Optimising Processes and Policy to Minimise Business and Operational Impacts of Seismic Surveys on the Fishing Industry and Petroleum Industry

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ABBREVIATIONS

Acronym	
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AFMA	Australian Fisheries Management Authority
ALARP	As Low As Reasonably Practicable
AMSIS	Australian Marine Spatial Information System
API	Assessment on Proponent Information
APPEA	Australian Petroleum Production and Exploration Association
CFA	Commonwealth Fisheries Association
CTS	Commonwealth Trawl Sector
DA	Designated Authority
DEWNR	Department of Environment, Water and Natural Resources
DERM	Department of Environment and Resource Management
DIIS	Department of Industry, Innovation and Science
DMITRE	Department for Manufacturing, Innovation, Trade, Resources and Energy
DMP	Data Management Plan
DMP	Department of Mines and Petroleum
DSEWPaC	Department of Sustainability, Environment, Water, Population & Communities
EES	Environment Effects Statement
EIA	Environmental Impact Assessments
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EP	Environmental Plan
EP&A	Environmental Planning and Assessment Act, 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act - 1999
EPI	Environmental Planning Instrument
ETBF	Eastern Tuna and Billfish Fishery
FHAs	Fish Habitat Areas
FHPAs	Fish Habitat Protection Areas
FPSO	Floating, Production, Storage and Offloading
FRDC	Fisheries Research and Development Corporation
GHaT	Gillnet, Hook and Trap
IAGC	International Association of Geophysical Contractors
JA	Joint Authority
LEFCOL	Lakes Entrance Fishermen's Co-Operative
MoU	Memorandum of Understanding
NES	National Environmental Significance
NOPSEMA	National Offshore Petroleum Safety and Environmental Management
NOPTA	National Offshore Petroleum Titles Administrator
NT EPA	Northern Territory Environment Protection Authority
NTSC	Northern Territory Seafood Council

OCS	Offshore Constitutional Settlements
OEPA	Office of the Environmental Protection Authority
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act - 2006
PAG	Project Advisory Group
PEL	Petroleum Exploration Licence
PER	Public Environment Report
PGER	Petroleum and Geothermal Energy (Environment) Regulations
PGS	Petroleum Geo-Services
PPA	Pearl Producers Association
PSLR	Petroleum (Submerged Lands and Environment) Regulations
REF	Review of Environmental Factors
Roundtable	Fishing and Oil and Gas Roundtable
SEO	Statement of Environment Objectives
SESSF	Southern and Eastern Scalefish and Shark Fishery
SFAIRP	So Far As Is Reasonably Practicable
SIV	Seafood Industry Victoria
WA	Western Australia
WA DoF	WA Department of Fisheries
WAFIC	Western Australian Fishing Industry Council
WFSA	Wildcatch Fisheries South Australia

EXECUTIVE SUMMARY

Around Australia the fishing industry and the petroleum industry (also referred to as oil and gas industry) operate their respective businesses in the marine environment. Sometimes there is a degree of spatial and/or temporal overlap between these operations that has the potential to negatively impact one, or both, of these industries. To minimise these impacts, a high level of understanding, respect, cooperation, communication, and compromise is required between the industries. The benefits of this approach would be felt by both the fishing and petroleum industries through improved relationships and a shared understanding of potential impacts (financial, operational, logistical), and the ways they can be minimised. The aim of this project is to improve processes to achieve this end, specifically in relation to seismic operations. Improved operations would lead to the savings of many millions of dollars through reductions in lost time and improved operational efficiencies.

It is important to point out that this project was not about investigating the potential impact of seismic activity on the behaviour, or mortality, of fishery resources. There have been numerous studies in this area, and many such studies are continuing in Australia and around the world.

It should be noted that even during this project there have been significant improvements in consultation between the petroleum and fishing industries. The establishment of National Offshore Petroleum Safety and Environmental Management Agency (NOPSEMA) saw the regulatory requirement for petroleum companies to demonstrate in an Environment Plan (EP) that they have consulted with potentially affected parties in the vicinity of their operations. However, in some instances this improved engagement has led to consultation fatigue or apathy.

Case studies identified opportunities to improve relationships between industries by recognising areas of negative impact, but more importantly, highlighting examples of best practice. Specific case study areas that had overlapping high levels of fishing and seismic activity were initially identified by the Project Advisory Group (PAG), and later through the Cross-sector Roundtable Group (Roundtable).

The three regions identified were Bass Strait, Northern Territory and North-West Western Australia. Interviews with stakeholders in the petroleum industry and the fishing industry in each of these regions covered all phases of seismic operations. Issues discussed were compiled and then categorised into six major areas:

1. Need for easy access to two-way information between the petroleum and fishing industries;
2. Complexities in liaison with multiple stakeholders, industries and/or companies;
3. Lack of understanding by one industry for the other's operational requirements and constraints;
4. Minimisation and/or resolution of sectoral impacts;
5. Minimisation and/or resolution of individual business impacts; and,
6. Costs and access to port-based infrastructure.

It is believed there are four overarching processes by which these issues can be addressed:

- Having accessible, easy to use central website-based information on the two industry's associated communication processes;
- Undertaking Roundtable discussion and feedback into overarching policy and process;
- Holding annual regional stakeholder meetings to discuss future planning and issues; and,
- Undertaking one-on-one industry/individual discussions.

The Roundtable has endorsed this approach and NOPSEMA has been provided with this information as part of the review of their current operations.

KEYWORDS

Seismic, petroleum industry, fishing industry.

INTRODUCTION

BACKGROUND

The commercial fishing industry has operated in Australian waters for well over a century, often in areas without other resource extraction activities taking place. Since the 1960s there has been exploration for oil and gas in many of these same waters (Figure 1). This petroleum exploration work often takes the form of seismic surveys whereby large vessels tow an array of seismic sources that send sound waves through the ocean and the sea floor to bounce off underground rock formations. The reflected waves return back to the surface where they are captured by recording sensors. Analysing the time that the waves take to return provides information about rock types and possible gases or fluids in rock formations. Many offshore areas around Australia have proven to be very productive and have valuable oil and gas reserves and seismic surveys continue in these areas in the search for new reserves. Where these coincide with productive fishing grounds, there is a necessary interaction between the two industries.

Seismic surveys can have a range of impacts on the capacity of the fishing industry to operate efficiently. Interactions with the fishing industry can also affect the efficiency of the offshore oil and gas industry – referred to hereafter as the "petroleum industry". Although seismic activity has been occurring in Australian waters since the 1950/60s, conflicts between the industries remain a problem. The issue was highlighted as a major concern for the fishing industry through the 'Empowering Industry[1]' project, and prompted a facilitated, multi-sector workshop in August 2011 to look for a way forward. The workshop highlighted two major areas of concern: 1) the direct impact of seismic activity on fish/crustacean/mollusc stocks; and 2) the conflict that arises between the two industries (fishing and oil/gas) as a result of the extensive use of seismic surveys. The first was being addressed through a range of other research projects. With regard to the second, the workshop participants strongly supported the need to improve processes and policies to minimise impacts between the industries, and to provide greater certainty to industry prior to, during and after seismic surveys.

There is recognition that potential cost savings across both industries through improved working relationships and communications could be in the millions of dollars. Although specific companies and individuals from both industries have tackled the issue and in a few cases, very successfully, it was felt that a coordinated industry-wide approach to addressing the issue would lead to greater efficiencies and reduced costs, and allow both industries to more efficiently plan their operations to reduce conflict situations.

The current project was developed following the 2011 workshop, with full support from both the fishing and petroleum industries. They felt that this project would be an ideal first step in the process to clarify the issues, develop solutions, and extend those findings across both industry industries. It was subsequently submitted by the Seafood Industry Victoria (SIV) and received funding by the Fisheries Research and Development Corporation (FRDC).

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[1] FRDC Project No 2009/300 'Empowering Industry - Developing an Industry Driven RD&E Model for the Australian Fishing and Seafood Industry - partnerships to improve efficiency, profitability and performance'

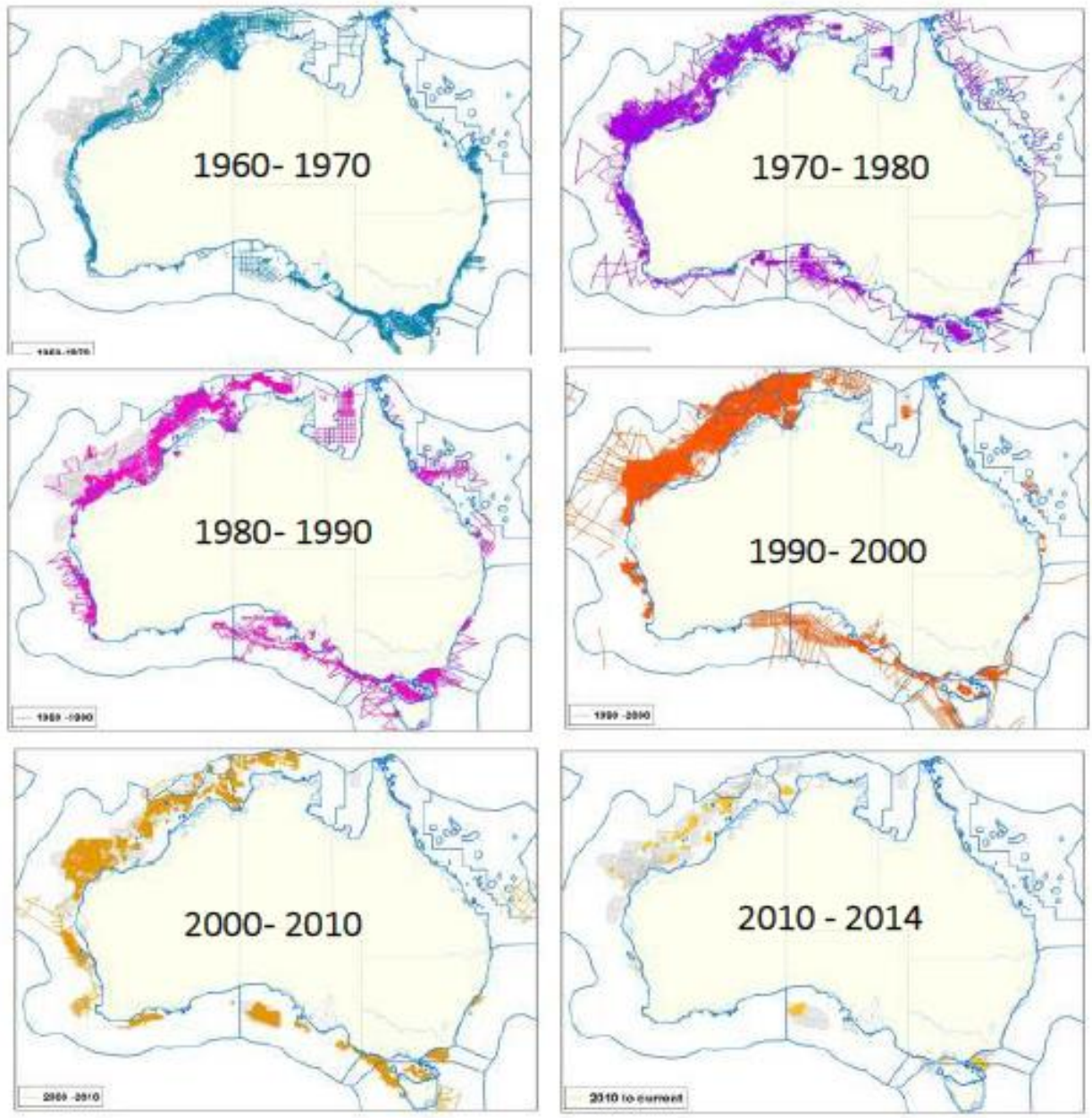


Figure 1 **Six decades of marine seismic survey activities since the 1960s. Highlighted areas represent individual tracks and blocks of 2-D and 3-D marine seismic surveys. (source National Offshore Petroleum Titles Administrator (NOPTA) 2014.**

NEED

The fishing and the petroleum industries have rights to operate their respective businesses in the marine environment. At sea, there is often a degree of spatial and/or temporal overlap between petroleum seismic surveys and established fishing grounds and fishing activity.

For shared access to work effectively, a high level of respect, cooperation, communication, coordination and compromise is required between the industries, together with a good understanding of each other's rights and needs. With some notable exceptions, this is generally not occurring between the fishing and petroleum industries. Many fishing operators feel as a result, their businesses are negatively impacted, with little if any, recognition by the

petroleum industry. Importantly, this does not only relate to direct loss of catch possibly arising from seismic activity, but also to disruptions at an operational and business level, including; time and resources to input into the seismic process, reduction of fishing opportunities during peak/open seasons, marketing and staffing issues (onshore and offshore) due to unplanned variations in fishing activity. Similarly, petroleum companies and seismic operators also report that poor communication and interactions with fishing vessels and fishermen can negatively impact on their operations, often at high cost. These issues were highlighted at a FRDC supported 'Empowering' workshop in 2011 attended by the fishing and petroleum industries. It was agreed that a project designed to examine and improve processes and policies to minimise impacts of seismic surveys on operations and businesses was a priority. Geosciences Australia — an Australian Government listed entity within the Industry, Innovation and Science portfolio — indicated that the approach outlined in the project was a long time coming and stressed the need for discussions before exploration leases are released, the benefits in educating both industries on the impacts of their activities on the other, and the value this will provide in forward planning for both industries to minimise negative interactions, and where possible, optimise efficiency and profitability.

OBJECTIVES

1. Review legislative consultation, notification and response processes and policies regarding interactions between fishers and seismic exploration activities.

2. Use case studies to assess interactions and impacts between seismic exploration activities and the fishing industry.

3. From case studies outline key areas and types of impacts experienced by businesses.

4. Highlight key pathways within current legislative framework for both industries to effectively raise and address concerns.

5. Recommend improvements to current practices for both stakeholders to improve consultation and minimise impacts on both stakeholders.

6. Identify key information needs from both industries to aid consultation and minimise two-way impacts.

PLANNED OUTCOMES AND BENEFITS

The project sought to develop consistent processes and policies that are supported and adopted by both industries to minimise negative operational impacts between seismic survey operations and fishing businesses.

The benefits will be recognised by both the fishing and petroleum industries through improved relationships and a shared understanding of potential impacts (financial, operational and logistical) and the ways they can be minimised.

Options for the establishment of an ongoing relationship between the fishing and petroleum industries can be established.

Adoption of recommendations by policy-makers and the fishing and petroleum industries can lead to cultural changes, greater transparency, and overall reductions in resources (human and capital) directed to this aspect of operations.

METHODS

The project methodology involved a number of steps, as outlined below.

Project Coordination

For a project that required extensive liaison with two completely separate industry groups, the first step involved the development of a Steering Group. The Group was sourced from the fishing industry and the petroleum industry, to work with the Principal Investigator and project managers. The project's original Principal Investigator appointed Ian Knuckey from Fishwell Consulting and Chris Calogeras from C-AID Consultants to manage the project work.

At the start of the project, there was a significant change in the personnel associated with the project. The Principal Investigator, Ms Renee Vajtauer left SIV and was replaced by Mr Johnathon Davey. Of the other co-investigators, Keld Knudsen of the Australian Petroleum Production and Exploration Association (APPEA) was replaced by Damien Hills, and Guy Leyland of the Western Australian Fishing Industry Council (WAFIC) was replaced by John Harrison. The other co-investigators remained - Katherine Winchester, CEO of the Northern Territory Seafood Council (NTSC), and Dale Sumner from the Lakes Entrance Fishing Co-operative Ltd (LEFCOL). These people formed the initial project Steering Group whose role was to develop the project's governance and reporting protocols, including seeking further input from relevant industry and government sectors and stakeholders as needed. The Group members were kept informed through emails and short Communiques.

During the early stage of this project, but independently, a formal Roundtable discussion group was established (in 2014) to foster closer co-operation and communication between the fishing and oil and gas industries. Although more wide-reaching, this goal aligned closely with what this project was trying to achieve in relation to seismic activity. Due to this, the Steering Group felt it should be determined how the FRDC project could best fit in with the Roundtable's role, without risking duplication of tasks and/or conflicts of approach, or process. In addition, nearly all Steering Group members were also Roundtable members (see Table 1). Agreement on roles and approaches were established through presentations by the project officers at Roundtable meetings and ongoing out of session discussions. Ultimately, due to the large overlap of membership, it was agreed that the Roundtable would act as the Steering Group in providing guidance to the project team.

Table 1 Roundtable members and industry role

Name	Industry Role
Annalisa Grubisa	Community Relations, Woodside Energy
Brett McCallum	EO, Pearl Producers Association (PPA)
Damien Hills*	Associate Director, Environment & Safety, APPEA
Farrah Tan-Savva	Environment & Regulatory Supervisor, Esso Australia
John Brewster	Senior Environmental Advisor, Origin Energy
John Harrison*	CEO WAFIC
Johnathon Davey*	Executive Director, SIV
Katherine Winchester*	CEO, NTSC
Marilyn (Mannie) Shea,	External Affairs Adviser, Chevron Australia
Mark Robertson	Government Approvals Manager, INPEX
Matt Pinnegar	External Affairs Manager, South Australia, BP Developments
Mike Marren	External Affairs, ConocoPhillips
Miranda Taylor	Director, Environment and Safety, APPEA
Renee Vajtauer*	CEO, CFA
Stuart Richey	Fishing Operator, Richey Fishing Company.

* Original members of the Steering Group

Review of Legislation

Relevant legislation was analysed and seismic legislative and consultative processes identified and presented in a simplified flow chart. The *Environment Protection and Biodiversity Conservation Act - 1999* (EPBC Act), *Offshore Petroleum and Greenhouse Gas Storage Act - 2006* (OPGGSA Act) and relevant State and Territory legislations were reviewed to determine current approval and consultation processes and identify key input areas.

Case Studies

Case studies were considered the best approach to identifying opportunities to improve relationships between industries, by highlighting areas of negative impact and examples of best practice. Face-to-face meetings were the preferred project communication method, but if that was not possible, interviews were held via telephone or email.

Specific case study areas that had high levels of seismic activity and fishing were identified through background research and direction from the Steering Group. The Steering Group also provided suitable contacts for the project in both the fishing industry and petroleum industry. Case study interviews with the petroleum industry and fishing industry covered all phases of seismic operation. Rather than strict questions and answers at the interviews, we started conversations with people and discussed their experiences, concerns and comments regarding interactions between the fishing industry and petroleum industry.

The various stages of petroleum exploration and development can span many decades but the only stage of relevance to this project were those involving seismic surveys during

exploration and site surveys (Figure 2). Within these stages, we endeavoured to divide up the case study discussions into four main time periods:

- Initial notification of potential seismic activity;
- The months prior to seismic activity starting;
- During the seismic activity; and,
- After the seismic activity had concluded.

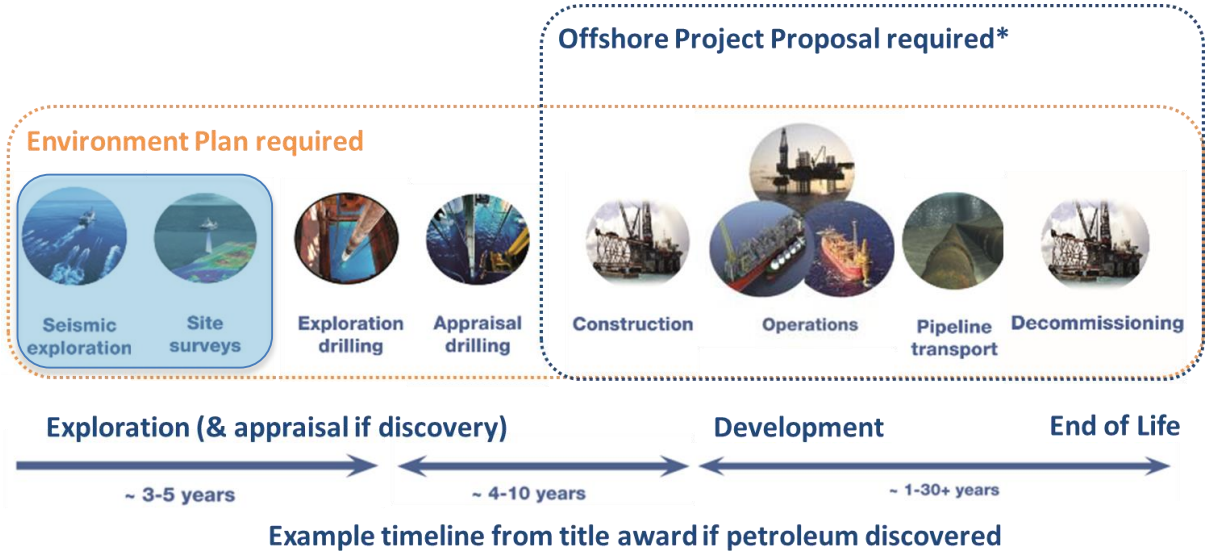


Figure 2. Various stages of petroleum exploration and development with the stages of relevance to this project highlighted. Adapted from NOPSEMA presentation to FRDC – August 2014.

We used the following as a general guide to move through the conversation.

Notification on intended seismic operation

- Researching where and when fishing / seismic activity will be and whether it is potentially going to influence the other industry
- Writing/receiving submissions to/from companies about potential impacts
- Going to meetings

Pending start of seismic

- Learning about seismic/fishing vessel movements and requirements
- Understanding communication protocols
- Planning / altering seismic/fishing plan

During seismic

Fishing

- Communication
- Working in non-preferred grounds

Seismic

- Communication
- Encroachment of fishing vessels

- Truncated fishing grounds
- Drop in catch rates
- Steaming further
- Death / avoidance of areas by fish
- Lost damaged gear
- Encountering fishing gear
- Changes to seismic pattern

After seismic

- Communication and feedback
- Recovery of fishing grounds
- Concern about results and potential petroleum installations

Tender vessels operating in the area

- Vessel interactions
- Fishing gear interruption / entanglement / loss
- Use of port facilities.

RESULTS AND DISCUSSION

Project Coordination

The inaugural Roundtable meeting between the fishing industry and petroleum industry was held on 21st July 2014 in Melbourne. As a direct result of this meeting, a Memorandum of Understanding (MoU) was established between APPEA and five of the nation's peak commercial fishing, aquaculture and seafood industry associations: CFA, NTSC, SIV, WAFIC, and Wildcatch Fisheries South Australia (WFSA).

The MoU established principles of co-operation, communication and consultation between APPEA and fishing industry bodies with members operating in Western Australian, South Australian, Victorian, Northern Territory and Commonwealth waters. Under the MoU, the industry groups committed to meet regularly through a roundtable process and to seek to resolve issues through better sharing of information.

The MoU also encouraged the development of joint initiatives or policies that would benefit both industries. Sharing a strong interest in science and evidence-based policy-making by industry and government, the purpose of the MoU was to facilitate improved communication, cooperation and consultation arrangements between the Parties, including, but not limited to:

- Identifying common goals of the Parties;
- Improving strategic communications between the Parties;
- Developing issue specific interaction frameworks where appropriate;
- Undertaking joint initiatives that benefit both industries;
- Raising awareness and perspectives of issues facing each industry; and
- Promoting commonly agreed messages to each party's members and stakeholders.

Under agreed principles, practices and joint actions arising from this MoU, the Parties sought to work collaboratively to:

- Improve interactions and engagement between our industries through the development and provision of joint guidance, protocols and/or best management practice documents, and where agreed by the Parties, joint initiatives such as identification of information or research gaps and enhanced processes for consultation;
- Keep lines of communication open through the provision of appropriate and regular forums, identify nominated contact officers from each party, and the annual review of the operations of this MoU;
- Attempt to resolve issues, with particular attention to issues of public policy, between the Parties in the first instance, but acknowledging the potential for differing views and for each party's right to express those views to their members, third parties and the general public without further effect on this MoU;
- Respect there are natural operational differences between the two industries and acknowledge that each industry may impact upon the other, but that this MoU aims to facilitate minimising such impacts while allowing each industry to operate to its full potential; and,
- Recognising that the MoU cannot be binding on Members, encourage Members to abide by the intent of this MoU.

As mentioned previously, the close alignment of this project's goals regarding seismic and broader principles of the Roundtable Group, and the overlap of many of the project team warranted that the project's original Steering Group be replaced by the Roundtable during 2014.

With the MoU established, the project managers met with the Roundtable in Canberra on 25th November 2014 to propose how the project could work in with the Group's goals. It was agreed that the FRDC project outcomes would be specifically used to provide input to the Group on the key areas shown below:

MoU Purpose and Common Goal

- Developing issue specific interaction frameworks
- Raising awareness/perspectives of issues facing each industry (through case studies)
- Promoting commonly agreed messages to each party's members and stakeholders.

MoU Agreed Principles, Practices and Joint Actions

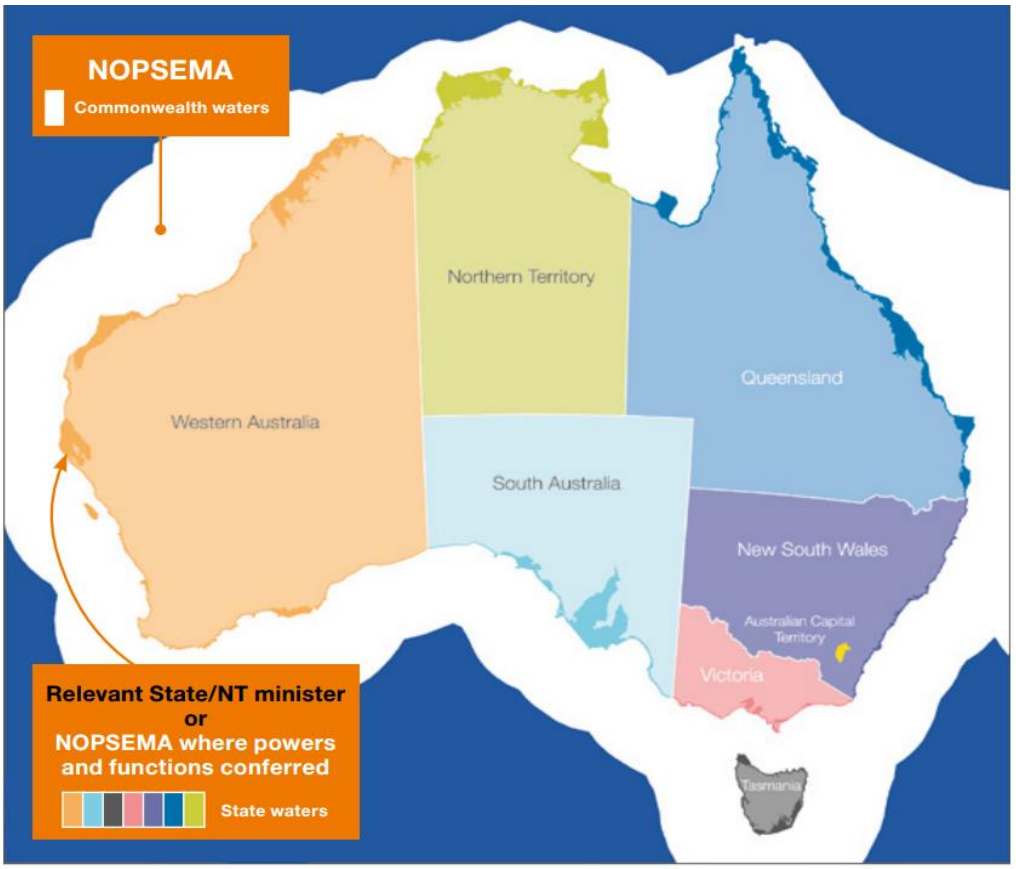
- Improve interactions and engagement between industries through the development and provision of joint guidance, protocols and/or best management practice documents
- Facilitate minimising each industry's impacts upon the other while allowing each industry to operate to its full potential.

Review of Legislation

A desktop review was undertaken of legislative consultation, notification, response processes and policies regarding interactions between fishers and seismic exploration activities and the

possible impacts that this could lead to between petroleum and the fishing industry in Australia. This involved a review of policies and the regulatory framework in the marine areas whose responsibilities were administered by the Commonwealth of Australia, New South Wales, Northern Territory, Queensland, South Australia, Tasmania, Victoria, and Western Australia, (see Figure 3) to provide an indication of responsibilities). The key stakeholders within each jurisdiction are provided in Table 2.

The legislation for every State, Northern Territory and the Commonwealth was reviewed and data relating to the legislative process outlining interactions between fishers and seismic exploration activities were collected, pathways identified, and summaries produced for each jurisdiction. For each jurisdiction this included: key institutional stakeholders; key legislations; assessment processes; approval process; and other observations.



Note: State and Northern Territory coastal waters conform more or less to the Australian continent and associated islands. Commonwealth waters extend seaward from the edge of the three nautical mile limit of designated coastal waters, to the outer extent of the Australian Exclusive Economic Zone at 200 nautical miles.

Figure 3 Map Showing Where Powers and Functions for Petroleum Are Conferred[2]

[2] From NOPSEMA presentation to the fishing Industry 2014

Table 2. Summary of the key stakeholders within each jurisdiction.

Jurisdiction	Key / Peak Industry Associations	Departments / Regulatory Bodies
Commonwealth	• Commonwealth Fisheries Association (CFA) • NPF Industry Pty Ltd • Small Pelagic Fishery Industry Association • South Esat Trawl Fishing Industry Association • Great Australian Bight Fishing Industry Association Inc (GABIA) • Southern Shark Industry Alliance Inc • Sustainable Shark Fishing Inc • Australian Petroleum Production and Exploration Association (APPEA)	* Department of Agriculture and Water Resources (was previously Department of Agriculture, Fisheries and Forestry * Australian Fisheries Management Authority (AFMA): The government agency responsible for the sustainable and efficient management of the Commonwealth fisheries resources. It is also pivotal in enabling consultations between the fisheries and petroleum industries. * *Fisheries Research and Development Corporation (FRDC) * *Department of the Environment: Responsible for administering the EPBC Act and the environmental assessments and approvals under it. * Department of Industry, Innovation and Science * National Offshore Petroleum Titles Administrator (NOPTA): Statutory body under Department of Industry that manages petroleum titles and exploration permits * National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA): An independent regulator of offshore petroleum operations responsible for environmental management and day-to-day operational compliance
New South Wales	• Professional Fishermen's Association	* Department of Primary Industries and Fisheries * Office of Environment and Heritage * Division of Resources and Energy, Department of Trade and Investment NSW * NSW Environment Protection Authority (EPA): The NSW entity responsible for issuing environmental protection licenses to control activities that can have significant impact on the environment. It also promotes better environmental performance and has the right to prosecute organizations and individuals who do not abide by SW environmental laws.
Northern Territory	• Northern Territory Seafood Council	* Department of Primary Industries and Fisheries * Department of Lands, Planning and the Environment * Department of Mines and Energy * NT Environment Protection Authority (EPA): An independent body set up by an Act of the NT Parliament to perform EIA and provide advice on development initiatives across the Territory
Queensland	• Queensland Seafood Industry Association (QSIA)	* Department of Agriculture, Fisheries and Forestry * Department of Natural Resources and Mines * Fisheries Queensland * Department of Environment and Heritage Protection (EHP) * Great Barrier Reef Marine Park Authority (GBRMPA - Commonwealth)
South Australia	• Fisheries Council of South Australia • Wildcatch Fisheries SA	* Primary Industries and Regions South Australia (PIRSA) * Department of Environment, Water and Natural Resources * Department of Mines and Energy * South Australia Environmental Protection Authority (SAEPA): SA's primary environmental regulatory body. Together with the DMITRE, the SAEPA is responsible for developing codes of practice and assessing and evaluating petroleum exploration permit applications
Tasmania	• Tasmanian Seafood Industry Council (TSIC) • Tasmanian Rocklobster Fishermen's Association • Tasmanina Abalone Council	* Department of Primary Industries, Parks, Water and Environment * Environment Protection Authority (EPA), Tasmania: Tasmania's principal working body that regulates developments and activities that may impact on environmental quality and to promote best practice, sustainable environmental management. * Mineral Resources Tasmania (MRT), Department of Infrastructure, Energy and Resources (DIER)
Victoria	• Seafood Industry Victoria • Lakes Entrance Fishermen's Co-Op Ltd (LEFCOL)	* Department of Economic Development, Jobs, Transport and Resources (DEDJTR) * Environment Protection Authority, Victoria: Is the agency responsible for protecting Victoria's environment. It has independent authority under the Environment Protection Act, 1970. * Fisheries Victoria Department of Sustainability and Environment * Minerals and Petroleum Regulation Division, Department of Primary Industries
Western Australia (Onshore)	• Western Australian Fishing Industry Council (WAFIC) • Western Rocklobster Council	* State Fisheries, Department of Fisheries * Western Australian Fisheries and Marine Research Laboratories * Department of Environment and Conservation * Department of Mines and Petroleum * Environmental Protection Authority (WA): An independent body governed by the Environmental Protection Act, 1986 that is responsible for undertaking environmental impact assessments
* **Also involved in state and territory**		

A flowchart representation of approval and consultation processes for seismic explorers and fishers for each of the States, Northern Territory and the Commonwealth is provided at Appendix 1.

The key legislations for each jurisdiction is provided below with a summary of the assessment and approval processes.

Commonwealth

Legislation

Environmental Protection and Biodiversity Conservation Act 1999: The fundamental environmental legislation in the Commonwealth of Australia. It provides the legal framework to protect and manage key species with National Environmental Significance (NES). As per the Act, the Commonwealth Marine Area (3 to 200 nautical miles) is a matter of NES. This compels most offshore petroleum exploration activities to seek environmental approvals under the Act.

The Act provides requirements and processes for undertaking environmental assessments and obtaining environmental approvals on activities that potentially bear significant environmental impact. Given discrepancies between the Commonwealth and State assessments processes, there is an initiative to streamline all environmental assessments and approvals under the EPBC Act. This is done through bilateral agreements signed between the Commonwealth and the respective State/Territory that accredits their assessment processes under the EPBC Act. This aims to minimise the regulatory burdens and costs of assessment processes while maintaining quality of assessments.

Guidelines for identifying, protecting and managing NES species under EPBC Act, 1999:

- EPBC Act Policy Statement 1.1 Significant Impact Guidelines: aids in determining the likelihood of an activity's significant impact
- EPBC Act Policy Statement 1.2 Significant Impact Guidelines: Actions on, or impacting upon Commonwealth land, and actions by Commonwealth agencies. This defines the criteria for significant impact and advises on whether an activity requires the submission of a referral to the Department of Environment and Heritage
- EPBC Act Policy Statement 2.1 Interaction between offshore seismic exploration and whales: provides guidelines to mitigate risk and impact of seismic surveys, and legal responsibilities of seismic survey operators under the EPCB Act.

***Offshore Petroleum and Greenhouse Gas Storage Act, 2006*:** Responsible for regulating offshore petroleum operations (greater than 3 nautical miles from the Territorial sea baseline) that fall under the jurisdiction of the Commonwealth.

Under this Act and its corresponding Regulation, it is mandatory for the petroleum industry to seek consultation of other ocean users, such as the fishing industry. Australian Fisheries Management Authority (AFMA) Guidelines for Petroleum Industry and Fisheries Consultation provides information on the scope for consultation and engagement between the fishing and petroleum industries. Seismic survey proposals from all operators require submission of an Environmental Plan (EP) and an oil spill Contingency Plan to the NOPSEMA. AFMA also provides information on the surveys to fishing operators.

Offshore Constitutional Settlements (OCS) between the Commonwealth and respective States/Territories redefines their respective jurisdictions. Fisheries under OCS arrangements

are categorised based on species, fishing method and area, implying that petroleum operators must check management arrangements for fisheries of interest, as multiple jurisdictions may be responsible for managing these fisheries.

The *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* under the OPGGS Act mandates the completion and approval of an EP before commencement of a petroleum activity. EPs of parties initiating seismic surveys must comply with Regulations 11(7) and 11(8) under OPGGS (Environmental) Regulations, 2009 and referral documents under EPBC Act, 1999. Under this Act, it is mandatory for the petroleum industry to seek direct consultation with other ocean users, including the fishing operators and associations, as per AFMA's Guidelines for Petroleum Industry Consultation. Level of consultation required is determined by type and scale of activity to be undertaken and its potential impact on fishing.

This Act is responsible for granting petroleum titles, permits and acreages under a Joint Authority (JA), and the respective State authority is the Designated Authority (DA) responsible for managing the daily administration of the offshore petroleum legislation.

Joint Authorities have been established with the relevant State/Territory departments (except Tasmania) giving them the power to make certain decisions under the OPGGSA. These decisions relate to, but are not limited to, the granting of petroleum titles, the imposition of title conditions and cancellation of titles, as well as decisions about resource management and resource security. The JA for the Eastern Greater Sunrise offshore area, the offshore area of each external territory (e.g. the Territory of Ashmore and Cartier Islands) and for the Tasmanian offshore area, is the responsible Commonwealth Minister only. In the case of greenhouse gas titles, the decision maker is the responsible Commonwealth Minister. The JA may delegate any or all of their functions and powers to appropriate Commonwealth and state/Territory department officials. Delegations will be subject to the following conditions:

- JA ministers have the opportunity to issue media statements when important decisions are made, such as the award of offshore petroleum titles
- Any contentious or strategic issues be referred to ministers (such as decisions that deviate from approved policy or well established precedents, or where there is a difference of opinion between Commonwealth and state/Territory officials)
- Departments are to report regularly to their respective minister on decisions envisaged in a coming period and also report back on delegated decisions taken during the previous period, and undertake to provide timely advice on issues arising from delegated decisions that might affect ministerial accountability.

The JA for each State and the NT comprises the responsible Commonwealth Minister and the relevant state or NT minister as shown below at Table 3 ([3]current as at 2016).

[3] http://www.nopta.gov.au/joint_authority.html

Table 3. Jurisdictional Departments with responsibility to make certain decisions under the OPGGSA (2006) under a Joint Authority agreement.

Jurisdiction	Department
Commonwealth	Department of Industry, Innovation and Science
New South Wales	Division of Resources and Energy
Northern Territory	Department of Mines and Energy
Queensland	Department of Natural Resources and Mines
South Australia	Department of State Development
Victoria	Department of Economic Development, Jobs, Transport and Resources
Western Australia	Department of Mines and Petroleum

Assessment Process

Under the EPBC Act, if the proposed action has the potential to cause significant environmental impact, it is referred for an environmental assessment. Assessment of seismic surveys is undertaken through a combination of the following, depending on the nature and degree of the impact:

- Referral information: assessment done solely on the information provided in the referral form;
- Preliminary documentation: referral form and any other relevant material identified by the Minister as being necessary to adequately assess a proposed action;
- Public Environment Report (PER) or Environmental Impact Statement (EIS);
- Public inquiry;
- Accredited assessment mechanisms through bilateral agreements with State/Territory governments.

Approval Process

Key criteria for decision-making by the Environment Minister (Commonwealth) for approval of the proponent's Environmental Plan include:

- Nature of the potential impact on protected matters;
- Protected matters likely to be impacted by the action;
- Scale and size of impact;
- Risks to the viability of protected matters arising from the action;
- Whether impact on protected matters would be permanent or temporary;
    - Can impact on protected matters be avoided?
- Scope to redesign proposed action to avoid impacting protected matters;
- Alternatives considered;

- Factoring environmental considerations into the project's design;
    - Can impact on protected matters be mitigated?
- Actions that will reduce the impact arising from the proposed action;
- Likely significance of residual impact;
    - Residual impact on protected matters that are still likely to occur after taking into account the proposed activities to avoid and mitigate all impact
- Suitability of the offsets approach; [4]
    - Feasibility of using the offsets approach to help compensate for residual impact on the protected matter
- Observations.

The CFA has proposed there is scope for tremendous improvement of the consultation processes. An integrated, long-term process initiated early in the proponent's development phase that allows Fisheries to engage directly with NOPSEMA is considered a more efficient and effective process rather than the current ad hoc consultations.

New South Wales

Legislation

Petroleum (Onshore) Act, 1991: This Act regulates the search and mining of petroleum within the jurisdiction of NSW. Section 47 of the Act restricts any unauthorised petroleum activity in the State of New South Wales and monitors the compliance procedures of petroleum operators as per the environmnetal protection guidelines. Furthermore, all activities carried out under the petroleum title should conform to the *Schedule of Onshore Petroleum Exploration and Production Safety Requirements* (1992).

Petroleum (Submerged Lands) Act, 1982**:** Makes provisions for the exploration and extraction of petroleum resources across submerged lands adjacent to the State of New South Wales. The Act applies to NSW's territorial sea up to the three nautical mile mark, including the territorial sea around State islands. It is relevant for all onshore petroleum exploration efforts. The Act operates under the OCS, 1979 and in concurrence with the OPGGS Act, 2006.

Environmental Planning and Assessment Act, 1979: The EP&A Act relates to the control and environmental assessment of development in NSW. All of the proposed seismic works are assessed under the provisions of Part 5 of the Act. Key statutory endorsements required under the EP&A Act include:

- Part 3A: If the Project is identified to be major either by the Minister for Planning, or by definition within an Environmental Planning Instrument (EPI) or by Part 5 definition that the project would have significant environmental impacts and an EIS would otherwise be required

[4] Offsets are defined as measures that compensate for the residual adverse impact of an action on the environment. Offsets are not required where the impact of a proposed action are not thought to be significant or could reasonably be avoided or mitigated.

- Part 4: For Projects when development consent is required under an EPI, typically a Local Environment Plan with approval sought from a local Council.

- Part 5: For projects wherein a development consent under an Environmental Planning Instrument (EPI) is absent and where an approval is required from a government agency to enable an activity to proceed.

Marine Parks Act, 1997: There are currently six marine parks covering approximately 34% of NSW State waters. Zoning plans for multiple-use management and a permit system allow specific activities in the Marine Parks. These areas have been declared under the aforementioned Act and are managed by the NSW Department of Primary Industries staff.

Assessment Process:

A seismic survey cannot be undertaken until an assessment by the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* regarding the likelihood of significant environmental impacts is carried out. The Government of New South Wales has entered into a bilateral agreement with the Commonwealth, under Section 45 of the EPBC Act relating to environmental assessment. This Agreement provides for the accreditation of each of the assessment approaches specified in Schedule 1 and requires approval from both the Commonwealth Minister (under the EPBC Act) and the NSW Minister for Planning and Infrastructure, for petroleum activities. Assessment of the activities is categorised under 3 streams; low, medium and high impact. Each level of impact corresponds to a separate assessment process. If the activity comes under 'High Impact', then a Review of Environmental Factors (REF) and in some cases, an EIS is to be provided by the proponent.

Approval Process:

As an approvals bilateral does not exist between the Commonwealth and NSW, the environmental assessment undertaken by the State Environment Minister requires approval by the Commonwealth Minister for a decision under Part 9 of the EPBC Act. Prior to this, proponents are encouraged to discuss proposals with the Environmental Sustainability Unit to determine whether a REF is required. The Commonwealth Minister eventually approves (upon which the exploration license is granted) or declines the final application.

Northern Territory

Legislation

Petroleum Act, 2014: The principal legislation responsible for managing and granting petroleum tenure and exploration permits in the onshore and inland waters of the Territory. Section 16 of the Act invites applications in onshore and inland waters, to grant exploration permits. Minister's approval is required by a permitee, licensee or the holder of an access authority before commencing operations for a seismic survey. To this end, a notice should be served to the Minister no less than 28 days before the commencement of operations and must contain information on the geographic location of the proposed survey and measures that will be implemented to mitigate the environmental impact.

Petroleum (Submerged Lands) Act, 2013: responsible for tenure and exploration permits under 3 nautical miles from the coastal waters of the Territory. Section 21 of the Act invites applications for tenure in the coastal waters to grant an exploration permit for petroleum. The

Act is managed by the Commonwealth-Northern Territory Offshore Petroleum Joint Authority and the corresponding Designated Authority.

Schedule of Onshore Petroleum Exploration and Production Requirements, 1993: An approval from the Minister is mandatory to carry out a seismic survey. Details of the energy sources to be used and the plan for the proposed survey are required as part of the application for seeking approval. As per these requirements, operators conducting seismic surveys must ensure that reasonable precautions are taken to mitigate damage to marine life.

Northern Territory Environment Protection Authority Act, 2012: Established and laid down the roles and responsibilities of the Northern Territory Environment Protection Authority (NT EPA). The NT EPA is an independent body responsible for undertaking Environmental Impact Assessments (EIA) of development proposals in the NT jurisdiction. An offence against this Act will be referred under Part IIAA of the Criminal Code. The operationalisation of this Act implies that the Environment Protection Authority Act, 2006 and Environment Protection Authority Amendment Act, 2010 have been repealed.

Environmental Assessment Act, 2013: Identifies NT EPA as wholly responsible for implementing the assessment and imposes additional transparency and reporting responsibilities on the Environment Minister and the responsible Minister for specific projects.

Assessment Process:

As an assessment bilateral exists between the Commonwealth and the NT, the Territory's environmental assessment processes will be relied upon for granting approval under the EPBC Act. However, a separate approval is required for approval of the application, until an 'approvals bilateral' is signed. Currently, NOPSEMA is assessing five Environmental Plan Summaries for the Northern Territory. The Assessment will be undertaken by NT EPA to determine whether a proposal can be approved or not. It needs to be established that the likely environmental impacts such as "detrimental impacts on aquatic fauna consumed as food", "flora and fauna assessments", etc. are minimum with respect to the development proposal. There are two kinds of assessments undertaken by NT EPA: (A) PER for assessing impacts that are considered significant but limited and (B) EIS that are significant either in terms of site specific issues, offsite issues, conservation values and nature of proposal.

Approval Process:

Once the assessment has been concluded, approval is required under the Petroleum Act. Though the NT EPA is keen on introducing an environmental offsets policy, the Environment Assessment Act provides no scope for such a policy. However, integrating offsets into the social and economic impact assessments is strongly recommended by the NT EPA.

Queensland

Legislation

***Petroleum and Gas (Production and Safety) Act, 2004*:** The Act primarily aims to facilitate and regulate petroleum exploration and development. Exploration permits/authorities to prospect are awarded as per the guidelines enumerated by this Act. Tenure and safety aspects of petroleum exploration are regulated under this Act.

Petroleum (Submerged Lands) Act, 1982: Makes provisions for the exploration and extraction of petroleum resources across submerged lands adjacent to the State of Queensland. The Act applies to Qld's territorial sea up to the three nautical mile mark, including the territorial sea around State islands. It is relevant for all onshore petroleum exploration efforts. The Act operates under the OCS, 1979 and in concurrence with the OPGGS Act, 2006.

Environmental Protection Act, 1994**:** Is exercised in conjunction with the EPBC Act, through the bilateral agreement. Environmental impact assessment under this Act deals specifically with petroleum and gas exploration and production. Petroleum production in the coastal waters of the State of Queensland requires an environmental approval under Chapter 5A of this Act. Department of Environment and Resource Management (DERM) is responsible for regulating environmental aspects of the Act and conducting environmental assessments.

Marine Parks Act, 2004: Three marine parks have been created under this Act: Great Barrier Reef (GBR) Coast Marine Park, Great Sandy Marine Park and Moreton Bay Marine Park. Zoning plans for multiple-use management and a permit system allows specific activities in the Marine Parks. Fish Habitat Areas (FHAs) in these Marine Parks are specifically designated areas that are protected from coastal development, which, however, continue to allow some fishing.

Assessment Process:

Every petroleum project mandates 'tenure' from the Department of Natural Resources and Mines for access to the land, and an 'environmental authority' from the Department of Environment and Heritage Protection. Granting of environmental authority requires the assessment of the potential environmental impact of the proposed activity.

Further to availing an authority, an EIS must be submitted by the proponent, if the proposed activity is perceived to have significant economic, social and/or environmental impact (a 'controlled activity'), as per EP Act, 1994. This would also incur the proponent an application fee and the first annual return fee at the time of applying. The draft terms of reference outlining the scope of the EIS is made available for review and comment from stakeholders and the concerned public for 30 business days.

As an assessment bilateral exists between the Commonwealth and the State of Queensland, the State's processes of environmental assessment will be relied upon. However, a separate approval is required under the Act, until an 'approvals bilateral' is signed.

Approval Process:

The Commonwealth and State of Queensland have committed to signing an approval bilateral by 18 September, 2014 in order to streamline the environmental assessment and approvals processes. As an approval bilateral does not currently exist between the Commonwealth and the State of Queensland, approvals for the assessments conducted will be the responsibility of the Commonwealth and will be processed as per the EPBC Act.

Observations

A large portion of Queensland's coastal area falls within the jurisdiction of the Great Barrier Reef Marine Park. This restricts petroleum exploration activities in the onshore waters that

fall within the jurisdiction of the State of Queensland. Thus, seismic exploration developments in the Commonwealth offshore waters neighbouring Queensland should be emphasised.

A Coral Stress Response Plan has also been put in place. This Plan permits temporary prohibition of fishing in areas where the coral reefs face severe environmental vulnerability.

South Australia

Legislation

Environmental Protection Act, 1993: Primary environmental legislation in the State of Western Australia. A MoU exists between the Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE[5]) and the SA EPA making the EPA responsible for awarding licenses for petroleum exploration activities under Schedule 1 of the Act. It also advises DMITRE on enforcing environmental standards and guidelines while assessing proposals and applications.

Petroleum and Geothermal Energy Act, 2000 and Petroleum and Geothermal Energy (Environmental) Regulations, 2013: This Act is responsible for awarding licenses for petroleum exploration in the State of South Australia. A Petroleum Exploration Licence (PEL) authorises the licensee to carry out in the licence area; exploratory operations for regulated resources, and operations to establish the nature and extent of a discovery and the feasibility of production. An Environmental Impact Report (EIR) must be prepared by the licensees for the regulated activities. The EIR must contain a description of: the nature of activity; potential and actual environmental impact (including duration, size and scope); assessment of potential consequences of proposed activity; and information on any consultation undertaken.

Petroleum (Submerged Lands) Act, 1982*:* Applies to the offshore jurisdiction, territorial sea to the three nautical mile mark, including the territorial sea around State islands. Application for a petroleum exploration permit is made to the concerned Minister, under Section 19 of the Act.

Marine Parks Act 2007: This Act is particularly relevant with respect to the Great Australian Bight Marine Park, which also hosts marine seismic survey activities by petroleum operators. The Park is home to predominantly endemic, rich marine biodiversity. Nevertheless, the State has allowed seismic survey undertakings within the Park based on environmental risk assessments. The region also supports nursery and feeding grounds for fish, including tuna, salmon, squid and baitfish.

Assessment Process

Once a license is provided under the *Petroleum and Geothermal Energy Act*, 2000, the regulated activity (seismic surveys, in this instance) cannot be undertaken until the submission of a Statement of Environment Objectives (SEO). The SEO should be based on an EIR.

Consultations by proponent with relevant stakeholders are a critical aspect in determining the degree (low, medium or high) of environmental impact of the proposed activity. The

[5] Now Department of State Development

Ministerial Committee on Mineral and Petroleum Resources has developed the Principles for Engagement with Stakeholders and Communities to aid the consultation process.

Consultations by the Energy Resources Division, DMITRE is undertaken based on the level of environmental impact awarded to the proposed activity. If an activity falls under the classification of (a) Low impact: a consultation is undertaken between the Energy Resources Division and EPA, Department of Environment, Water and Natural Resources (DENR); comments are expected within 30 business days. (b) Medium impact: requires public consultation for a minimum period of 30 days and (c) High impact: requires the preparation of an EIS and Draft SEO that will be subject to public consultation process that is undertaken for at least 7 months. Level of environmental impact is based on (a) predictability criterion and (b) manageability criterion.

Approval Process

A permit holder is statutorily required to submit an EP and a Data Management Plan (DMP) prior to undertaking seismic exploration activity. Since an approval bilateral does not exist between the Commonwealth and SA, assessments that have been cleared under the bilateral will require approval from the Commonwealth.

For activities requiring low-level surveillance, an Activity Notification is required to be submitted at least 21 days prior to commencement of activity. These activities do not require approval and can be initiated without an approval, provided time lines are honoured.

High-level official surveillance activities require the submission of an Activity Notification and application for approval at least 35 days prior to the submission of the activity.

Observations

Given its tremendous potential in the energy industry, South Australia's petroleum industry is strongly encouraged to undertake exploration activities. Other key stakeholders who may be impacted by these developments, such as the fisheries industry, must ensure that they actively participate in the consultations the environmental assessment and approval processes.

Tasmania

Legislation

A JA agreement exists between the Government of Tasmania and the Commonwealth of Australia. The Tasmanian Government, through Mineral Resources Tasmania, is periodically involved in high level decisions through the JA arrangements of the OPGGS Act 2006, but other functions are carried out by Commonwealth departments.

The OPGGS Act is responsible for granting petroleum titles, permits and acreages under a JA and the respective State authority is the DA responsible for managing the day-to-day administration of the offshore petroleum legislation.

Mineral Resources Development Act, 1995: Is the principal Act responsible to provide for the development of mineral resources in the State of Tasmania, in consistence with sound economic, environmental and land use management procedures. Section 11 of the Act invites

applications for onshore and inland waters tenure to grant exploration permits. The exploration application is first reviewed by the Registrar or Director or both and then later recommended to the Minister who then grants the exploration license to the applicant. The holder of the license is required to submit an annual report detailing the amounts expended in respect of any exploration, summary of the matters specified in Section 187(2) and details of any work that is proposed to be undertaken under the license in the future to the Director.

Petroleum (Submerged Lands) Act, 1982: Makes provisions for the exploration and extraction of petroleum resources across submerged lands adjacent to the State of Tasmania. The Act applies to Tasmania's territorial sea up to the three nautical mile mark, including the territorial sea around State islands. It is relevant for all onshore petroleum exploration efforts.

Environmental Management and Pollution Control Act 1994: The environment protection and pollution control legislation in Tasmania. It adopts a performance-based type of legislation which is responsible for reduction, prevention and alleviation of environmental harm.

Assessment Process

Once a petroleum exploration permit has been granted for the seismic activity under the *Mineral Resources Development Act* (1995), it is required that the proponent's project undergo environmental assessment regarding the likelihood of significant environmental impact. Consultations by the proponent with relevant stakeholders (especially ocean users) are important and must be incorporated in the design of the proposal. Additionally, the proposed activity would need to be evaluated under the *State Policies and Project Act* (1993) to determine whether it is a 'State Significant' activity. A project is said to be 'State Significant' if it satisfies at least two out of seven attributes, such as 'significant capital investment', 'significant impact on the environment' and 'significant contribution to State's economic development' among the list. The Government of Tasmania has entered into a bilateral agreement with the Commonwealth, under Section 45 of the EPBC Act relating to environmental assessment. This Agreement provides for the accreditation of each of the assessment approaches specified in Schedule 1 and requires approval from both the Commonwealth Minister (under the EPBC Act) and the Tasmania Planning Commission, for petroleum activities. There are opportunities for public input throughout the assessment process.

Approval Process

Upon conclusion of the assessment, approval is required for the proponent to undertake seismic survey activity. The absence of an Approval Bilateral between the Cth and Tasmania implies that assessments under the Assessment Bilateral will require final approval from the Commonwealth itself under the EPBC Act. The Tasmanian EPA does not currently implement the Environmental Offsets Policy into the assessments.

Victoria

Legislation

Petroleum Act, 1998: The purpose of this Act is to regulate petroleum exploration and production in Victoria, with the objective of encouraging the exploration for petroleum and promoting production through the provision of an orderly and fair system for granting authority for exploration and production; transparent and effective administrative

frameworks for organising petroleum development activities; easy access to information on Victoria's petroleum geology.

Petroleum (Submerged Lands) Act, 1982: Applies to the offshore jurisdiction, Victoria's territorial sea up to the three nautical mile mark, including the territorial sea around State islands. Application for a petroleum exploration permit is made to the concerned Minister, under Section 19 of the Act.

Environmental Protection Act, 1970: This act provides a detailed legislative framework for the protection of the environment in Victoria having regard to the principles of environment protection. This Act extends to and applies in relation to the territorial seas adjacent to the coasts of Victoria.

Environment Effects Act, 1978: The current legislation requires certain public works such as seismic activities to have an environmental impact assessment carried out before the granting of permission to proceed with exploration activities. It is under this particular Act that the proponent of the seismic activity must submit an Environment Effects Statement (EES) to the Minister for assessment of the proposed activity's environmental effects.

Assessment Process:

The regulated seismic activity needs to go through an assessment of the potential environmental impact of the proposed activity. Consultations by the proponent with relevant stakeholders (especially ocean users) are important and must be incorporated in the design of the proposal. As the Government of Victoria has entered into an assessment bilateral agreement under Section 45 of the EPBC Act, 1999, the state's environmental assessment processes will be utilised for granting approval under the EPBC Act. Once the license is provided under the Petroleum Act, 1998, the proponent is required to create an EES detailing the activity's potential environmental consequence for assessment by the Commonwealth Environmental Minister. If the content indicates that further environmental assessments are required prior to granting of approval, the proposal will be forwarded to the Victorian EPA, who will then take forward the assessment process. The Commonwealth Environment Minister may even appoint a panel to thoroughly evaluate the content of the submitted EES.

Approval Process:

Upon conclusion of the assessment, approval would be required. The absence of an Approval Bilateral between the Cth and Victoria implies that assessments from the Assessment Bilateral will require final approval from the Commonwealth itself. The Victorian EPA does not currently implement the Environmental Offsets Policy into the assessments.

Western Australia

Legislation

Environmental Protection Act, 1986: The primary environmental legislation in the State of Western Australia. All petroleum exploration proposals that could potentially have a significant environmental impact require clearance under this Act. The WA EPA established under this Act is the independent body responsible for environmental assessments as per Part III and IV of the Act. It is also the primary environmental policy advisor to the government of Western Australia.

Petroleum and Geothermal Energy (Environment) Regulations, 2012 and Petroleum (Submerged Lands and Environment) Regulations, 2012: These regulations ensure that any petroleum activity undertaken in WA must be compliant with the principles of ecological sustainable development and bear environmental impacts that are 'as low as reasonably practicable' (ALARP). The EP requirement is co-regulatory and encourages active consultation between regulators and proponents. They also outline the requirements for drafting the requisite environmental plan and the subsequent assessment process. The regulations allow for a risk-based approach for assessment of the proponent's activity. The primary distinction between the two regulations is jurisdictional. *Petroleum and Geothermal Energy (Environment) Regulations,* (PGER) is responsible for all onshore areas of the State, including its islands, and *Petroleum (Submerged Lands and Environment) Regulations* (PSLR) applies to WA's territorial sea to the three nautical mile mark, including the territorial sea around State islands. A MoU between the Department of Mines and Petroleum (DMP) and the WA EPA allows for the streamlining of environmental assessments and makes the WA EPA the authority responsible for assessing the EPs.

Fish Resources Management Act, 1994: Underscores the need to conserve fisheries and their environment. This Act also allows for protection and management of specific species under Sec. 115 by creating Fish Habitat Protection Areas (FHPAs) that prohibit seismic surveying in the designated areas, in accordance with Cth environmental policies (previously managed by DSEWPaC[6]).

Assessment Process

The petroleum legislations as well as the WA EPA demand a thorough assessment of the potential environmental impact of the proposed activity. Once an exploration permit has been granted, as per the petroleum legislations and regulations, the proponent must conduct a stakeholder consultation that includes the DMP, WA EPA, etc. in order to decide the likely impact of the proposed activity. The proposal can either be referred under the Cth EPBC Act or the WA EPA Act.

Under the EPA Act and petroleum regulations, the proponent must submit an EP that lays out the potential impact and risks of the proposed activity. The EP assessment will be undertaken by the DMP's Environmental Officers.

When assessed under the EPBC Act, the Bilateral Agreement comes into force if the assessment is carried out as per the requirements laid out in Schedule 1 of the Act. WA EPA entertains two levels of assessment: (A) PER, which is selected if the proposal is complex, is of Regional/State-wide significance and can generate a high degree of public concern and (B) API (Assessment on Proponent Information), which is selected if the proposed action's environmental impact is apparent from the referral information provided. Further, API comes under Category A (sufficient information) and Category B (environmentally unacceptable). Degree of potential impact determines the scope for public referral of the proposals at various stages through the assessment.

[6] Department of Sustainability, Environment, Water, Population and Communities

Approval Process

As an approval bilateral does not exist between the Cth and WA, assessments that have been cleared under the bilateral will require approval from the Commonwealth.

WA is one of the few States/Territories to employ an Offsets Policy in its broader environmental engagements. An Offset Register will be provided to this end for public perusal. The Offsets Policy will be context-specific, complement the existing environmental regulatory framework in the State and be considered only after attempts to avoid and mitigate the impact have been considered.

Observations

There are multiple institutional bodies (WA EPA, OEPA[7], Petroleum and environment division, DMP, etc.) and requirements (DMP EP, WA EPA PER/API, etc.) that operate within the realm of environmental assessment and approvals at the State-level. This increases the risk of greater regulatory burden, costs and duplication of the processes, demanding a coordinated and streamlined regulatory design.

Key fishing industry stakeholders such as WAFIC have made suggestions to improve the regulatory realm under the OPGGSA:

- Identifying and measuring the risks and environmental impact is a necessary but insufficient condition. Entities who will be affected by the risks and environmental impact of the proposed activity need to be clearly identified.

- Potentially affected parties and relevant industry expertise should be incorporated into the consultation process while drafting the EPs to ensure effective stakeholder participation.

- Greater degree of transparency is required in NOPSEMA, DMP Environmental Officers and WA EPA's assessment and approval processes, as the information is provided by only one of the stakeholders—the proponent who wishes to undertake seismic survey activities. The regulatory framework should also allow for direct consultation between the Regulator and the fishing and fisheries industry.

An integrated, long-term consultation process initiated early in the proponent's development phase that allows Fisheries to engage directly with NOPSEMA is considered a more comprehensive, efficient and effective process rather than the current ad hoc practices.

Summary

This exercise showed that the process is complex and it is not clear when both industries can best engage to ensure that interactions lead to positive outcomes during potential periods of activity. This complexity is compounded if there are multiple jurisdictions (i.e. State/Territory and Commonwealth), and multiple seismic and fishing activities taking place at given points in time.

[7] Office of the Environmental Protection Authority

Although the outputs (shown above and Appendix 1) are informative, they are probably not ideal for those in either industry to use as a ready reckoner due to their complexity, and as such a simpler guide or other engagement tool is required.

In addition, regulatory requirements or responsible departments may change (and have already changed) at any time, further complicating matters. As an indication of this, after the flowcharts were produced, the NOPSEMA became the sole designated assessor of petroleum and greenhouse gas activities in Commonwealth waters on 28 February 2014, under Part 10, section 146 of the EPBC Act.

Case Studies

Some level of commercial fishing occurs in almost all areas off the Australian coastline (Figure 4), but most fisheries production comes from a relatively small area of the AFZ on the continental shelf and upper continental slope.

In the 2013-14 financial year, wild-capture fisheries contributed 60 per cent ($1.5 billion) of the total value of Australia's fisheries production and produced more than 152,000 tonnes (t) of seafood, for local, domestic and export markets (ABARES 2015).

Australia's energy production comes from a variety of sources (Figure 5) but the most significant sources of oil (crude, condensate and LPG) and conventional gas are derived from basins offshore from Western Australia and the Northern Territory (Carnarvon, Browse and Bonaparte Basins) and Victoria (Gippsland Basin). Approximately 94 per cent of Australia's oil resources are located in these four basins. Around 48 per cent of Australia's gas was produced for the domestic market in 2013–14, with the remainder exported as LNG.

As at December 2013, Australia's Economic Demonstrated Resources included 20,559 Petajoules of oil (5038 crude, 4,118 LPG and 11,403 of condensate) and 110,120 PJ of conventional gas (BREE 2014).

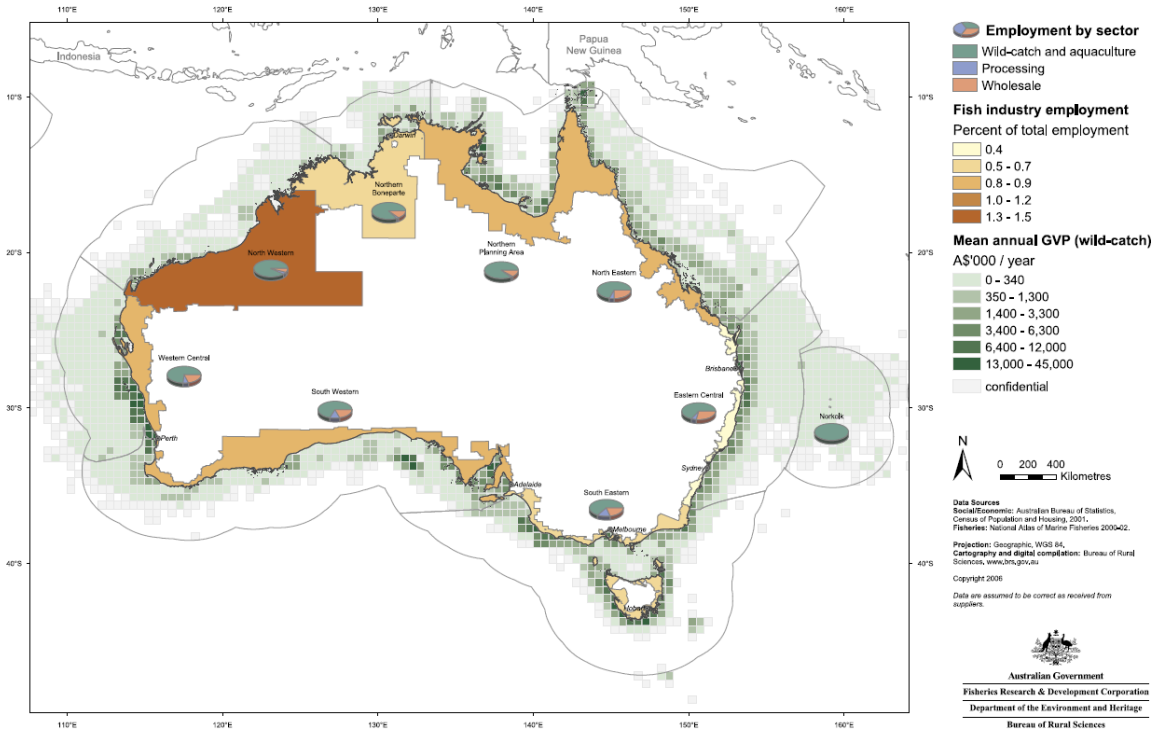


Figure 4. Australian commercial fishing GVP and fish industry employment. Adapted from Larcombe et al. (2006).

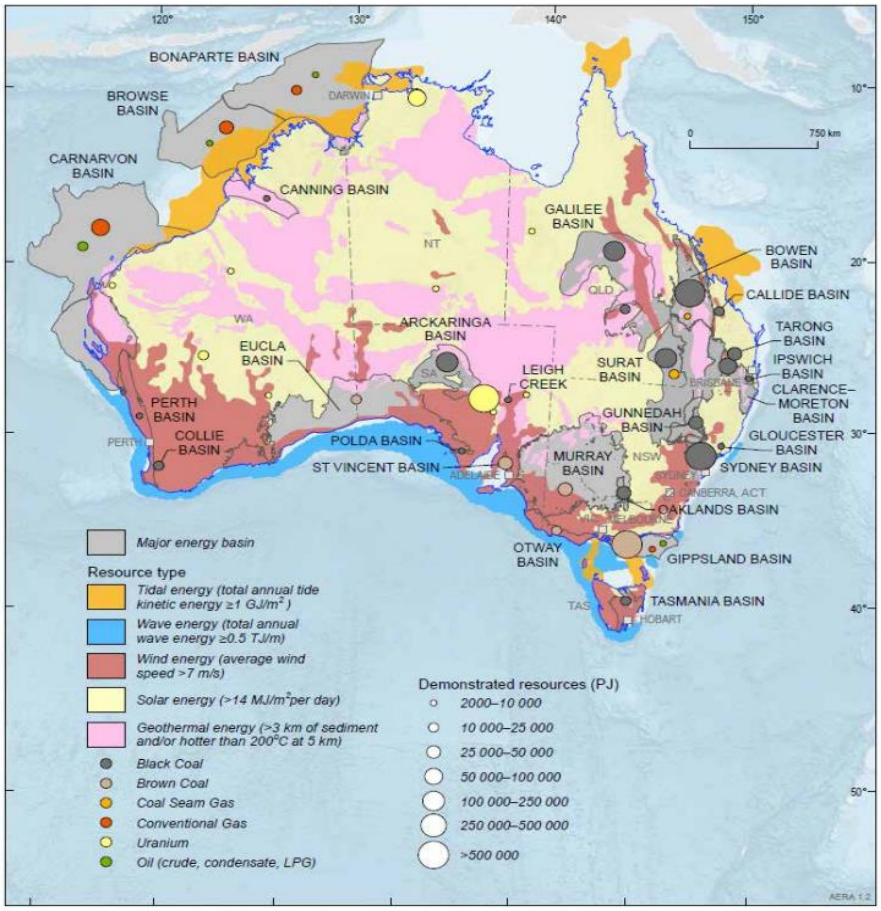


Figure 5. Australia's energy resources. From BREE (2014).

The National Offshore Petroleum Titles Administrator (NOPTA) is a branch of the Resources Division within the Department of Industry, Innovation and Science (DIIS) and it has a key role to oversee Australian offshore petroleum tenements. NOPTA produces a series of maps[8], updated annually, which show petroleum activities for the offshore area of Australia, and include titles, wells, pipelines, fields and Acreage Release areas current at the time of map publication. Figure 6 shows the 2014 Exploration Permits (light green).

A combination of the locations of the four major offshore energy basins, position of exploration permits and advice from the Steering Committee determined the case studies areas that were used in this project: Bass Strait, the Northern Territory and Western Australia (Figure 7).

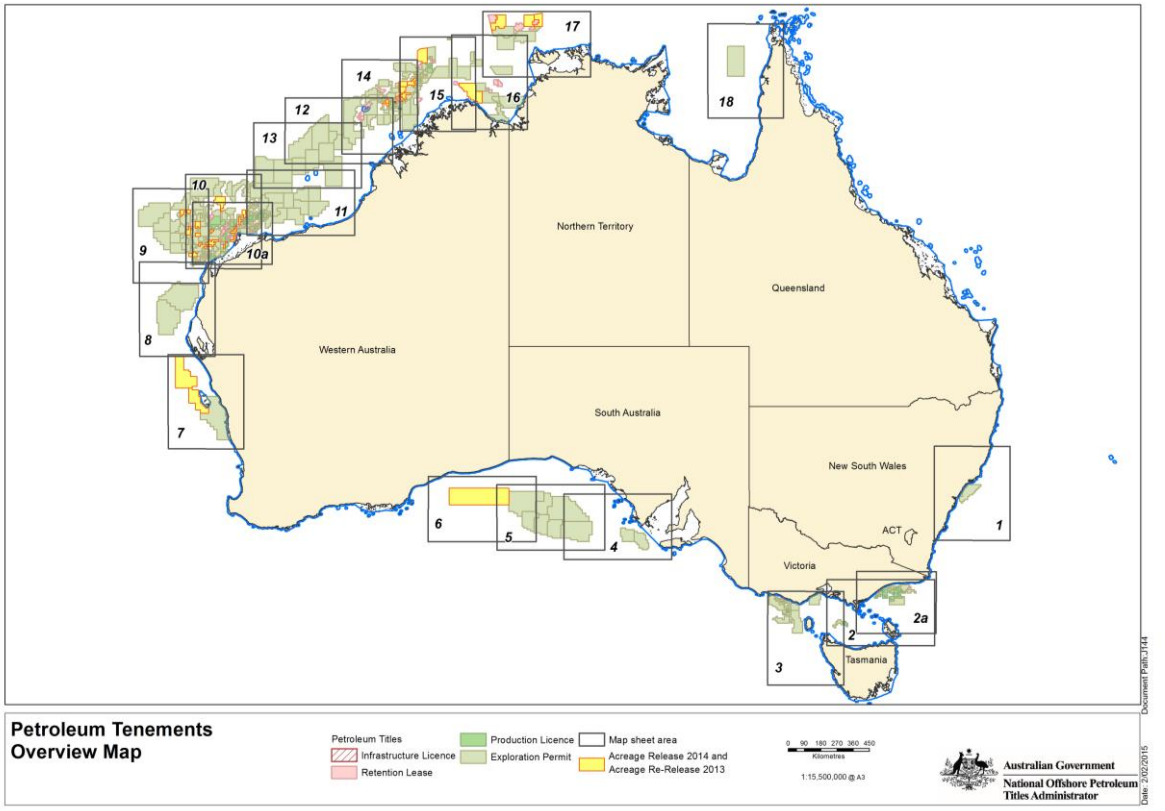


Figure 6. Australian Petroleum Tenements Overview Map – 2014

[8] See NOPTA details at http://www.nopta.gov.au/spatial-data/spatial-maps.html

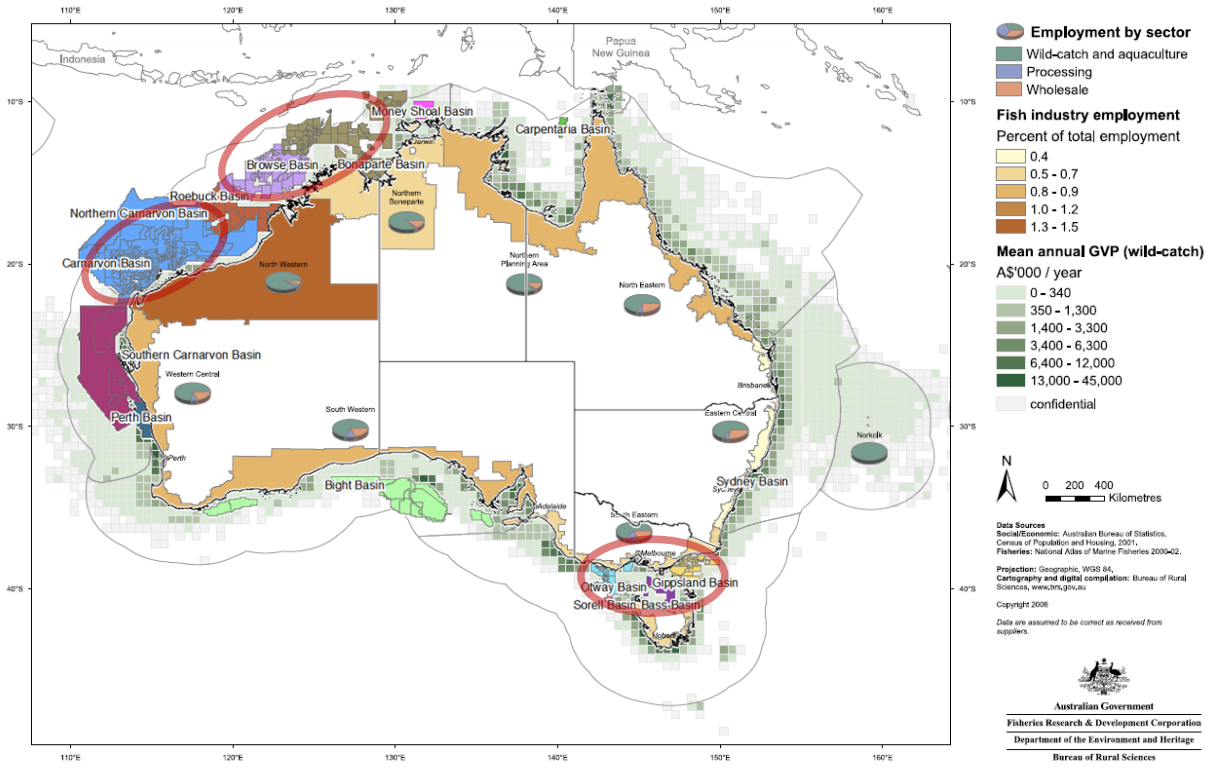


Figure 7. **Australian commercial fishing GVP (adapted from Larcombe et al. 2006) overlayed with petroleum titles as of January 2016 (NOPTA). Three case-study areas highlighted.**

Interviews were undertaken with fishing operators and a range of petroleum representatives from the case study regions (Table 4 and Table 5). These interviews sought to:

- Identify the level of commercial fishing operations and overlap with seismic activity in the area;
- Provide information to determine the full range of impacts on both the fishing and petroleum industries, and highlight opportunities to minimise them;
- Identify what areas both industries need to more effectively engage in;
- Provide a framework to optimise industry opportunities and minimise negative impacts across industry; and,
- Identify opportunities or examples to improve communication.

Case studies were considered the best approach to identify opportunities to improve relationships between industries, by highlighting areas of negative impact and examples of best practice.

Due to a range of confidentiality arrangements (past, current or potentially future) between some operators in the various industries arising from interactions, it was decided that summarising issues/processes/outcomes was more possible/desirable than outlining specifics for each of those interviewed. Following is a summary for each of the case study areas.

Table 4. Case study areas and key fisheries

Region	Fisheries Interviewed	
Mid Coast and North West Western Australia (Gascoyne, North Coast and upper West Coast)	Northern Demersal Scalefish Fishery Western Rock Lobster Pilbara Line Fishery Pearl Oyster	
Northern Territory	Demersal Fishery Timor Box Fishery Fish Trawl	
Bass Strait	Bass Strait Scallop Commonwealth Scallop Commonwealth Squid Jig Commonwealth SPF Eastern Tuna and Billfish Fishery Southern and Eastern Scalefish and Shark Fishery (SESSF) Trawl SESSF Danish seine	SESSF Gillnet, Hook and Trap (GHaT) Southern Squid Jig Victoria Ocean Purse Seine Victorian Inshore Trawl - Prawn Victorian Ocean Access Victorian Rock Lobster Victorian Scallop

Table 5. Case study stakeholder liaison meetings

Date	Location	Sectors	Interviewees
Sept 2013	Broome	WA Northern Demersal Scalefish Fishery	George and Tracey Hamilton, Paul Cordingly
Feb 2014	Lakes Entrance	SESSF Commonwealth Trawl	Tony Gurnaccia "Bluey"
		Victorian Ocean Access, SESSF GHaT Shark & Scalefish, Eastern Tuna and Billfish Fishery (ETBF), Recreational Charter to 30 nm	Tony Kemna
		Victorian Rock Lobster, SESSF GHaT Shark, Victorian Inshore Trawl - Prawn	John Barrett
		SESSF Danish seine, Commonwealth Southern Squid Jig, Commonwealth Scallop	Andy Watts and two skippers
		Victoria Ocean Purse Seine, Commonwealth SPF	Harry Mitchelson
		Manager of Lakes Entrance Fishermen's Co-Op (LEFCOL) (co-investigator)	Dale Sumner
		SESSF, GHaT Shark	Shane Duggins
		SESSF Commonwealth Trawl	Brendan (Western Alliance)
		Victorian Scallop, Victorian Inshore trawl - prawn	Steve Melissakis
		Bass Strait Scallop, Southern Squid Jig	Paul Anastos
	Canberra	APPEA	Damien Hills, Annalisa Grubisa, Mannie Shea
May 2014	Canberra Fremantle	Roundtable discussion group members	Petroleum and fishing representatives
Nov 2014	Fremantle	WAFIC	John Harrison, Alex Ogg, John Duffy, Aaron Irving
	Perth	NOPSEMA	Cameron Grebe, Carissa Aitken
		APPEA	Damien Hills
Dec 2014	Perth	Petroleum Geo-Services (PGS)	Terry Visser
	Perth	International Association of Geophysical Contractors (IAGC)	Paul Miller – Searcher, Ian Hay
	Perth	Geophysical Operations Advisors IAGC support	John Hughes
	Mandurah	NT Demersal Fishery	Bill Passey
	Perth	Conoco Phillips	Michael Marren
Feb 2015	Fremantle	WA Pilbara Line Fishery	Deryck Ethelston, Jimmy Money, Rob Rourke
	Dongara	WA Western Rock Lobster	Jeff Cockman, Bruce Cockman, George Bass
	Perth	Murphy Oil	Simon Zoller, Derrick O'Keeffe

Bass Strait

Fishery Activities

Bass Strait has had a rich history of fishing since European settlement and now supports a range of Commonwealth and State commercial fisheries that use a variety of different fishing gears including otter trawls, Danish seine, demersal gill nets, demersal longlines, dropline, scallop dredges and rock lobster traps, to target more than 15 key commercial species. In 2013–14 the gross value of Victorian fisheries production was estimated to be $80 million consisting of $55 million from the wild catch sector and $25 million from the aquaculture sector. Only a portion of this is derived from the Bass Strait case study area.

Commonwealth managed fisheries that can potentially fish in Bass Strait are:

- Southern and Eastern Scalefish and Shark Fishery including the Commonwealth Trawl Sector (CTS) and the Gillnet Hook and Trap fishery
- Bass Strait Scallop Fishery
- Southern Squid Jig Fishery
- Small Pelagic Fishery
- Eastern Tuna and Billfish Fishery
- Skipjack Tuna Fishery
- Southern Bluefin Tuna Fishery

State managed fisheries that that can potentially fish in Bass Strait are:

- Victorian Scallop Fishery;
- Victorian Rock Lobster Fishery;
- Victorian Abalone Fishery;
- Victorian Ocean Fishery.

Petroleum Activities

The Gippsland Basin covers an area of about 41,000km^2 in south-east Australia. About one third of the basin covers onshore Victoria, while the remaining area is offshore. The offshore area is considered part of Bass Strait, and comprises mainly shallow water (<200m deep). Depths exceeding 3,000m are reached in the Bass Canyon in the east of the basin.

Victoria is the largest supplier of gas to the eastern market, producing 415 Petajoules in 2013–14, mainly from the Gippsland and Otway basins in Bass Strait (BREE 2014). The Bass Strait region is one of Australia's most prolific hydrocarbon provinces, and has been worked since 1969. At its peak production, Bass Strait was producing 500,000 barrels a day. Although current production is considerably lower, the region has 3.5 billion barrels of oil and 5 trillion cubic feet of gas over its production history. In 2009 there were 17 developed offshore oil and gas fields, 24 offshore production facilities, over 600km of pipeline network, and 5 fields under development (Anon 2009). OPTA (2016) lists companies with current (2016) exploration permits in the Gippsland Basin as Larus Energy, Bass Strait Oil Company Ltd, Oil Basins Ltd, SGH Energy, Origin Energy, WHL Energy, Santos Carnarvon Hibiscus, Quadrant Northwest, Trident Energy, and Liberty Petroleum Corporation.

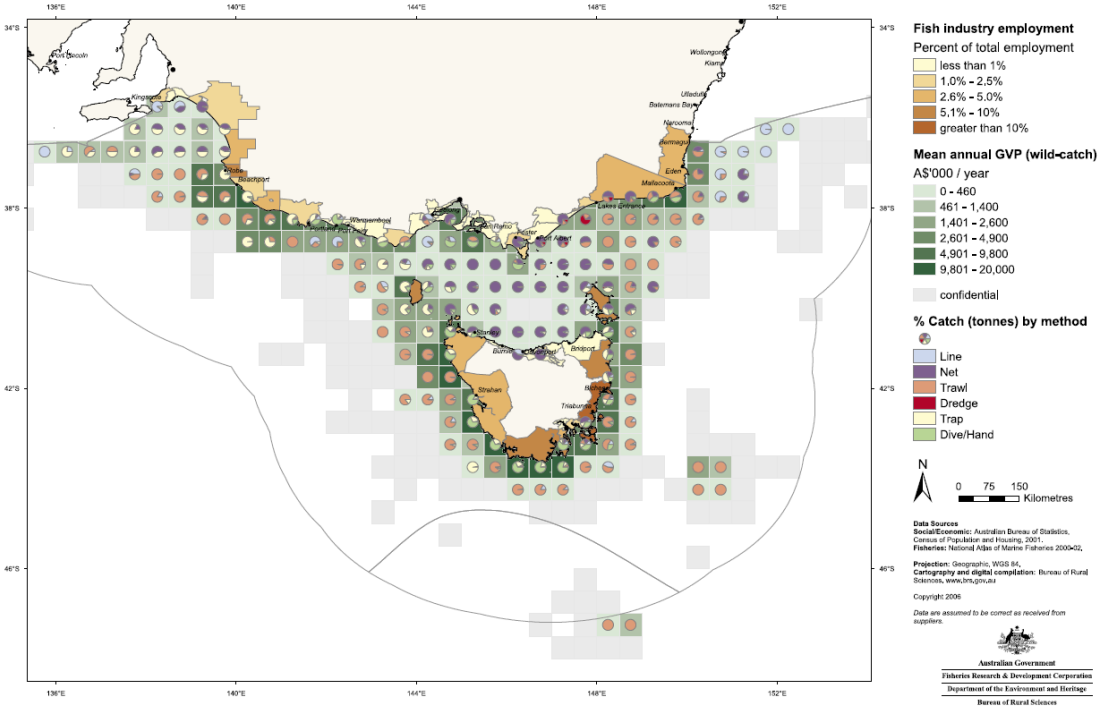


Figure 8. South East Region – Fishing industry employment, GVP and fishing methods. Adapted from Larcombe et al. (2006).

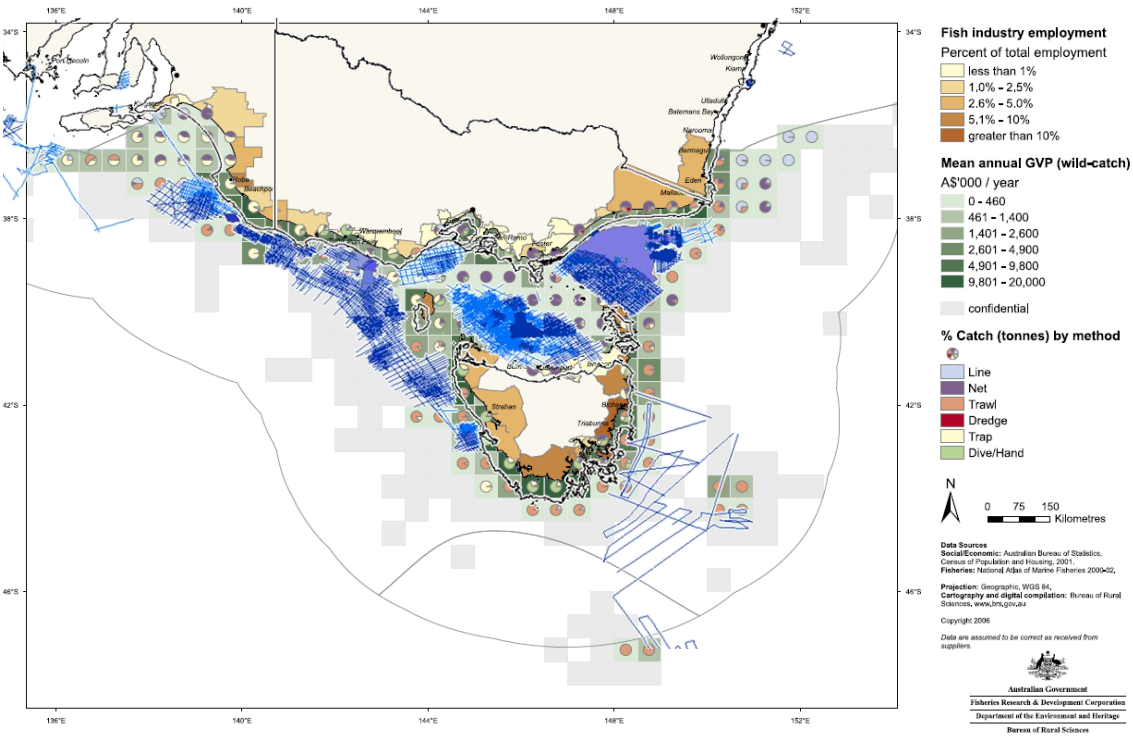


Figure 9. South East Region – Fishing industry data (adapted from Larcombe et al. 2006) overlayed with 2D and 3D seismic surveys[9] conducted since 2000 (NOPTA 2016).

9 Seismic activity shows a combination of 2D and 3D across various regions

Mid Coast and Northern Western Australia

Fishery Activities

Mid Coast and Northern WA are isolated areas with only a few small towns. There has been sporadic and at times heavy commercial fishing activity in this region over time, supporting a range of large (e.g. Western Rock Lobster) and smaller (Northern Shark) State and Commonwealth commercial fisheries. These fisheries use a range of different fishing gears including hand harvest, gill nets, longlines, traps, droplines and otter trawls, to catch more than a hundred species. In 2013–14 the gross value of fisheries production from Western Australia was $490 million consisting of $417 million of wild-catch production and $73 million of aquaculture production (Savage and Hobsbawn 2015). Only a portion of this is derived from the case study areas.

State managed fisheries that have the potential to fish in the area of interest are:

- Abrolhos Islands and Mid-West Trawl
- Exmouth Gulf Prawn
- Gascoyne Demersal Scalefish
- Kimberley Gillnet and Barramundi
- Mackerel
- North Coast Prawn Managed Fisheries
  - Nickol Bay Prawn
  - Kimberley Prawn
  - Onslow Prawn
  - Broome Prawn
- Northern Coast Demersal Fisheries
  - Pilbara Trap
  - Pilbara Line
  - Pilbara Fish Trawl
  - Northern Demersal Scalefish
- Northern Shark
- Pearl Oyster
- Shark Bay Prawn and Scallop
- West Coast Deep Sea Crustacean Managed Fishery
- West Coast Demersal Gillnet and Longline Fishery
- West Coast Demersal Scalefish
- West Coast Rock Lobster.

Commonwealth managed fisheries that have the potential to fish in the area of interest are:

- North West Slope Trawl Fishery

- Western Deepwater Trawl Fishery
- Western Tuna and Billfish Fishery.

Petroleum

There are a number of key basins within this case study area extending from the NT border to south of Geraldton. These basins include; Browse, Roebuck, Offshore Canning, Northern Carnarvon and Southern Carnarvon (Figure 6). These basins cover an area of approximately 890,000[10] km^2.

The area has had hydrocarbon activity since the 1950s when exploration began, particularly in the Carnarvon basins, with activity increasing in other basins. Now, most (around 92 per cent) of Australia's conventional gas resources are located in the Carnarvon, Browse and Bonaparte basins off the north-west coast.

BREE (2012) states that there are three operating LNG processing plants in Australia: the North West Shelf with a total production capacity of 16.3 million tonnes per annum (Mtpa), and Pluto projects (4.3 Mtpa) in Western Australia and the Darwin LNG plant (3.6 Mtpa) in the Northern Territory. There are an additional three more conventional LNG projects either now completed or under construction off the North-West coast of Australia, including the Gorgon (15 Mtpa), Wheatstone (8.9 Mtpa) and Ichthys (8.4 Mtpa).

OPTA (2016) lists companies with current (2016) exploration permits in the Carnarvon, Browse and Roebuck Basins as AWE, BHP Billiton Petroleum, Carnarvon Petroleum, Chevron Australia, CNOOC Australia, Cue Exploration, Emerald Gas, Eni Australia, Exmouth Exploration, Finder, Flow Energy, Hess Australia, Hydra Energy, Kufpec, Lightmark Enterprises, Murphy Australia, Neon Energy, North West Shelf Exploration, Oilex, OMV Australia, Pathfinder Energy, Quadrant, Rampart Energy, Santos Limited, Shell Australia, Statoil Australia, Strike Energy, Tap Oil Limited, Total E&P Australia, and Woodside Energy.

[10] http://www.ga.gov.au/scientific-topics/energy/province-sedimentary-basin-geology/petroleum/

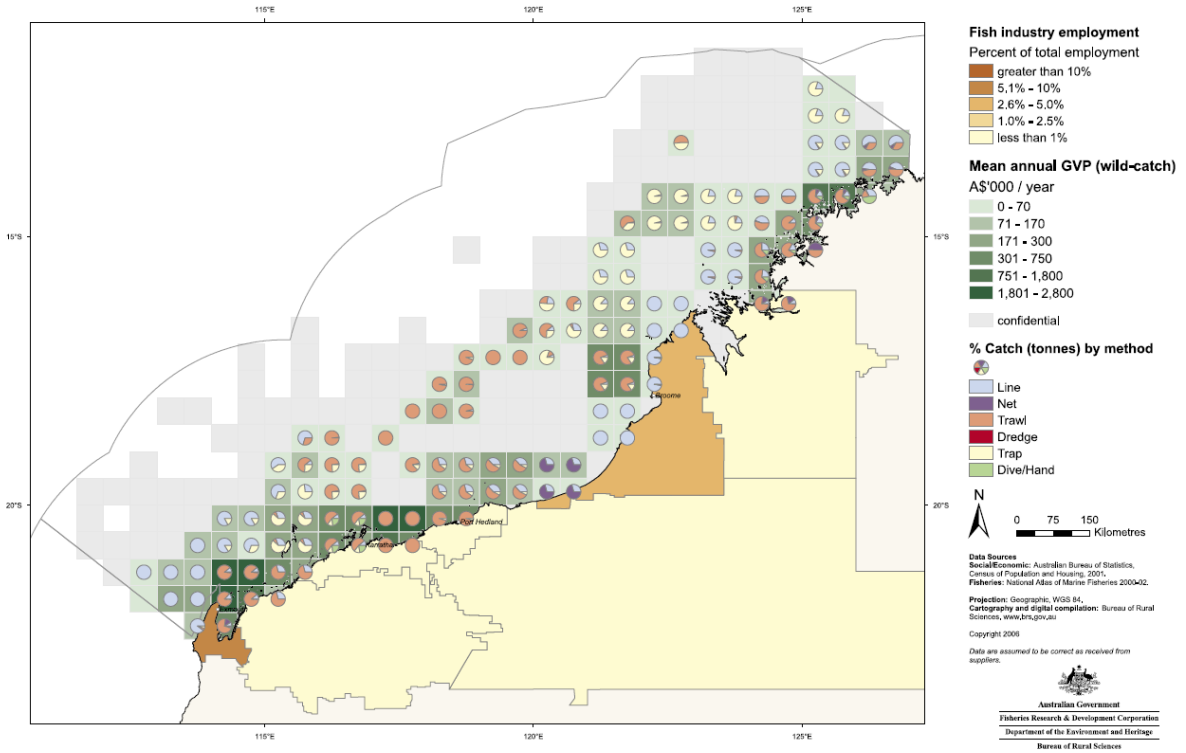


Figure 10. North West Region – Fishing industry employment, GVP and fishing methods. Adapted from Larcombe et al. (2006).

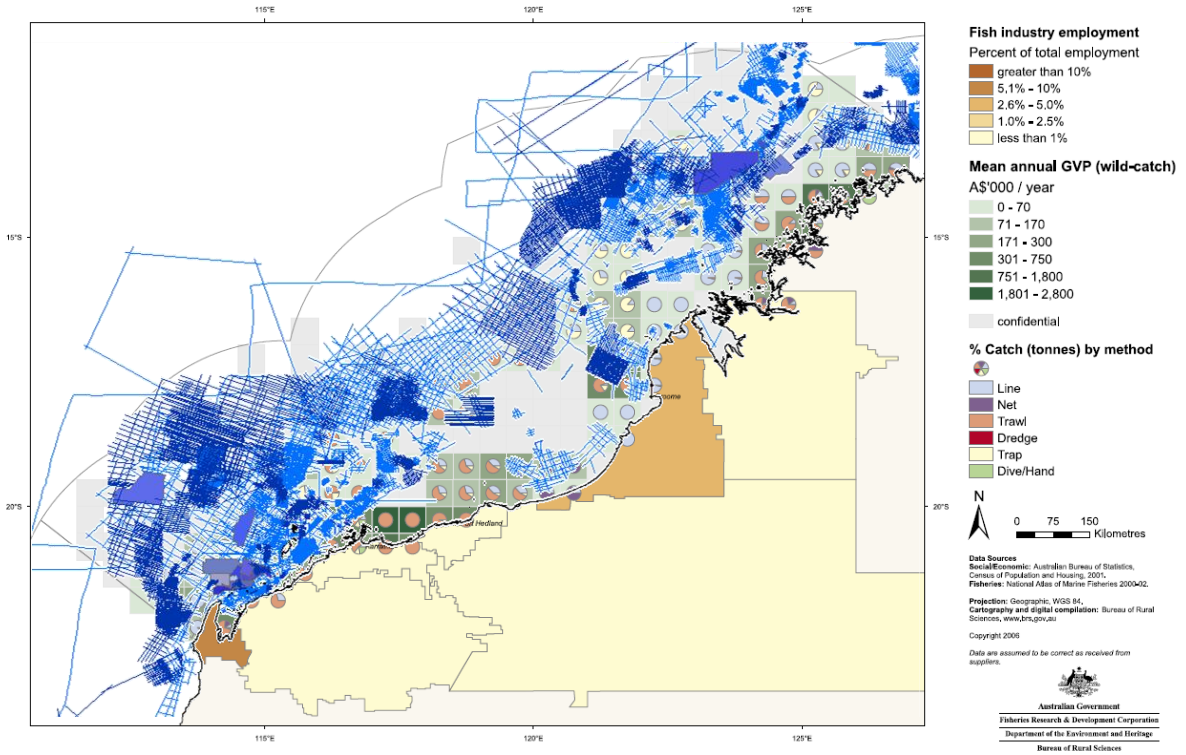


Figure 11. North West Region – Fish industry data (adapted from Larcombe et al. 2006) overlayed with 2D and 3D seismic surveys[9] conducted since 2000 (NOPTA 2016).

Northern Territory

Fishery Activities

The NT is very isolated, with only one major coastal fishing town/port, being Darwin. Commercial fishing has taken place in offshore waters of the Northern Territory by Australian vessels since the 1980s and by large foreign vessels for 20 plus years before that. Fishing by smaller Indonesian vessels for subsistence and commercial purposes has also been operating in the region for many hundreds of years.

These fisheries use a range of different fishing gears including hand harvest, gill nets, longlines, traps, droplines and otter trawls to catch 20 to 30 key species, but this number is expected to grow as the Demersal fishery further develops. The 2013–14 GVP of fisheries production in the Northern Territory was $46 million consisting of $31 million wildcatch production and $15 million aquaculture production (Savage and Hobsbawn 2015). Only a portion of this is derived from the case study area.

Territory managed fisheries that have the potential to fish in the area of interest are:

- Demersal Fishery;
- Offshore Net and Line Fishery;
- Spanish Mackerel Fishery; and,
- Timor Reef Fishery.

Commonwealth managed fisheries that have the potential to fish in the area of interest are:

- Northern Prawn Fishery; and
- Western Tuna and Billfish Fishery.

Petroleum Activities

There are two major basins covering the case study areas in the NT, Bonaparte - Money Shoal and Arafura (Figure 6). These basins cover an area of approximately 700,000km^2.

The Bonaparte Basin straddles the border between the Northern Territory and Western Australia. Most of the basin is located offshore, covering 250,000 km^2, compared to just over 20,000 km^2. The Petrel and Tern fields were discovered in this Basin in the late 1960's with the Frigate field discovered in 2008. The Bonaparte floating, production, storage and offloading (FPSO) LNG facility was proposed to develop these fields.

OPTA (2016) lists companies with current (2016) exploration permits in the Bonaparte Basin and Money Shoal Basins include Alpha Natural Resources , Aurlandia NL, Bengal Energy, Bounty Oil & Gas NL, ConocoPhillips Australia Exploration, Eni Australia, Finder, Finniss Offshore Exploration, GDF SUEZ Bonaparte, Goldsborough Energy, Inpex Browse, Karoon Energy International, Magellan Petroleum (Offshore), Murphy Australia, Origin Energy Resources, PTTEP Australasia (Ashmore Cartier), PTTEP Australia Timor Sea, Quadrant Northwest, Reliance Exploration & Production, Santos Offshore, Shell Development (Australia), Silver Wave Energy, Sinopec O&G, Sinopec Oil and Gas Australia (NT) , Tangiers Petroleum Limited, Tata Petrodyne , Total E&P Australia, and Vulcan Exploration.

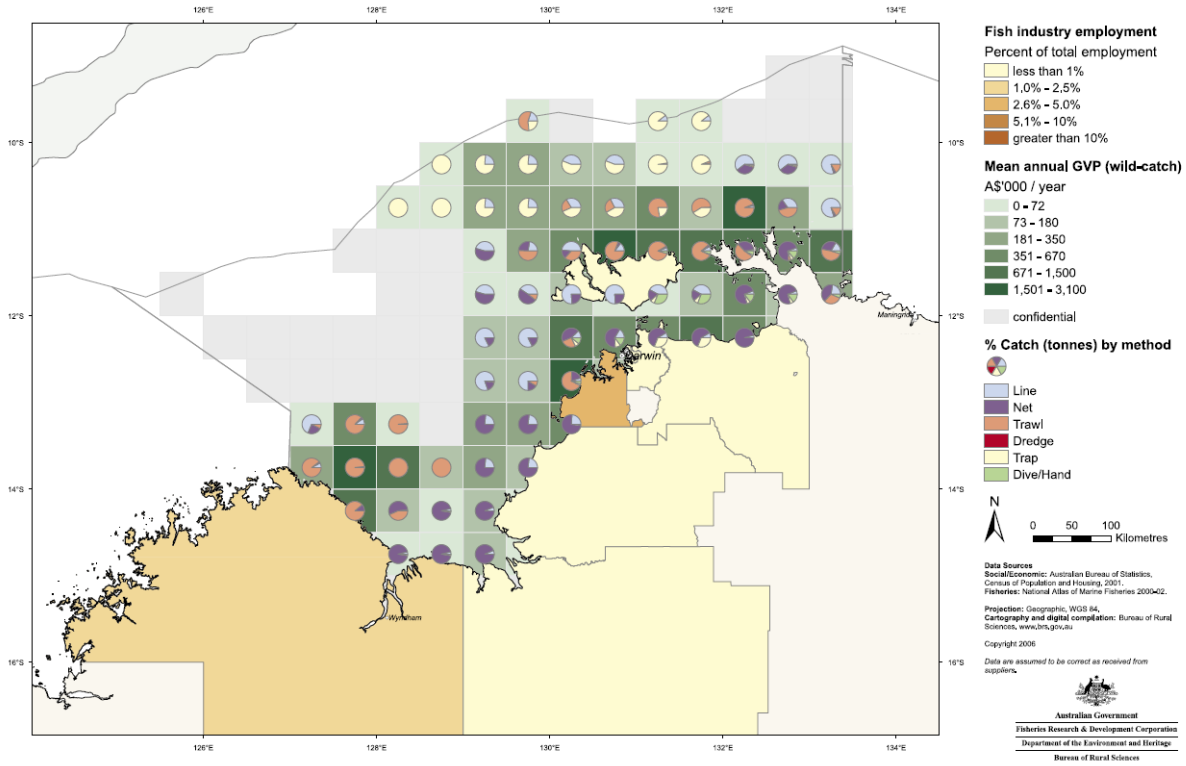


Figure 12. Northern Bonaparte Area – Fishing industry employment, GVP and fishing methods. Adapted from Larcombe et al. (2006).

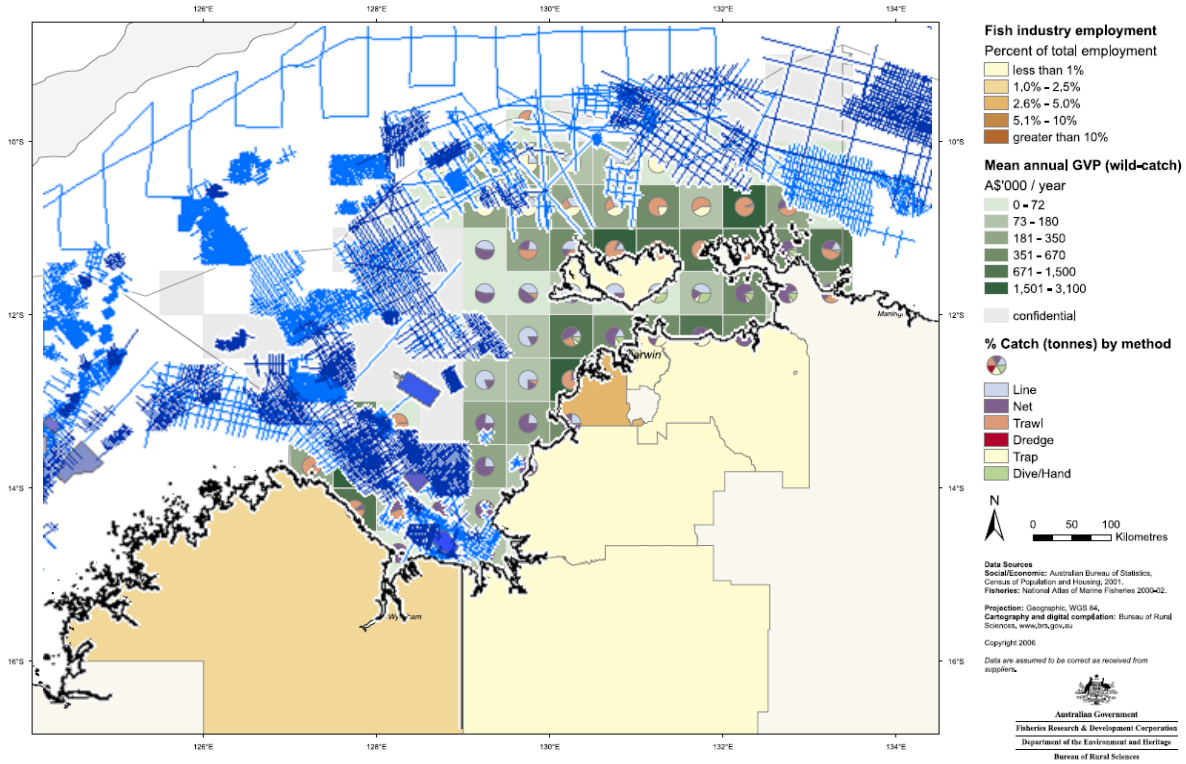


Figure 13. Northern Bonaparte Area – Fishing industry data overlayed with 2D and 3D seismic surveys[9] conducted since 2000. Adapted from Larcombe et al. (2006).

Key Issues and Findings

Following stakeholder liaison, there is little doubt that underpinning many (but not all) of the conflict issues is a fundamental lack of understanding by each industry of the other's operational requirements and constraints, and communications challenges. Katz and Lawyer (1985 cited in Ramsbotham 2011) highlighted five approaches to conflict (Figure 14) depending on whether 'concern for self' or 'concern for other' was high or low. The positive opportunities for 'compromising' and 'problem solving' are extremely hampered by a lack of understanding of the other industry. This categorisation of approaches to conflict is a useful framework to consider the interactions between the petroleum and fishing industries.

All of the above approaches to conflict were demonstrated by people from both industries in the case study discussions. For many individuals, businesses and associations in the fishing industry, there was a perception that the petroleum industry and companies were just too big, well-resourced and powerful to enter into fruitful negotiations towards conflict resolution and therefore 'withdrawal' or 'yielding' was a common attitude. Due to legislation required as part of the EP process, withdrawal really wasn't an option for the petroleum companies. There were some case study discussions where it was obvious that the petroleum companies fully recognised their power with respect to the fishing industry and took a very contentious approach, with little regard for the interests of the fishing industry. Some people from the fishing industry also adopted a similarly contentious approach, but positive outcomes for them appeared to be harder to achieve.

The really insightful case study discussions were where both the fishing and petroleum industries had fully engaged with each other, understood the other's requirements and adopted either the 'compromising' approach or even better, the 'problem-solving' approach and had achieved positive outcomes as a result. Ramsbotham *et al.* (2011) describe the optimal approach where there is '…high regard for the interests of both Self and Other. This implies strong assertion of one's own interest but equal awareness of the aspirations and needs of the other, generating energy to search for a creative problem-solving outcome'. There were a number of stand-out instances of where this had occurred.

Although some case study discussions identified a range of opportunities to improve outcomes, there were a number of seismic operations where both the fishing industry and petroleum industry were satisfied with most aspects of communication and interaction. It appears that the best outcomes arise when there is genuine two-way communication processes in place, and a lot can be learned from these examples. Where good liaison and information exchange processes had been established, many of the issues and most, if not all, of the potential conflict had been overcome.

Examples of such positive levels of liaison and information exchange were where a petroleum company assigned someone (either from the petroleum or fishing industry) dedicated to begin and continue the process of communicating (usually face-to-face) with the fishing industry as soon as the potential for a seismic survey in the region was recognised — way before the legislated period for communication needed to meet the requirements of an EP. Often they attended fishing industry meetings to give brief updates and progress reports, sometimes just to listen to the fishing industry to better understand them and their issues, but also occasionally just joined in fishing industry social events. This gave the fishing industry members a familiar point of contact to raise any questions or concerns. It also gave the

petroleum companies forewarning of potential issues and adequate time for them to be raised and maybe resolved before the EP.

Commitment of both industries to the development of relationships, good communication and understanding were all critical in these success stories. Lack of these commitments was seen as the major hurdle to positive outcomes in many of the other case studies. Consequently, inter-sectorial relationship-building and communication are a major focus of this report.

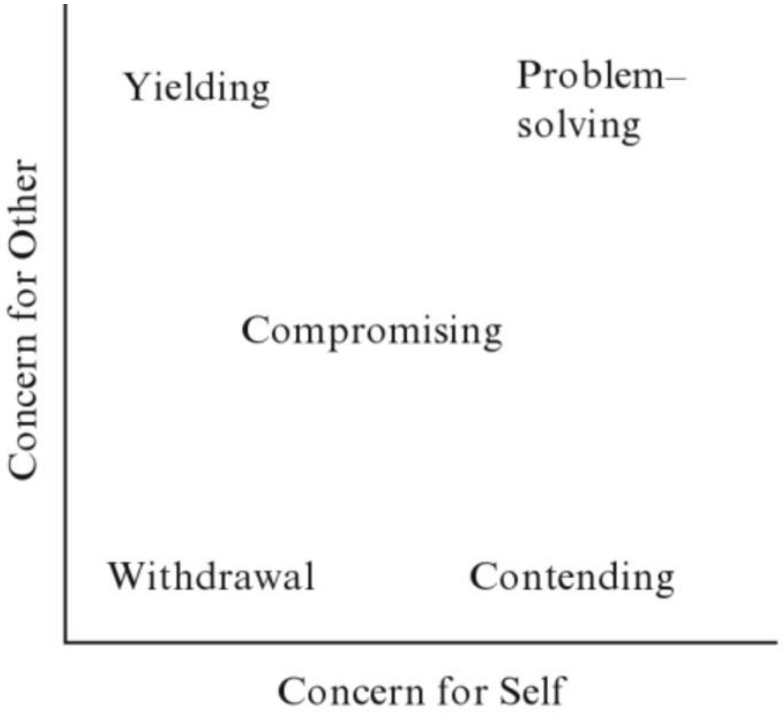


Figure 14. Five approaches to conflict (from Katz and Lawyer 1985).

From the interviews conducted with stakeholders from both industries, the issues were categorised into six major areas:

1. Need for easy access to two-way information;
2. Complexities in liaison with multiple stakeholders, industries and/or companies;
3. Lack of understanding by one industry for the other's operational requirements and constraints;
4. Minimisation and/or resolution of sectoral impacts;
5. Minimisation and/or resolution of individual business impacts; and,
6. Costs and access to port-based infrastructure.

At the October 2015 Roundtable meeting, members were presented with a summary of these six key issues. Four potential processes that could be adopted to address them include: an easy to use and accessible web-based information sharing system; improved visual information; annual cross-sector meetings; and greater utilisation of industry liaison people. Development of 'common language' would be valuable in all these approaches.

These issues, findings and solutions were supported by the Roundtable and are expanded on below.

Information Access

Access to current, factual and clear information is a major issue for both industries. The corollary of this is that poor information costs both industries in time and resources, and leads to misunderstanding, angst, resistance, and in the worst cases, even active disruption of the other industry's business activities.

A specific case of the above for the fishing industry is having up-to-date information on the position and movements of seismic vessels immediately prior to, and during surveys. For the petroleum industry, it would be to have accurate fine-scale spatial and temporal information on catch and effort at the fishery level, with recognition of the need to protect potential confidential information.

Being able to identify and access specific websites that establish where seismic vessels are operating, using web and SMS notifications for changed circumstances, and developing fishing industry templates outlining fishery-level operation of industry would address the issue to a large extent. However, having to access a number of websites to gather this information is often not easy or practical - a dedicated front-end fishery portal could assist in bringing the various pieces of information together for both industries, and be a cost effective method.

A number of those interviewed outlined how they were involved in ongoing consultation even when they didn't need to or want to be. A formalised process that ensures everyone is in until they choose to opt out could reduce the amount of unnecessary consultation between the industries.

In addition, as an example of a need for a common language, positional information is not always conveyed using the same means to describe values (i.e. latitude and longitude can be divided into minutes and seconds or decimal minutes and seconds).

Liaison with Multiple Stakeholder Groups

Both industries struggled with situations in which they had to deal with multiple groups of stakeholders with different interests and concerns.

For the fishing industry, this was often the case in regions where there were numerous seismic operations being either planned, or conducted, by different petroleum operators or independent seismic service providers. Simply keeping track of all of the different stages of multiple operations was a challenge for fishers, particularly when the main communication is via posted letters to fishers who spend significant periods at sea.

This was compounded if there were last minute changes to previously proposed operations. This quickly leads to a situation of information overload and frustration, which consequently affects individual fisher's responses – with them either giving up getting involved in the process or providing ineffectual or generic responses (i.e. consultation fatigue or apathy).

The other issue is that each of the seismic operations is considered individually by the petroleum companies in meeting their respective consultation, communication and liaison requirements under the EP process. There is no process for the consideration of the cumulative impacts of multiple seismic operations on fishers working in a region.

Fishers may be able to contend with impacts from a single seismic operation by modifying their activities, but there may be limited ability to do this in response to multiple seismic operations over relatively small spatial and/or temporal scales.

For the petroleum industry, the issues were in understanding the complexity of working in a region that encompasses fishers from multiple fishing sectors, working with a range of different gear types, and managed under multiple jurisdictions (State/Territory and Commonwealth). This situation was further exacerbated when fishers work considerable distances away from their home ports, or when there are multiple industry associations within sectors.

In addition, although many seismic operations are planned well in advance the exact timings may be required to change due to operational and economic considerations, and this generally leaves little time for adequate industry notification, unless time alternative communication methods are available and used (e.g. specific email, SMS notification, live web messaging etc) and the relevant contacts are known.

Having better links with, and an understanding of the various associations and contacts, and being able to provide more detailed information on the fishing industry in respect to gear, areas of operation and seasonality, will assist.

In addition to regional annual meetings to share information and lay out forward plans, providing this information in one place that is easy to access and understand can help address problem.

Two-way Consultation and Communication

Improved two-way consultation, engagement and notification processes on shore and at sea was a critical component of improving information sharing, minimising impacts on both industries, and generating improved outcomes.

The need to work together to minimise impacts can only really be achieved if there is a dialogue that allows discussions to take place in a timely manner and which leads to agreed processes and protocols. Some excellent examples of this were identified in the case studies where there are whole-of-industry face-to-face meetings arranged, local liaison officers engaged by petroleum companies to minimise disruption, and readily available updates and communiqués made available. Direct face-to-face (or phone-to-phone or text-to-text) engagement seemed to work the best, but it was noted that this was not always possible.

The fishing industry also needs to have a level of understanding, relevant expertise, and technical capacity to be able to fully engage in these processes.

Improved understanding and awareness on the scale, timing and methods of operations used by both industries should, over time, minimise consultation overload.

What was clear for both industries was that the burden attached with having to provide, read and respond to multiple written notifications did not lead to optimal outcomes. Both industries still want the information and an opportunity for input, but a less onerous approach was sought.

A case of the above is for potential improvements in efficiency in the NOPSEMA requirements for the petroleum industry to consult with stakeholders and report on such consultations, and for the engagement of liaison officers who have an understanding of who's who and what's what, and noting the communication limitations of fishers at sea and possible impacts of consultation overload. NOPSEMA has just concluded a survey to gain better insights into the current state and future direction of environmental management consultation and decision-making processes. The current project's outputs have been provided to NOPSEMA and discussions have taken place with staff. The review outcomes will be available in early 2016.

Opportunities to develop opt-in/opt-out electronic communication processes (immediate), rather than relying on hard copy correspondence (delayed), were raised by both industries as a means to simplify the communication issue, whilst acknowledging the need that full consultation must occur. Having visual and interactive websites that can allow operators to quickly identify areas of interest would mitigate concerns.

In addition, OPGGS Regulations require an evaluation of all the impacts and risks, appropriate to the nature and scale of each impact or risk. It was identified by a number of fishing industry participants that the development and implementation of an environmental policy framework, based on a hierarchical, transparent and inclusive multi-stakeholder risk assessment process (see methodology as described by Fletcher[11]) that underpins the OPGGS Regulations, would provide more certain policy and business outcomes between petroleum and the Seafood industry.

Understanding Temporal, Spatial Impacts, Obligations and Drivers

The need for better education of both industries was clear, as neither appeared to have a good understanding of the legal, operational and logistical requirements of the other industry. There was generally not a good understanding of the impacts that one industry could have on another industry or a particular business. This lead to misunderstandings and conflicts as operators either didn't understand the implications of their actions, or assumed that their actions were not a significant impact.

Admittedly, the complexity and variability in the fishing industry (different sectors, seasons, gear, methods, species distribution etc) is difficult for most people outside the industry to understand. What can appear to be an insignificant seismic survey area given the entire spatial extent of a fishery, may be seasonally or spatially important given the movement or population dynamics of the species involved. Similarly, what may be a relatively unimportant area for most operators in a fishery may be the bread and butter of one local operator. Also, there is often the assumption that if a fishery is operating under quota then that quota can simply be caught in another area of the fishery, without the realisation that the costs of fishing may be greater in other areas or that movement of fishing operations may cause intra-sectoral conflict. This level of insight into a fishery cannot be gained from a cursory overview of the fishery.

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[11] Fletcher (2005) used an application of qualitative risk assessment methodology to prioritise issues for fisheries management, that involves:

- The examination of sources of risk (issue identification)
- The potential consequences (impacts) associated with each issue; and,
- The likelihood (probability) of a particular level of consequence actually occurring.

The fishing industry questioned why they couldn't be notified of planned seismic operations further in advance or why they received little notice of large changes in seismic schedules. They were perplexed because they know that large seismic vessels (like fishing vessels) must have vessel operation plans organised well in advance, although they fully recognise that working in the marine environment requires dealing with logistical issues and changes associated with weather, equipment failure etc.

Having a one-stop-shop, or regular forum, better websites and industry fact sheets, as a means to explain this information in a simple format, would allow both industries to better understand the needs and drivers of the other.

The lack of a web-based repository for up to date research on impacts of seismic activity on fishing resources was also noted by a number of the case study participants. A host for this should be investigated.

Minimising Grey Areas to Provide More Certainty through Clearer Frameworks

All participants wanted a framework that optimised opportunity and minimised negative impacts, however it was raised a number of times that there are some grey, or vague areas in the legislative framework. It was felt that these areas are open to interpretation and this could lead to greater misunderstanding. This was particularly noted by seismic operators responding to EP requirements, but was also by some from the fishing industry.

The challenge for regulators is to provide a framework that is clear and unambiguous but still is reasonable and is not too onerous. The Roundtable could provide guidance on this.

Interactions Between Seismic and Tender Vessels with Fishing Boats and Gear

This was a key area of concern for both industries and was seen as a major economic consideration, as well as an operational and safety issue due to loss of fishing gear, or entanglement with seismic vessels or towed array. Opportunities to limit (or reduce to nil) these interactions would be a very positive outcome.

Interactions were identified as taking place for a number of reasons, e.g.:

- Fishing industry were unaware that seismic activity was taking place in an area at a particular time;
- Fishing gear was incorrectly set in an identified area;
- Seismic vessels operated over gear that was outside identified areas or undertook wider sweeps or turns than anticipated, or did not take due care to ensure it was appropriate to operate in the area;
- Economic imperatives - the perceived cost of not doing it outweighed cost of doing it; and,
- Simply a lack of care about the operations of or impacts on the other industry.

Most of these matters could be addressed with better communication and more current information on activities. Up to date easy to access web information, SMS messaging and use of liaison staff onshore and at sea are means to address this in most instances.

The issue of compensation for lost or damaged fishing gear was raised often by the fishing industry. In many instances the petroleum industry had procedures in place to deal with loss

or damage to fishing gear, and this was resolved amicably in some cases, but in others it caused high levels of conflict that in some cases was never resolved. Transparent and agreed processes for these claims need to be agreed by both industries, including responsibilities for payment and provision of accurate data. The Roundtable could provide guidance on this.

The issue of compensation for increased costs or loss of income (by both industries) is far more vexed and very little constructive dialogue could be achieved from either industry on this issue. Again, lack of knowledge of the other industry's business logistics and constraints did not assist in this respect. Each industry had very limited knowledge about the financial consequences of their interactions with the other industry. Many in the fishing industry considered it was just a one-way street with them being the only losers, but it actually occurs both ways. Many in the petroleum industry considered they were only impacting a very small region of the areas available to fishers, so any losses could be recouped by fishing in another area, especially if the fishery was under quota. In some instances, agreements had been brokered between individual companies but such arrangements were kept in strict confidence. Overall, there was very little guidance on this matter from either industry with this unlikely to change in the near future.

Access to and Increasing Costs of Shared Port Facilities.

Fishing industry and petroleum operators both identified a need to be able to access port facilities to load, unload and berth vessels. The fishing industry identified that it is becoming more difficult and/or expensive to access berthing and loading facilities due to increased activity and space required by vessels operating in the petroleum industry. This was particularly important because most fishing operations in the affected areas rely on fresh or live product, and delays can lead to mortalities, spoilages and missing the markets.

The fishing industry also noted that the level of OH&S requirements and certified training incumbent on the petroleum industry at port facilities is far beyond what they would consider reasonable for the fishing industry, further increasing costs or restricting access to some port facilities.

The extent of this issue is very port-dependent, so it is very difficult to provide overarching solutions as part of this project.

Solutions - Four processes to address the key issues

The conflict cycle illustrated in Figure 15 below[12] indicates that resolution is only achieved through balanced engagement. They suggest that the choice of avoidance or engagement in the process is critical and the latter can only succeed if people resolve to use effective communication techniques rather than trying to dominate the engagement.

It was particularly important to highlight situations where both the fishing industry and petroleum industry were satisfied with aspects of communication and interaction and conflicts were minimal. This showed that underpinning many (but not all) of the conflict issues

[12] http://www.maximumadvantage.com/conflict-resolution-in-the-workplace.html

is a fundamental lack of understanding by each industry of the other's operational requirements and constraints and/or access to timely information and poor engagement.

Figure 15. Escaping the conflict cycle

An area that leads to a degree of angst from fishing industry stakeholders relates to expectations that there be no risk or impact from seismic activities, rather than the risks being *'As Low As Reasonably Practicable'* (ALARP) with acceptable levels of risk or impact *'So Far As Is Reasonably Practicable'* (SFAIRP). So when consultations lead to outcomes that may well meet ALARP they often do not meet the fishing industry's expectations.

It appears that the best outcomes arise when there is genuine two-way communication processes in place. What provided a lot of hope is that, in a number of cases where effective liaison processes had been established, many of the issues, and most, if not all of the potential conflict had been overcome. A lot can be learned from these examples and developing commonly agreed messages to each industry's stakeholders, and joint guidance protocols.

Although there were a range of issues identified, it was felt that a large majority could be rectified by addressing four key processes. These protocols and processes have developed based on the various stages of petroleum exploration and development as shown in Figure 16 below, with the scope of this current FRDC project delineated by the green dashed rectangle.

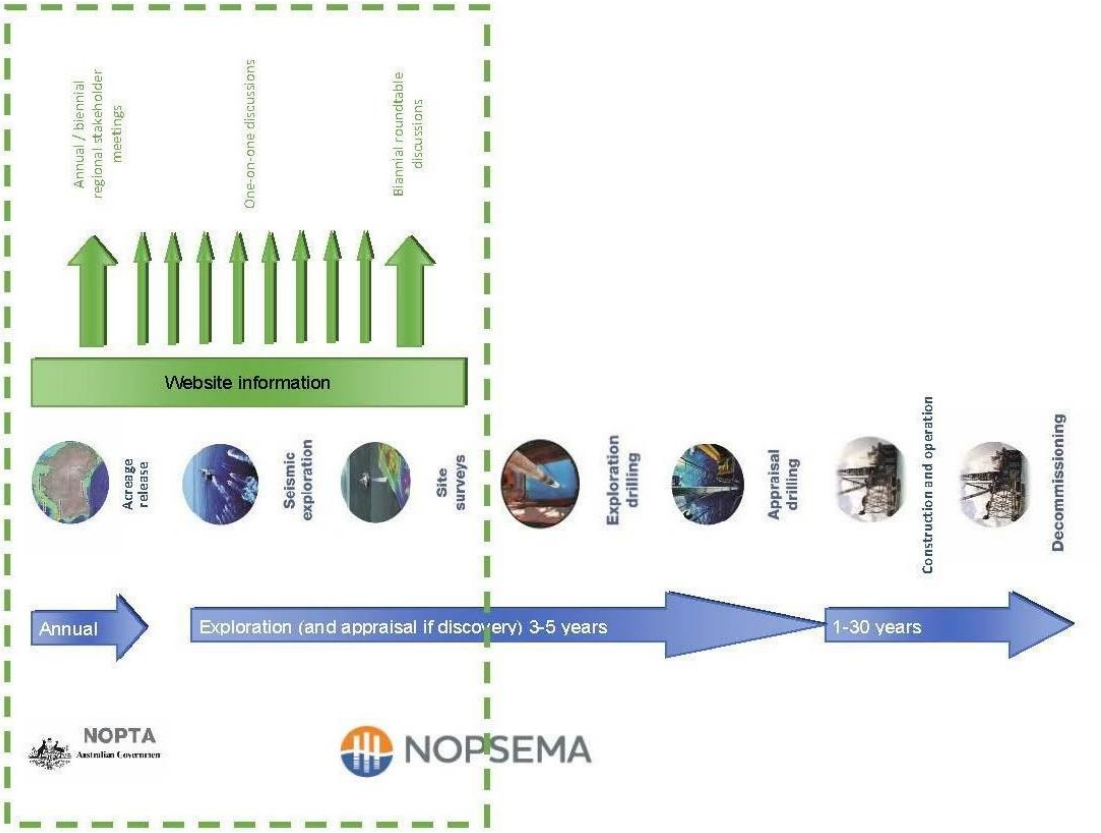


Figure 16 Stages of petroleum exploration and development - relevance to this project outlined.

It was determined there are four overarching communication processes by which issues can be potentially addressed:

1. Accessible, easy to use central website-based information on the two industries;
2. Roundtable discussion and feedback into overarching policy and process;
3. Annual regional stakeholder meetings to discuss future planning and issues; and,
4. One-on-one industry/individual discussions.

These processes are expanded below.

Accessible, central website-based information on the two industries

Access to relevant up-to-date information is important for both the petroleum and fishing industry. At the moment there is no easy way for either industry to access such information, although this is starting to change (very recently). Knowledge of the location and timing of another industry's operations is of critical importance to a productive working relationship between the two industries.

Examples of the required information have been developed as part of this project. One example is available through the Environmental Plan Submissions and Summary Search Tool[13] (see sample screen dump at Figure 17). Although only focussed on the EP phase (as prescribed by NOPSEMA's legislative objectives), this is a good example of a tool that could give fishers access to information in the process leading up to seismic activity so they can have input to

[13] www.nopsema.gov.au/environmental-management/ep-submissions-and-summaries/search/

future actions. It was felt that including a portal through a *'Fishing Industry Button'* would improve usability of the NOPSEMA tool for industry.

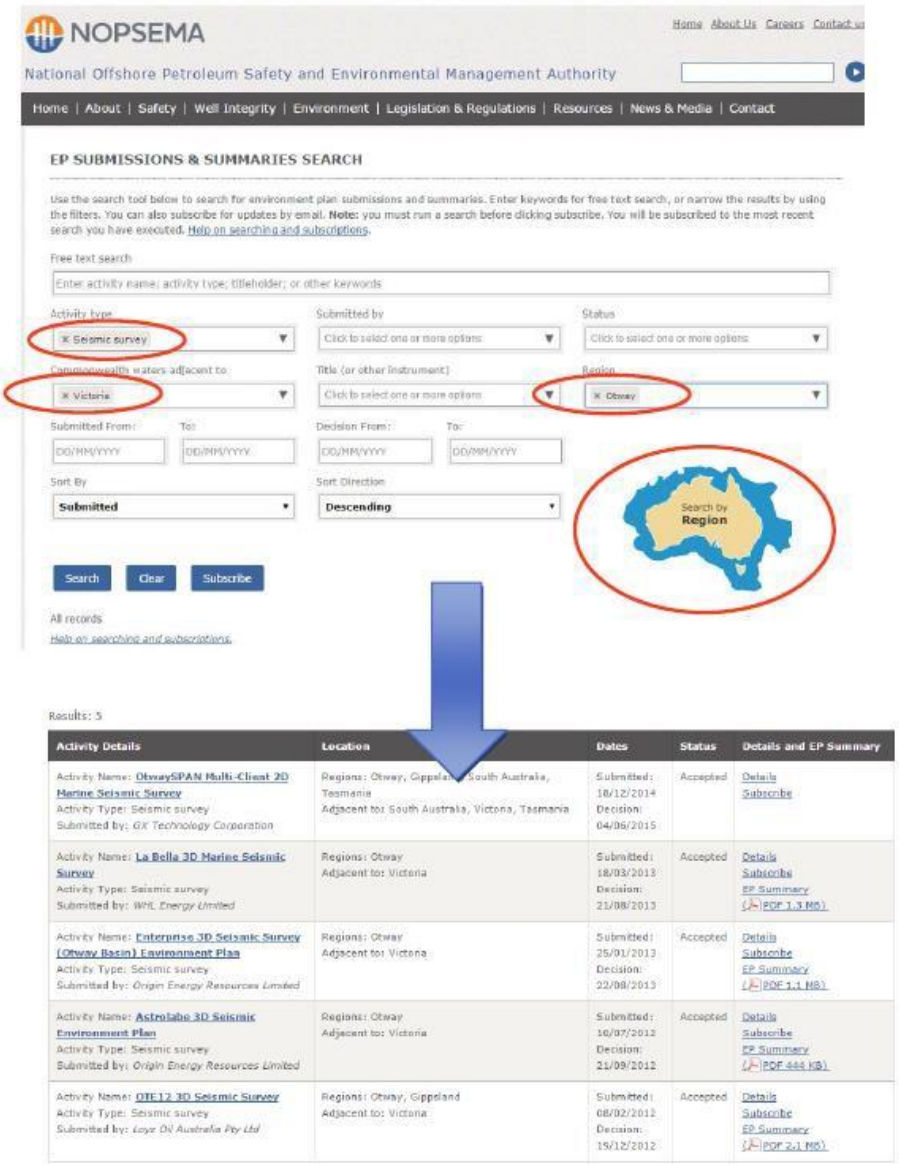


Figure 17: NOPSEMA EP Submissions and Summary Search Tool – Example

Consultation commenced with NOPSEMA during the project, about how to improve the experience and usability of their website within their regulatory capacity. The findings of their review have been released and these are discussed later in the report.

Once seismic operations are underway, use of AIS vessel tracking[14] can augment the above process through timely information on general vessel traffic, seismic vessels and locations of drilling and support vessels (see sample screen dumps at Figure 18, Figure 19 and Figure 20).

[14] See example at
https://www.marinetraffic.com/en/ais/home/centerx:117/centery:-20/zoom:8
http://www.searcherseismic.com/multiclient-data-library.htm#vessel
https://www.marinetraffic.com/en/

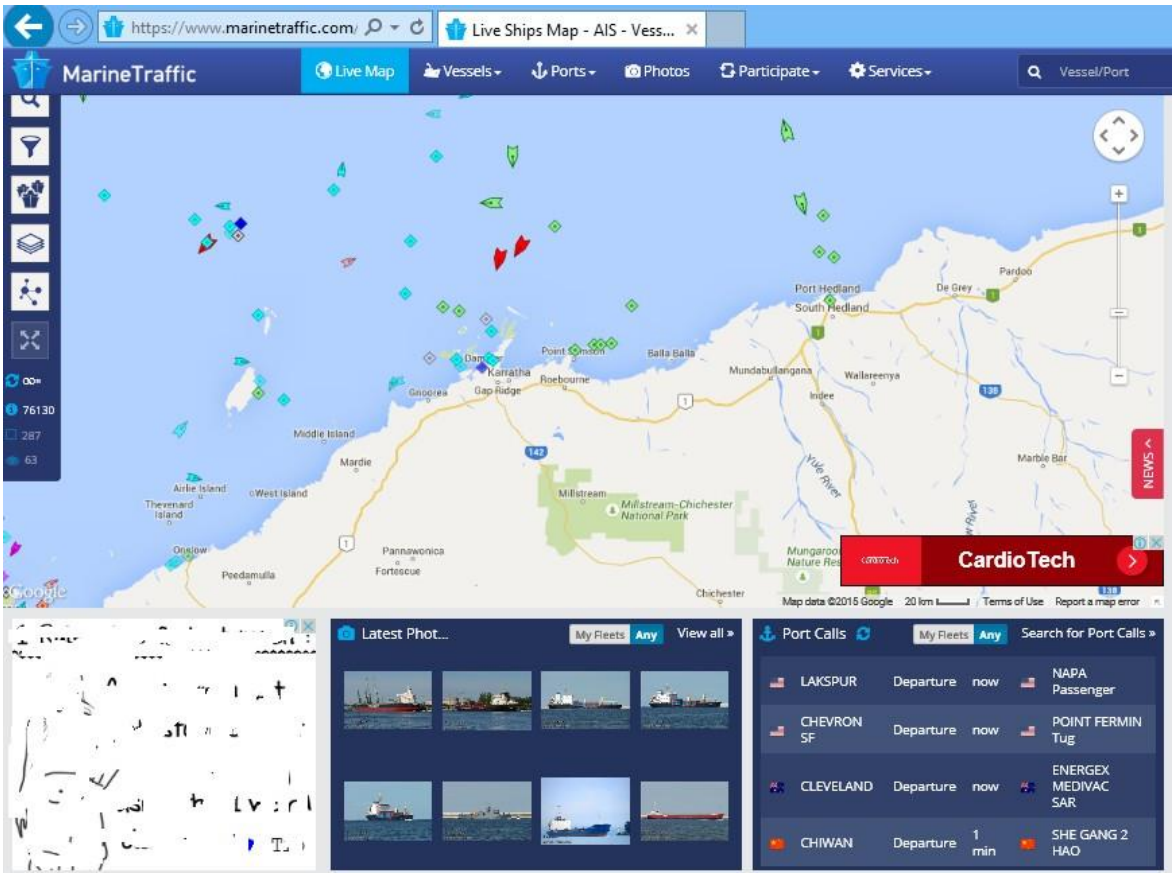


Figure 18 AIS Vessel Tracking Website – Example

This information could be complemented by other communication methods, such as automatic SMS notices, live web updates and messaging, and updates from regional/company liaison officers. Sending regular specific and relevant emails (e.g. fortnightly) during the period of seismic activity, with the area or activity in the Subject Line also allows greater transparency, builds relationships and leads to less surprises – this could be a two-way process with the fishing industry also advising of key activities taking place. However, for this to occur there needs to be access to potentially affected parties and agreed communication links established. Petroleum operators have expressed concerns as to being able to identify key fishing groups and industries operating in the region of seismic activities. This can be addressed in two ways.

Firstly, by providing details of the fisheries operating in the areas affected, and then by providing details that identify fisheries, number of operators, and key contact groups, including representative bodies. As part of this FRDC project, Mind Maps[15], supported by spreadsheets containing specific information, have been developed for each jurisdiction showing fisheries, numbers of operators, and links of representative group's details (see Figure 21 for WA example). Appendix 3 shows copies of jurisdictional Mind Maps.

Secondly, by providing petroleum or seismic companies easily accessible information on areas of fishing operations, types of gear used, or other relevant spatial or temporal information.

15 A mind map is a graphical way to represent ideas and concepts. It is a visual thinking tool that helps structuring information, helping you to better analyse, comprehend, synthesize, recall and generate new ideas.

A template showing the type of fishery information that would be useful is given as an example below, and could possibly be developed as part of the National Fisheries Status reporting process (see example at Figure 22). This template has been provided to the FRDC for consideration as part of the development of the next series of Status of Key Australian Fish Stocks Reports.

Australian Marine Spatial Information System[16] (AMSIS) provides a web based interactive mapping and decision support system that seeks to improve access to integrated government and non- government information in the Australian Marine Jurisdiction. This includes a capacity to overlay petroleum titles and fisheries boundary information. This however isn't a simple and quick to use tool.

AFMA has provided a quick tutorial[17] on how to use the system, which involves opening and making decisions on a number of separate screens. The information is available, but it is not readily accessible and would-be much more user accessible if there was a more user friendly access through a specific button/link with pull down menus. Development of a front end portal for affected fishing, petroleum, and seismic operators could simplify this process and provide a one stop access point.

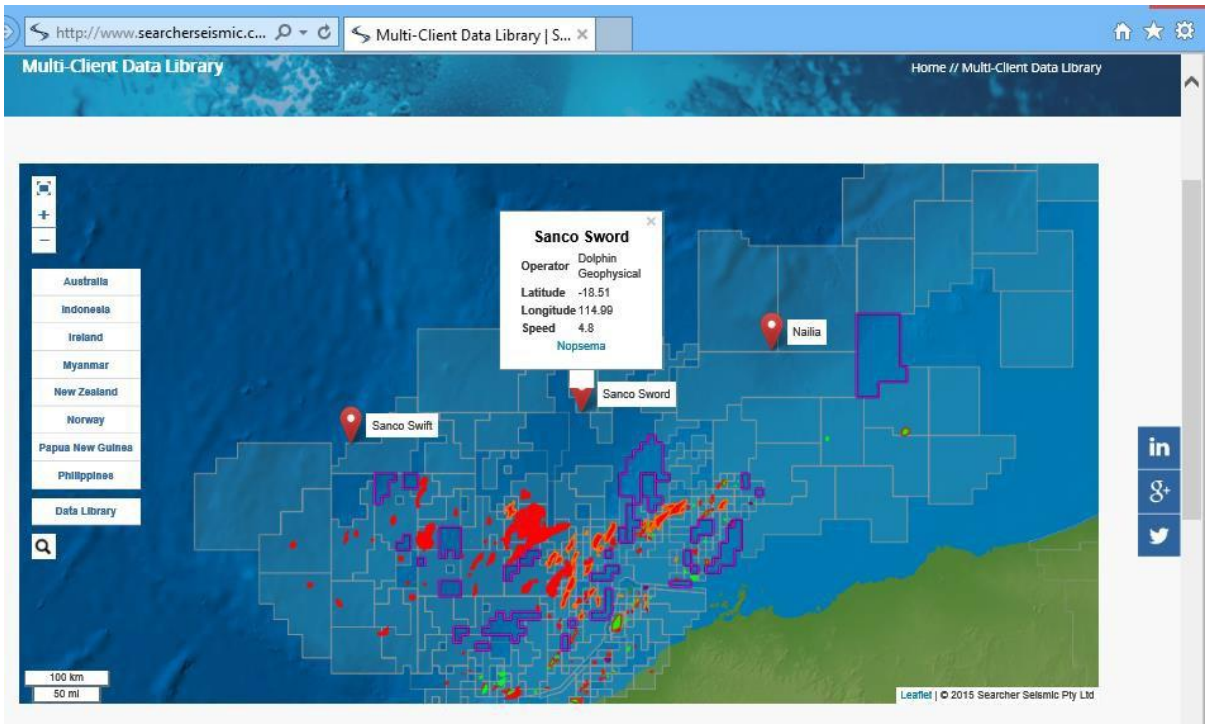


Figure 19 Locations of Seismic Survey Vessels Operating Offshore – Example

16 http://www.ga.gov.au/scientific-topics/marine/jurisdiction/amsis

17 http://www.afma.gov.au/wp-content/uploads/2014/11/Amsis-Tutorial-_Petroleum-Fisheries-overlay.pdf

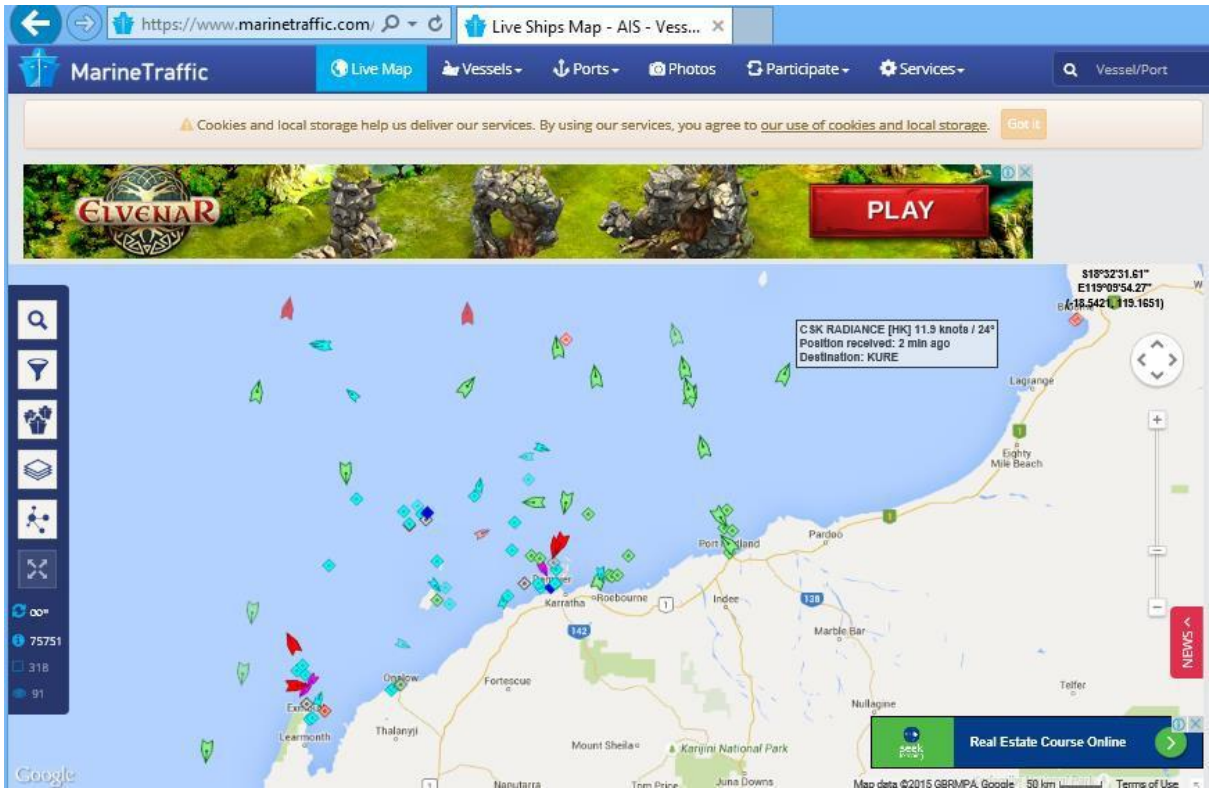


Figure 20 Location of Drilling Ships, Construction and Support Vessels – Example

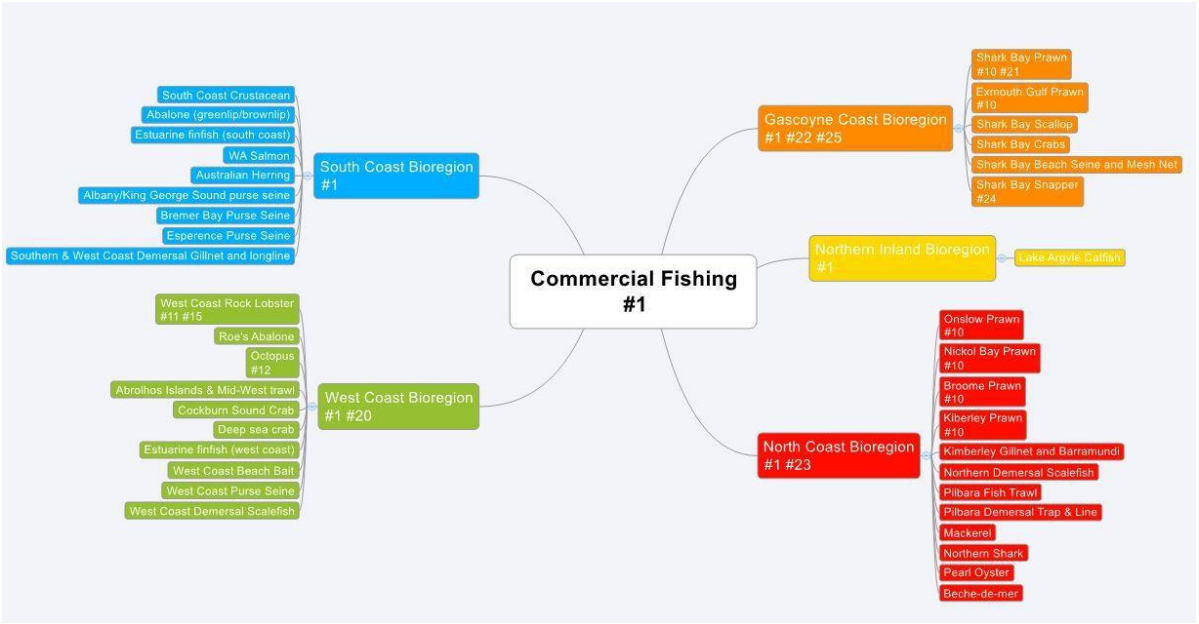


Figure 21 Organisational Map - WA Fishing Industry Showing Fisheries and Links to Key Groups and Number of Operators

Cross-Sector Roundtable Group Discussion and Feedback into Overarching Policy and Process

The aim of the Roundtable group has been to facilitate improved communication, cooperation and consultation arrangements, and to begin to address a range of issues jointly affecting the two industries. The group's operations and scope were formalised in 2014 through the

development of a MoU between peak associations (not all fishing industry groups had signed on during the life of this project), to guide further collaborative effort and provide the tool for implementation.

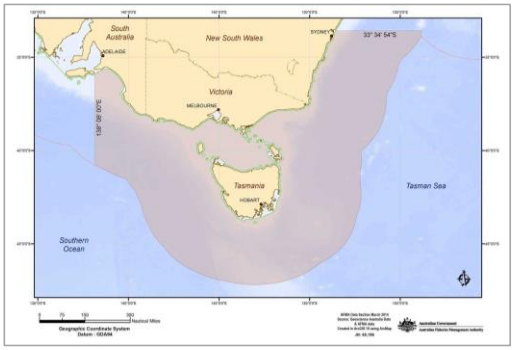
The group currently operates under an agreed terms of reference, and with respect to this project's focus, it provides a forum to discuss issues and seek agreed ways forward to finding practical solutions to continually improve fisheries/maritime vessel interactions. Linkages between the MoU and this FRDC project's deliverables have been determined.

The Roundtable arrangement can be one of the most valuable assets in this process if members can work cooperatively to generate common messages, and ensure that the appropriate linkages for particular issues are in place, including possibly with NOPSEMA.

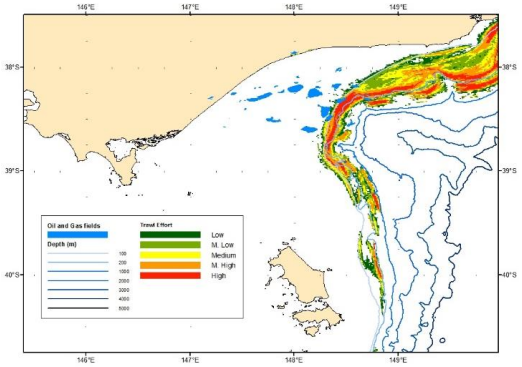
In addition, areas of conflict could be discussed in this forum and win/win resolutions sought through a cooperative approach. Examples of suboptimal application of agreed best practice could also be assessed by members, and guidance and direction provided (i.e. provide links to agreed protocols such as website information and meetings).

Jurisdiction: Commonwealth
Fishery: Southern and Eastern Scalefish and Shark
Sector: Commonwealth Trawl
Gear: Otter-board trawl

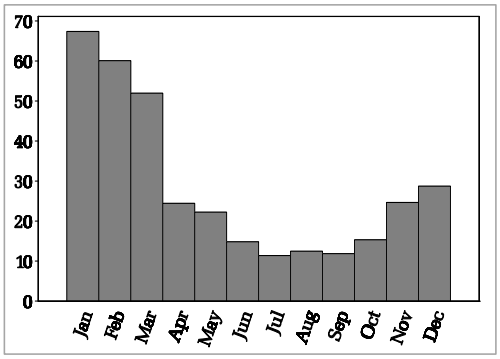
Fishery Extent



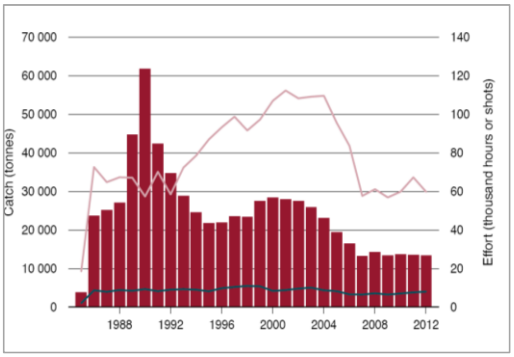
Relative Spatial Effort



% Catch by Month



Catch by Year



2013 data:

Primary management Catch Quota
No. of operators 57
Fishing Effort 65,00 Trawl hours
Main Species Flathead, Ling, Blue Grenadier
Annual GVP $45 million

Contacts:

Australian Fisheries Management Authority
02 6225 5555

South East Trawl Fishing Industry Association
0404 045 045

Further Reading

http://www.fish.gov.au/pages/safs_report.aspx

http://www.agriculture.gov.au/abares/publications/display?url=http://143.188.17.20/anrdl/DAFFService/display.php?fid=pb_fsr14d9abm_20141023_11a.xml

Last updated: June 2015

Figure 22 Sample Template Showing Key Fisheries Facts for Possible Inclusion in National Fisheries Status Reporting Process

Annual Regional Stakeholder Meetings to Discuss Future Planning and Issues

For many people in the fishing industry, their first knowledge of upcoming seismic operations occurs when they receive a written letter or email due to the legislated need for communication and consultation as part of preparation for an EP. As part of this requirement the onus is on titleholders, as 'risk creators', to bear the burden of proof and seek out views of affected parties. The EP must demonstrate that the titleholder has carried out consultation and adopted measures (if any) to mitigate risks that have been highlighted as a result of the consultations. This process could be strengthened and simplified with the inclusion of an agreed Communication Strategy (between petroleum and fishing industries) as part of the EP. This could provide a means to ensure there is improved engagement that meets both industry's needs.

Once exploration permits are granted, following acreage release, there is generally a long lead-up period prior to seismic operations beginning. This period provides a good opportunity for petroleum and seismic companies and fishing industry members to meet, build relationships, and learn about the current and proposed activities. It is envisaged that such meetings would occur at a regional (basin) level, and be open to all operators (petroleum/seismic and fishing) who have an interest in working in that region.

These meetings would be essentially multi stakeholder information sharing forums and allow the fishing industry to get a picture of the broader range of proposed activities in the region on a short, medium and longer term horizon. They would also provide the petroleum industry with a good overview of fishing operations in the region. Information could include expected timelines, areas of activities, and duration of activities could be discussed. The fishing Industry could outline concerns and provide possible means to mitigate against these. Both industries could seek to identify opportunities to minimise impacts from interactions. These meetings could be independently facilitated to encourage discussion and resolution.

The legislatively required consultation process with fishers is laid out by NOPSEMA. Linking these meeting with the prescriptive requirements could provide an opportunity to achieve best practice in line with the 10 features attributed to good practice for seismic surveys and consultation developed by NOPSEMA. A number of Agencies and fishing organisations have also developed policies relating to their clients' and fishing and petroleum interactions (Table 6). This process is ongoing in a relatively uncoordinated way across jurisdictions and sectors, and would benefit from a coordinated approach. Developing a consistent approach to these policies across jurisdictions would simplify operations across sectors and jurisdictions. Agencies and organisations should seek to develop a consistent message and instructions on these matters.

Table 6 Current policies relating to fishing and petroleum interactions

Date	Organisation	Policy Name	Details
2011	WAFIC	Interim Policy In Relation To Resource Conflict And Mining And Petroleum Sectors	Outlines broad policies for engagement and consultation
2012	WCFSA	Policy In Relation To Resource Conflict And The Mining, Petroleum And Energy Sectors	Outlines broad policies for engagement and consultation
2013	SIV	Policy In Relation To Resource Conflict And Mining And Petroleum Sectors	Outlines broad policies for engagement and consultation
2013	WA Department of Fisheries (DoF)	Guidance statement on undertaking seismic surveys in Western Australian waters	Gives O&G 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.
2013	WA DoF	Guidance statement for petroleum industry consultation with the Department of Fisheries	Gives O&G proponents planning to undertake any activities in State or Commonwealth waters off the coast of WA that have the potential to impact upon fish or fish habitats. It describes the processes that should be followed and the information that needs to be supplied to the Department to ensure appropriate and timely consultation is carried out.
2014	NOPSEMA	Considerations for good practice in consultation with stakeholders on offshore petroleum activities	10 inherent good practices features in consultation that will assist both titleholders/applicants and stakeholders to engage in the consultation process more efficiently and effectively.
2014	CFA	Resource Sharing and Mining and Petroleum Development Policy	Outlines broad CFA policies for engagement and consultation
2014	APPEA, WAFIC, NTSC, SIV, CFA, WCFSA	Memorandum of Understanding	Establish principles of co-operation, communication, and consultation between APPEA and assigned Commercial Fishing and Seafood Industry representative bodies to assist in improving the interactions between our two industries in their joint access and use of Australia' s valuable marine resources
NA	AFMA	Guidelines for petroleum industry consultation with AFMA	Outlines consultation requirements between O&G and Cwlth fisheries. Provides links to; • Annual acreage releases • Consultation criteria • AMSIS website overlap between Petroleum and Cwlth fishing areas • Fishery details and industry contacts Maps of proposed areas are provided to AFMA Does not provide information on current Seismic activity Does not show fishing activity

One-On-One Industry Discussions

Regardless of the various communication processes above, there will always remain the need for one-on-one discussions between fishing businesses and petroleum/seismic operators.

During the case studies the use of industry liaison officers was extremely successful, particularly when linked to one petroleum operation.

This may be more complex if there are multiple petroleum companies involved, using multiple service providers across a range of fisheries. Appropriate protocols to assist in this process based on best-practice examples could be developed.

NOPSEMA Review Findings

As previously mentioned, during this FRDC project, consultation commenced with NOPSEMA about how to improve the experience and usability of their website and communication process within their regulatory capacity. This FRDC project's findings were provided to NOPSEMA as part of the recent review of their operations. Review findings were made available in December 2015[18].

NOPSEMA identified that poor environmental consultation practices in the offshore petroleum industry can have negative impacts on individuals, communities, and organisations. They also received feedback that the current transparency of its decision making processes and practices do not meet community expectations.

A number of the key issues identified through this FRDC project were prominent in the NOPSEMA review. These were:

- NOPSEMA should engage further with government and non-government stakeholders to ensure a common understanding of views, issues and concerns. This should see mutual benefits for all parties and reduce unnecessary burden;
- Greater coordination and collaboration between petroleum industry associations and non-government organisations would assist in delivering more effective consultation outcomes;
- Environment plan summaries produced by petroleum titleholders and guidance prepared by NOPSEMA should be improved/modified to encompass the needs of all stakeholders;
- NOPSEMA should continue to investigate ways to have ongoing meaningful engagement with all stakeholders;
- There should be greater transparency of NOPSEMA's decision-making processes. NOPSEMA should continue to work with its stakeholders to determine what means would be most effective in delivering this outcome;

[18] http://www.nopsema.gov.au/environmental-management/work-programs/stakeholder-engagement-and-transparency/

- Greater access to information regarding environmental management performance of petroleum activities should be considered by petroleum titleholders and NOPSEMA.

Following the review NOPSEMA have adopted a range of ideas that closely align with this FRDC projects recommendations, i.e.:

- NOPSEMA will:
    - provide better guidance
    - develop stakeholder brochures
    - facilitate consultation masterclasses
- NOPSEMA working cooperatively with stakeholders will:
    - Develop information portals
    - Facilitate government run open days

Implement the 18 actions in the stakeholder engagement and transparency work program as outlined in Table 7.

Importantly 15 of the 18 actions in the work program provide an opportunity for stakeholder input to their further development or resolution. Utilising the finding of this FRDC report and adapting them to align with NOPSEMA's program will provide a means to address (or partly address) many of the issues identified through this project.

NOPSEMA also noted that they will work cooperatively with relevant stakeholders where the action falls outside NOPSEMA's direct responsibilities.

Table 7 Summary of NOPSEMA's 18 actions for their stakeholder engagement and transparency work program

NOPSEMA End of Year Report Stakeholder engagement and transparency work program

Item	Action	Origin	Stakeholders involved	Due date	NOPSEMA lead	Current status (Not Started/In Progress/Delayed/Completed)
1.	NOPSEMA to undertake detailed planning to extend the work program on stakeholder engagement and transparency beyond end FY2015/16 by 1 January 2016.	Aug 2015 consultation	NOPSEMA	1 January 2016		**Complete** Planning inputs ready to be made into budget cycle for FY2016/17.
2.	NOPSEMA considers how to involve stakeholders in its development of an end-user focused website in accordance with updates to Government accessibility requirements by 30 June 2016.	Aug 2015 consultation	NOPSEMA, TBC	30 June 2016		**In progress** Discussions commences with other government organisations to determine scope of project
3.	NOPSEMA commences publication of up-to-date information regarding the status of an EP assessment and petroleum activities over the life of an activity on its website on 1 January 2016.	Work program development: early 2015	NOPSEMA	1 January 2016		**Complete** Publication of information to commence 1 January 2016
4.	NOPSEMA will engage with the Department of Industry, Innovation and Science in 2016 to discuss measures in which NOPSEMA can participate to raise general awareness of stakeholders and provide further publically available information on the offshore petroleum regulatory regime, the petroleum lifecycle, and acreage release and assessment processes.	Aug 2015 consultation	DIIS, industry, other stakeholders	End of 2016		**In progress** Open days conducted in South Australia, more to be considered for early 2016
5.	NOPSEMA develops and implements a 'Consultation Masterclass' to provide a forum for relevant persons and titleholders to; • Share and learn about consultation successes; and • Generate and refine ideas for improving consultation; by 30 April 2016.	Aug 2015 consultation	Industry, other stakeholders	30 April 2016		**Not started** Planning to commence early 2016
6.	NOPSEMA will engage with the Department of Industry, Innovation and Science to discuss the feasibility of regulatory change in 2016 to improve consultation and transparency	Aug 2015 consultation	NOPSEMA, DIIS, industry, other stakeholders	End of 2016		**In progress** Preliminary discussions held with DIIS
7.	NOPSEMA commences publication of a 'decision notification' on 1 January 2016, excluding environmental performance outcomes and standards in the acceptance notification.	Work program development: early 2015	Industry, other stakeholders	1 January 2016		**Complete** Publication of information to commence 1 January 2016
8.	NOPSEMA to improve guidance for stakeholders regarding how they can access information regarding reasons a decision was reached under the *Administration Decisions (Judicial Review) Act 1977* by 31 March 2016.	Aug 2015 consultation	Other stakeholders	31 March 2016		**Not started** Planning to commence early 2016
9.	NOPSEMA assesses all other information received under the Environment Regulations for its utility in increasing regulatory transparency. The outcomes of this assessment will be published by 30 June 2016.	Aug 2015 consultation	Industry, other stakeholders	30 June 2016		**Not started** Planning to commence early 2016
10.	NOPSEMA to create and implement a template for relevant persons to use in characterising their information requests (as related to their functions, interests, and activities) and centralise a list of completed templates for access by titleholders by 30 June 2016.	Aug 2015 consultation	Industry, other stakeholders	30 June 2016		**Not started** Planning to commence early 2016
11.	NOPSEMA to examine ideas and suggestions for capacity building in relation to improved consultation practices and propose initiatives for implementation under the work program by 28 February 2016.	Aug 2015 consultation	Industry, other stakeholders	28 February 2016		**Not started** Planning to commence early 2016
12.	NOPSEMA to publish material for relevant persons on how to engage with NOPSEMA prior to, during, and after assessment of an EP, by 31 March 2016.	Aug 2015 consultation	Other stakeholders	31 March 2016		**Not started** Planning to commence early 2016
13.	NOPSEMA to consolidate a list of environmental management-related cooperative forums it is aware of, and specify our participation in these forums publically by 31 January 2016.	Aug 2015 consultation	Industry, other stakeholders	31 January 2016		**Not started** Planning to commence early 2016
14.	NOPSEMA to publish material for relevant persons on how to engage in the consultation process as described in the Environment Regulations a relevant person, by 31 March 2016.	Aug 2015 consultation	Other stakeholders	31 March 2016		**Not started** Planning to commence early 2016
15.	NOPSEMA to convert the proposed Consultation Guidance Note into a Guideline relating to its interpretation of the Environment Regulations about how regulatory decisions will be made on the appropriateness of consultation and publish this in January 2016 and invite further comment from stakeholders.	Work program development: early 2015	NOPSEMA	28 January 2016		**In progress** Publication of information to commence by 28 January 2016
16.	APPEA to prepare and publish a 'how to undertake effective consultation with relevant persons' methodology (or equivalent) by 30 June 2016.	Aug 2015 consultation	Industry, other stakeholders, NOPSEMA	30 June 2016		**Not started** Planning to commence early 2016
17.	NOPSEMA to review and update the proposed EP Summary Guideline to address stakeholder feedback by 1 January 2016. NOPSEMA to review and update the EP Content Requirements Guidance Note in January 2016 to make it clearer where titleholders can prepare material to satisfy both the EP content requirements and the EP Summary content requirements.	Work program development: early 2015	Industry, other stakeholders	1 January 2016 and 28 January 2016		**Complete** Publication of information to commence 1 January 2016 and 28 January 2016
18.	NOPSEMA develops with input from stakeholders its State and Commonwealth Organisations and Agency Communication Plan by 31 March 2016.	Work program development: early 2015	Other stakeholders (government)	31 March 2016		**In progress** Has commenced

CONCLUSIONS

As stated at the outset, the fishing industry has two major areas of concern with regard to seismic activity; 1) the direct impact of seismic ensonification on fish/crustacean/mollusc stocks; and 2) the conflict/displacement/disruption that arises between the two industries (fishing and petroleum) as a result of the overlap of fishing and seismic surveys. This project only focused on the second area.

As both industries can legitimately operate in the marine environment there is always potential for interactions between these industries, and if not properly managed, this can lead to conflict. Research shows that the best opportunities to generate positive outcomes in conflict situations is where those in potential conflict showed 'concern for the others and self' and where opportunities for 'compromising and problem solving' were applied.

Following the stakeholder liaison undertaken as case studies for this project, there is little doubt that underpinning many of the conflict issues is a fundamental lack of understanding by each industry of the other's operational requirements and constraints, inadequate access to timely information, poor engagement and associated communications challenges.

The findings from the case studies showed that when both the fishing and petroleum industries fully engaged with each other, understood the other's requirements and adopted either a 'compromising' approach or even better, a 'problem-solving' approach they achieved positive outcomes (or at least minimised conflicts). In a number of case studies however this did not happen which lead to the fishing industry or its members giving up or completely withdrawing from the process, with those in the fishing industry feeling overwhelmed and believing that the petroleum industry were too powerful to enter into successful negotiations with.

There were a number of standout instances through the case studies where both the fishing industry and petroleum industry were satisfied with most aspects of communication and interaction. In these examples there was balanced engagement and the use of effective two-way communication techniques and as a result many of the issues and most, if not all, of the potential conflict were overcome. The case studies also identified opportunities to improve relationships between industries by recognising areas of negative impact, but more importantly, highlighted examples of best practice. The commitment of both industries to the development of relationships, good communication and understanding were critical in those success stories. The learnings from the positive case studies provided the basis for the recommendations in this report.

During the life of this is project there were significant improvements in formal consultation between the petroleum and fishing industries through the establishment of NOPSEMA and the associated regulatory requirement for petroleum companies to demonstrate that they had consulted with potentially affected parties. In some instances this lead to improved engagement but in others to consultation fatigue or apathy.

The case studies involved interviews with stakeholders in the petroleum industry and the fishing industry and covered all phases of seismic operations in three regions; Bass Strait, Northern Territory and Mid/Northern Western Australia. Responses were compiled and key issues then categorised into six major areas:

- Need for easy access to two-way information
- Complexities in liaison with multiple stakeholders, industries and/or companies
- Lack of understanding by one industry for the other's operational requirements and constraints
- Minimisation and/or resolution of sectoral impacts
- Minimisation and/or resolution of individual business impacts
- Costs and access to port-based infrastructure.

Based on the best practice case study examples it is believed there are four overarching processes by which these issues can be addressed:

- Having accessible, easy to use central website-based information on the two industry's associated communication processes
- Undertaking Roundtable discussion and feedback into overarching policy and process
- Holding annual regional stakeholder meetings to discuss future planning and issues
- Undertaking one-on-one industry/individual discussions.

The matrix below (Table 8) shows where the processes outlined above could be utilised.

Table 8: Matrix showing issues and suggested whole-of industry-actions

Issue	Action			
	Electronic Information	**Roundtable**	**Annual Meetings**	**One on One Liaisons**
Liaison with multiple stakeholder groups	✓✓✓	✓✓	✓✓✓	✓
Information Access	✓✓✓	✓	✓✓✓	✓
Two-way Consultation and Communication	✓✓✓	✓	✓✓✓	✓✓✓
Understanding the Temporal, Spatial Impacts, Obligations and Drivers for Both Industries	✓✓✓	✓	✓✓✓	✓
Minimising the Grey Areas to Provide More Certainty Through Clearer Frameworks	✓✓	✓✓✓	✓	✓
Interactions Between Seismic Vessels and Tender Vessels with Fishing Boats and Fishing Gear	✓✓✓	✓	✓✓	✓✓✓
Access to and Increasing Costs of Shared Port Facilities			✓✓✓	✓

(✓✓✓ Primary means, ✓✓ Secondary means, ✓ Tertiary means)

IMPLICATIONS

Difficulties and conflicts between the fishing and petroleum industries, as a result of negative interactions over seismic activity, has cost both industries millions of dollars in time and resources over decades. The cost associated with lost time for a seismic vessel can run into hundreds of thousands of dollars per day and lost or disrupted fishing opportunities also many thousands of dollars.

Any opportunity to improve each industry's relationship with, and understanding of, the others operation could lead to significant savings (financial and time) and a reduction in unnecessary and ineffective consultation.

The cost associated with implementing the processes outlined in this report are not significant and should over time lead to improved relationships and overall cost savings. To maintain the current system will lead to ongoing conflict and significant costs to both industries.

RECOMMENDATIONS

There are four overarching communication processes recommended to help reduce conflict and address the current issues:

1. Provide accessible, easy to use web-based information for each industry;
2. Continue Roundtable discussion and feedback into overarching policy and process;
3. Conduct annual regional stakeholder meetings to discuss future planning and issues; and,
4. Encourage one-on-one industry/individual discussions.

FURTHER DEVELOPMENT

The Roundtable Group can utilise the findings of this report to improve industry interactions. There are a number of reasonably cost-effective solutions available that can address many of the key issues.

In addition, following from NOPSEMA's review on improving regulatory policy and guidance, there are a number of opportunities to have input to the actions identified in their stakeholder engagement and transparency work program Table 7.

EXTENSION AND ADOPTION

The preliminary result of this project were presented at Seafood Directions in Perth, October 2015, in a session that featured the relationship between the fishing and petroleum industries. Immediately following that presentation, the project results were presented to the Roundtable Group meeting in Perth and were further distributed by APPEA. Both groups were supportive of the project findings and outputs. Based on that endorsement, the project findings have been finalised in this report.

The Roundtable Group and APPEA have endorsed the approach proposed in this report. NOPSEMA has been provided with the projects findings as part of the review of their operations. A number of the project recommendations have been incorporated into their stakeholder engagement and transparency work program actions, with an opportunity for further industry input during the work programs resolution and implementation. Opportunities exist for stakeholder input into addressing NOPSEMA's 18 actions for their stakeholder engagement and transparency work program by adapting the finding of this report to align with the NOPSEMA program.

In the long term, the level of adoption of the project recommendations will depend on the ongoing support and actions of the Roundtable Group. To date this has been high, but in the difficult financial times being experienced by both industries at present, resources to implement some of the recommendations may be scarce. Fortunately, there are some reasonably cost-effective solutions available that will go a long way to addressing most of the key issues.

The project also received a write-up in the September 2015 edition of the FRDC Fish Magazine as below **Figure 23**.

MORE INFORMATION: Ian Knuckey, ian@fishwell.com.au; Matt Smith, NOPSEMA, 08 6188 8819, nopsema.gov.au
FRDC RESEARCH CODE: 2013/209, 2012/008

NEW WAVE OF SEISMIC ENGAGEMENT

MARINE RESOURCES

The heightened profile of seismic activity in Australian waters is generating new science about potential effects, answering some questions and dispelling some misconceptions

By Catherine Norwood

There has been a recent deluge of requests seeking comment from fishers about proposed seismic surveys in Australia's petroleum hot spots. While this suggests that offshore activity is on the rise and has generated increased concern about the potential effects on fisheries, the reverse is in fact true.

Matt Smith, from the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), says the number of surveys has decreased in the past three years.

What has increased is the level of consultation now required between the petroleum industry and other marine stakeholders, including fishers.

This follows changes to legislation in February 2014 that also made NOPSEMA the sole environmental regulator of offshore oil and gas operations in Commonwealth waters.

The changes introduced new obligations on petroleum titleholders preparing environmental plans for proposed activities to consult with stakeholders, such as fishers, who may be affected by any proposed activities including seismic surveys.

Matt Smith says while the new consultation requirements involve more effort for all those involved, they also provide more protection for fisheries against the potential effects of petroleum-related activities.

High-pressure impact

There are considerable concerns about the impact of surveys that involve the use of air guns, which discharge high-pressure air into the water every few seconds while criss-crossing the oceanic survey area.

The process then uses the pressure waves reflected back from the seafloor to create an image of the rock layers below the seabed and to reveal any potential oil or gas reserves.

In recent years exploration has expanded to include potential sites for carbon sequestration, particularly in the Gippsland basin off Victoria's south-eastern coast.

Canadian research has documented evidence of physical damage to fish directly in the path of the high-pressure air gun blasts, but there has been little research on the longer-term impact on fish or on the effects of the survey process on invertebrate species.

Industry input

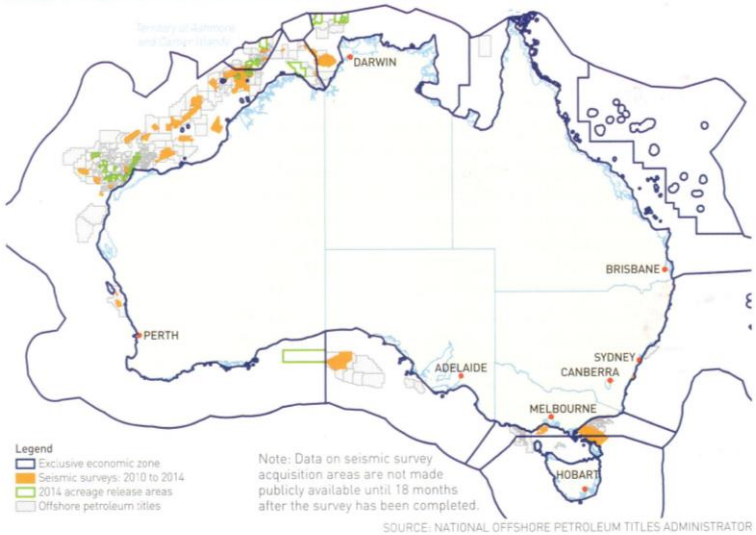
Prior to environmental streamlining in February 2014, Matt Smith says fishers may only have been consulted on some seismic surveys.

Prior to environmental streamlining both the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* applied. But the focus of the EPBC Act on threatened, endangered and protected species did not necessarily extend the same level of consultation or protection to commercial fisheries, he says.

As an example of the increased protection provided by the new arrangements regulated by NOPSEMA, Matt Smith points to applications for seismic surveys off Eighty Mile Beach in Western Australia.

Four different applications were received for 'speculative' surveys off Eighty Mile Beach south of Broome, from the 30-metre seabed contour to the 200-metre contour. The area of the proposed surveys extended from about 40 kilometres offshore to almost 200 kilometres.

FIGURE 1 AREA OF COMPLETED SEISMIC SURVEYS IN AUSTRALIAN COMMONWEALTH WATERS FROM JANUARY 2010 TO JANUARY 2014.



SOURCE: NATIONAL OFFSHORE PETROLEUM TITLES ADMINISTRATOR

The adjacent inshore area is home to the only commercial wild pearl oyster fishery of its kind in the world, and it underpins Australia's high-value pearl industry.

The Pearl Producers Association (PPA) was concerned about the pearl oyster broodstock spawned in areas out to the 100-metre contour and possibly beyond. Any potential damage to the broodstock and the spawning process would jeopardise the future of the industry.

Matt Smith says that under the pre-February 2014 public consultation arrangements, it is possible that the PPA may have only received notification of the survey going ahead rather than being consulted on the proposed seismic activity, which is now part of the mandated consultation process.

While the PPA had strong anecdotal evidence from reputable scientists that spawning was occurring beyond the areas of the pearl beds, there was no published science to support their case. At the same time, there was also no definitive evidence to support the applicants' position that the oysters would not be affected.

Science to fill gaps

With a substantial modification to the proposed surveys to address the PPA concerns, the survey applications were accepted by NOPSEMA.

The PPA remains concerned about the potential effects of seismic surveys on the pearl oyster population and has called for research to provide definitive scientific information on its ecological effects.

The pearl oyster case highlights two of the seismic-related issues that FRDC-funded projects underway are already working to address. One is managing the consultation processes, the paperwork and closer relationships between the petroleum industry and fisheries. The other is the gap in the science about the effects of seismic surveys.

Jayson Semmens at the Institute for Marine and Antarctic Studies is leading the project to investigate the effects of seismic surveys on Southern Rock Lobsters and scallops.

The project was initiated by the Scallop Fishermen's Association of Tasmania following concerns about a decline in scallop beds in the Gippsland Basin and Bass Strait.

Partners in the project include Curtin University, Origin Energy and the Victorian Department of Environment, Land, Water and Planning, which operates the national CarbonNet (carbon sequestration) project for the Australian Government.

Jayson Semmens says the three-year project is analysing both the immediate effects of air gun blasts on scallops and rock lobster and longer-term physiological effects, using both laboratory and field tests.

In the case of rock lobsters, this includes the effects on offspring, as berried female lobsters are included in the experiments. Both rock lobsters and scallops are placed, in containment, on the seafloor and are subjected to air gun blasts. Blood tests are part of the work to measure physiological responses, while video is used to document behavioural responses.

Optimise engagement

Meanwhile, working with Seafood Industry Victoria, researcher Ian Knuckey has been investigating ways to optimise the communication and operational processes of seismic surveys for the fishing industry and the oil and gas industry.

The paperwork is one issue that can seem overwhelming, he says.

Fishers can come home from extended time at sea to find a mass of notifications from several different players, who may all seem to be proposing something similar.

"Simply keeping track of all the different stages of multiple operations is a challenge for fishers," he says. "On the other side of the equation, oil and gas companies are just as flummoxed by the extent of the engagement they now have to undertake and the number of players they need to notify."

He says interviews with stakeholders have also shown that the different sectors do not really understand the operational requirements and constraints of the other. This includes the potential impact on an individual business, fishing in a specific area, and on an industry sector basis.

There is also little consideration of the cumulative effects of multiple seismic operations. "Fishers may be able to contend with the impacts of a single seismic operation by modifying their activities, but there may be limited ability to do this in response to multiple operations conducted in a relatively small area in a short period of time," he says.

Proposals to improve the engagement process include an annual regional stakeholder meeting and website to centralise and share relevant information between the industries, roundtable discussions on overarching policy and processes, as well as one-on-one industry discussions.

SEISMIC SURVEY UPDATES

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) provides a notification service for applications related to seismic survey at its website (www.nopsema.gov.au). Customised notification services for new submissions or changes to status in existing submissions can be made through NOPSEMA's search tool.

This service is designed to ensure that anyone potentially affected by survey activity has the opportunity to comment, even if they may have been missed from the official notification list.

NOPSEMA search tool: www.nopsema.gov.au/environmental-management/ep-submissions-and-summaries/search

SEAFOOD DIRECTIONS ON TOPIC

Several presentations at this year's industry conference Seafood Directions in Perth from 25 to 27 October will feature the relationship between the fishing and the petroleum industries.

- Bertie Armstrong, the CEO of the Scottish Fishermen's Federation Services Limited, will present 'How we made oil and water mix – a 50-year journey linking fishing and energy'.
- A joint presentation from the Australian Petroleum Production and Exploration Association and the Commonwealth Fisheries Association will discuss the development of a memorandum of understanding between the sectors, and the initiation of a roundtable forum.
- John Hughes, Alan Hopping and Paul Young from the International Association of Geophysical Contractors will present 'How could the fishing and seismic industries achieve a closer working relationship?'
- Ian Knuckey and Chris Calogeras will speak about reducing industry transaction costs due to seismic activity.
- Michelle Andrews, from the Western Australian Department of Mines and Petroleum, will discuss community engagement with the resource sector.

Ian Knuckey says several new protocols have been developed to help guide improved relations between the fishing and the petroleum industries, although these are yet to be tested.

Both of these FRDC-funded projects are expected to be completed this year. F

Figure 23: September 2015 edition of the FRDC Fish Magazine

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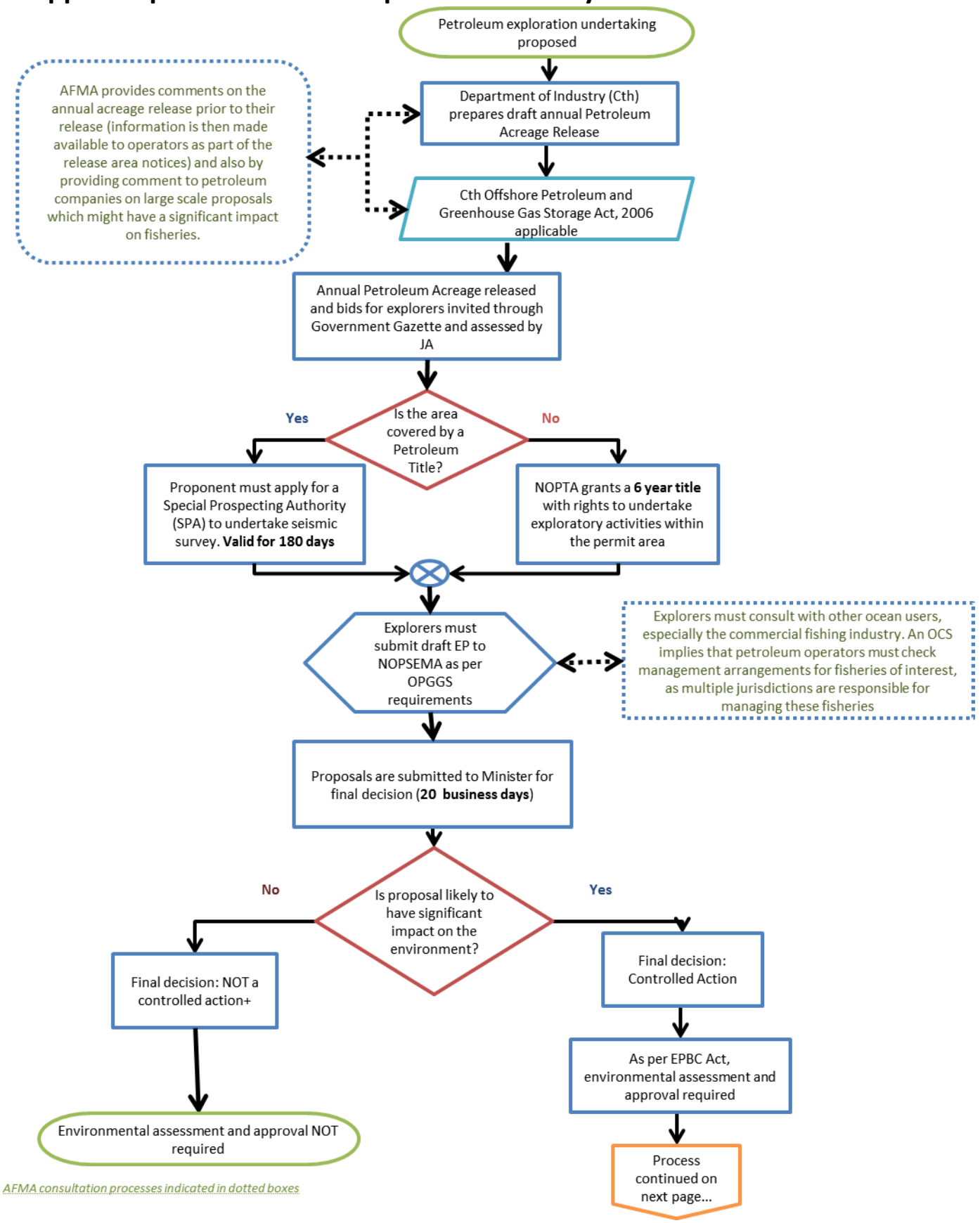
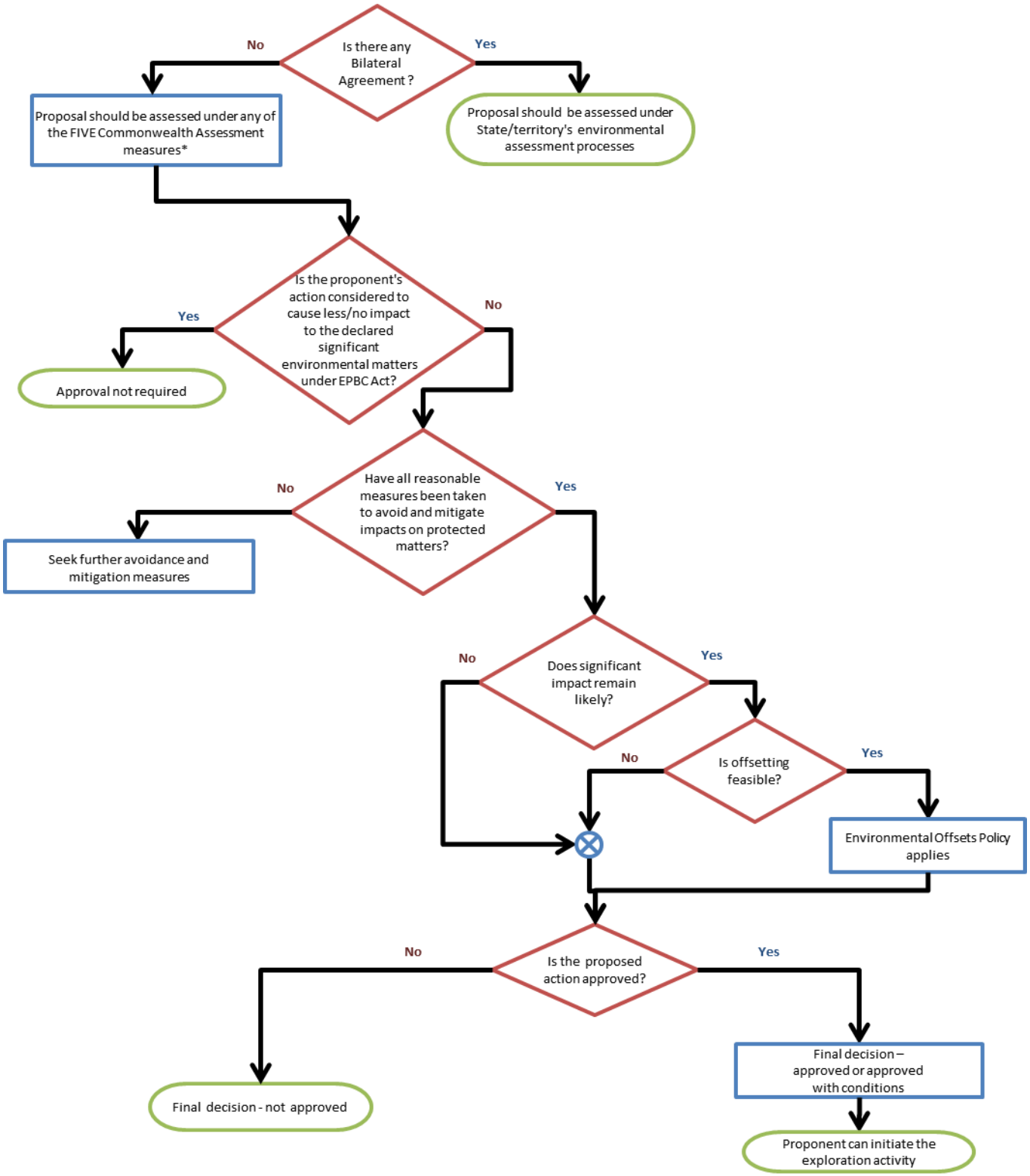
APPENDIX 1 JURISDICTIONAL FLOWCHARTS

Approval process for new exploration activity - Commonwealth

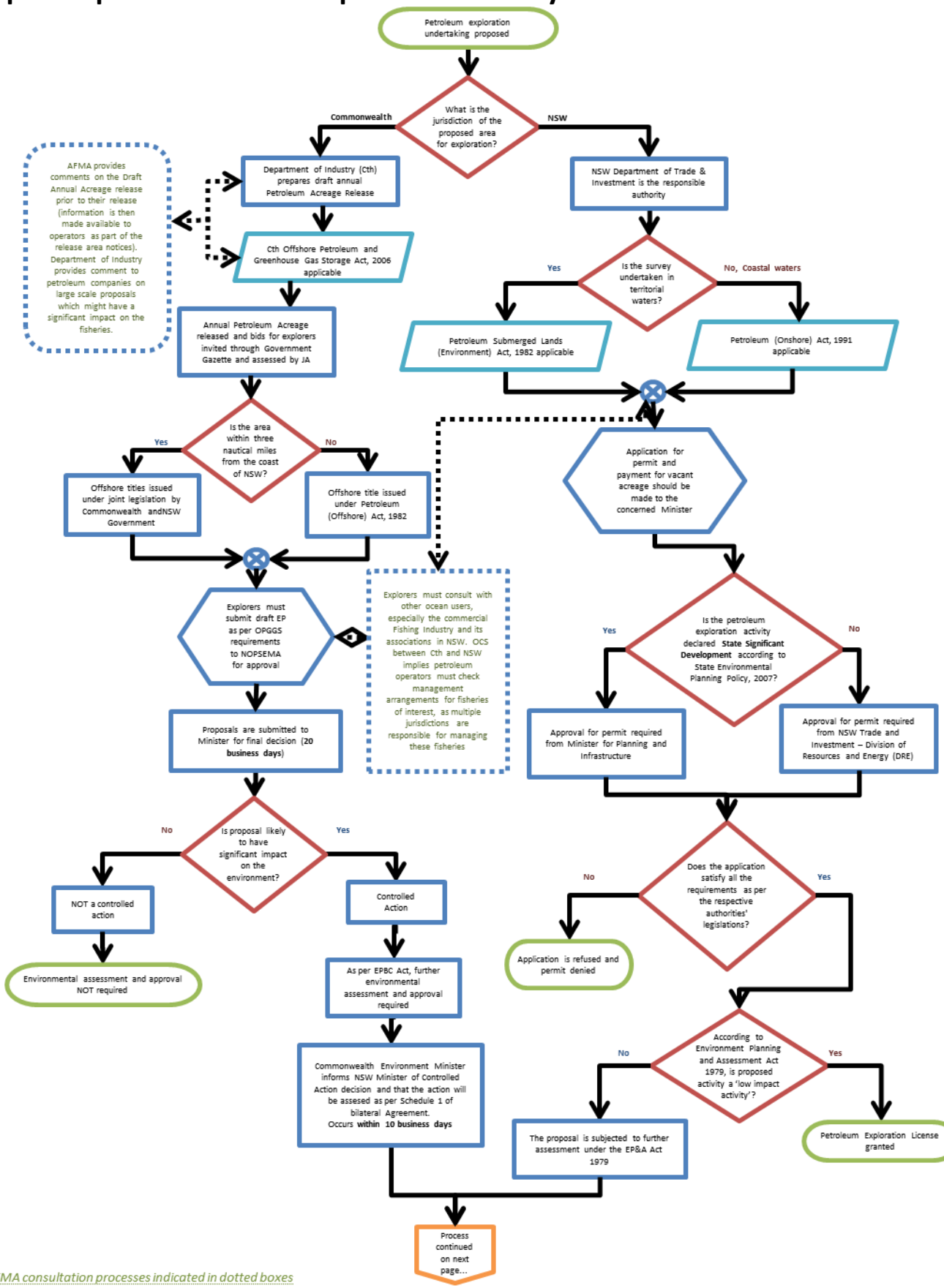


AFMA consultation processes indicated in dotted boxes



*Assessment Methods	*Decision Time-frames
Based on referral information	Within 20 days of receiving final recommendation report
Based on preliminary documentation	Within 40 days of receiving final documentation from proponent
By public environment report	Within 40 days of receiving final documentation from proponent
By environmental impact statement	Within 40 days of receiving final documentation from proponent
By public inquiry	Within 40 days of receiving an enquiry report/within 30 days of receiving an assessment report

Approval process for new exploration activity – New South Wales



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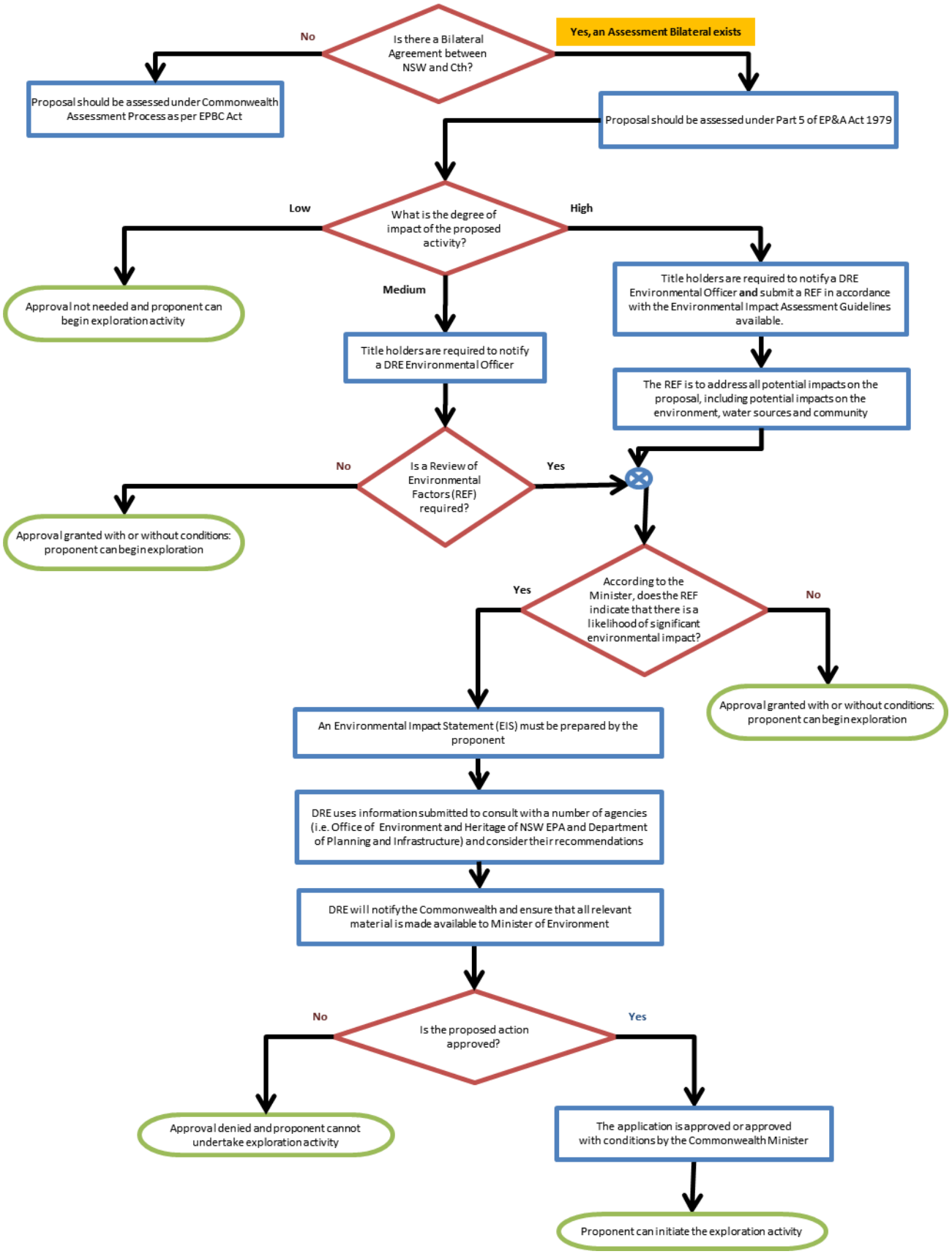
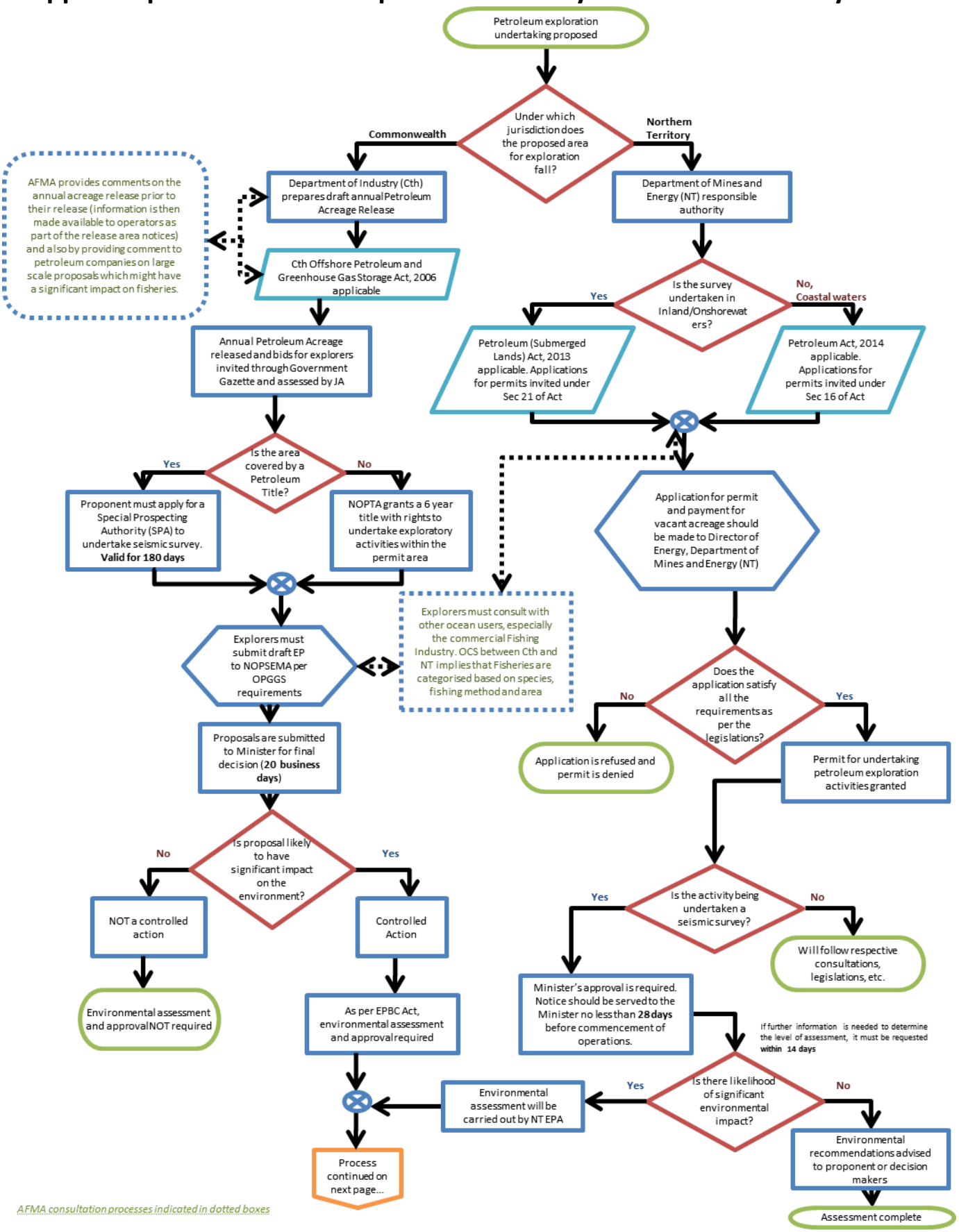
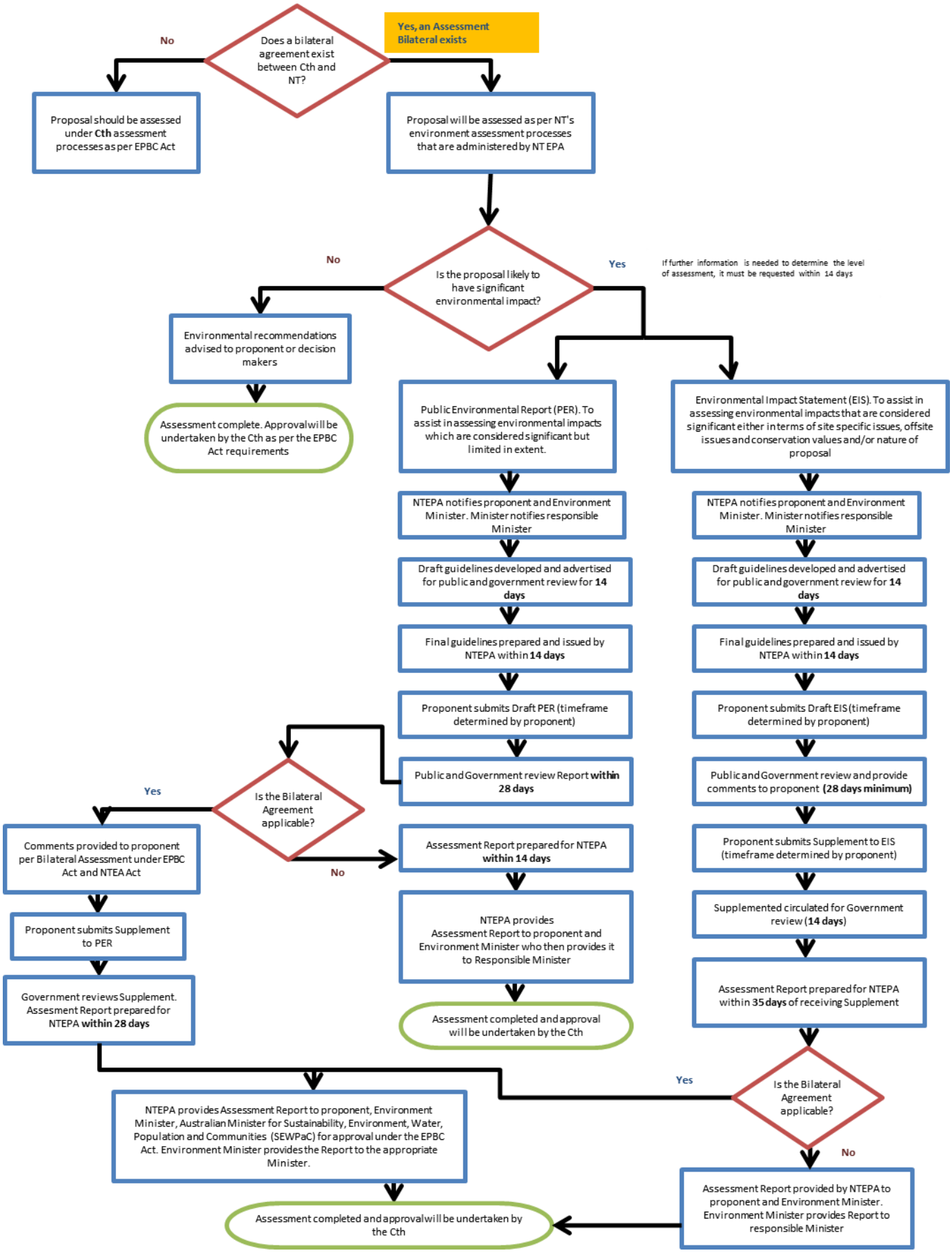
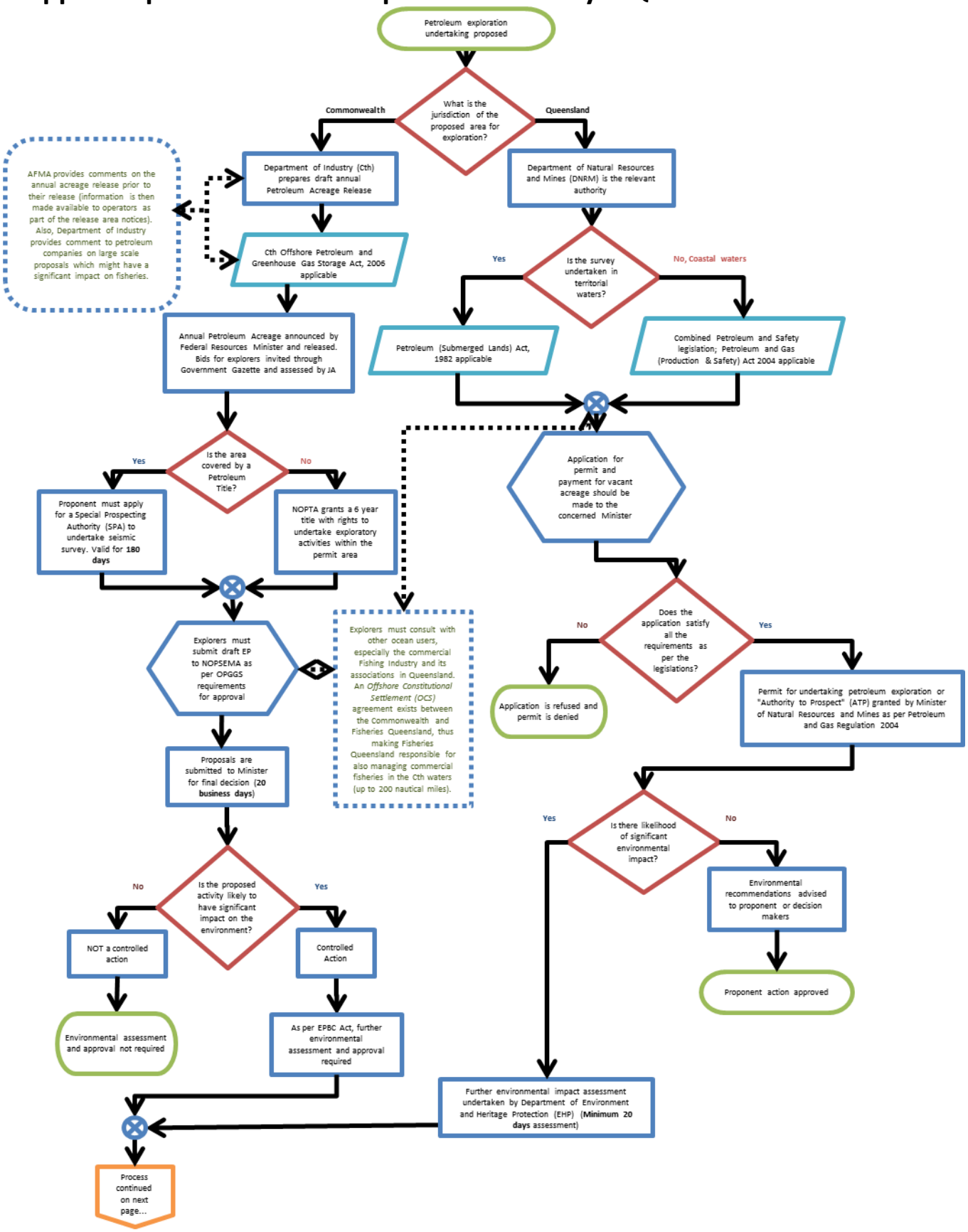

Is there a Bilateral Agreement between NSW and Cth?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Commonwealth Assessment Process as per EPBC Act
Proposal should be assessed under Part 5 of EP&A Act 1979
What is the degree of impact of the proposed activity?
Low
High
Medium
Approval not needed and proponent can begin exploration activity
Title holders are required to notify a DRE Environmental Officer and submit a REF in accordance with the Environmental Impact Assessment Guidelines available.
Title holders are required to notify a DRE Environmental Officer
The REF is to address all potential impacts on the proposal, including potential impacts on the environment, water sources and community
Is a Review of Environmental Factors (REF) required?
No
Yes
Approval granted with or without conditions: proponent can begin exploration
According to the Minister, does the REF indicate that there is a likelihood of significant environmental impact?
Yes
No
Approval granted with or without conditions: proponent can begin exploration
An Environmental Impact Statement (EIS) must be prepared by the proponent
DRE uses information submitted to consult with a number of agencies (i.e. Office of Environment and Heritage of NSW EPA and Department of Planning and Infrastructure) and consider their recommendations
DRE will notify the Commonwealth and ensure that all relevant material is made available to Minister of Environment
Is the proposed action approved?
No
Yes
Approval denied and proponent cannot undertake exploration activity
The application is approved or approved with conditions by the Commonwealth Minister
Proponent can initiate the exploration activity

Approval process for new exploration activity – Northern Territory

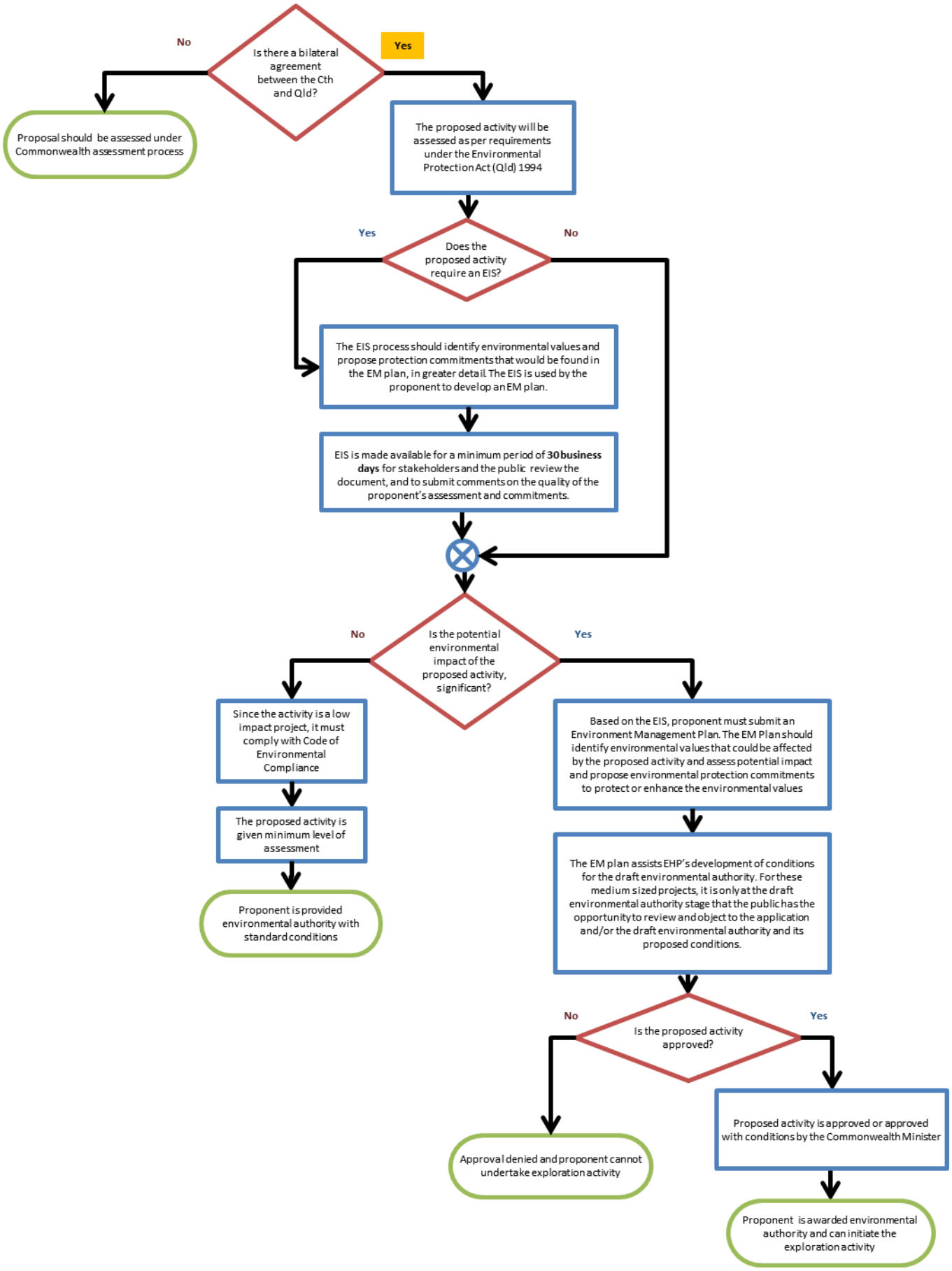



Does a bilateral agreement exist between Cth and NT?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Cth assessment processes as per EPBC Act
Proposal will be assessed as per NT's environment assessment processes that are administered by NT EPA
Is the proposal likely to have significant environmental impact?
No
Yes
If further information is needed to determine the level of assessment, it must be requested within 14 days
Environmental recommendations advised to proponent or decision makers
Assessment complete. Approval will be undertaken by the Cth as per the EPBC Act requirements
Public Environmental Report (PER). To assist in assessing environmental impacts which are considered significant but limited in extent.
Environmental Impact Statement (EIS). To assist in assessing environmental impacts that are considered significant either in terms of site specific issues, offsite issues and conservation values and/or nature of proposal
NTEPA notifies proponent and Environment Minister. Minister notifies responsible Minister
Draft guidelines developed and advertised for public and government review for 14 days
Final guidelines prepared and issued by NTEPA within 14 days
Proponent submits Draft PER (timeframe determined by proponent)
Proponent submits Draft EIS (timeframe determined by proponent)
Public and Government review Report within 28 days
Public and Government review and provide comments to proponent (28 days minimum)
Is the Bilateral Agreement applicable?
Yes
No
Comments provided to proponent per Bilateral Assessment under EPBC Act and NTEA Act
Proponent submits Supplement to PER
Government reviews Supplement. Assesment Report prepared for NTEPA within 28 days
Assessment Report prepared for NTEPA within 14 days
NTEPA provides Assessment Report to proponent and Environment Minister who then provides it to Responsible Minister
Assessment completed and approval will be undertaken by the Cth
Proponent submits Supplement to EIS (timeframe determined by proponent)
Supplemented circulated for Government review (14 days)
Assessment Report prepared for NTEPA within 35 days of receiving Supplement
Is the Bilateral Agreement applicable?
Yes
No
NTEPA provides Assessment Report to proponent, Environment Minister, Australian Minister for Sustainability, Environment, Water, Population and Communities (SEWPaC) for approval under the EPBC Act. Environment Minister provides the Report to the appropriate Minister.
Assessment completed and approval will be undertaken by the Cth
Assessment Report provided by NTEPA to proponent and Environment Minister. Environment Minister provides Report to responsible Minister

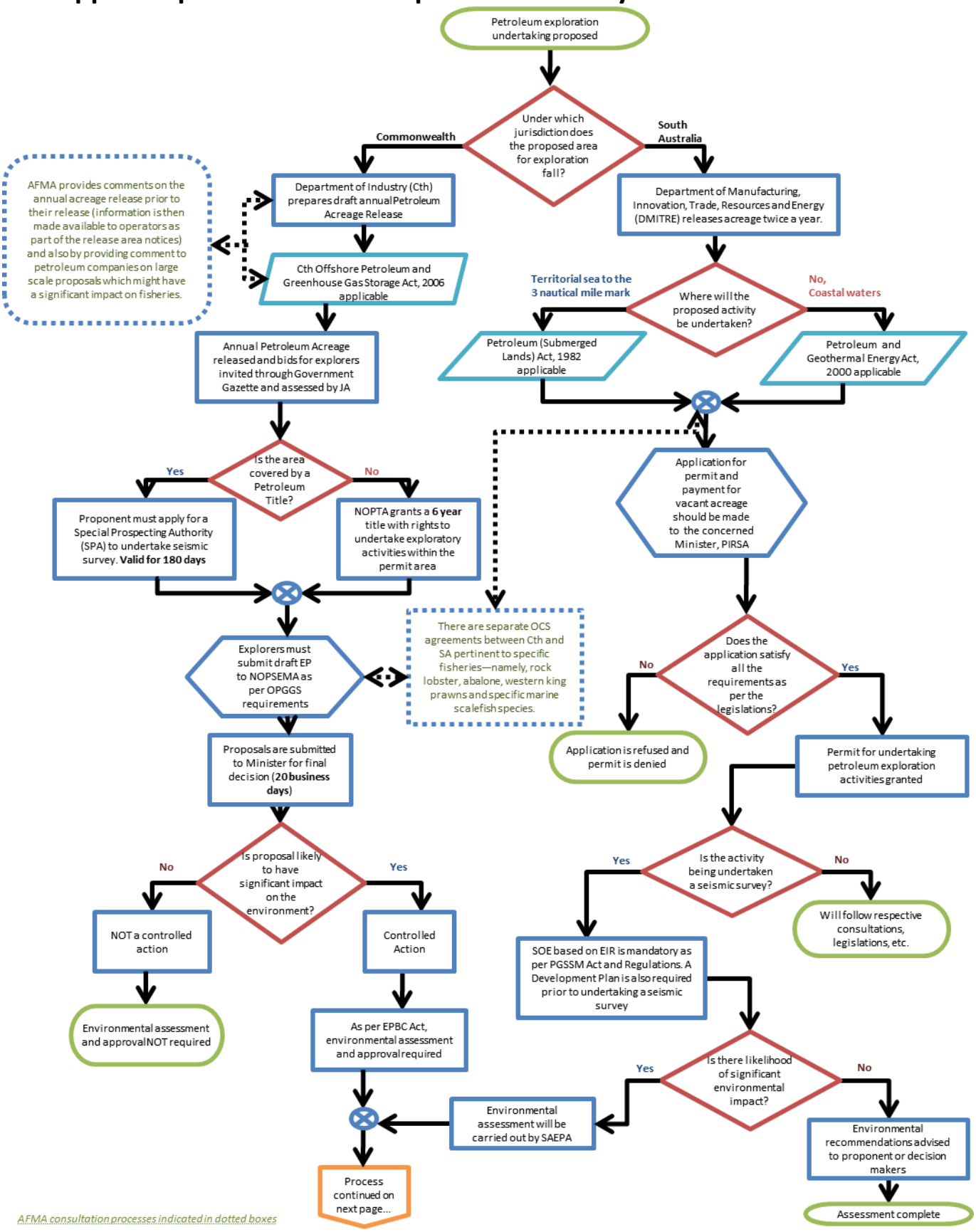
Approval process for new exploration activity – Queensland

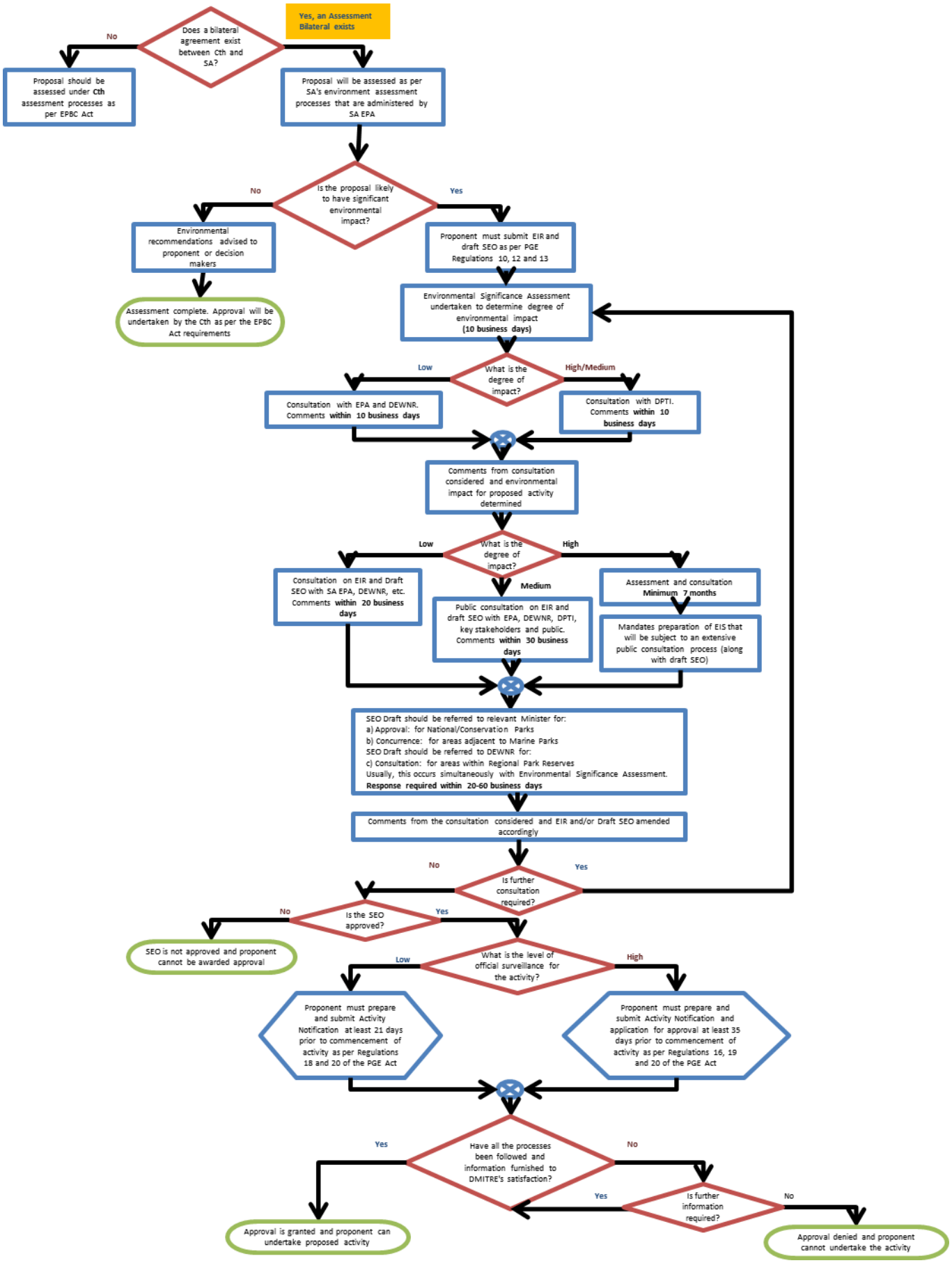


AFMA consultation processes indicated in dotted boxes

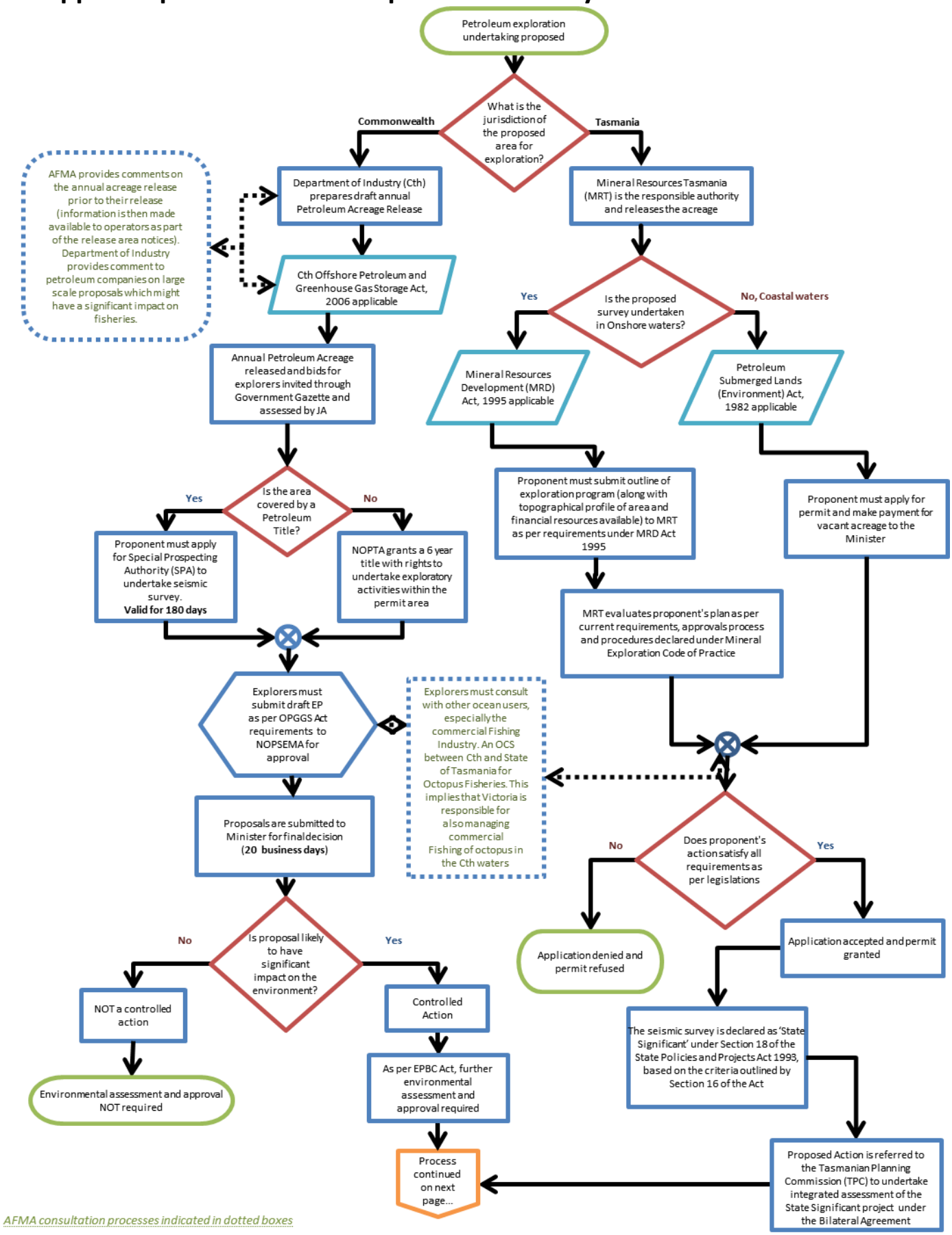

No
Is there a bilateral agreement between the Cth and Qld?
Yes
Proposal should be assessed under Commonwealth assessment process
The proposed activity will be assessed as per requirements under the Environmental Protection Act (Qld) 1994
Yes
Does the proposed activity require an EIS?
No
The EIS process should identify environmental values and propose protection commitments that would be found in the EM plan, in greater detail. The EIS is used by the proponent to develop an EM plan.
EIS is made available for a minimum period of **30 business days** for stakeholders and the public review the document, and to submit comments on the quality of the proponent's assessment and commitments.
No
Is the potential environmental impact of the proposed activity, significant?
Yes
Since the activity is a low impact project, it must comply with Code of Environmental Compliance
The proposed activity is given minimum level of assessment
Proponent is provided environmental authority with standard conditions
Based on the EIS, proponent must submit an Environment Management Plan. The EM Plan should identify environmental values that could be affected by the proposed activity and assess potential impact and propose environmental protection commitments to protect or enhance the environmental values
The EM plan assists EHP's development of conditions for the draft environmental authority. For these medium sized projects, it is only at the draft environmental authority stage that the public has the opportunity to review and object to the application and/or the draft environmental authority and its proposed conditions.
No
Is the proposed activity approved?
Yes
Approval denied and proponent cannot undertake exploration activity
Proposed activity is approved or approved with conditions by the Commonwealth Minister
Proponent is awarded environmental authority and can initiate the exploration activity

Approval process for new exploration activity – South Australia

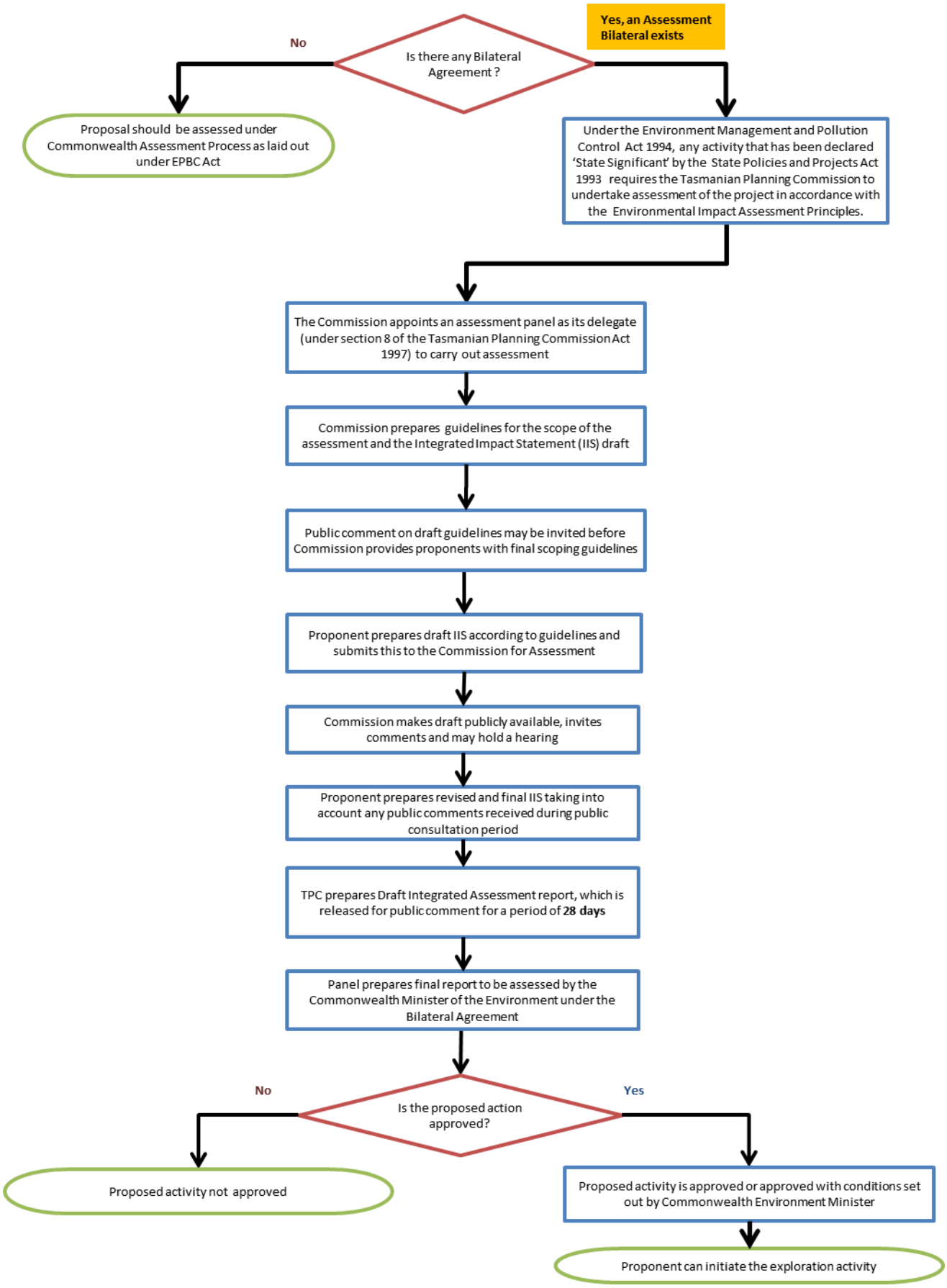



Does a bilateral agreement exist between Cth and SA?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Cth assessment processes as per EPBC Act
Proposal will be assessed as per SA's environment assessment processes that are administered by SA EPA
Is the proposal likely to have significant environmental impact?
No
Yes
Environmental recommendations advised to proponent or decision makers
Assessment complete. Approval will be undertaken by the Cth as per the EPBC Act requirements
Proponent must submit EIR and draft SEO as per PGE Regulations 10, 12 and 13
Environmental Significance Assessment undertaken to determine degree of environmental impact (10 business days)
What is the degree of impact?
Low
High/Medium
Consultation with EPA and DEWNR. Comments within 10 business days
Consultation with DPTI. Comments within 10 business days
Comments from consultation considered and environmental impact for proposed activity determined
What is the degree of impact?
Low
High
Medium
Consultation on EIR and Draft SEO with SA EPA, DEWNR, etc. Comments within 20 business days
Public consultation on EIR and draft SEO with EPA, DEWNR, DPTI, key stakeholders and public. Comments within 30 business days
Assessment and consultation Minimum 7 months
Mandates preparation of EIS that will be subject to an extensive public consultation process (along with draft SEO)
SEO Draft should be referred to relevant Minister for:
a) Approval: for National/Conservation Parks
b) Concurrence: for areas adjacent to Marine Parks
SEO Draft should be referred to DEWNR for:
c) Consultation: for areas within Regional Park Reserves
Usually, this occurs simultaneously with Environmental Significance Assessment.
Response required within 20-60 business days
Comments from the consultation considered and EIR and/or Draft SEO amended accordingly
No
Yes
Is further consultation required?
No
Yes
Is the SEO approved?
SEO is not approved and proponent cannot be awarded approval
Low
High
What is the level of official surveillance for the activity?
Proponent must prepare and submit Activity Notification at least 21 days prior to commencement of activity as per Regulations 18 and 20 of the PGE Act
Proponent must prepare and submit Activity Notification and application for approval at least 35 days prior to commencement of activity as per Regulations 16, 19 and 20 of the PGE Act
Yes
No
Have all the processes been followed and information furnished to DMITRE's satisfaction?
Yes
No
Is further information required?
Approval is granted and proponent can undertake proposed activity
Approval denied and proponent cannot undertake the activity

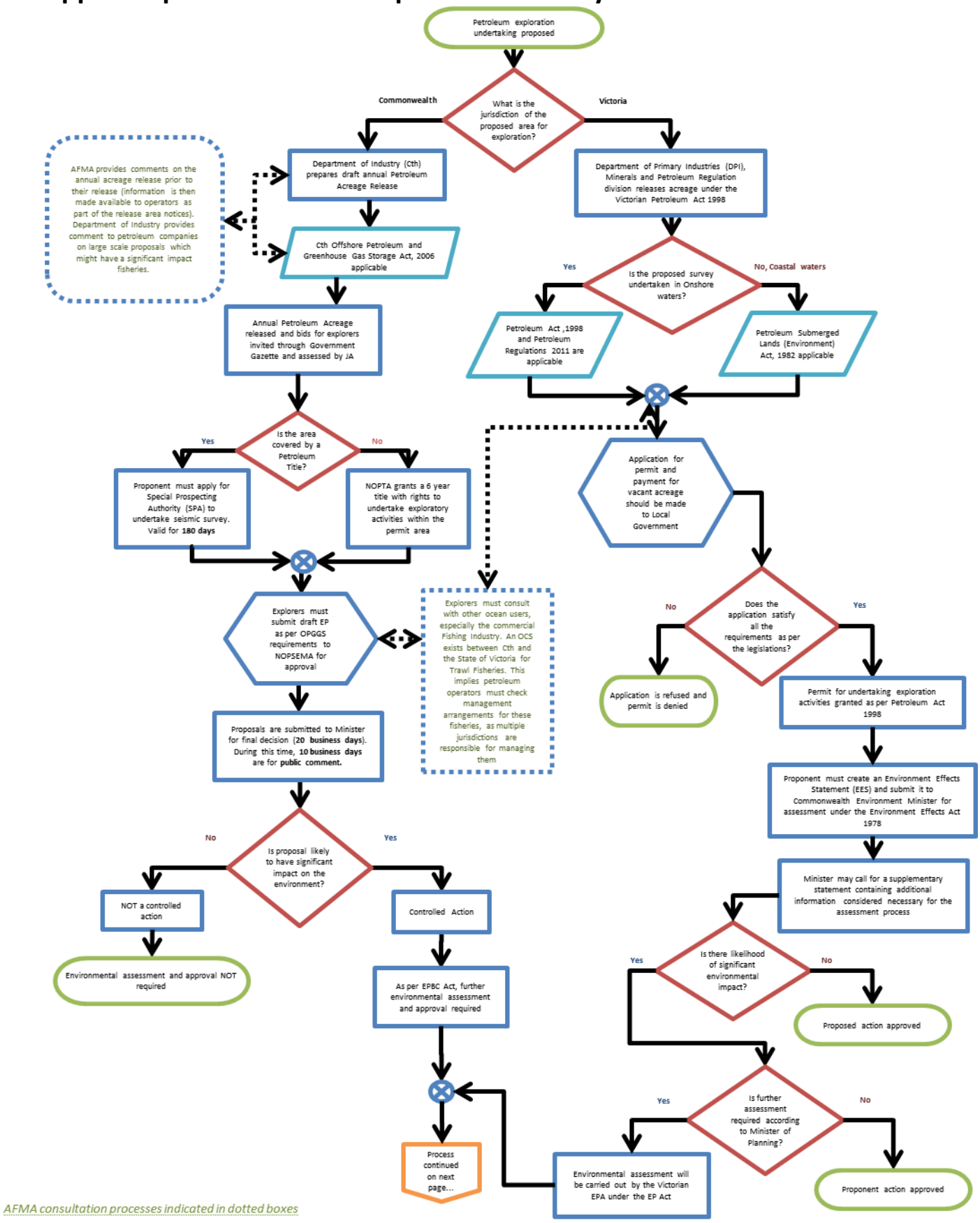
Approval process for new exploration activity – Tasmania



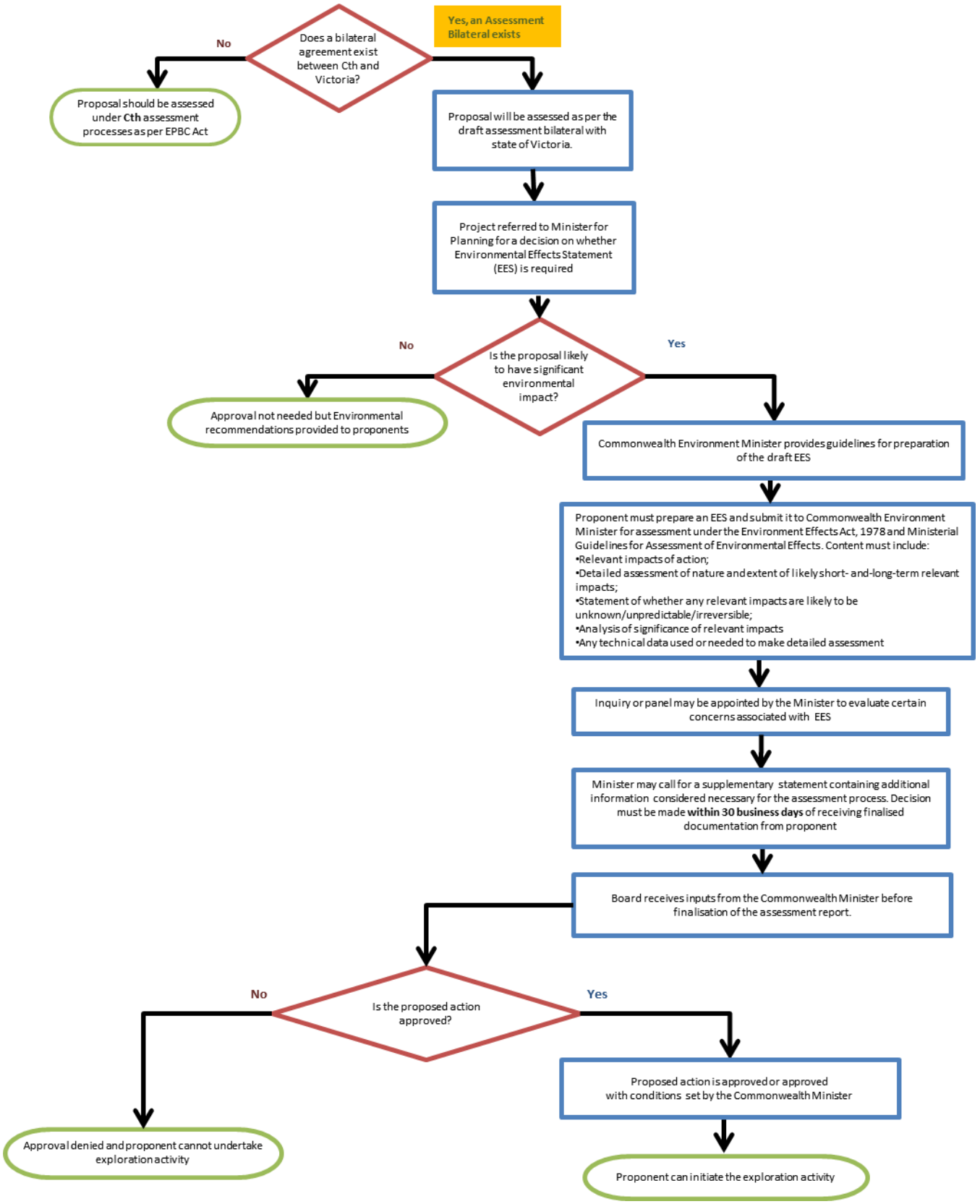
AFMA consultation processes indicated in dotted boxes


Is there any Bilateral Agreement ?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Commonwealth Assessment Process as laid out under EPBC Act
Under the Environment Management and Pollution Control Act 1994, any activity that has been declared 'State Significant' by the State Policies and Projects Act 1993 requires the Tasmanian Planning Commission to undertake assessment of the project in accordance with the Environmental Impact Assessment Principles.
The Commission appoints an assessment panel as its delegate (under section 8 of the Tasmanian Planning Commission Act 1997) to carry out assessment
Commission prepares guidelines for the scope of the assessment and the Integrated Impact Statement (IIS) draft
Public comment on draft guidelines may be invited before Commission provides proponents with final scoping guidelines
Proponent prepares draft IIS according to guidelines and submits this to the Commission for Assessment
Commission makes draft publicly available, invites comments and may hold a hearing
Proponent prepares revised and final IIS taking into account any public comments received during public consultation period
TPC prepares Draft Integrated Assessment report, which is released for public comment for a period of 28 days
Panel prepares final report to be assessed by the Commonwealth Minister of the Environment under the Bilateral Agreement
Is the proposed action approved?
No
Yes
Proposed activity not approved
Proposed activity is approved or approved with conditions set out by Commonwealth Environment Minister
Proponent can initiate the exploration activity

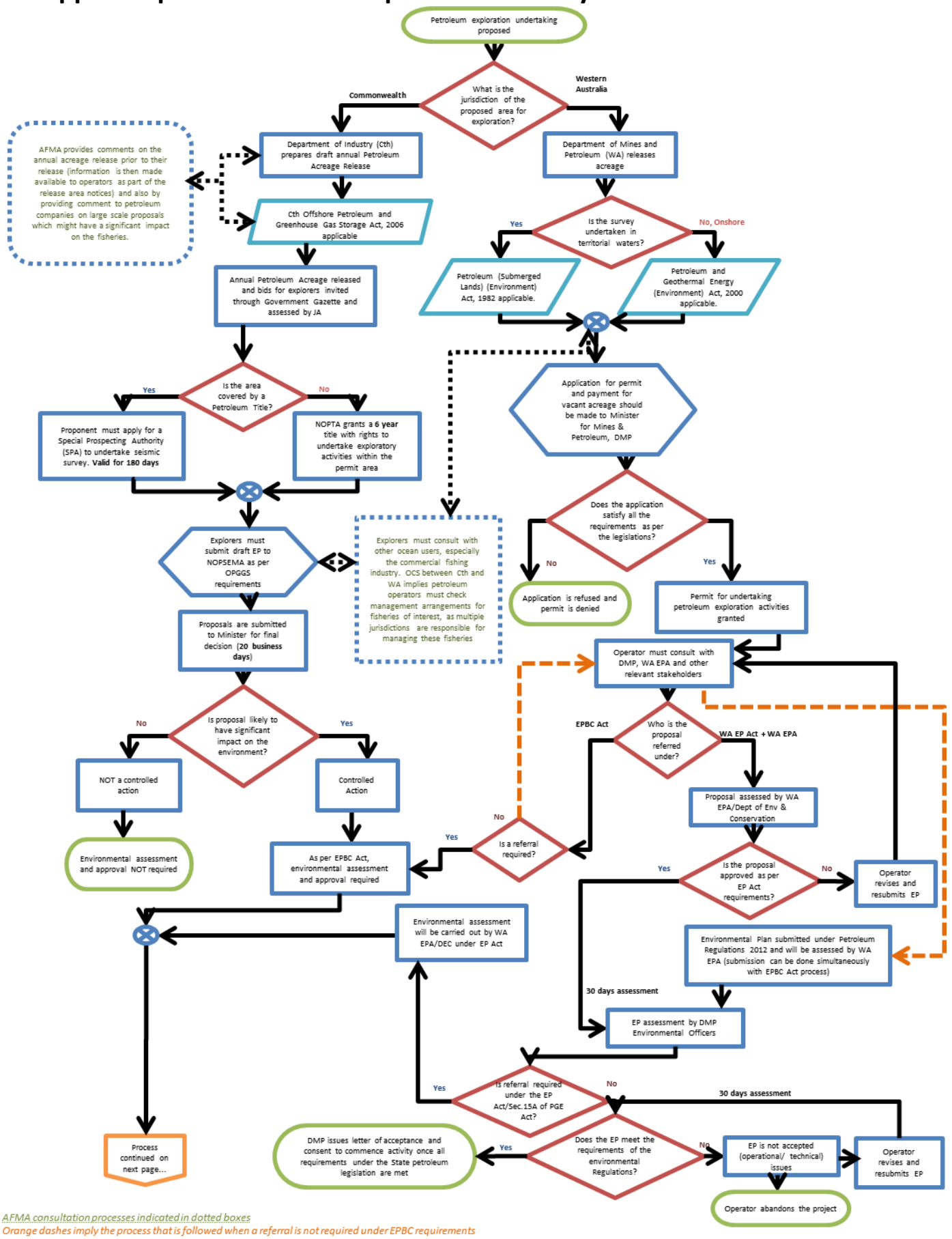
Approval process for new exploration activity – Victoria



AFMA consultation processes indicated in dotted boxes

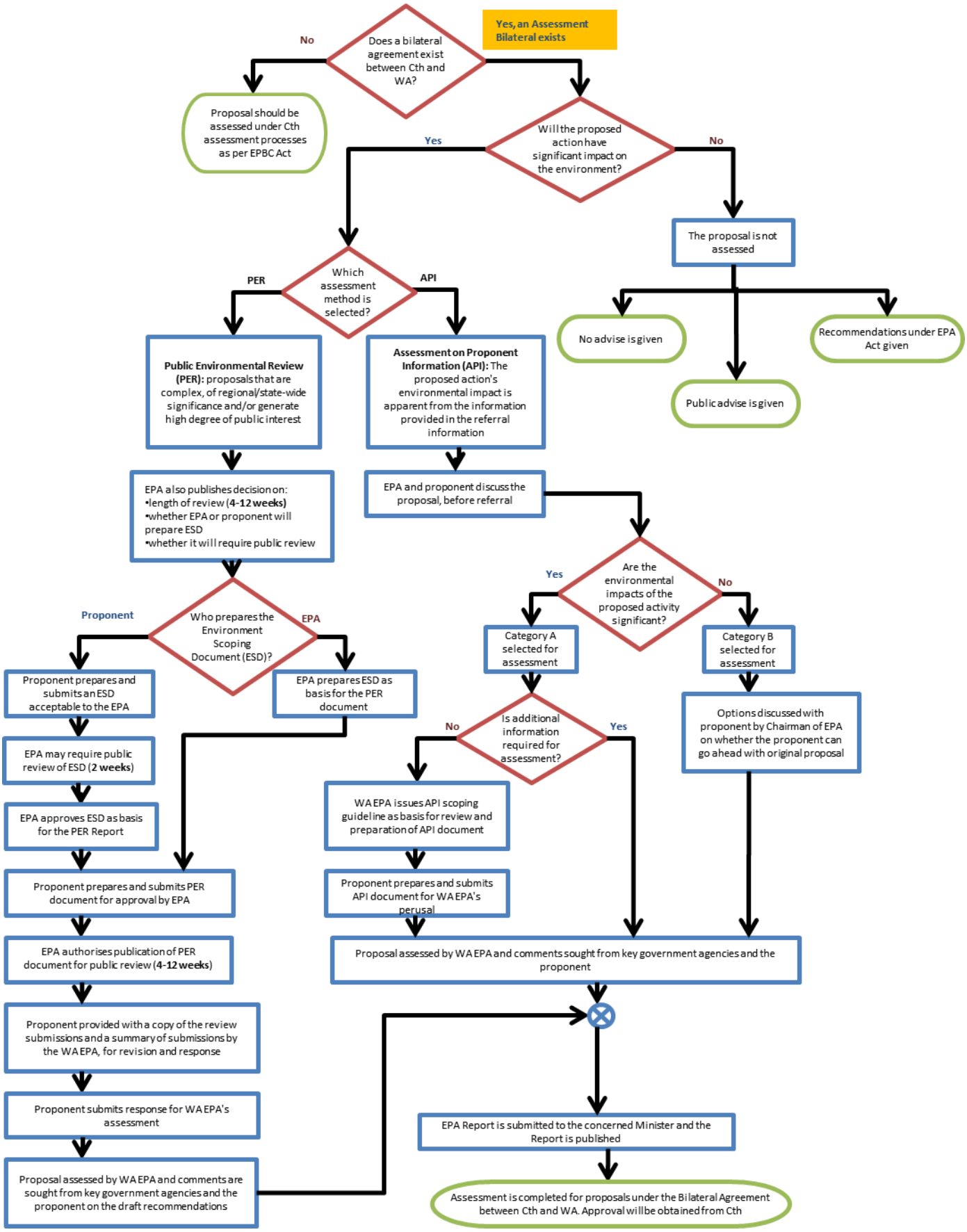

Does a bilateral agreement exist between Cth and Victoria?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Cth assessment processes as per EPBC Act
Proposal will be assessed as per the draft assessment bilateral with state of Victoria.
Project referred to Minister for Planning for a decision on whether Environmental Effects Statement (EES) is required
Is the proposal likely to have significant environmental impact?
No
Yes
Approval not needed but Environmental recommendations provided to proponents
Commonwealth Environment Minister provides guidelines for preparation of the draft EES
Proponent must prepare an EES and submit it to Commonwealth Environment Minister for assessment under the Environment Effects Act, 1978 and Ministerial Guidelines for Assessment of Environmental Effects. Content must include:
•Relevant impacts of action;
•Detailed assessment of nature and extent of likely short- and-long-term relevant impacts;
•Statement of whether any relevant impacts are likely to be unknown/unpredictable/irreversible;
•Analysis of significance of relevant impacts
•Any technical data used or needed to make detailed assessment
Inquiry or panel may be appointed by the Minister to evaluate certain concerns associated with EES
Minister may call for a supplementary statement containing additional information considered necessary for the assessment process. Decision must be made within 30 business days of receiving finalised documentation from proponent
Board receives inputs from the Commonwealth Minister before finalisation of the assessment report.
Is the proposed action approved?
No
Yes
Approval denied and proponent cannot undertake exploration activity
Proposed action is approved or approved with conditions set by the Commonwealth Minister
Proponent can initiate the exploration activity

Approval process for new exploration activity – Western Australia



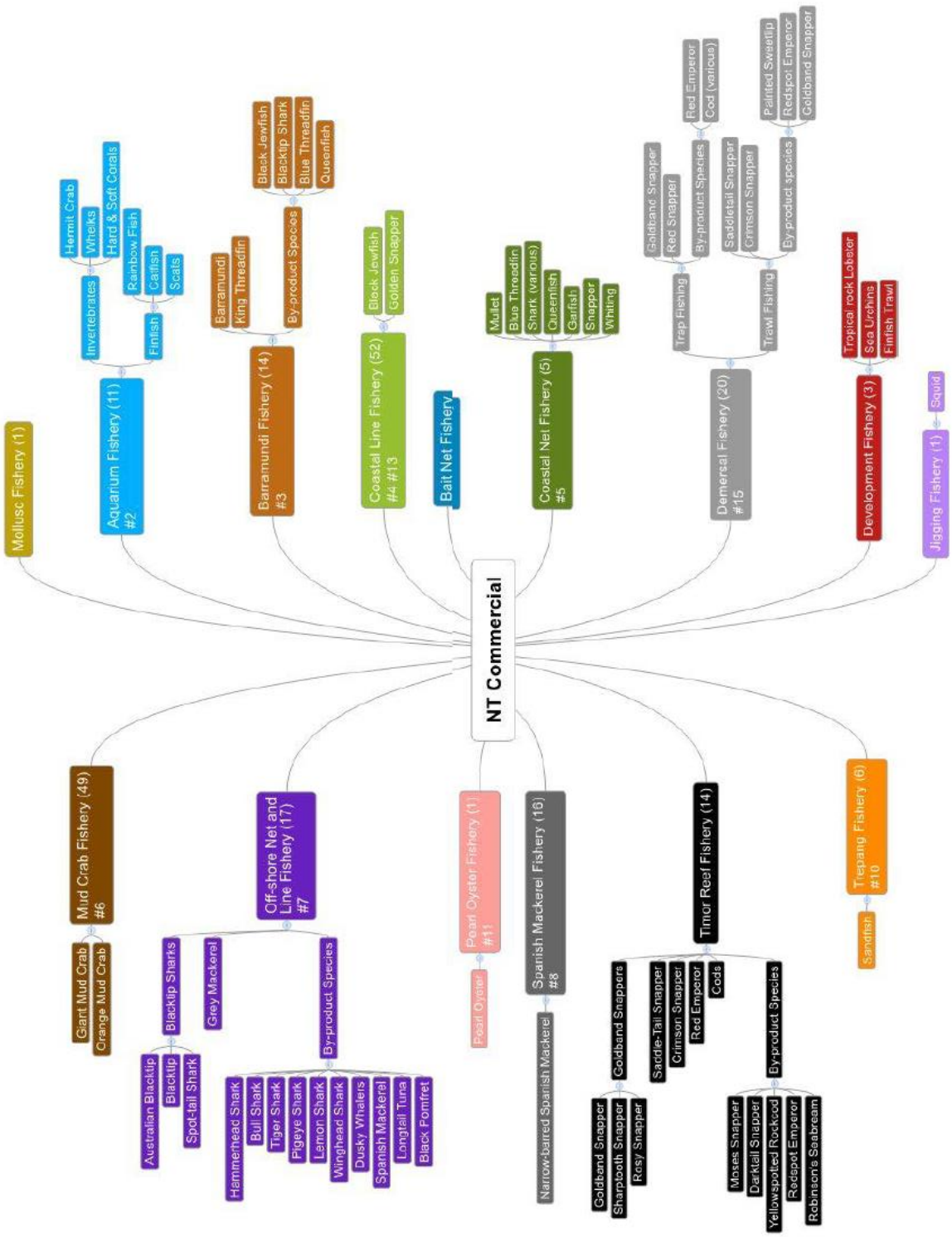
AFMA consultation processes indicated in dotted boxes

Orange dashes imply the process that is followed when a referral is not required under EPBC requirements


Does a bilateral agreement exist between Cth and WA?
No
Yes, an Assessment Bilateral exists
Proposal should be assessed under Cth assessment processes as per EPBC Act
Will the proposed action have significant impact on the environment?
Yes
No
The proposal is not assessed
No advise is given
Recommendations under EPA Act given
Public advise is given
Which assessment method is selected?
PER
API
Public Environmental Review (PER): proposals that are complex, of regional/state-wide significance and/or generate high degree of public interest
Assessment on Proponent Information (API): The proposed action's environmental impact is apparent from the information provided in the referral information
EPA also publishes decision on:
•length of review (4-12 weeks)
•whether EPA or proponent will prepare ESD
•whether it will require public review
EPA and proponent discuss the proposal, before referral
Are the environmental impacts of the proposed activity significant?
Yes
No
Category A selected for assessment
Category B selected for assessment
Options discussed with proponent by Chairman of EPA on whether the proponent can go ahead with original proposal
Who prepares the Environment Scoping Document (ESD)?
Proponent
EPA
Proponent prepares and submits an ESD acceptable to the EPA
EPA prepares ESD as basis for the PER document
EPA may require public review of ESD (2 weeks)
EPA approves ESD as basis for the PER Report
Is additional information required for assessment?
No
Yes
WA EPA issues API scoping guideline as basis for review and preparation of API document
Proponent prepares and submits PER document for approval by EPA
Proponent prepares and submits API document for WA EPA's perusal
EPA authorises publication of PER document for public review (4-12 weeks)
Proposal assessed by WA EPA and comments sought from key government agencies and the proponent
Proponent provided with a copy of the review submissions and a summary of submissions by the WA EPA, for revision and response
Proponent submits response for WA EPA's assessment
EPA Report is submitted to the concerned Minister and the Report is published
Proposal assessed by WA EPA and comments are sought from key government agencies and the proponent on the draft recommendations
Assessment is completed for proposals under the Bilateral Agreement between Cth and WA. Approval will be obtained from Cth

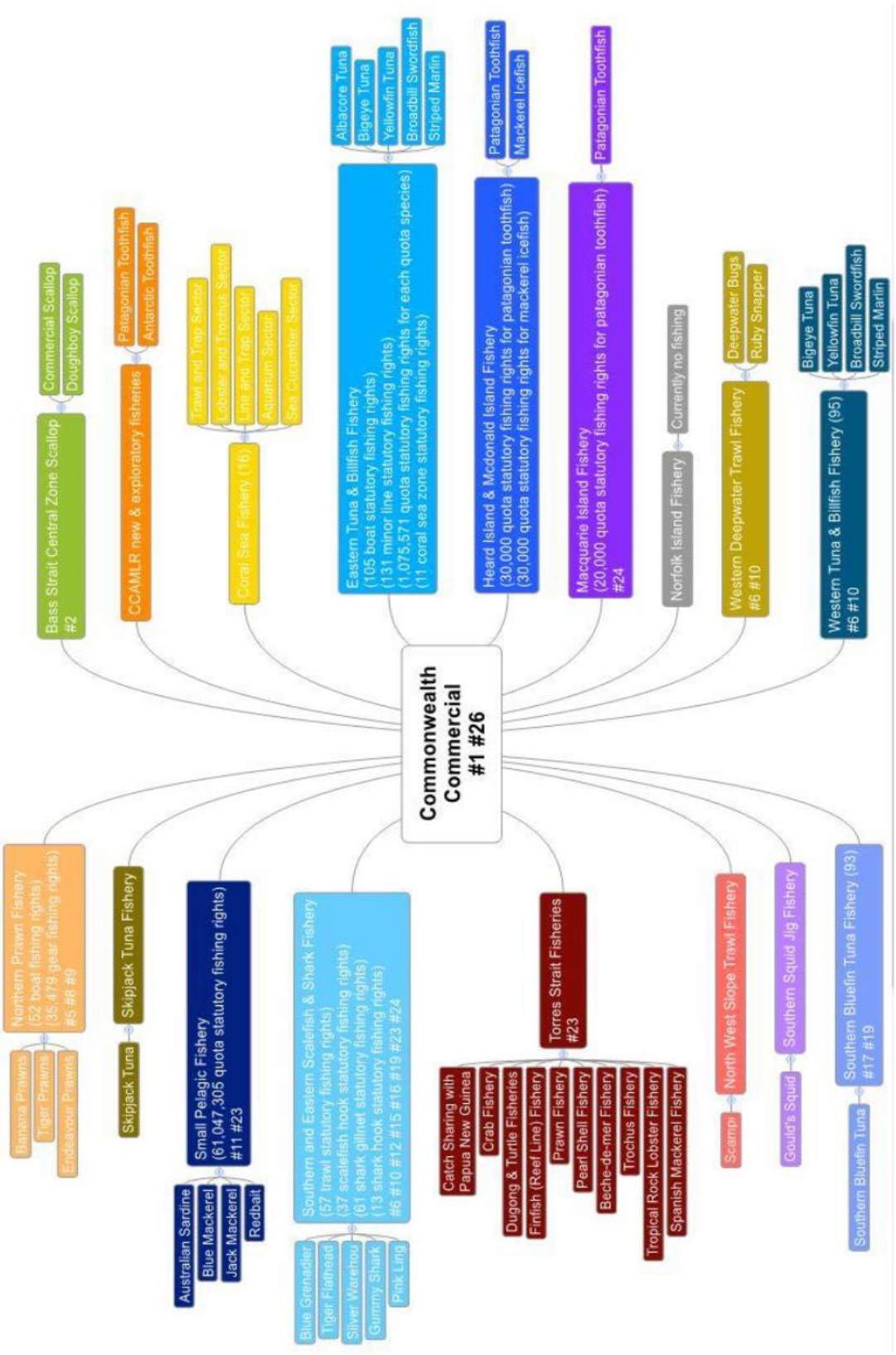
APPENDIX 2 INDUSTRY ASSOCIAITON MAPS

Northern Territory

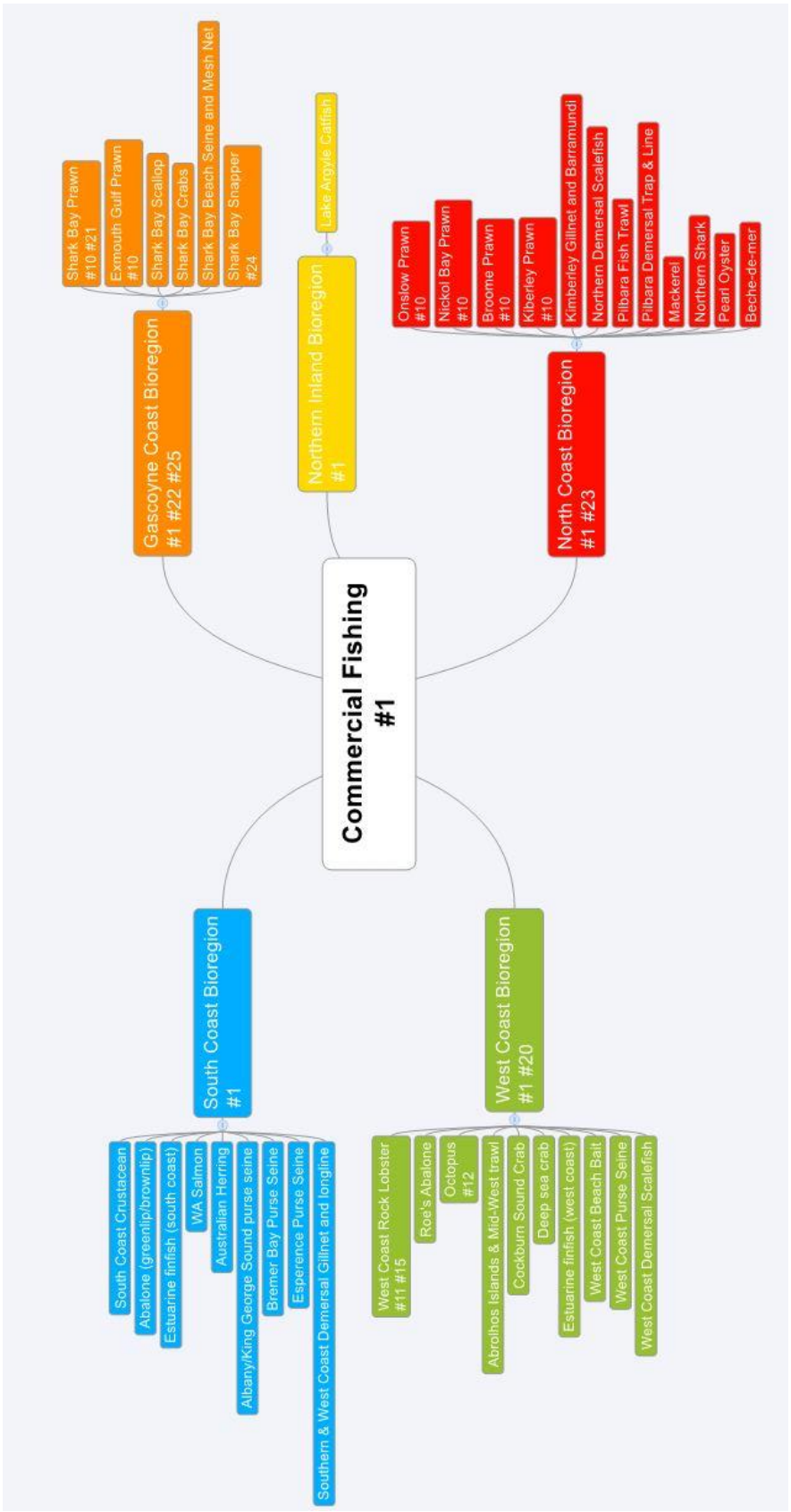


NODE #	ASSOCIATION
1	Northern Territory Demersal Fishermen's Association
2	Aquarium Fishing and Display Licensee Committee
3	Barramundi Fishery Licensee Committee
4	Coastal Line Fishery Licensee Committee
5	Coastal Net Fishery Licensee Committee
6	Mud Crab Fishery Licensee Committee
7	Offshore Net and Line Fishery Licensee Committee
8	Spanish Mackerel Fishery Licensee Committee
9	Timor Reef Fishery Licensee Committee
10	Trepang Fishery Licensee Committee
11	Pearl Oyster Fishery Licensee Committee
12	Northern Territory Seafood Council
13	NT Coastal Line Fishermen's Association
14	Tiwi Coastal Waters Consultative Committee, Manbuynga Ga Rulapa Consultative Committee and Anandilyakwa Consultative Committee
15	Demersal Fishery Licensee Committee

Commonwealth

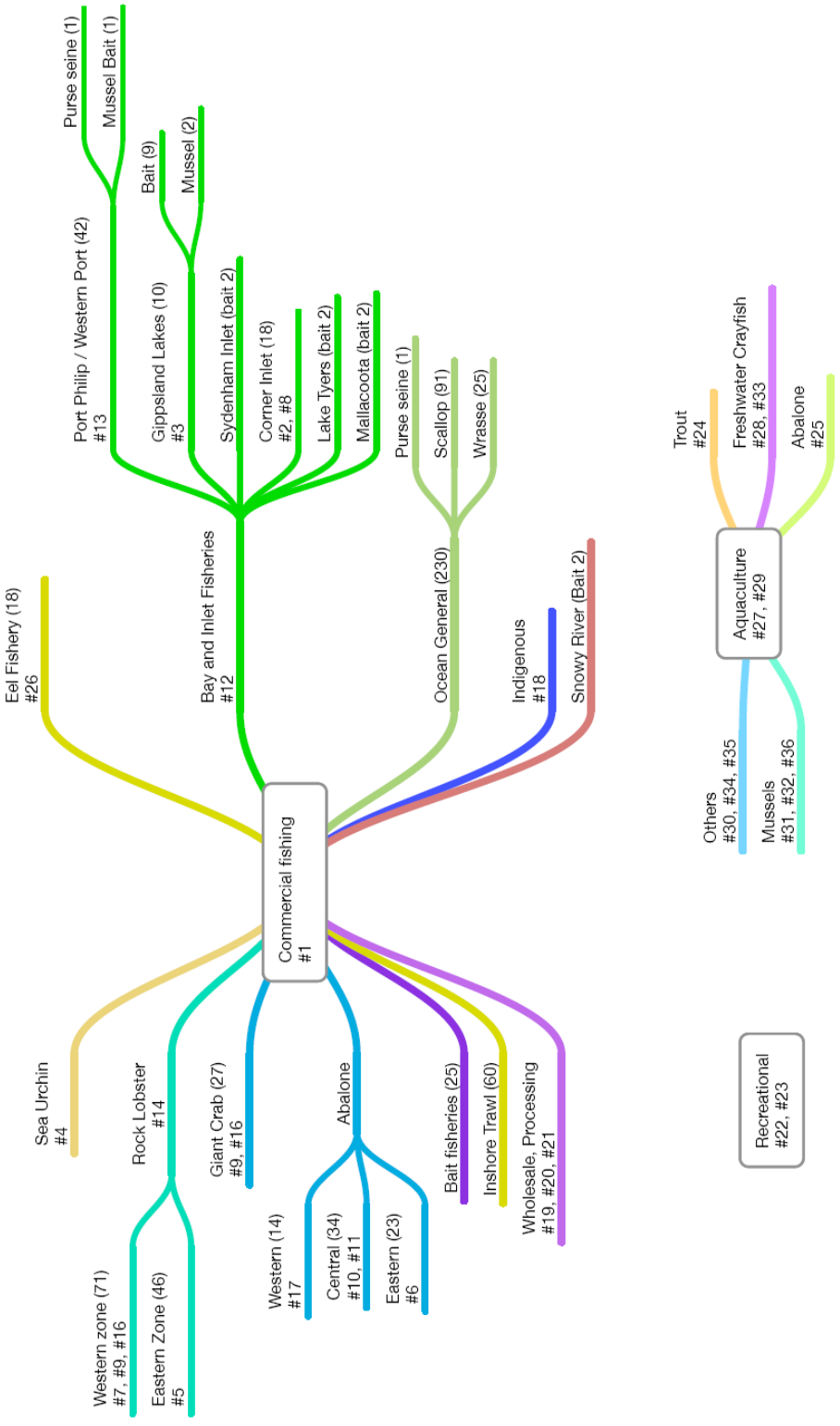


Western Australia



NODE #	Commercial Associations
1	Western Australia Fishing Industry Council (WAFIC)
9	Australian Council of Prawn Fisheries
11	Western Rock Lobster Council
14	Geraldton Fisherman's Co-operative
16	Aquaculture Council of West Australia (ACWA)
19	Pearl Producer's Association
20	West Coast Trawl Association
21	Shark Bay Prawn Trawler Operators' Association
23	Western Australian Northern Trawl Owners Association
24	The Shark Bay Snapper Managed Fishing Working Group

Victoria


Commercial fishing
#1
Bay and Inlet Fisheries
#12
Port Philip / Western Port (42)
#13
Purse seine (1)
Mussel Bait (1)
Gippsland Lakes (10)
#3
Bait (9)
Mussel (2)
Sydenham Inlet (bait 2)
Corner Inlet (18)
#2, #8
Lake Tyers (bait 2)
Mallacoota (bait 2)
Ocean General (230)
Purse seine (1)
Scallop (91)
Wrasse (25)
Indigenous
#18
Snowy River (Bait 2)
Eel Fishery (18)
#26
Sea Urchin
#4
Rock Lobster
#14
Western zone (71)
#7, #9, #16
Eastern Zone (46)
#5
Giant Crab (27)
#9, #16
Abalone
Western (14)
#17
Central (34)
#10, #11
Eastern (23)
#6
Bait fisheries (25)
Inshore Trawl (60)
Wholesale, Processing
#19, #20, #21
Aquaculture
#27, #29
Trout
#24
Freshwater Crayfish
#28, #33
Abalone
#25
Others
#30, #34, #35
Mussels
#31, #32, #36
Recreational
#22, #23

Node	Associations
1	Seafood Industry Victoria
2	Corner Inlet Fisheries Habitat Association
3	East Gippsland Estuarine Fishermen's Association.
4	Eastern Victorian Sea Urchin Divers Association.
5	Eastern Victorian Rock Lobster Industry Association
6	Eastern Zone Abalone Industry Association
7	Port Campbell Professional Fishermen's Association
8	Port Franklin Fishermen's Association
9	Portland Professional Fishermen's Association
10	Victorian Abalone Council
11	Victorian Abalone Divers Association
12	Victorian Bays and Inlets Fisheries Association
13	Victorian Fishery Association Resource Management
14	Victorian Rock Lobster Association
16	Warrnambool Professional Fisherman's Association.
17	Western Abalone Divers Association
18	Victorian Indigenous Seafood Corporation
19	Lakes Entrance Fishermen's Co-op Society Ltd
20	Victorian Abalone Processors Association
21	Victorian Fish & Food Marketing Association
22	VRFish
23	Futurefish Foundation
24	Victorian Trout Farmers Association
25	Victorian Abalone Growers Association
26	Victorian Eel Fishermen's Association
27	Victorian Marine Farmers Inc.
28	Australian Freshwater Crayfish Growers Association (Vic.)
29	The Victorian Aquaculture Council
30	Victorian Warmwater Aquaculture Association
31	Mussel Producer’s Association of Victoria
32	Victorian Mussel Grower’s Association
33	Australian Freshwater Crayfish Grower’s Association VIC
34	Victorian Native Fish Farmers Inc
35	Victorian Ornamental Growers

APPENDIX 3 STAFF

Name	Organisation	Project Involvement
Johnathon Davey	SIV	Principal Investigator
Renee Vajtauer	CFA (formerly SIV)	Principal Investigator (initial)
Ian Knuckey	Fishwell Consulting	Project Manager
Chris Calogeras	C-AID Consultants	Project Manager