

Sequoia 3D Marine Seismic Survey

1. Purpose of this report

NOPSEMA has accepted the Sequoia 3D Marine Seismic Survey environment plan (the EP) submitted by ConocoPhillips Australia SH1 Pty Ltd (the titleholder) for a seismic survey activity in the Otway Basin within the period 10 August – 31 October 2021.

As required by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (the Environment Regulations), the public was provided with an opportunity to comment on the EP. After this period, ConocoPhillips Australia SH1 Pty Ltd took into account public comments and prepared a Report on Public Comment which is published on NOPSEMA's website¹.

Following the public comment period, the titleholder submitted the EP for assessment by NOPSEMA on 11 February 2021. NOPSEMA has since completed its assessment of the EP and has determined that it is satisfied that the EP meets the criteria for acceptance² on 10 August 2021.

This report explains how NOPSEMA took into account comments received from the public during the public comment period in making its decision³. Comments have been grouped into 'matters' and 'claims' that capture the key issues, concerns or new information provided during the public comment process. This report also contains other 'key matters' that may be of interest to the public identified during the assessment process.

This report accompanies the accepted Sequoia 3D Marine Seismic Survey environment plan, Revision 5 submitted by ConocoPhillips Australia SH1 Pty Ltd, which is available on the NOPSEMA website and should be referred to for further information.

1.1. Information relevant to NOPSEMA's decision:

In making the decision to accept this EP, NOPSEMA took into account:

- the Environment Regulations;
- NOPSEMA Assessment Policy (PL0050), Environment Plan Assessment Policy (PL1347) and Environment Plan Decision Making Guidelines (GL1721);
- the Sequoia 3D Marine Seismic Survey environment plan;
- the information raised by relevant persons, government departments and agencies that is relevant to making a decision;
- the information raised through public comment that is relevant to making a decision;
- There were 341 public comment submissions received during the public comment period with issues raised predominantly in relation to the key matters outlined in the below report;

¹ Titleholder report on public comments – Sequoia 3D Marine Seismic Survey, dated: February 2021

² Environment Regulations, Regulation 10A Criteria for acceptance of environment plan

³ Environment Regulations, Regulation 11(3) Publication of notice, etc.

- relevant plans of management and threatened species recovery plans developed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and relevant guidance published by the Department of the Environment and Energy.

2. Next steps

Responsibility for the ongoing environmental performance of the seismic survey activity remains, at all times, with ConocoPhillips Australia SH1 Pty Ltd.

NOPSEMA has legislated responsibilities to inspect and investigate offshore petroleum and greenhouse gas storage activities, and to enforce compliance with environmental law. These functions will be applied to this activity in accordance with NOPSEMA's policies.

3. Sensitive Information

Sensitive information received during the public comment period, such as the names and contact details of commenters and specific information identified by the commenter or relevant person as 'sensitive', is not published in this report. Sensitive information is contained in a sensitive information part of the EP which has been considered by NOPSEMA during its assessment process.

4. Further information

If you would like further information about the activity, please contact the titleholder's nominated liaison person specified in the EP and on NOPSEMA's webpage for the Sequoia 3D Marine Seismic Survey.

If you would like to be notified of regulatory information on the activity, such as start and end dates and enforcement actions (if any), please subscribe to updates from the [Underway Offshore page](#) on NOPSEMA's website.

How NOPSEMA has taken into account key matters raised during public comments, the assessment and decision making process for the Sequoia 3D Marine Seismic Survey EP

#	Issues raised	Titleholder response	NOPSEMA's assessment and decision
1	<p>Matter:</p> <p>There would be unacceptable losses of giant crab and future catches resulting from the survey.</p> <p>Claim: Claims were made that seismic pulses will kill giant crab, including larvae, resulting in future economic losses to the giant crab commercial fishery.</p> <p>Some stakeholders requested that the south west corner of the operational area be excised from the survey, which would remove the impact of the seismic activity from a significant part of the Tasmanian giant crab fishery.</p>	<p>ConocoPhillips response after public comment:</p> <p>ConocoPhillips Australia undertook an assessment of the publicly available information, commissioned a report by South East Trawl Fishery Association (SETFIA), and undertook consultation with relevant government departments and other relevant persons with commercial fishing interests.</p> <p>The assessment undertaken found that the acquisition area overlaps 1.1% of the Tasmanian giant crab commercial fishery. Over the last 10 years, an average annual catch of 7.4 tonnes has been caught from the survey area, representing 39% of the fishery's total annual catch.</p> <p>Based on available literature, it was concluded that the key commercial catch areas mostly targeted by the giant crab fishery was at water depths of 140-300m, which is in the southwestern corner the acquisition area (Figure 1.1) and over the southern-most lead (Figure 2.1).</p>	<p>NOPSEMA's assessment based on final version of EP:</p> <p>NOPSEMA recognises that there is the potential for the activity, if not appropriately managed, to have unacceptable impacts on the giant crab (GC) stock and the fishery it supports.</p> <p>In making a decision regarding this matter, NOPSEMA took into account EP content, relevant scientific literature; views expressed by relevant persons, including the Department of Primary Industries, Parks, Water and Environment and NOPSEMA's Decision Making Guidelines (GL1721).</p> <p>The EP has defined acceptable levels of impact that are consistent with fisheries management objectives.</p> <p>During its assessment, NOPSEMA also raised matters with ConocoPhillips relating to the evaluation of impacts on the GC stock and how the proposed GC habitat survey excision area would be effective in ensuring that impacts to GC will be of an acceptable level. In response to this matter, ConocoPhillips committed to excising a</p>

		<p>Jasco Applied Sciences was commissioned to undertake acoustic modelling at these water depths to determine the distance to 'no-effect' for benthic crustaceans (Appendix 15). This modelling work concluded the distance to 'no-effect' being a 425 m buffer along the 130 m contour and a 455 m buffer along the 300 m contour.</p> <p>In response to consultation, ConocoPhillips Australia has redesigned the Sequoia 3D marine seismic survey (MSS) such that the 140-300 m water depths have been excised. The excise area combined with the abovementioned buffers has resulted in a loss of 4.9% of the original acquisition area. The excise area and the buffers still allow for acquisition in the remaining southwest section of the acquisition area where giant crab fishing does not occur but does compromise data capture objectives on the southern-most lead.</p> <p>This is discussed in the 'Evolution of the Survey Design' in Section 2.6 of the EP.</p> <p>The control measures adopted in response to this claim include:</p>	<p>larger area of GC habitat in the south-west corner of the acquisition area that encompasses and protects important GC habitat outside of the fished area.</p> <p>Given ConocoPhillips' commitment to excise a larger area of GC habitat from the acquisition area, NOPSEMA is reasonably satisfied that impacts of underwater noise on GC will be of an acceptable level.</p>
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		<ul style="list-style-type: none"> Excising the giant crab fishery area (140-300 m plus buffers) from the acquisition area. The adoption of ConocoPhillips' Compressive Seismic Imaging (CSI) technology (Section 2.4.1). Using a maximum acoustic array of 3,480 cui. 	
2	<p>Matter: The ecology of the southern rock lobster (SRL) and giant crab (GC) particularly breeding and larval release was insufficiently described.</p> <p>Claim: Claims were made that an insufficient description of the ecology of these species means that the timing of the survey has not been optimised to avoid impacts.</p>	<p>ConocoPhillips Australia examined these claims and included additional information on the ecology of southern rock lobster and giant crab to the EP (Section 5.5.1).</p> <p>Key life phases for these species is as follows:</p> <ul style="list-style-type: none"> Southern rock lobster (<i>Jasus edwardsii</i>) – mate from April to July, fertilized eggs carried for 4-6 months before being released between September and November. The larvae (phyllosoma) then live in the plankton and undergo 11 developmental stages over 12-24 months while being carried by ocean currents, often far beyond the continental shelf. The phyllosoma then moult and metamorphose into a puerulus larvae, still living in the water column and then settle on reef in shallower waters, moulting again into pigmented juvenile lobsters. In adults, moulting generally occurs in September and 	<p>NOPSEMA recognises that there was concern from fisheries stakeholders about the timing of the activity overlapping sensitive periods for SRL and GC and the potential ecological consequences of underwater noise on SRL and GC ecology.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of the EP, NOPSEMA's Decision Making Guidelines (GL1721), the full text correspondence with relevant persons (presented to NOPSEMA in the sensitive information report) and how ConocoPhillips addressed the merits of objections and claims made by SRL and GC fisheries stakeholders.</p> <p>NOPSEMA acknowledges the potential overlap with sensitive life stages for SRL and GC and required ConocoPhillips to provide further information on SRL and GC ecology to inform the evaluation of impacts presented in the EP.</p>

		<p>key receptors at risk during a diesel spill, noting that these risks are 'low' for each receptor.</p> <p>The control measures adopted relevant to this claim include:</p> <ul style="list-style-type: none"> • Adopting ConocoPhillips vessel selection procedure (as described in Section 2.5.1). • Implementing the vessel's planned maintenance system. • Applying a Permit to Work and Job Hazard Analysis system for bunkering events. • Ensuring sufficient emergency response capability is in place. 	
9	<p>Matter: Tasmania's and King Island's 'clean and green' reputation is at risk.</p> <p>Claim: Claims were made that the Sequoia 3DMSS will damage Tasmania's and King Island's 'clean and green' reputation and tourism credentials.</p>	<p>ConocoPhillips Australia is cognisant of the marketability of Tasmania's and particularly King Island's image as a 'clean and green' area in which to fish, given the low human population in the region and relative absence of polluting industries.</p> <p>Figure 2.2 of the EP presents maps of the numerous 2D and 3D MSS that have occurred around King Island, which have not damaged King Island's current 'clean and green' reputation.</p>	<p>NOPSEMA recognises that there was concern from relevant persons, particularly residents of King Island, that the activity could impact on their functions, activities and interests.</p> <p>In making a decision regarding this matter, NOPSEMA took into account EP content, including impact evaluation and maps showing the proximity of the activity to King Island, the titleholder's consultation process and measures adopted by ConocoPhillips for ongoing consultation with relevant persons, including those at King Island. NOPSEMA required</p>

		<p>ConocoPhillips Australia takes its environmental responsibility seriously, and its Sustainable Development Position and Biodiversity Position are included in Section 3.9 of the EP. ConocoPhillips Australia believes these positions are met in the design of the Sequoia 3DMSS, the environmental impact assessment presented in the EP and the controls that will be adopted for the survey. As such, ConocoPhillips Australia believes that the Sequoia 3DMSS will not result in any damage to Tasmania's 'clean and green' reputation.</p>	<p>ConocoPhillips to ensure that relevant person consultation was undertaken with individual tourism operators who may be impacted by the activity. This resulted in ConocoPhillips consulting with charter operators that launch from locations that could access the operational area within a day trip. This included Port Campbell, King Island, Stanley and Apollo Bay. In order to identify charter companies in King Island, ConocoPhillips further engaged with the King Island Yacht Club. ConocoPhillips also engaged with Victoria and Tasmania peak recreational fishing representatives, the King Island Shire Council, King Island Chamber of Commerce (KICC) and the King Island Brand Management.</p> <p>The King Island Shire Council- Brand Management is a committee of King Island Council tasked with protecting and promoting the King Island brand.</p> <p>King Island Brand Management met with ConocoPhillips in May 2021 and discussed relevant considerations including the potential impacts to commercial fishing operators, long term impacts, survey timing, an adjustment protocol and stakeholder engagement. ConocoPhillips have made commitments to continuing ongoing consultation with King Island Brand Management. The EP also provides for ongoing consultations including with fishers, communities and local government bodies at King</p>
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			<p>Island, using methods suited to the circumstances, recognising that Covid-19 restrictions may prevent face-to-face engagement.</p> <p>As seismic surveys are exploratory activities, their results in terms of data about potential hydrocarbon-bearing geology are not certain before activities commence. Results of seismic surveys are among the factors considered by titleholders in deciding whether or not further petroleum activity in an area may be planned. Accordingly, there remains uncertainty as to whether the area of the Sequoia MSS may be the subject of future petroleum activity EPs.</p> <p>Taking into consideration the consultation conducted by ConocoPhillips, the control measures adopted to manage the activity, including the further consultation committed to as part of the fisheries and communities liaison program, and the commercial fisheries adjustment protocol, NOPSEMA is satisfied that ConocoPhillips have fulfilled the consultation requirements of the Environment Regulations.</p>
<p>10</p>	<p>Key Matter: There would be unacceptable impacts on protected matters, specifically southern right whales (SRW).</p>	<p>ConocoPhillips undertook an assessment of the potential impacts of seismic survey noise on SRWs. This was informed by the Conservation Management Plan for the Southern Right Whale (SEWPC, 2012), published studies on the</p>	<p>NOPSEMA recognises the conservation significance of the SRW and the potential for the activity to have impacts on SRW if calving and breeding phases were disturbed, or if whales</p>

		<p>distribution and behaviour of SRWs in the region and the management procedures set out in EPBC Act Policy Statement 2.1 (DEWHA, 2008).</p> <p>ConocoPhillips will ensure that the activity is conducted such that Southern Right Whales continue biologically important behaviours.</p> <p>The control measures originally proposed by ConocoPhillips to ensure that SRWs can continue biologically important behaviours included:</p> <ul style="list-style-type: none"> • Limiting the survey period to the months of August, September and October. • Implementing the EPBC Act Policy Statement 2.1 (Part A) – pre-start visual observations, soft start, start-up delay, stop work and night-time and low visibility procedures). • Implementing the EPBC Act Policy Statement 2.1 (Part B.1) – use of Marine Mammal Observers (MMOs). • Cetacean strategy will be discussed each day to assess all available data on whale presence at the time of the survey. 	<p>come within close proximity to the seismic source and were subject to injurious levels of sound.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of ConocoPhillips EP, views expressed by relevant persons with functions relating to the conservation of the SRW, NOPSEMA's Decision Making Guidelines (GL1721), the Conservation Management Plan for the Southern Right Whale (SEWPC, 2012), EPBC Act Policy Statement 2.1 (DEWHA, 2008), and EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DEWHA, 2013).</p> <p>NOPSEMA considered that the activity avoids the SRW migration period into the region for calving and that any noise received within the coastal calving BIAs will be below adopted behavioural disturbance and injury thresholds. NOPSEMA also considered that the survey avoids the critical period for SRW calving when pregnant females and new calves would be at their most sensitive (AMMC, 2009).</p> <p>To provide confidence that impacts to SRW would be managed so that they are not inconsistent with the SRW Conservation Management Plan and to an acceptable level, NOPSEMA required ConocoPhillips to:</p>
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			<ul style="list-style-type: none"> • Undertake further sound modelling to demonstrate that SRW mothers and calves won't be disturbed within emerging and established biologically important areas for calving and nursing on the Victorian coast. • Apply rigorous SRW detection measures to identify SRW mothers and calves moving toward the survey area and inform decisions on control measures designed to limit behavioural disturbance and prevent injury and/or hearing loss. <p>In response to this, ConocoPhillips committed to the development and implementation of a SRW surveillance program including aerial, vessel and land based observations to inform a marine mammal adaptive management procedure. This also includes a commitment to the establishment of a peer review panel to review the procedure and provide advice during implementation.</p> <p>Given the above, NOPSEMA is reasonably satisfied that ConocoPhillips have provided a detailed evaluation of potential impact on SRWs and demonstrated that with the adoption of control measures the activity can be conducted in a manner that is not inconsistent with the Conservation Management Plan for Southern Right Whales.</p>
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<p>11</p>	<p>Key Matter: The survey may result in unacceptable impacts to commercial fishing, including displacement of commercial fishers, loss of catch or damage to equipment.</p>	<p>ConocoPhillips conducted an evaluation into the ways that other marine users could be affected by the proposed activity. Specifically for commercial fisheries, the potential impacts of interference were identified as:</p> <ul style="list-style-type: none"> • Diversion of commercial fishing vessels resulting in longer sail times and greater fuel consumption • Displacement of commercial fishers from fishing area resulting in longer sail times, greater fuel consumption and changes in catch • Damage to or loss of fishing equipment potentially resulting in change to catch. <p>The evaluation concluded:</p> <ul style="list-style-type: none"> • A maximum deviation of ~7km to get around the seismic vessel (~11 minutes) is unlikely to result in significant longer sail times /fuel consumption. • Potential for multiple displacement events that could be up to several days, however is unlikely to extend to the whole survey period. • Potential for fishing gear to be lost and associated loss of income from the loss of catch. 	<p>NOPSEMA acknowledges the potential for the activity, if not appropriately managed to have unacceptable impacts to commercial fisheries by displacing fishers, reducing catchability of fish and damaging fishing gear.</p> <p>In making a decision regarding this matter, NOPSEMA took into account the content of the EP, NOPSEMA's Decision Making Guidelines (GL1721), the full text of relevant person consultation in the sensitive information report and relevant scientific literature.</p> <p>During the course of the assessment process ConocoPhillips were required to demonstrate the activity and the associated concerns regarding impacts to commercial fisheries could be managed to acceptable levels.</p> <p>In response to this, ConocoPhillips provided an evaluation of the fisheries potentially impacted by the activity, the recent catches within those fisheries, the catches within the operational area, the existing pressures within the fishery and stakeholder concerns.</p> <p>ConocoPhillips also provided clear levels of performance for the key control measure, the commercial fisheries loss adjustment protocol.</p> <p>Taking into consideration the relatively short duration of the acquisition period (~35 days), the proposed control measures, timing of the survey</p>
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		<ul style="list-style-type: none"> • Moderate risk of a change in fish behaviour making the fish potentially less abundant in the area of impact. <p>ConcocoPhilips then provided a comparison of predicted impact with defined acceptable levels and demonstrated that any displacement, loss of gear and catchability impacts would be acceptable based on the control measures in place.</p> <p>Further measures to ensure there is no unacceptable displacement/impact to commercial fisheries as a result of the seismic survey include:</p> <ul style="list-style-type: none"> • Notification of commencement of the survey • Daily 72 hour look ahead for acquisition to assist with planning • Notice to Mariners issued prior to the commencement of the survey • An 'on-water cooperation and interaction protocol for commercial fishers • Pre and during survey visits to Portland, King Island and Norther Tasmania to meet with local fishers • SIMOPS plan with abalone divers on King Island 	<p>to avoid peak fishing seasons for SRL and GC and the fishery compensation plan (loss adjustment protocol), NOPSEMA is satisfied that the potential impacts to commercial fisheries will be of an acceptable level.</p>
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		<p>The adjustment protocol ensures that no fisher is worse off as a result of the Sequoia seismic survey. The scope covers direct losses associated with:</p> <ul style="list-style-type: none"> • Accidental damage or loss of fishing gear • Displacement or increased transit times • Reduced catch per unit effort. 	
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5. References

AMMC. (2009). Report of the Australian Southern Right Whale Workshop, 19-20 March 2009, Australian Antarctic Division, Kingston, Tasmania available at www.marinemammals.gov.au

DEWHA. (2008). EPBC Act Policy Statement 2.1- Interaction between offshore seismic exploration and whales, May, downloaded on 1st November 2008, at <http://www.environment.gov.au/epbc/publications/seismic/pubs/seismic-whales.pdf>

DoE. (2013). Matters of National Environmental Significance – Significant Impact Guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999 available at http://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf

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SEWPC. (2012a). Conservation Management Plan for the Southern Right Whale (2011-2021) at <https://www.environment.gov.au/system/files/resources/4b8c7f35-e132-401c-85be-6a34c61471dc/files/e-australis-2011-2021.pdf>