons consultation

CGG is committed to consultation with all relevant stakeholders regarding the survey. Interested stakeholders will have the opportunity to participate in consultation throughout the stakeholder consultation period. If you would like to comment, or would like additional information, please do not hesitate to contact us using the details below.

Please advise if you do not want to receive further updates on this project or do not consider this project relevant to your interests, functions or activities.

CGG has endeavoured to reach all relevant persons but recognises that further persons may self-identify or come to our attention in coming weeks. Please advise CGG, or pass this update on, if you are aware of any other relevant parties whose interests, functions or activities may be affected by the survey.

Coordinates of the proposed survey are provided in Table 3.

Table 3 Coordinates of the Sauropod MSS Acquisition and Operational areas (GDA 94)

Operational Area		Acquisition Area	
Latitude	Longitude	Latitude	Longitude
-17° 55’ 47.93”	120° 3’ 24.12”	-18° 1’ 49.19”	119° 59’ 24.25”
-18° 50’ 45.74”	120° 4’ 22.48”	-18° 44’ 52.37”	120° 0’ 8.93”
-18° 51’ 15.77”	119° 31’ 2.71”	-18° 45’ 14.87”	119° 35’ 4.56”
-17° 56’ 16.4”	119° 30’ 14.87”	-18° 2’ 10.75”	119° 34’ 26.08”

Contact CGG

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