2 ENVIRONMENTAL REQUIREMENTS

The OPGGS Act provides the regulatory framework for all offshore petroleum exploration, production and greenhouse gas (GHG) activities in Commonwealth waters. The related OPGGS (E) Regulations require titleholders to undertake their petroleum activity in accordance with an EP accepted by NOPSEMA. This EP has been prepared to meet the requirements of the OPGGS (E) Regulations. This section provides information on the requirements that apply to the activity. Requirements include relevant laws, codes, standards, agreements, treaties, conventions or practices (in whole or part) that apply to the jurisdiction in which the activity will take place.

2.1 EPBC Act

The Eureka 3D MSS will take place within Commonwealth waters. Relevant requirements associated with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), related policies, guidelines, plans of management, recovery plans, threat abatement plans, and other relevant advice issued by the Department of Climate Change, Energy, the Environment and Water (DCCEEW; formerly the Department of Agriculture, Water and the Environment) are detailed in Section 4 in the applicable subsections, as part of the description of the existing environment.

2.1.1 Recovery plans and threat abatement plans

Under s139(1)(b) of the EPBC Act, the Environment Minister must not act inconsistently with recovery plans for a listed threatened species or ecological community or a threat abatement plan for a species or community protected under the Act. Similarly, under s268 of the EPBC Act: "A Commonwealth agency must not take any action that contravenes a recovery plan or a threat abatement plan."

In respect to offshore petroleum activities in Commonwealth waters, these requirements are implemented by NOPSEMA via the commitments included in the Streamlining Program. Commitments relating to listed threatened species and ecological communities under the Act are included in the Program Report (Commonwealth of Australia, 2014).

A separate assessment is undertaken to demonstrate that the EP is not inconsistent with any relevant recovery plans or threat abatement plans. The steps in this process are:

- Identify relevant listed threatened species and ecological communities (Section 4.3).
- Identify relevant recovery plans and threat abatement plans (Section 9).
- List all objectives and (where relevant) the action areas of these plans and assess whether these objectives/action areas apply to government, the Titleholder, and the Activity (i.e. the Eureka 3D MSS) (Section 9).
- For those objectives/action areas applicable to the Activity, identify the relevant actions of each plan, and evaluate whether impacts and risks resulting from the Activity are clearly not inconsistent with that action (Section 9).

2.1.2 Australian Marine Parks

Under the EPBC Act, Australian Marine Parks (AMPs), formally known as Commonwealth Marine Reserves, are recognised for conserving marine habitats and the species that live and rely on these habitats. The Director of National Parks (DNP) is responsible for managing AMPs (supported by Parks Australia) and is required to publish management plans for them. Other parts of the Australian Government must not perform functions or exercise powers relating to these parks that are inconsistent with management plans (s362 of the EPBC Act). Relevant AMPs are described in Section 4.4.1. The South-west Marine Parks Network Management Plan (DNP, 2018) describes the requirements for managing the marine parks that are relevant to this EP.

Specific zones within the AMPs have been allocated conservation objectives as stated below (International Union for Conservation of Nature (IUCN) Protected Area Category) based on the Australian IUCN reserve management principles outlined in Schedule 8 of the EPBC Regulations 2000:

- Special Purpose Zone (IUCN category VI) – managed to allow specific activities through special purpose management arrangements while conserving ecosystems, habitats and native species. The zone allows or prohibits specific activities
- Sanctuary Zone (IUCN category Ia) – managed to conserve ecosystems, habitats and native species in as natural and undisturbed a state as possible. The zone allows only authorised scientific research and monitoring
- National Park Zone (IUCN category II) – managed to protect and conserve ecosystems, habitats and native species in as natural a state as possible. The zone only allows non extractive activities unless authorised for research and monitoring
- Recreational Use Zone (IUCN category IV) – managed to allow recreational use, while conserving ecosystems, habitats and native species in as natural a state as possible. The zone allows for recreational fishing, but not commercial fishing
- Habitat Protection Zone (IUCN category IV) – managed to allow activities that do not harm or cause destruction to sea floor habitats, while conserving ecosystems, habitats and native species in as natural a state as possible
- Multiple Use Zone (IUCN category VI) – managed to allow ecologically sustainable use while conserving ecosystems, habitats and native species. The zone allows for a range of sustainable uses, including commercial fishing and mining, where they are consistent with park values.

2.1.3 World heritage properties

Australian World Heritage management principles are prescribed in Schedule 5 of the EPBC Regulations 2000. No management principles are considered relevant to the scope of this EP given there is no potential impacts to any of these areas.

2.2 WA State legislation

Given the proximity of the planned Eureka 3D MSS to the Western Australia state boundary Pilot Energy had regard for the following WA State legislation:

1. Fisheries Resource Management Act 1994 (WA) – this act regulates the management and conservation of fish and fish habitats. The WA Department of Primary Industries and Regional Development (DPIRD) is the regulatory body for this Act, and they were consulted as a relevant person for this EP.
2. Environmental Protection Act 1986 (WA) – This Act provides the framework for environmental protection in Western Australia. It includes provisions for assessing the environmental impact of proposed activities in WA state areas. The Office of the EPA was consulted as a relevant person for this EP.
3. Biodiversity Conservation Act 2016 (WA) – this Act focuses on the conservation of biodiversity, including threatened species and ecological communities. The list of threatened fauna for WA has been checked and there are no additional species that would be relevant to the EMBA or OA. The Department of Biodiversity, Conservation and Attractions (DBCA), as the management agency for this Act, has been consulted as a relevant person for this EP.
4. Aboriginal Heritage Act 1972 (WA) – this Act protects Aboriginal heritage sites in Western Australia. DPLH, as the management agency, has been consulted as a relevant person for this EP.
5. Emergency Management Act 2005 – This Act provides for the DoT functions as the Hazard Management Agency for marine spills.

2.3 Summary of environmental requirements

Table 2-1 provides a summary of requirements that apply to the activity and are relevant to the activity's environmental management, while Table 2-2 summarises the international conventions and agreements of which Australia is a signatory that are relevant to the Eureka 3D MSS. Table 2-3 provides a summary of the relevant industry standards and guidelines considered for Eureka 3D MSS.

Table 2-1: Summary of requirements relevant to the activity

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
Australian Maritime Safety Authority Act 1990	Facilitates international cooperation and mutual assistance in preparing and responding to major oil spill incidents and encourages countries to develop and maintain an adequate capability to deal with oil pollution emergencies.	Under this Act, any hydrocarbon spill to the marine environment, resulting from the survey must be reported. In Commonwealth waters the Australian Maritime Safety Authority (AMSA) is the Statutory Agency for vessels and must be notified of all incidents involving a vessel. Hydrocarbon spill risks are detailed in Section 8	AMSA
Biosecurity Act 2015 Biosecurity Regulations 2016	The objects of this Act are: To provide for managing the following: Biosecurity risks The risk of contagion of a listed human disease The risk of listed human diseases entering Australian territory or a part of Australian territory, or emerging, establishing themselves or spreading in Australian territory or a part of Australian territory Risks related to ballast water Biosecurity emergencies and human biosecurity emergencies To give effect to Australia's international rights and obligations, including under the International Health Regulations, the SPS Agreement and the Biodiversity Convention. Biosecurity Amendment (Biofouling Management) Regulation 2023 served to amend the Biosecurity Regulation 2016 with the following insertion (after paragraph 48(2)(o)): Details of any inspections of the vessel for biofouling, cleaning of biofouling or treatment for biofouling undertaken before the vessel's arrival in Australian territory.	The Biosecurity Act and regulations apply to 'Australian territory', which is the air space over and the coastal seas out to 12 nm from the coastline. Biosecurity risks associated with the survey are detailed in Section 8.	DAFF

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
	Details of any inspections of the vessel for biofouling, cleaning of biofouling or treatment for biofouling intended while the vessel is in Australian territory. Practices included in any plan of biofouling management for the vessel that is currently in use. Details of the voyage history of the vessel in the past 12 months.		
Biosecurity Act 2015	Australian Ballast Water Management Requirements Version 8 (DAWE 2020)	Provides guidance on how vessel operators should manage ballast water when operating within Australian seas to comply with the Biosecurity Act.	DAFF
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act aims to protect the environment, particularly matters of national environmental significance for which Australia has made international agreements. The EPBC Act streamlines national environmental assessment, and approval processes and promotes ecologically sustainable development and conservation of biodiversity. It also provides for a cooperative approach to the management of natural, cultural, social and economic aspects of ecosystems, communities and resources. Section 3A of the Act defines the principles of ecological sustainable development. The following principles are principles of ecologically sustainable development: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation The principle of inter-generational equity -- that the present generation should ensure that the health, diversity and productivity of the	Petroleum activities are excluded from within the boundaries of a World Heritage Area (Sub regulation 10A(f)).	DCCEEW

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
	environment is maintained or enhanced for the benefit of future generations The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making Improved valuation, pricing and incentive mechanisms should be promoted. Petroleum activities must be carried out in a manner consistent with the principles of ecological sustainable development set out in Section 3A of the EPBC Act. Determination of impact and risk Acceptability details that residual risks are ALARP, and the principles of ecologically sustainable development have been met. Assessment of impacts and risks to Matters of National Environmental Significance (MNES) from the survey are described in Section 7 and 8.		
Environment Protection and Biodiversity Conservation Regulations 2000	Provides additional regulations regarding Matters of National Environmental Significance.	Part 8 of the Regulations details requirements for operating vessels and aircraft in relation to cetaceans.	DCCEEW
EPBC Act Policy Statement 2.1 Interaction between offshore seismic exploration and whales	The policy statement encourages industry to minimise the likelihood of seismic activities causing injury or hearing impairment to whales in Australian waters. The aim of this Policy Statement is to: Provide practical standards to minimise the risk of acoustic injury to whales in the vicinity of seismic survey operations. Provide a framework that minimises the risk of biological consequences from acoustic disturbance from seismic survey sources to whales in biologically important habitat areas or during critical behaviours.	The policy statement provides guidance on undertaking seismic activities in Australian waters to limit potential impacts to whales. Section 7 details how the policy statement has been applied to this survey. The policy statement outlines sound exposure criteria for determining appropriate precaution zones and outlines recommended management procedures. Part A of the policy statement outlines standard management procedures, which include: Pre-start-up visual observations Soft-start procedures	

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
	Provide guidance to both proponents of seismic surveys and operators conducting seismic surveys about their legal responsibilities under the EPBC Act (DEWHA, 2008c). Part B of the policy statement outlines additional optional management procedures for consideration for seismic surveys in areas where there is a moderate to high likelihood of encountering whales.	Start-up delay procedures Operations and shut-down procedures Night-time and low visibility procedures.	
Underwater Cultural Heritage (Consequential and Transitional Provisions) Act 2018	This Act protects historic wrecks (and associated relics) in Commonwealth waters that are more than 75 years old. Under this Act, historic shipwrecks are protected for their heritage values and maintained for recreational, scientific and educational purposes.	Anyone who finds the remains of a ship, or an article associated with a ship, needs to notify the relevant authorities, as soon as possible but ideally no later than after one week, and to give them information about what has been found and its location. Refer to Section 4.4.9 for information on historic shipwrecks in relation to the Eureka 3D MSS.	DCCEEW
Navigation Act 2012	Regulates international ship and seafarer safety, shipping aspects of protecting the marine environment and the actions of seafarers in Australian waters. It gives effect to the relevant international conventions (MARPOL 73/78, COLREGS 1972) relating to maritime issues to which Australia is a signatory. The Act also has subordinate legislation contained in Regulations and Marine Orders.	Several Marine Orders are enacted under this Act relating to offshore petroleum activities, including: Marine Order 21: Safety and emergency arrangements Marine Order 27: Safety of navigation and radio equipment Marine Order 30: Prevention of collisions Marine Order 31: Vessel surveys and certification Marine Order 58: Safe management of vessels. Section 7 and Section 8 detail where the applicable requirements apply to the survey.	AMSA
Offshore Petroleum and Greenhouse Gas Storage Act 2006 Offshore Petroleum and Greenhouse Gas Storage	Addresses all licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and development operations extending beyond the three nautical mile limit. Ensures that petroleum activities are undertaken in an ecologically sustainable manner and in accordance with an approved EP.	A titleholder must have an in-force EP prior to the commencement of any petroleum activity. This requirement is met by submission and acceptance of this EP.	NOPSEMA

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
(Environment) Regulations 2023		A significant modification, change or new stage of an existing activity that is not included in an in-force EP requires a revision of the EP to be submitted to NOPSEMA for acceptance. Titleholders are required to maintain financial assurance sufficient to give the titleholder carrying out the petroleum activity, the capacity to meet the costs, expenses and liabilities that may result in connection with carrying out the petroleum activity; doing any other thing for the purpose of the petroleum activity; or complying (or failing to comply) with a requirement under the OPGGS Act in relation to the petroleum activity. This requirement must be met by the titleholder before NOPSEMA can accept the EP.	
Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Act 2003 Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Regulations 2004	An Act to impose levies relating to the regulation of offshore petroleum activities and greenhouse gas storage activities.	Requires that EP levies be imposed on EP submissions, including revisions, NOPSEMA where the activities to which the EP relates are authorised by one or more Commonwealth titles. This requirement applies once the EP is accepted.	
Protection of the Sea (Prevention of Pollution from Ships) Act 1983	Regulates ship-related operational activities and invokes certain requirements of the MARPOL Convention relating to discharge of noxious liquid substances, sewage, garbage, air pollution etc.	Provides for discharges and emissions from ships as per MARPOL Annex I, II, III, IV, V and VI. Several Marine Orders are enacted under this Act relevant to the activity, including: Marine Order 91: Marine pollution prevention – oil Marine Order 93: Marine pollution prevention – noxious liquid substances Marine Order 94: Marine pollution prevention – packaged harmful substances Marine Order 95: Marine pollution prevention – garbage	AMSA

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
		Marine Order 96: Marine pollution prevention – sewage Marine Order 97: Marine pollution prevention – air pollution Marine Order 98: Marine pollution prevention – anti-fouling systems. Provides exemptions for the discharge of materials in response to marine pollution incidents. Requires ships ≥400 gross tonnes to have pollution emergency plans. Section 7 details where the applicable requirements apply to the survey.	
Protection of the Sea (Harmful Antifouling Systems) Act 2006	Is an offence to engage in negligent conduct that results in a harmful anti-fouling compound being applied to a ship. Australian ships must hold 'anti-fouling certificates', provided they meet certain criteria.	If required, a ship must have a current anti-fouling certificate and must not use harmful antifouling compounds. Marine Order 98 Marine Pollution Prevention – anti-fouling systems is enacted under this Act. Section 8 details where the applicable requirements apply to the survey.	AMSA
International Association of Geophysical Contractors (IAGC) Environment Manual for Worldwide Geophysical Operations (2013)	Provides the industry with useful information for conducting geophysical field operations in an environmentally sensitive manner.	Provide guidelines for best practice operations of seismic surveys to minimise environment impacts. Section 7 details applicable guidance.	IAGC
IAGC Mitigation Measures for Cetaceans during Geophysical Operations (February 2015)	Provides recommended mitigation measures for cetaceans during geophysical operations. IAGC recommends implementing the suggested controls (mentioned in the document) in the absence of regulations or guidelines.	Provide recommended mitigation measures for cetaceans during geophysical operations. Section 7 details applicable requirements.	IAGC
International Maritime Organization (IMO) Guidelines for the Control and Management of Ships'	Provide a globally consistent approach to the management of biofouling. They were adopted by the Marine Environment Protection Committee (MEPC) in July 2011 and were the result of three years of consultation between IMO member states	Specific requirements are that vessels have a biofouling management plan and biofouling record book.	IMO

Requirements	Scope (as relevant to this EP)	Application to Eureka 3D MSS	Administering authority
Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) 2011			
Australian Biofouling Management Requirement, Version 2 (DAFF, 2023)	The Australian Biofouling Management Requirements set out vessel operator obligations for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas. These requirements reduce the risk of introducing harmful aquatic organisms into Australia's marine environment through biofouling from vessels. These requirements are enforceable under the *Biosecurity Act 2015*.	Assists in the identification of potential risks to the project area and provides benchmarks to set Environmental Performance standards	DAFF
Australian Ballast Water Requirements, Version 8 (DAWE 2020)	Australian Ballast Water Management Requirements outline the mandatory ballast water management requirements to reduce the risk of introducing harmful aquatic organisms into Australia's marine environment through ballast water from international vessels. These requirements are enforceable under the *Biosecurity Act 2015*.	Assists in the identification of potential risks to the project area and provides benchmarks to set Environmental Performance standards	DAFF
National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna (2017)	The overarching goal of the strategy is to provide guidance on understanding and reducing the risk of vessel collisions and the impacts they may have on marine mega-fauna.	The strategy provides information and guidance on reducing vessel collisions with marine mega-fauna. Section 8 details applicable information and requirements.	DCCEEW

Table 2-2: Summary of relevant international conventions

Agreement	Scope (as relevant to this EP)	Relevance
1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972	Contributes to the international control and prevention of marine pollution by prohibiting the dumping of certain hazardous materials. Under the 1996 Protocol, dumping is prohibited, except for materials on an approved list.	No dumping of any wastes or other matter from survey activities except for those listed in Annex 1 of the Protocol (which will be discharged in line with MARPOL requirements).
Bonn Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil and other harmful substances (Bonn Agreement)	The Bonn Agreement is the mechanism by which the North Sea states, and the European Union (the Contracting Parties), work together to help each other in combating pollution in the North Sea area from maritime disasters and chronic pollution from ships and offshore installations; and to carry out surveillance as an aid to detecting and combating pollution at sea.	The Bonn Agreement Oil Appearance Code may be used during spill response activities.
Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90)	This Convention establishes measures for dealing with marine oil pollution incidents nationally and in cooperation with other countries.	All vessels ≥400 gross tonnes will have a Shipboard Oil Pollution Emergency Plan (SOPEP) in place
International Convention for the Prevention of Pollution from Ships 1973/1978 (MARPOL 73/78)	This Convention covers prevention of pollution of the marine environment by ships from operational or accidental causes. It includes regulations aimed at preventing and minimising pollution from ships (accidental and routine).	Pollution from the survey activities will be managed in accordance with MARPOL requirements, as described in Sections 7 and 8.
International Regulations for Preventing Collisions at Sea, 1972 (COLREGS)	The COLREGS outline internationally agreed rules for safe navigation, including 'give way' rules between vessels and other requirements for safe conduct including the requirement to keep a look out, travel at a safe speed, and how to operate vessels in narrow channels.	The survey will adhere to the requirements of COLREGS as implemented in Commonwealth waters through the *Navigation Act 2012* (refer to Section 8).
International Convention for the Safety of Life at Sea, 1974 (SOLAS)	This convention outlines the minimum safety standards in the construction, equipment and operation of merchant ships.	The survey will adhere to the requirements of SOLAS as implemented in Commonwealth waters through the *Navigation Act 2012* (refer to Table 2-1).
International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001	The Convention prohibits the use of harmful organotins in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems.	The survey will adhere to the requirements of the convention as implemented through the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*.
China-Australia Migratory Bird Agreement (CAMBA) 1988	Signatories to CAMBA, JAMBA and ROKAMBA are committed to cooperating and taking appropriate measures to preserve and enhance the environment of	The survey is designed, sited and managed such that there is no measurable disruption in the lifecycle (breeding, feeding, migration

Agreement	Scope (as relevant to this EP)	Relevance
Japan-Australia Migratory Bird Agreement (JAMBA) 1981	migratory birds by seeking means to prevent damage to such birds and their environment. These agreements recognise the existence of special international concern for the protection of migratory birds and those species that are known to migrate between each of the countries.	or resting behaviour) of an ecologically significant proportion of the population of a migratory species or their habitats.
Republic of Korea Migratory Bird Agreement (ROKAMBA) 2007		
Agreement on the Conservation of Albatrosses and Petrels (ACAP) 2004	A multilateral agreement which seeks to conserve albatrosses and petrels by coordinating international activity to mitigate known threats to their populations. The Agreement provides a focus for international cooperation, exchange of information and expertise and the implementation of conservation measures for these threatened seabirds on land and at sea.	The survey is designed, sited and managed such that activities are not inconsistent with the ACAP and conservation measures for identified in Article III of the Agreement.
Convention on the Conservation of Migratory Species of Wild Animals (CMC or Bonn Convention) 1980	An environmental treaty of the United Nations that provides a global platform for the conservation and sustainable use of terrestrial, aquatic and avian migratory animals and their habitats.	The survey is designed, sited and managed such that activities are not inconsistent with the Fundamental Principles identified in Article II of the Agreement.

Table 2-3: Summary of relevant industry standards and guidelines

Standard / guideline	Description
Australian and New Zealand guidelines for fresh and marine water quality (ANZECC/ARMCANZ 2000)	These guidelines provide a framework for water resource management and state specific water quality guidelines for environmental values, and the context within which they should be applied
The Australian Petroleum Production and Exploration Association (APPEA) Code of Environmental Practice (APPEA 2008)	Recognising the need to avoid or minimise and manage impacts to the environment, this code of environmental practice includes four basic recommendations to APPEA members undertaking activities Assess the risks to, and impacts on, the environment as an integral part of the planning process. Reduce the impact of operations on the environment, public health and safety to as low as reasonably practicable (ALARP) and to an acceptable level by using the best available technology and management practices. Consult with stakeholders regarding industry activities. Develop and maintain a corporate culture of environmental awareness and commitment that supports the necessary management practices and technology, and their continuous improvement.
NOPSEMA (2018) Information Paper IPI765 Acoustic Impact Evaluation and Management	The information paper provides advice to titleholders to assist with preparing EPs for marine seismic survey activities, and in particular the components of an EP that relate to detailing, evaluating and managing impacts from acoustic emissions.
WA Department of Fisheries (DoF) Guidance Statement on Undertaking Seismic Surveys in WA Waters	Identifies potential issues of concern associated with seismic surveys on fish and fish habitats, as defined under the Fish Resources Management Act 1994 (FRMA). It is aimed at giving proponents direction on general standards and protocols designed to avoid or mitigate the potential impacts of seismic surveys on fish. It is expected that proponents will incorporate these standards and protocols when planning and implementing seismic surveys.
WA DPIRD Fisheries Research Report No. 288 Risk Assessment of the potential impacts of seismic air gun surveys on marine finfish and invertebrates in Western Australia (Webster et al. 2018)	The Fisheries Division of the WA DPIRD undertook an ecological risk assessment (ERA) of the potential effects of seismic surveys on marine finfish and invertebrates. The ERA assessed different categories of seismic source volume and the potential exposure of different types of finfish and invertebrates in different water depths. The ERA was undertaken at the level of individual adult finfish and invertebrate organisms closest to the seismic source and it was assumed that an individual organism remains stationary (i.e., does not flee) and is positioned directly in the path of the vessel, thus experiencing numerous pulses with varying degrees of intensity as the vessel approaches, passes overhead and moves further away. Therefore, the WA DPIRD ERA represents a highly conservative worst-case scenario that is not representative of real-life exposures in all cases, as it does not account for any avoidance response by mobile organisms. The WA DPIRD ERA identified that overall, the greater the intensity of sound and shallower the water depth the greater the assigned risk. The organisms classified as most at risk from seismic impacts were immobile invertebrates (e.g., molluscs) while pelagic fish were rated as the least at risk. The 2D seismic exploration survey environmental impact and risk assessment in Section 7.1 of this EP has applied additional activity-specific and situation specific context to assess potential risks to individuals and populations. A guidance statement is currently being developed by the WA DPIRD Fisheries Division.

Standard / guideline	Description
International Association of Oil and Gas Producers (IOGP) Recommended monitoring and mitigation measures for cetaceans during marine seismic survey geophysical operations (March 2017)	Provides recommendations on applying mitigation measures for cetaceans during geophysical operations. The measures outlined in this report are recommended for use during all marine seismic surveys that use compressed air source arrays, and are only intended for cetaceans (whales, dolphins and porpoises).
Marine Mammal Acoustic Technical Guidance (NMFS, Revision 2018)	The Technical guidance provides thresholds for onset of permanent threshold shift (PTS) and temporary threshold shifts (TTS) in marine mammal hearing for all underwater sound sources. It is intended to be used to better predict how a marine mammals hearing will respond to sound exposure.
Effective planning strategies for managing environmental risk associated with geophysical and other imaging surveys (IUCN 2016)	This is a guideline to the responsible and effective planning of offshore geophysical surveys particularly with respect to marine mammals with the focus given to planning and implementing large-scale airgun surveys.
National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry (MPSC 2009)	A voluntary biofouling management guidance document developed under the National System for the Prevention and management of Marine Pest Incursions. Its purpose is to provide tools to operators to minimise the amount of biofouling accumulating on their vessels, infrastructure and submersible equipment and thereby to minimise the risk of spreading marine pests.