



Document Control Sheet

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Executive Summary

The Marine Estate Management Authority (MEMA) organised a series of six targeted workshops in February 2017 to inform and engage with key stakeholders about the draft Statewide Threat and Risk Assessment report (draft TARA report).

The purposes of the workshops were to:

- Engage with stakeholders on the draft TARA report
- Provide the community and stakeholders with:
 - a. an understanding of the draft TARA report; and
 - b. the opportunity to:
 - i. identify omissions or inaccuracies within the draft TARA report
 - ii. review the evidence base used
 - iii. give additional evidence to inform the finalisation of the TARA report
 - iv. provide local and regional examples where available
- Provide the community and stakeholders with an understanding of how to provide a submission and how their feedback will be used
- Outline timeframes for engagement

This report summarises the outcomes, comments, evidence and other information received from participants in the six stakeholder workshops.

Specific feedback from participants on risk levels and evidence related to the draft TARA report is listed in full in Appendix A to this report. In a general context, evidence comments could be characterised as follows –

- Risk levels were set too high some participant(s) were of the view that risk levels in the draft TARA report may be set too high. For the Environmental TARA, this view was generally expressed (but not always) by stakeholders whose industry, use or activity in the marine estate was rated as a 'high' or 'moderate' risk. Notably, for the Social and Economic TARA, there were very few instances where participants expressed the view that the risk levels in the draft TARA may be set too high.
- Risk levels were set too low some participant(s) were of the view that the risk levels in the draft TARA report may be set too low. This view was generally expressed by stakeholders who noted evidence that environmental threats, including aspects of climate change, should be more explicit in the Environmental TARA. Some participant(s) also expressed the view that the Social and Economic TARA had underestimated the risk levels to social and economic benefits, particularly for threats related to resource use conflict and governance. This was recognised to be due in part to the lack of documented evidence for these risks.
- Mixed comments about risk levels some participant(s) had mixed or opposing views about the evidence for a particular threat or benefit and that risk levels should be reviewed on the basis that they were either set too high or set too low.



 That the risk had not been taken into account adequately – for this category, participant(s) identified either: (a) additional or new risk issues that from their perspective had not been properly considered in the draft TARA report; and/or (b) instances where the evidence provided for a risk level was not considered relevant or applicable.

In keeping with the TARA evidence-based process and wider consultation aims, wherever possible additional and supplementary evidence or local examples were noted and collected to underpin these viewpoints as part of the workshop process.

In addition to the information on the evidence collected at the workshops, a range of general queries, clarifications, comments and/or statements were made by participants during the workshops. This information has also been collated and reported in Appendix B. Some of common themes and issues that were raised as part of this feedback included:

- Comments related to the TARA process and approach, in particular to how the risk levels would be used in the next steps and what constitutes acceptable evidence;
- Comments related to consultation, in terms of the need for broader community consultation and associated comments about the on-line tool;
- Comments related to the Environmental TARA, relating to specific threat or asset categories;
- Comments related to the Social and Economic TARA, most notably in relation to the lack of suitable evidence and knowledge gaps.

Based on the volume of information and outputs obtained (across the evidence tables and more generally) and the feedback from participants about the process, it is considered that the engagement objectives and outcomes for the workshop sessions on the draft TARA report were achieved.



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1 Introduction

1.1 Background

The Marine Estate Management Authority (MEMA) organised a series of six targeted workshops in February 2017 to inform and engage with key marine estate stakeholders about the draft Statewide Threat and Risk Assessment report (draft TARA report).

This consultation report summarises the outcomes, comments, evidence, feedback and other information received from participants in these workshops.

1.2 Purposes and Aims of the Workshops

The purposes of the workshops were to:

- Engage with stakeholders on the draft TARA report
- Provide the community and stakeholders with:
 - o an understanding of the draft TARA report; and
 - the opportunity to:
 - identify omissions or inaccuracies within the draft TARA report
 - review the evidence base used
 - give additional evidence to inform the finalisation of the TARA report
 - provide local & regional examples where available
- Provide the community and stakeholders with an understanding of how to provide a submission and how their feedback will be used
- Outline timeframes for engagement

The workshops were by invitation only. MEMA agencies invited marine estate stakeholders to the workshops on the basis of the following:

- Marine estate stakeholders (including academics and researchers) who are most likely to hold new evidence or could effectively review and comment on evidence related to the draft TARA report;
- Peak marine estate stakeholder groups and bodies that could effectively disseminate information to their members and/or to the broader community; and
- Government representatives (including local government representatives) that have a responsibility for managing the marine estate and/or are likely to play a key role in developing future management initiatives and implementing the Strategy.

Accordingly, the invited stakeholders included a range of organisations and individuals across State agencies, local government, recreational fishing, commercial fishing, conservation, diving, boating and universities.



The schedule of workshops and stakeholder participants that attended each workshop is described in Table 1-1.

Workshop Name/Location	Date (2017)	Participant Organisations That Attended
Stakeholder workshop - Newcastle	14 February	Oceanwatch Australia, Professional Fishermans Association, Newcastle Commercial Fishermans Cooperative, Newcastle City Council, Port Stephens Council, University of Newcastle, Take 3 for the Sea, Estuary Management Committee, Hunter Local Land Services, Greater Sydney Local Land Services, DPI Fisheries, Port Stephens Great Lakes Marine Park Advisory Committee, Department of Industry - Lands, Department of Primary Industries (DPI) Biosecurity.
Stakeholder workshop – Coffs Harbour	15 February	Professional Fishermans Association, NSW Farmers Oyster Committee, Solitary Islands Underwater Research Group, Coffs Harbour City Council, Clarence Valley Council, Southern Cross University, recreational fisher, North Coast Local Land Services, DPI Fisheries, Solitary Islands Marine Park Advisory Committee, National Parks and Wildlife Service, Department of Industry (DOI) Lands.
Stakeholder workshop - Ballina	16 February	Professional Fishermans Association, Hydrosphere Consulting, Byron Shire Council, Tweed Shire Council, James Cook University, North Coast Local Land Services, Cape Byron Marine Park Advisory Committee, DPI Fisheries, Office of Environment and Heritage (OEH) National Parks and Wildlife Service, Department of Industry - Lands
Stakeholder workshop – Kiama	20 February	Underwater Skin-divers and Fishers Association, Commercial fishers, Oceanwatch, Port Kembla Environment Group, NSW Ports Authority, Natural Resource Commission, Australian Seabird Rescue South Coast, DPI Fisheries, Jervis Bay Marine Park Advisory Committee, NPWS South Coast Regional Advisory Committee, OEH, Department of Industry - Lands, Department of Transport
Stakeholder workshop – Narooma	21 February	NSW Recreational Fishers Alliance, Commercial fishers, Bega Valley Shire Council, Nature Coast Marine, South East Local Land Services, Batemans Marine Park Advisory Committee, DPI Fisheries, OEH, Department of Transport.
Stakeholder workshop - Sydney	22 February	University of NSW, University of Wollongong, Sydney Institute of Marine Science, Professional Fishermans Association, NSW Wild Caught, Ballina Fishermen's Cooperative, Clarence River Fishermans Co-operative Fishing Alliance, Boating Industry Association, National Parks Association, Environmental Defenders Office NSW, NSW Port Authority, Australian Marine Conservation Society, Dive Industry Association Australia, OEH, NPWS, Department of Industry - Lands, Department of Transport.

Table 1-1 Schedule of Workshops and Participants



In addition to the six stakeholder workshops, a seventh interagency workshop with staff from State natural resource management agencies was held on 7 February in Sydney. This workshop was an information sharing platform to broaden agency understanding of the draft TARA report and was also used to 'road test' the presentation materials for the following six marine estate stakeholder workshops.

1.3 Workshop Framework

MEMA's engagement plan for stakeholder and community engagement on the draft TARA report (MEMA, August 2016) has the following objectives and outcomes as set out in Table 1-2.

Stage	Objectives	Outcomes
Stage 2: Releasing draft TARA report	 Clearly communicate the draft TARA and the process behind developing it to the community Gather feedback from key stakeholders such as research institutions and local councils who may have evidence to change the risk ratings in the draft TARA Gather feedback on proposed priority stressors Manage community and stakeholder expectations and promote transparency by providing clear information to stakeholders and the community Refine stakeholder list for Stage 3 engagement (below) 	 The community and stakeholders understand and have confidence in the TARA process and understand how their feedback will be used to finalise the TARA and contribute to the Strategy and new marine park management plans The community and stakeholders have been given the opportunity to review the draft TARA, identify inaccuracies or omissions and provide additional evidence

 Table 1-2 Objectives and Outcomes of the Stakeholder and Community Engagement

Based on these objectives and outcomes sought, a methodology for the workshops was devised and delivered in accordance with an agreed workshop framework, developed by BMT WBM and endorsed by the MEMA agencies.

The session content is shown in Figure 1-1 (noting some minor amendments were made to the speakers and timing depending on the session and staff attending). Each half-day workshop was broken down into seven stand-alone modules with two interactive break-out sessions inserted into the program to encourage audience engagement and participation.



The sessions included:

- Session 1 introduction and context (delivered by the senior MEMA officer about the overall marine estate reforms and progress to date)
- Session 2 overview of the TARA process and outputs
- Session 3 a break-out session on how to use a risk matrix (interactive with participants)
- Session 4 information on how to make a submission including using the on-line tool from the MEMA website
- Session 5 key findings of the draft TARA report across the Environmental and Social and Economic TARA components and across the three regions identified in the report
- Session 6 break-out interactive sessions where participants reviewed and provided additional evidence for a portion of the overall TARA matrices
- Session 7 summary, wrap up and information about future actions

Session Number	Timing (10 AM – 2.30 PM) and Presenter
1) Introduction and Context	15 minutes (Presented by DPI Senior Officer)
2) The TARA Process and Outputs	45 minutes (Presented by Facilitator)
 Breakout session on using a risk matrix 	20 minutes (Presented by Facilitator)
4) Engagement and how to make a submission	30 minutes (Presented by DPI Project Lead) + 10 minute Question and Answer
 	– Lunch Break (12.00 – 12.30)
5) Findings of the TARA on Priority Risks	15 Minutes (Presented by Facilitator)
6) Breakout sessions on TARA Risk Matrices	45 Minutes – Environmental 45 Minutes – Social and Economic (Presented and run by Facilitator)
	(Presented and run by Facilitator)
7) Summary and where to from here	15 Minutes (DPI Project Lead) Followed by one on one demonstrations of on-line tool
	and informal discussions with participants

Figure 1-1 Sessions Delivered as part of the Workshops

The bulk of the afternoon session of each day was taken up by Session 6, which was used to engage with participants about the risk levels and the underlying evidence from the draft TARA report.

While the lodgement of written or on-line submissions (using the TARA interactive tool) was identified as the formal mode for feedback, the interactive sessions provided an additional



opportunity to obtain rapid and direct feedback from stakeholders about particular risk levels, the suitability of underpinning evidence and local examples of where threats to benefits of the marine estate are being realised.

A key feature of the approach was to record feedback directly from stakeholder participants into a standard template. This collected information using that template is contained in Appendix A and summarised in Section 2 of this report.

In addition to the information on the evidence collected as part of the breakout workshop process, a range of general queries, clarifications, comments and/or statements were made by participants during the stakeholder workshops. These interjections occurred either during the presentations or at designated question and answer periods. These common themes and issues are summarised in Section 3 of this report, with the full list of comments tabulated in Appendix B.

Evaluation of the workshops including participant feedback and whether the set engagement objectives were achieved is summarised in Section 4 of this report. This is based in part on a review of the feedback forms that were voluntarily completed by attending stakeholders.



2 Workshop Interactive Session Outputs

2.1 Collected Comments on Risk Levels and Evidence

As outlined in Section 1, the interactive sessions undertaken as part of stakeholder workshops included an opportunity for participants to:

- identify omissions or inaccuracies associated with the risk levels;
- review the evidence base used;
- dispute or seek clarifications about the evidence;
- give additional evidence to inform the finalisation of the TARA; and
- provide local and regional examples where available.

Each workshop contained eight 'table' sessions as shown in Table 2-1 such that all cells of the draft Statewide TARA were available for review across the Estuarine TARA, Coastal and Marine TARA and Social and Economic TARA.

A template was used by MEMA Agency facilitators to collect the comments from participants at each table.

Given the volume of information presented to participants to review, the interactive session was broken down into three phases:

- (1) An initial phase was undertaken to assist participants to navigate the risk level matrix and evidence.
- (2) Following this initial review period, a more substantial period of time was allowed for participants to provide feedback on specific cells or issues of interest. Participants were encouraged to concentrate and provide feedback on issues of most interest and concern to them as well as hear the issues and concerns of other participants in the table group. This approach made best use of the time available rather than seeking to methodically address each cell in the draft TARA report.
- (3) At the end of each session, a short verbal summary was provided by the facilitator at each table to the broader group with the opportunity for individual participants to add emphasis or key messages.

Collated comments from the participants as captured in the templates by MEMA agency staff are contained in Appendix A and summarised in the sections below.



Table Colour Code	Session 1 – Environmental TARA	Session 2 – Social and Economic TARA
Blue Table	Resource uses that affect the environmental assets of Estuaries	Resource uses that affect the Social and Economic benefits derived from the marine estate
Yellow Table	Resource uses that affect the environmental assets of Coasts and Marine Waters	Governance of the marine estate including public safety and access availability that affect the Social and Economic benefits derived from the marine estate
Red Table	Land based impacts (including climate change) that affect the environmental assets of Estuaries	Environmental threats (including climate change) that affect the Social and Economic benefits derived from the marine estate
Black Table	Land based impacts (including climate change) that affect the environmental assets Coasts and Marine Waters	Environmental threats (including climate change) that affect the Social and Economic benefits derived from the marine estate

Table 2-1	Workshop	Breakout	Sessions
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It is important to note that wherever possible participants were generally allocated a workshop table (colour) relevant to their area or activity of interest rather than a random seating arrangement. This facilitated a cross section of relevant interests to be represented at each table, with the comments a reflection of this arrangement.

2.2 Nature of Comments Received

Section 2.3 (following) provides a summary of the comments raised by stakeholder participants that were documented and collated by MEMA staff as part of the interactive breakout sessions.

As the comments on risk levels and evidence was quite diverse, the information is presented as a general summary of the participant's comments sorted by threat issue and includes a high level description of the nature or intent of the comments. In this context, the 'nature of the comment' (in the far right column of each summary table in Section 2.3) should be interpreted as follows –

<u>**Risk levels were set too high**</u> – for this category, participant(s) were of the view that risk levels in the draft TARA report may be set too high. For the Environmental TARA, this view was generally expressed (but not always) by stakeholders whose industry, use or activity in the marine estate was rated as a 'high' or 'moderate' risk. Notably, for the Social and Economic TARA, there were very few instances where participants expressed the view that the risk levels in the draft TARA may be set too high.

Some specific examples of these sorts of comments (refer Appendix A) were as follows:

 In the context of commercial fishing in the Environmental TARA – 'High risk levels should be lower. Use of catch stats for 2009/2014 and 2013/2014 were heavily affected by weather events; there were changes to log book procedures affecting reporting; there was a documented reduction in fishers on the South Coast which reduces impact; questions on overfished status of king prawn; legacy issues of previous fishing are trending down and will be further impacted by the structural reform process'



 In the context of recreational boating and boating infrastructure in the <u>Environmental TARA</u> – 'Seagrass and moorings – how can heavy metal bioaccumulation be attributed to just vessels? Need to look at evidence and adjust risk rating. Dubious of evidence used and robustness of data [listed as high]'

<u>**Risk levels were set too low**</u> – for this category, participant(s) were of the view that the risk levels in the draft TARA report may be set too low. This view was generally expressed by stakeholders who noted evidence that environmental threats, including aspects of climate change, should be more explicit in the Environmental TARA. Some participant(s) also expressed the view that the Social and Economic TARA had underestimated the risk levels to social and economic benefits, particularly for threats related to resource use conflict and governance. This was recognised to be due in part to the lack of documented evidence for these risks.

Some specific examples of these sorts of comments (refer Appendix A) were as follows:

- In the context of agriculture diffuse source runoff in the <u>Environmental TARA</u> 'Risks should not be "Low" due to water abstraction, use and changes to hydrological regime. This is a real community concern and knowledge gap.'
- In the context of water pollution from septic and sewage affecting safety health and wellbeing in the <u>Social and Economic TARA</u> – 'Risk to seafood safety should be higher particularly in Central Region given greater pollution risk Septic systems are having an impact in the Hawkesbury. People don't want to eat product because of suspected pollution. Upstream caravan parks – high use and discharge during holiday periods. Need to understand what is coming out of these septic systems (hormones, etc.).'
- In the contest of conflict over resource access and use in the <u>Social and Economic TARA</u> 'Risks should be higher. Cultural conflicts between traditional areas and restricted areas; loss of traditional fishing practices, livelihoods, habits and customs. Restrictions and zoning causing problems between fishing groups.'

<u>Mixed comments about risk levels</u> – for this category, participant(s) had mixed or opposing views about the evidence for a particular threat or benefit and that risk levels should be reviewed on the basis that they were either set too high or set too low.

Some specific examples where mixed comments about risk levels were received included:

- Risks attributed to beach nourishment in the Coasts and Marine Environmental TARA
- Risks attributed to foreshore development in the Coasts and Marine Environmental TARA
- Risks attributed to recreational boating and boating infrastructure in the Estuary <u>Environmental</u> <u>TARA</u>
- Risks attributed to resource use and conflicts in the <u>Social and Economic TARA</u>

<u>That the risk had not been taken into account adequately</u> – for this category, participant(s) identified either: (a) additional or new risk issues that from their perspective had not been properly considered in the draft TARA report; and/or (b) instances where the evidence provided for a risk level was not considered relevant or applicable.



Some specific examples of these sorts of comments (refer Appendix A) were as follows:

- In the <u>Environmental TARA</u> 'Where are reclamation and Acid Sulfate Soil (ASS) impacts in the TARA? Should this be a new category To be investigated where it fits in terms of stressors'
- In the <u>Environmental TARA</u> 'What about coastal pest plants and animals in dune and beach areas? Is this a key threat/stressor that has been missed?'

The sections following are a highly generalised summary of the viewpoints presented; as such, for clarification or context, the source information in Appendix A should always be consulted as the raw data informing the nature of the comment.

2.3 Summary of Comments Raised – Environmental TARA (Estuaries)

This section summarises the comments raised and collected as part of the interactive session for the draft TARA report for Estuaries.

2.3.1 Resource Uses - Estuaries

The blue tables across the interactive sessions examined the part of the TARA matrix entitled, **'Resource uses that affect the environmental assets of Estuaries'**.

Blue Table - Threat Issue	Risk/Evidence Comments Collected (21)	Nature of Comments (generally)
Boating and boating infrastructure	5	Mixed comments
Recreational Fishing	3	Risks too high
Dredging	3	Risks too high
Aquaculture	2	Mixed comments
Small commercial vessels	2	Risks too high
Large Commercial Vessels/Ports	2	Risks too high
Freshwater Flows	1	Risks too low
4WD	1	Risks too low
Camping	1	Risk not taken into account adequately
Commercial Fishing	1	Risks too high



2.3.2 Land Based Impacts – Estuaries

The red tables across the interactive sessions examined, 'Land based impacts (including climate change) that affect the environmental assets of Estuaries'.

Red Table - Threat Issue	Risk/Evidence Comments Collected (38)	Nature of Comments (generally)
Stock grazing	7	Risks too low <i>and/or</i> Risks not taken into account adequately
Point source water pollution	4	Risks too low
Non-point source water pollution - agriculture	4	Risks too low
Non-point source water pollution - urban	4	Risks too low
Foreshore development	3	Risks too low
Climate Change – Ocean Acidification	3	Risks too high
Vegetation Clearing	2	Risks too low
Climate Change - Storm surge and extreme weather	2	Risks too low
Climate Change – Altered Currents	2	Risks too low
Climate Change - Sea level rise	1	Risks too low
Algal blooms	1	Risks too low
Wildlife disturbance	1	Risks too low
Dredging	1	Risks too high
Estuary Entrance Modification	1	Risks too low
Reclamation	1	Risks not taken into account adequately
Climate Change – Sea temperature rise	1	Risks too low



2.4 Summary of Comments Raised – Environmental TARA (Coasts and Marine)

This section summarises the comments raised and collected as part of the interactive session for the TARA for Coastal and Marine (e.g. open coasts and marine).

2.4.1 Resource Uses – Coasts and Marine

The yellow tables across the interactive sessions examined the part of the TARA matrix entitled, 'Resource uses that affect the environmental assets of Coasts and Marine Waters'.

Yellow Table - Threat Issue	Risk/Evidence Comments Collected (37)	Nature of Comments (generally)	
Commercial Fishing	14	Risks too high	
Recreational fishing	11	Risks too high	
Shark Controls	2	Risks not taken into account adequately	
Mining	2	Risks not taken into account adequately	
Pests and Diseases	1	Risks not taken into account adequately	
4-Wheel Driving	1	Risks too low	
Marine debris	1	Risks too low	
Small commercial vessels	1	Risks too high	
Recreation – snorkelling and diving	1	Risks too high	
Large commercial vessels/ports	1	Risks appropriate	
Bait and aquarium trade	1	Risks not taken into account adequately	
Aquaculture	1	Risks not taken into account adequately	

Evidence comments collected can be summarised as follows:

2.4.2 Land Based Impacts – Coasts and Marine

The black tables across the interactive sessions examined, 'Land based impacts (including climate change) that affect the environmental assets of Coasts and Marine Waters.

Black Table - Threat Issue	Risk/Evidence Comments Collected (26)	Nature of Comments (generally)		
Estuary entrance modification	4	Risks too low		
Non-point source water pollution - urban	3	Risks too low		



Black Table - Threat Issue	Risk/Evidence Comments Collected (26)	Nature of Comments (generally)	
Climate Change – Storm surge and extreme weather	3	Risks too low	
Climate Change - sea temperature rise	3	Risks too low	
Foreshore development	3	Mixed comments	
Non-point source water pollution – agriculture	2	Risks too low	
Pests and disease	2	Risks too low <i>and/or</i> Risks not taken into account adequately	
Beach nourishment	2	Mixed comments	
Climate Change – Ocean Acidification	2	Risk too high	
Climate Change - Altered currents	1	Risk too low	
Vegetation Clearing	1	Risk too low	

2.5 Summary of Comments Raised – Social and Economic TARA

This section summarises the comments raised and collected as part of the interactive session for the TARA for Social and Economic.

2.5.1 Resource Uses – Social and Economic

'Resource uses that affect the Social and Economic benefits derived from the marine estate' were addressed by the blue tables.

Blue Table - Threat Issue	Risk/Evidence Comments Collected (15)	Nature of Comments (generally)		
Conflict over resource use and access	12	Mixed comments; but generally risks considered too low		
Anti-Social Behaviour	1	Risk too low		
Loss or decline of marine industries	1	Risk too low		
Excessive or illegal take	1	Risk too low		



2.5.2 Governance of the Marine Estate – Social and Economic

'Governance of the marine estate including public safety and access availability that affect the social and economic benefits derived from the marine estate' were addressed by the yellow tables.

Yellow Table - Threat Issue	Risk/Evidence Comments Collected (26)	Nature of Comments (generally)		
Access Issues	7	Risks to benefits from restricted access rated too low		
Compliance Issues	7	Risks too low (not enough compliance occurring)		
Public Safety	5	Risks too low (particularly for seafood safety)		
Engagement and Consultation	3	Risks too low (insufficient consultation and engagement)		
Over regulation	3	Mixed comments (some groups feel over regulated)		
Lack of Information	1	Risks too low (insufficient information provision)		

Evidence comments collected can be summarised as follows:

2.5.3 Environmental Threats – Social and Economic

'Environmental threats (including climate change) that affect the Social and Economic benefits derived from the marine estate' were addressed at both the red and black tables.

The evidence comments received have been combined and are summarised as follows:

Red/Black Table – Threat Issue	Risk/Evidence Comments Collected (49)	Nature of Comments (generally)	
Water pollution - Point sources	8	Risk too low	
Habitat physical disturbance	6	Risk too low	
Pests and diseases	5	Risk too low	
Reduction in abundance of species and trophic levels	5	Risk too low	
Water pollution - litter, plastics	4	Risk too low	
Modified hydrology	4	Risk too low	
Water pollution - sewage and septic	3	Risk too low	
Water pollution - urban stormwater	3	Risk too low	
Climate change	3	Risk too low	



Red/Black Table – Threat Issue	Risk/Evidence Comments Collected (49)	Nature of Comments (generally)		
Wildlife disturbance/interactions	2	Risk too low		
Erosion	1	Risk too low		
Sediment contamination	1	Risk too low		
Water pollution - landfills and impacts on groundwater	1	Risk too low		
Water pollution - Agricultural diffuse	1	Risk too low		
Seafood contamination	1	Risk too low		
Water quality (algal blooms)	1	Risk too low		



3 Common Themes and Issues Raised During Workshops

In addition to the comments and information on risk levels and evidence collected as part of the breakout interactive workshop process discussed in Section 2 (and Appendix A), a range of general queries, clarifications, comments and/or statements were made by participants during the stakeholder workshops. These interjections occurred either during the presentations or at designated question and answer periods.

A full register of these issues was collated by MEMA staff and is listed in Appendix B.

In reviewing this register across the six workshop sessions, some common themes and issues that were raised included:

Comments related to the TARA process and approach

- Questions around how the risk levels were assigned, definition of likelihoods and who were the experts used to determine risk levels
- Many participants sought clarification on what is suitable/acceptable evidence to inform and guide the process
- Questions around the terminology and use of the word 'threats' suggesting it would have been better to focus on impacts from activities rather than labelling industries and uses of the marine estate as threats
- Questions about the planning timeframes (20 years) and longevity of the TARA and if the risks stated are the current risk or the future risk (or both)
- In terms of next steps, questioned how MEMA will use the risk levels, how they will be prioritised, who develops new management controls, what agencies are involved and the budget that will be available to implement the controls
- Noted the TARA is useful to understand the discrete threats to specific benefits but needs to ensure it is considering cumulative or interactive threats

Comments related to Consultation

- Questions around how consultation would be undertaken with the broader community and if additional consultation is required with specific groups (such as commercial fishers) as it was believed most community members will not engage in such a complex process
- Disagreed with the online tool options of being able to click on YES / NO / UNSURE in relation to the evidence as it could allow people to lobby and click on 'yes' (e.g. 'I support the evidence') hundreds of times and skew consultation outcomes
- Questions if the Hawkesbury Bioregion submissions were used in the Statewide TARA and what changes were made from Hawkesbury TARA to the Central Region TARA.



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Comments related to the Environmental TARA

- Noted beach erosion is not included as a priority threat but should be, and not specific to development.
- Suggested 'dunes' be added as an environmental asset
- Suggested boating and boating infrastructure are two separate threat issues and need to be separated.
- Suggested septic and sewage impacts are two separate threat issues and need to be separated
- Noted commercial fishing risk levels were of concern as current management meets EPBC Act provisions and queried the evidence behind the risk levels
- Noted concerns about the lack of recognition of biosecurity risk and associated pests and disease
- Noted that threats from pest plants and animals in dune and coastal areas needed more recognition
- Noted emerging impacts from catchment agricultural uses (particularly in Northern region workshops)
- Suggested marine pollution (e.g. oil spills) from shipping is under rated and noted whilst there
 have been few incidences there have been many close calls and consequence rating should be
 higher.

Comments related to the Social and Economic TARA

- Comments that the lack of social and economic information is concerning and that economic systems are fragile, particularly in the regions, so before initiatives are undertaken, more data is needed.
- Suggested more research is needed into threats and potential impacts before management options decided and will need data pre- and post-implementation
- Suggested that conflict over resource use should be a high risk to health and wellbeing
- Questioned why historic cultural heritage associated with the marine estate was not considered in the assessment
- Noted that seafood safety is an important social and economic issue (as well as environmental) and queries who monitors fish to ensure they are safe.
- Noted that gaps in knowledge / evidence makes it difficult to evaluate commercial benefit vs broader community benefit vs environmental benefit
- Frustration noted at the different perspectives involved in making decisions on the risk levels, made by people with limited direct knowledge or information who haven't been in industry or on boats and note that subjective viewpoints have led to higher risk levels.



4 Workshop Evaluation

4.1 Participant Feedback on Workshop Process

Feedback from the workshop sessions - as collated from the completed feedback forms - were generally positive.

Participants were asked to answer a series of questions based on a ranking of 5 (strongly agree) to 1 (strongly disagree). The questions and responses are summarised in Figure 4-1 (across all sessions).

Additional narrative comments made by participants on the feedback forms were also generally positive about the sessions and how the sessions were facilitated.

The interactive 'table' sessions in the afternoon to review the TARA evidence and risk levels in detail were regarded by participants (as well as MEMA agency staff) as particularly useful, evident by the volume of comments collected and shown in Appendix A.

4.2 Achievement of Engagement Objectives and Outcomes

As outlined in Section 1, the key objectives and outcomes for the sessions were identified in the Engagement Plan for the draft TARA (MEMA, August 2016). How these objectives and outcomes are assessed to have been achieved is outlined in Table 4-1 and Table 4-2.

Objectives	How achieved as part of workshops?
 Clearly communicate the draft TARA and the process behind developing it to the community 	 One-half of the sessions were devoted to explaining the TARA process and draft TARA report outcomes. This included a specific 'ice breaker' exercise on how to
 Gather feedback from key stakeholders such as research institutions and local councils who may have evidence to change the risk ratings in the draft TARA 	undertake a risk assessment using two relatively simple coastal-themed health and safety examples. For the most part this exercise was seen as useful by participants as it raised the collective understanding of using a risk assessment process as well as the inherent concepts of subjectivity, dealing with uncertainty, and understanding
 Gather feedback on proposed priority stressors Manage community and 	 The sessions included participants from a broad range of stakeholders including Council, State Government,
stakeholder expectations and promote transparency by providing clear information to	 research institutions, peak stakeholder groups and NGOs The interactive sessions were designed to collect feedback on evidence in addition to formal submissions
 stakeholders and the community Refine stakeholder list for Stage 3 engagement (below) 	 Specific feedback on priority stressors was not sought but can be inferred based on the comments received on TARA risk scores (including for example where proposed risk scores were evaluated by participants as being too low)
	 The sessions were reasonably well attended given the sessions were during the weekday and by invitation only. There was a record kept of organisations that attended for use in later engagement.

Table 4-1 How were engagement objectives achieved?



	Outcomes	Нс	w achieved as part of workshops?
•	The community and stakeholders understand and have confidence in the TARA process and understand how their feedback will be used to finalise the TARA and contribute to the Strategy and new marine park management plans	•	The TARA process and draft Tara report is very comprehensive and complex for general community consumption including many stakeholders.
		•	Nonetheless, the approach undertaken – particularly the breakout sessions with a devoted MEMA staff facilitator – was a very useful means of explaining the product and conveying the importance of the evidence collection process to stakeholders.
•	The community and stakeholders have been given the opportunity to review the draft TARA, identify inaccuracies or omissions and provide additional evidence	•	The interactive sessions provided a rapid and responsive approach to obtaining stakeholder feedback. However, the key emphasis of the day was informing participants on how to make a formal submission (the preferred method of interaction on the draft TARA). This was achieved through the demonstration of the on-line tool and through the interactive sessions.

 Table 4-2
 How were engagement outcomes achieved?

4.3 Lessons Learned

The generally positive feedback from participants about the workshop process (refer Figure 4-1) and methods of engagement across the six workshops are indicative that the sessions were designed and delivered effectively and achieved their purpose.

Following the initial sessions, major changes to the workshop framework were not seen as required by either the facilitator or MEMA agency staff that participated as table facilitators and support staff.

Recurring comments from participants about the process in general and areas for improvement included:

- a recognition of the complexity of the information being presented and process in general and how MEMA should/can more effectively engage with the broader community;
- (ii) the view that the evidence presented to underpin risk levels was very limited in some cases (particularly for social and economic TARA); and
- (iii) that less time be spent on presenting the background on the TARA in the workshop sessions and more time be devoted to the interactive workshop sessions to illicit direct comments on the evidence and risk levels.

As was to be expected, the 'quality' of new or additional evidence that was able to be provided by participants during the sessions varied. In some cases, new documented information sources were able to be identified whereas in other cases, participants were only able to rely on their personal experiences with the marine estate. This was particularly notable for the Social and Economic TARA where the existing evidence base is limited. The ability to acknowledge and incorporate this anecdotal and experienced-based information into the TARA is an important next step in risk evaluation prior to developing the Marine Estate Management Strategy.

The online tool received generally positive feedback from participants and was seen as a good method for soliciting comments about the evidence and to assist participants to navigate the TARA evidence base. However, it was identified that participants would need to be familiar with the



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stressor and activity categories to fully utilise the search function. As such it was recommended that a more general search function (by stressor or activity or issue) would also be useful to include.

4.4 Conclusion

As outlined in this consultation report, six stakeholder workshops at locations along the NSW coast were undertaken during February 2017 on the draft TARA report.

While the lodgement of written or on-line submissions (using the TARA interactive tool) was identified as the formal mode for feedback, the interactive workshop sessions provided an opportunity to provide an overview of the process, to provide context to the participants about how to undertake a risk assessment and to summarise the findings of the draft TARA report.

Through the interactive sessions, rapid and direct feedback from stakeholders was obtained about particular risk levels, the suitability of underpinning evidence and local examples of where threats to benefits of the marine estate are being realised.

In general based on the volume of information and outputs obtained (across the evidence tables and more generally) and the feedback from participants about the process, it is considered that the engagement objectives and outcomes for the draft TARA report was achieved.



Workshop Evaluation



Figure 4-1 Summary of Feedback from Participant Feedback Forms



Appendix A Outputs from Interactive Session on Risk Ratings and Evidence



'Resource uses that affect the environmental assets of Estuaries'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Aquaculture - Oyster aquaculture	Seagrass	Moderate	N ,C, S	Negative effects There are also positive effects. Not just threat Benefit to fish habitat	Oysters stabilise the seabed and provide habitat for small fish	Salamander Bay Oyster racks, habitat left	Newcastle	Aquaculture
2	Shipping - Small commercial vessels	Mangroves	High	С	Moderate	Only high for mangroves, creeks and rivers, not lakes	Wallis Creek. Has cattle property. Cattle eating mangroves.	Newcastle	Small commercial vessels
3	Modified freshwater flows	Species and Communities		Ν	Need to investigate this issue further in Northern Region	Effect of agriculture		Coffs Harbour	Freshwater Flows
4	4WD - Four Wheel Drive Vehicles	Saltmarsh	Moderate	Ν	Seems should be high, but understandable after looking at evidence because of current setting.			Coffs Harbour	4WD
5	Estuaries – Charter activities			Ν	Evidence in risk table missing central region area			Coffs Harbour	n/a
6	Recreation and Tourism – new category	Need row for tourist/camping		Ν	Need to consider illegal camping and environmental impacts of pollution, no toilets, etc.		NP reserves next to estuaries	Ballina	Camping
7	Recreational fishing: Snorkelling to hand gathering	Reefs		Ν	Minimal rating seems low		Snorklers gathering shells and abalone	Ballina	Recreational Fishing
8	Recreational fishing: Shore based line and trap fishing	Estuarine Waters Beaches		Ν		Impact of bait bags and discarded lines. (Captured under marine debris)	Tweed Bait Bays	Ballina	Recreational Fishing
9	Recreation and tourism	Boating		Ν	Investigate issues in terms of sewage pump out and boat based sewage		Brunswick Heads/River pump out	Ballina	Boating
10	Dredging including placement	Mangrove and Rock Shores		Ν	Revisit 'minimal' against mangrove and rocky shore			Ballina	Dredging
11	Shipping and large commercial vessels	Estuarine Waters		C, S	Consequence should be <i>major</i> for all areas; likelihood higher in Central region – oil spill risk	Cruise shipping into non central ports is an issue	Impacts of oil spills in Gippsland – cross border issues	Kiama	Large Commercial Vessels
12	Boating and boating infrastructure	Seagrass and Estuarine Waters		S	Consequence should be minor – highly localised	Suggest breaking out the antifoul issue from other issues		Kiama	Boating
13	Dredging	Soft sediments		С	Perhaps risk overdone as it doesn't happen very often			Kiama	Dredging
14	Shipping - small commercial vessels	Boat wash		S	Issue not clear beyond the evidence presented for upper Parramatta river			Kiama	Small Commercial Vessels
15	Recreation and tourism - boating and boating infrastructure	Seagrass		S	Consequence should be lower in southern region given much less infrastructure compared to central region	Separate physical disturbance from pollution issues		Kiama	Boating
16	Recreational fishing	Protected species under TSCA		S	Consequence should be higher in Southern region – same as Central and North	Taronga Zoo data only a small proportion of overall NSW		Kiama	Recreational Fishing



Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
17	Commercial Fishing categories	Fish assemblages		S	Broad range of feedback received including: School prawns lost Tuross Relying more on closed estuaries as a result of marine park No big tidal rivers on the south coast No security of access to coastal lakes and estuaries Sea mullet in Tuross River can't access Coila Lake became more pressured (blackfish) – can't spawn/recruit in lake because land locked Closure of waterways has lowered the diversity of fishing locations and concentrating effort there leading to less legal fish Estuary haul effort is low – have to go upstream and impacts from blubber Land locked estuaries if overfish it	Evidence supplied based on 1 st hand feedback from fishers		Narooma	Commercial Fishing
					affects stock for 10 – 15 years Boating impacts on Posidonia worse than fishing All fishing risks should be low in the South Coast region				
18	Dredging	Estuarine Waters			Risk score needs to recognise beneficial impacts of dredging particularly after drought to allow flushing of estuaries and to facilitate fish movement		Wallaga Lakes example of greater tidal inundation rejuvenating tea tree	Narooma	Dredging
19	Recreational boating	Beaches, Mudflats and Soft Sediments	High	S	Agree that it is high	Lakes off main beaches, high impacts from boats being pulled onto flats and tied to trees; boat wash from fishing boats and speed boats; propeller impacts on seagrasses	Lake Cunjola – few places to pull up boats	Narooma	Boating
20	Aquaculture - Oyster	Environmental assets		S	Too low – needs to be higher	Significant number of oyster leases affects rejuvenation of oysters and other fish (over populated); worth counting number of leases and production rates	Especially Clyde River/Batemans Bay	Narooma	Aquaculture
21	Shipping – Large Commercial Vessels	Environmental assets (generally)		С	Need clarification of how this process affects ports and how existing port management of these issues affects risk rating Issues change depending on if in or outside of port limits Concern that highly localised issues are coming up as moderate and high risks statewide Oil spills are an issue but there is extensive processes and spill equipment and procedures in place to manage risks	Port tenants/users – EPA licences these but could be issue of water pollution from these uses Change in vessel traffic away from cargo to more cruise ships – generally less potential for impacts spills, etc.	Port Kembla example	Sydney	Large Commercial Vessels/Port s



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
22	Boating and Boating infrastructure	Environmental assets (generally) bit specifically seagrass and moorings		N, C, S	Concerns how Hawkesbury information has been used Dubious of evidence used and robustness of data for both environmental and s/e	Seagrass and moorings – how can heavy metal bioaccumulation be attributed to just vessels? Need to look at evidence and adjust risk rating		Sydney	Boating and boat infrastructure

Workshop Evaluation

Table A-2 Yellow Table Session 1 – Collected Comments on Environmental TARA (Coastal and Marine)

'Resource uses that affect the environmental assets of Coasts and Marine Waters'

ID #	Activity/Threat/Stressor	Asset/Benefit Category	Specific Risk	Region	Comment on or Suggested Changes to	New/Additional Evidence	Local Examples	Session	Topic Keyword
	Category	 	Cell Rating	(N,C,S)	Risk Rating	·		Location	
1	Commercial fishing - Ocean Trap and Line	Fish assemblages	High	С	Commercial fishers not fishing for Kingfish. So question evidence.	Catch stats		Newcastle	Commercial Fishing
2	Pests – foxes		Missing	С	Absence of foxes in pests category			Newcastle	Pests and Diseases
3	Shark meshing	Threatened species under FMA and TSCA		Ν	Shark meshing would be high risk on north coast for threatened species	Need to amend now that new controls are in place		Newcastle	Shark Controls
4	4WD (Four Wheel Drive Vehicles)	Threatened species (TSCA)		С	4WD central	Contact for evidence provided.	Farquhar Inlet - little terns nest. 4WD this year no fledglings	Newcastle	4WD
5	Commercial fishing - Ocean haul	Beaches, North and South	Moderate	N, S	Physical disturbance should not be consequence of activity or wildlife disturbance.	Fishing 200 years old – rare occasion any disturbance to wildlife occurs should be low		Newcastle	Commercial Fishing
6	Commercial fishing - Ocean haul	Fish assemblages	High	N	Physical disturbance should not be consequence of activity or wildlife disturbance	Caution using raw catch data Look at other influential factors behind catches: • management, • seasonally • cycles See page 264 Background Environment Report, graph reflects form affected catch		Newcastle	Commercial Fishing
7	Commercial fishing	Fish assemblages		С	Shared stocks – recreational fishing affects assemblages too e.g. snapper growth over fished 'due to commercial' but majority caught by recreational fishers. Lack of fish stocks due to estuary water quality too.			Newcastle	Commercial Fishing
8	Commercial fishing hand gathering	Not included	Missing	N,C,S	Need to be looked at			Newcastle	Commercial Fishing
9	Recreational fishing	Beach	Moderate	Ν	Pipis can't be taken from beaches so should be low.			Newcastle	Recreational fishing
10	Marine debris from ocean	All environmental		N,C,S	How does TARA deal with that			Newcastle	Marine debris
11	Small commercial vessels	Threatened species		С	More whales = more boat strikes Is this a problem? Years ago one dead whale was a problem, now one killed in population of 15,000 less of a threat to population survival.	Is risk rating appropriate?		Newcastle	Small commercial vessels
12	Recreation and Tourism	Boating and boating infrastructure		N,C,S	Should split these two categories			Newcastle	n/a



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
13	Recreation and Tourism Shark meshing	Threatened and protected species (FMA)	N/A	N	Should be high risk rating	Now undertaking shark meshing in North Region		Coffs Harbour	Shark controls
14	Recreation and Tourism Snorkelling and diving	Marine habitats and assemblages		N	Minimal rating? What evidence	Elevate risk – impact on coral reefs		Coffs Harbour	Recreation – snorkelling and diving
15	Commercial fishing - Ocean hauling	Fish assemblages		Ν	Don't understand high rating. Evidence does not relate to a high risk. Stock not growth overfished. Ocean hauling is not seen as socially acceptable			Coffs Harbour	Commercial Fishing
16	Hand gathering and recreational fishing	Rocky shores		N	Collecting molluscs is an issue. Only trampling. Mentioned in evidence not hand gathering.	Paper looking at impact.		Coffs Harbour	Recreational fishing
17	Mining		N/A	N	How can it all be n/a? Is it only in Commonwealth waters? Is a big threat in State waters.			Coffs Harbour	Mining
18	Aquaculture			С	New offshore aquaculture venture is a potential risk off Newcastle.			Coffs Harbour	Aquaculture
19	Commercial fishing - Ocean Trap and Line	Fish and threatened species	Not high or moderate risk	N	Don't put in with trap and line category. Separate spanner crab from T&L. All are well regulated. Only specific to north coast region. Risk assessments done on equipment.			Ballina	Commercial Fishing
20	Recreational Fishing	Hand Gathering Beach	Mod	Ν	Possibly lower as highly regulated – bag limits. Pipi and worms only.			Ballina	Recreational fishing
21	Recreational Fishing	Shore based line and trap fishing		Ν	Does moderate apply to both line and trap. One may be greater impact than other. Split trap and line.			Ballina	Recreational fishing
22	Recreational Fishing.	Boat-based line and trap Fishing		N	Split line and trap Does moderate apply to both line and trap. One may be greater impact than other			Ballina	Recreational fishing
23	Recreational Fishing – Hand Gathering	Fish assemblages		Ν	Beach - moderate Rock shores - low			Ballina	Recreational fishing
24	Commercial fishing – Ocean Trap and Line	Fish assemblages		S	Should be lower rating. Misleading evidence in logbooks. Other factors such as weather, reduction in fishers and droughts affected catch. Data / evidence used not up to date. Conflict between wild caught seafood and aquaculture. TARA undermines commercial fishing reforms process. Commercial fishing is sustainable – water pollution biggest impact on stock. Absence of evidence or questionable previous evidence (DPI EIS). Recreational fishers should have same controls as commercial – closed areas, same quotas as commercial fishers etc.			Kiama	Commercial Fishing



Workshop Evaluation

Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
25	Recreational fishing – Spear fishing	Fish assemblages		S	Agree with rating as minimal to low			Kiama	Recreational fishing
26	Recreational fishing – Trap and Line	Fish assemblages		S	Question moderate risk level	Not any evidence as don't see the species being caught		Kiama	Recreational fishing
27	Mining			S	Note it is not an impact now but could be in terms of impacts in other States or from activities in Commonwealth waters			Kiama	Mining
28	Commercial Fishing categories	Fish assemblages		S	Broad range of feedback received including: School prawns lost from Tuross Lake Relying more on closed estuaries as a result of marine park No big tidal rivers on the south coast No security of access to coastal lakes and estuaries Sea mullet in Tuross River can't access Coila Lake became more pressured (blackfish) – can't spawn/recruit in lake because land locked Bycatch is minimal and much less on the south coast than North region and Central region Don't catch GNS and White Sharks (type of gear minimises interaction – circle hooks) All fishing risks should be low in the South coast region	Evidence supplied based on first hand feedback from fishers		Narooma	Commercial Fishing
29	Recreational Fishing	TSCA species		S	Should be lower risk - concerned about the evidence particularly GNS – issue that the original listing evidence as critically endangered was flawed and not peer reviewed	Has affected recreational fishing particularly around Montague GNS are present and not interacting with recreational fisherman GNS not in estuarine areas		Narooma	Recreational fishing
30	Recreational Fishing – shore and boat based	FMA species		S	Should be changed from Moderate to Low	Evidence is highly questionable		Narooma	Recreational fishing
31	Commercial fishing - Ocean trawl	Fish assemblages		C, S	Currently High - Question the evidence of growth overfished status on annual prawn spp	Evidence provided by PFA fisher – noting need for a better commercial fishing engagement process for the TARA to get better detail about actual catch		Narooma	Commercial Fishing
32	Commercial fishing - Ocean Trap and Line	Fish assemblages TSCA		S	Supports DPI moderate rating Is the interaction with GNS driving the rating? No evidence	Evidence provided by PFA fisher - noting need for a better commercial fishing engagement process for the TARA to get better detail about actual catch		Narooma	Commercial Fishing
33	Commercial fishing – Ocean haul	Fish assemblages		S	Disputes high risk rating and evidence which notes interaction with Mulloway	Evidence provided by PFA fisher- noting need for a better commercial fishing engagement process for the TARA to get better detail about actual catch		Narooma	Commercial Fishing
34	Shipping –	Deep rocky reefs		С	Agree risk rating as moderate	Davis et al 2016 paper		Sydney	Large commercial



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples So	ession ocation	Topic Keyword
	Large commercial vessels	Deep soft sediments				Changes to deep soft sediment from anchoring can have broader effects (10s of kms)			vessels
35	Commercial fishing - Ocean Trap and Line Ocean Haul	Fish assemblages		S	High risk should be lower	Use of catch stats for 2009/2010 and 13/14 heavily affected by weather events; changes to log book procedures; documented reduction in fishers in south coast reduces impact; question over fished status of king prawn; legacy issues of previous fishing are trending down; will be further impacted by the structural reform process	Sydr	ney	Commercial Fishing
36	Cumulative impacts (generally)	Fish assemblages		Ν	TARA needs to recognise change to fish habitat from catchments having an impact on fish assemblages; also introduction of exotic species such as carp Affecting commercial and recreational fishing catch and livelihoods	Provided advice in the context of local examples for: Clarence (cumulative impacts from urban and rural production, flood mitigation and changes to flows, aquaculture also having an impact) Richmond River (cumulative impacts including ASS impacts on water quality and habitat quality and changes to flows)	Sydr	ney	Recreational fishing
37	Recreational fishing – hand gathering	Fish assemblages and associated soft sediment habitats	Current moderate – s/b low	С	Risk rating for recreational hand gathering too high – being managed well now	Why is hand gathering a category for rec fishing by not commercial	Sydr	ney	n/a
38	Bait and aquarium trade	Fish assemblages		С	Impact of disease can be significant consequence on wild stocks as well as aquacultured species	Needs to be reviewed noting risks are low	Sydr	ney	Bait and aquarium trade



Workshop Evaluation

'Land based impacts (including climate change) that affect the environmental assets of Estuaries'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Land use intensification – clearing riparian etc.	Estuarine Waters		N,C,S	Need to look at how these activities affect water quality			Newcastle	Clearing
2	Stock grazing	Mangroves		С	Questioning cattle in mangroves/impact			Newcastle	Stock grazing
3	Cattle Grazing	threatened and protected species		С	Question about why salt marsh not included threatened and protected species. Impact of cattle grazing on threatened/protected species in saltmarshes and mangrove habitats.			Newcastle	Stock grazing
4	Point discharges: sewage effluent and septic	Estuarine Waters		С	 Should sewage and septic be separated out as different in regions. More rural communities' issues with human runoff is septic not sewage. Onsite sewage management (council) Council environmental health annual inspection info/report. Need to be treated separately. 			Newcastle	Point source water pollution
5	All threats	Saltmarsh		С	Enviro background report doesn't mention saltmarsh as an EEC but it is threatened/listed under TSC Act. (also seagrass, which is listed under the FM? Act?			Newcastle	n/a
6	All threats	Saltmarsh		С	Enviro background report doesn't mention that saltmarsh as an EEC is threatened/listed under TSC Act.			Newcastle	n/a
7	Point discharges: sewage and septic	Estuarine Waters		С	Sewage/septic in Central region	Hunter water management data on infrastructure failings/sewage leaks incidents.		Newcastle	Point source water pollution
8	Climate change: sea level rise	Estuarine Waters		С	Stormwater pipes/system currently at sea level – if levels rise, systems won't work anymore	Individual Local government engineering specs of stormwater Sydney Metro CMA did a study on the impact of sea level rise on storm water infrastructure in Sydney Harbour, Greater Sydney services.		Newcastle	CC - SLR
9	Algal blooms from land use intensification and clearing riparian and adjacent habitat	Estuarine Waters		N	Look at risk levels for these issues	Photos of fish dead in river		Coffs Harbour	Algal blooms



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
10	Agriculture diffuse source runoff	Reefs and threatened species subtidal		N	Impact should not be low Water use/hydro regimes This is a real community concern and knowledge gap	Council's working on it with Southern Cross program Regulations allowing blueberry farmers to build dams without DA (% of river they can take) Water licensing approved without an understanding of the water		Coffs Harbour	NPS water pollution - agriculture
						amounts.			
11	Agriculture diffuse source runoff	Estuarine Waters		N	Rated as low but is an unknown because the blueberry industry very new			Coffs Harbour	NPS water pollution - agriculture
12	Agriculture diffuse source runoff and industrial discharges	TSCA		Ν	Need to look further into the impact of toxins on top predators Supposed to be ok but we don't know	Testing fish for levels of DDE and organic chlorines, organic phosphates		Coffs Harbour	NPS water pollution - agriculture
13	Wildlife disturbance	TSCA		N	Threat is quite high but it's like that because it's managed by National Parks Monitoring could be improved in further north			Coffs Harbour	Wildlife disturbance
14	Foreshore development.	Threatened speciesSpecies protected under TSCA		N	Should say north is high especially as central is high Threats to nesting turtles caused by foreshore development. Climate change = causing more turtles Foreshore development also a threat to birds	OEH elements database: stranding and nesting Saving our species Program for threatened birds/identified sites for these. Listing status/threatened species nominations for those species		Ballina	Foreshore development
15	Dredging	Soft Sediments		N	Navigation dredging can be done poorly and/or well under adequate planning. Done under Dep of Industry – Crown Lands (2007) Infrastructure SEPP should be referenced in terms of dredging (allows for navigational dredging)	Risk may be too high depending on how managed		Ballina	Dredging
16	Climate Change - Altered storm/cyclone/storm surge	TSCA species		N	Big east coast lows – severe impact to shore birds, turtle nesting Increased disease outbreaks. Increased whale standings Evidence in Queensland on negative impact Consequence should be higher than moderate climate change = predicted increase the impact/intensity and frequency of these events Every east coast low brings trouble Strandings data from NSW QLD data/literature on impacts = Susan Crocetti can provide literature/data			Ballina	CC - storm surge and extreme weather
17	Stock grazing impact	Estuarine Waters		N	Stock grazing creates a lot of water pollution and erosion impacted further by flooding Query why this is low, should be moderate. Brunswick river examples Fisheries management Act/Regs try to address this. Generally accepted that cattle grazing in riparian zones and access to waterways is			Ballina	Stock Grazing



Workshop Evaluation

Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence Local Examples	Session Location	Topic Keyword
					seriously impacting the water quality and vegetation. Also direct water quality impact due to defaecation/faeces from the cattle.			
					Should be assessed higher risk – despite current management settings there is still an issue which is increasing.			
18	Stock grazing	riparian veg impact on shallow soft sediments		Ν	Should not be low as cattle grazing has severe impact on these		Ballina	Stock Grazing
19	Stock grazing	estuarine waters		Ν	Risk level for north/south should not be the same as the central, as there are <u>more</u> cattle grazing areas therefore likely more impact		Ballina	Stock Grazing
20	Industrial discharges	estuarine waters		N, S	Risk is overly low in north and south <u>because</u> of the strict development controls, so these should not be ignored		Ballina	Point Source Water Pollution
					Future risk assessment processes should take another look at these			
					Challenge in interpretation – as long as future reviews recognise that this considers risk with management initiative in place already, so that these areas aren't just ignored			
21	Stock grazing of riparian and marine vegetation	Estuarine waters Seagrass Riparian communities		Ν	Should be higher – same as seagrass – sedimentation and turbidity impacts	Management is somewhat effective to minimise the risk	Kiama	Stock Grazing
22	Agricultural diffuse pollution	Subtidal reefs TSCA		Ν	Ag chemicals are changing hormonal levels of fish and subtidal reefs through trophic levels to higher order species	See SIMS Matt Landos	Kiama	NPS water pollution - agriculture
23	Thermal pollution	Estuarine waters		Central	Agree that potentially high for central region	Chris Haley can provide additional evidence	Kiama	Point Source Water Pollution
						Port Kembla another potential source of thermal pollution		
24	Urban stormwater runoff	TSCA		Ν	Lack of documentation; bioaccumulation happening (toxoplasmosis) in TSCA species	Justin Clarke can provide extra information in addition to Taronga Zoo study	Kiama	NPS water pollution - urban
25	Land use intensification – foreshore development	Estuarine waters		S	Seems low given potential impacts on water quality from erosion and sediment		Kiama	Foreshore development
26	Climate change – ocean acidification	All estuarine habitats		S	Believe this should be lower for all; lack of evidence of impacts		Kiama	CC – Ocean Acidification
27	Climate change – ocean currents	All estuarine habitats		S	Believe this should be higher for all; nutrients/oxygen circulated will change all habitats including estuaries,		Kiama	CC – Altered Currents
28	Estuary entrance modification	Seagrass		S	Likely risk is too high given not many estuaries and existing management will reduce impacts		Kiama	Estuary Entrances
29	Foreshore development	Mangroves	Low	S	Should be moderate; consequence would not be minor	Bateman's urban areas and Eurobodalla's Council Zoning will place greater population pressure and there are more mangroves that will be lost	Narooma	Foreshore development
30	Urban stormwater	Mangroves	Low	S	Should be considered	Local example of stormwater See left	Narooma	NPS water pollution



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
						runoff behind pool in Bateman's Bay has killed mangrove – maybe chlorinated water from industrial discharge			- urban
31	Climate Change Ocean Acidification	Fish Assemblages		N,C,S	Should apply these categories to Fish Assemblages not N/A	Will affect shellfish leading to greater proliferation of jellyfish; Potential impacts on the oyster industry as well		Narooma	CC – Ocean Acidification
32	Stock Grazing	Riparian and marine vegetation	Low	S	Should be moderate noting the current risk does not consider the loss of buffer areas and impacts on water quality			Narooma	Stock Grazing
33	Urban stormwater	TSCA		N,C,S	Why is this high Central but low in Northern and Southern?	Impacts from microplastics will affect everywhere		Sydney	NPS water pollution - urban
34	Reclamation and Acid Sulfate Soil (ASS) impacts	Environmental assets		С	Where are these issues in the TARA? Should this be a new category	To be investigated where it fits in terms of stressors		Sydney	Reclamation
35	Climate change: Sea temperature rise	Reefs		С	Should be higher	Sydney Harbour reef bleaching impacts		Sydney	CC – Sea temperature
36	Climate change: acidification	Environmental assets		N,C,S	Surprised this is higher than temperature – considered less of an impact compared to other influences such as urban impacts	Look at new research by Will Figneira into Dissolved Oxygen levels		Sydney	CC – Ocean Acidification
37	Climate change: Storm surges and extreme weather events	Seagrass		С	Could be higher – low on estuary compared to other issues but can have significant localised impacts			Sydney	CC - storm surge and extreme weather
38	Climate change: ocean currents	Fish assemblages		С	Look at how this could affect fish assemblages in Sydney Harbour	Risk should be higher for 50 year climate change (currently n/a) or across relevant habitats		Sydney	CC – Altered Currents
39	Legacy issues and cumulative impacts	All environmental assets		N,C,S	Noted the need to consider the current condition and extent of some habitats are a lot less than others and cumulative impacts	Need to consider how current management is dealing with these issues		Sydney	n/a
40	Vegetation Clearing	riparian and marine plants		N,C,S	Query why Central low and other regions are moderate	Central Region is already cleared – legacy issue – evidence seems to be largely based on boating impacts		Sydney	Vegetation clearing
41	Industrial discharges	South coast environmental assets		S	Specific issue for South Coast; consider emerging issue of PFOS – Albatross Military Base			Sydney	NPS water pollution - urban



Workshop Evaluation

 Table A-4
 Black Session 1 – Collected Comments on Environmental TARA (Coastal and Marine)

'Land based impacts (including climate change) that affect the environmental assets Coasts and Marine Waters'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Urban Stormwater	Ocean waters		С	Low agree – distinction between estuaries and coastal oceans			Newcastle	NPS water pollution - urban
2	Septic effluent and sewage	Ocean waters		С	No discussion of septic in report – (evidence?) Difference between treated sewage and raw septic – no reasoning provided Missing discussion of management or otherwise			Newcastle	NPS water pollution - urban
3	Pests and diseases	Shallow soft sediment Shallow reefs Climate change		С	No mention of introduced species and risk posed e.g. climate change – A's to species distributions etc. forecasting 20 years vs 50 years	'Temp tolerances for NSW' – paper K.Lobb & T.M. Glasby 'Assessing likelihoods of marine pest introductions in Sydney estuaries: A transport vector approach'. Oct 2008.		Newcastle	Pests and disease
4	Climate change	Altered storm/cyclone activity		С	Low on beaches vs Moderate ocean waters etc.		Collaroy storms and related damages	Newcastle	CC: Altered currents
5	Beach nourishment and grooming	Beaches		N	Doesn't distinguish between grooming and nourishment in evidence report Can't find evidence – referencing needs to be more specific	Byron Shire Council Erosion Report Study on impact to marine biota		Coffs Harbour	Beach nourishment
6	Beach nourishment and grooming	Threatened species		N	Existing management measures would mitigate likelihood, therefore not almost certain. Evidence of positive effects (Dave Hopper)			Coffs Harbour	Beach nourishment
7	Agriculture diffuse Some runoff	Shallow sediment		Ν	Note local example for this area Consider whether sig enough to D risk rating for	Professor Isaac Santos new studies chemist and toxicologist (Brendan Kellaher)	e.g. Coffs blueberry industry, chemical runoff (>50 chemicals) no monitoring – more estuaries affected	Coffs Harbour	NPS water pollution – agriculture
8	Climate change ocean acidification	Ocean Waters		N	Ocean acidification impacts overstated Temperature and acidification ratings need to be linked (Brendan Kellaher) Temp=mod, acidification=high	Found in recent studies 2016 (Brendan Kellaher)		Coffs Harbour	CC – Ocean Acidification
9	Climate change (flooding, storm surge and inundation)	Ocean waters		Ν	Low risk should be moderate noting increased flooding leading to greater run off and load events	OEH producing storm surge maps Healthy rivers reports	Richmond River	Ballina	CC – Storm surge and extreme weather
10	Climate change (sea temperature rise)	Species Protected under the TSCA		N	Likely to be beneficial impact to turtles (risk level likely lower than listed in TARA)	Current evidence based on Queensland which is not relevant to NSW; Rochelle Ferris has NSW evidence		Ballina	CC- sea temperature rise
11	Land use intensification and agricultural runoff	Ocean waters		N	Little evidence presented but noting there could be impacts from these on ocean waters (not just estuaries)	Cane farm run off		Ballina	NPS water pollution – agriculture



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ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
12	Climate change (generally)	Fish Assemblages		N	Why are fish assemblages n/a for everything but fishing impacts?			Ballina	n/a
13	Foreshore development	Beaches		C,S	Question to why high in Central?			Kiama	Foreshore
					Most of the development has already occurred				development
14	Urban stormwater discharge	Seagrass and ocean waters		N,C,S	Is low risk because it is higher in estuaries?			Kiama	Estuary entrance modification
15	Estuary entrance modifications	Beaches		S	Impacts on biodiversity but noting very dynamic – is this risk too high?			Kiama	Estuary entrance modification
16	Ocean acidification and ocean currents	TSCA		N,C,S	Low in north south central minimal – why would it not be the same?			Kiama	CC – Ocean Acidification
17	Pests and disease	All assets		N,C,S	Biosecurity issues underdone in general – low – should have higher consequence			Kiama	Pests and Diseases
18	Clearing riparian vegetation	TSCA		N,C,S	Should be similar across regions			Kiama	Vegetation Clearing
19	All threats	TSCA			Change asset categories to communities, populations and species			Kiama	n/a
20	Climate change: Flooding, storm tide and inundation	Beaches		S	Support rating			Narooma	CC – Storm surge and extreme weather
21	Climate change: Altered storm and cyclone activity	Beaches		S	Should be higher risk rating	East Coast Low event was notable in that it change direction of storm swell and intensity		Narooma	CC – Storm surge and extreme weather
						Resulting in greater damage and movement of sand			
						Up to 17 m waves in Eden Contact Council to get more information			
22	Climate change: temperature increased	TSCA		S	GNS likely under-represented and risks should be higher as these species in South	GNS seems to be staying longer at Montague Island	Dalmeny, Potato Point are localities	Narooma	CC- sea temperature rise
					Coast waters longer now	Additional spatial and temporal information and observations of the Nature Coast Marine Group	when GNS observed		
23	Climate change – temperature and currents	Rocky shores and reefs Kelp Forests		C, N	Likely risks are too low – need to be higher	See Wernberg et al 2016 in Science, PNAS and ProcB		Sydney	CC- sea temperature rise
						Loss of Kelp and dramatic changes to Solitary Islands fish assemblages			
24	Foreshore development	Erosion impacts on soft sediment habitats, saltmarsh		С	Agree with high risk	Local evidence of effect of coastal development in Botany Bay on Towra Point wetlands		Sydney	Foreshore development
25	Foreshore development	TSCA saltmarsh		N, C	Risk should be greater in northern region (consequence moderate) and southern	Note that increasing pressure on North and South		Sydney	Foreshore development
					region				
26	Estuary entrance modification	Beaches; saltmarsh		N,C,S	May need to split this between short term and long term impacts	Certainly there are short term impacts; structures have longer term impacts		Sydney	Estuary entrance modification
27	Climate change sea level rise	Rocky shores		N,C,S	Currently minimal in risk table but moderate in evidence	Error in hand out Table to be addressed		Sydney	n/a – error in table to be fixed up



Workshop Evaluation

Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell Rating	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
28	Urban stormwater	TSCA FMA species		N,S	Should increase in North and South regions from low to moderate	Large development increase in these regions over the life of the TARA		Sydney	NPS water pollution – urban
29	Estuary entrance modification (needs to include construction of walls and seawalls)	Shallow reef		N,C,S	Risk too low – currently minimal	If present will have an impact on these systems as a result of impacts from changes in currents, changes to sand movements, freshwater flows and nutrients and sediments (for changes to entrances)		Sydney	Estuary entrance modification



'Resource uses that affect the Social and Economic benefits derived from the marine estate'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Conflict over resource use and access	Safety, health and well being	1	N, C	Currently low, should be high High cost of mental anguish over cost of livelihood Cost of investing in fishing gear to make the same money Too many fishing closures from reforms Stress, anxiety	Government closure of fishing grounds, contamination from Williamtown closing down. Fisherman livelihood causing mental health issues – suicide. DPI (regional 5) will buy out, didn't mention that there would be no access. Fisherman move to region 4 and buy out.	Suicide Government subsidies not adequate Grounding	Newcastle	Conflict over resource use and access
2	Conflict over resource use and access	Excessive extraction	1?	Ν	Increase	Compliance data	Headland shell collection Woolgoolga Headland	Coffs Harbour	Conflict over resource use and access
3	Resource use conflict	Conflict between uses	1?	Ν	Increase		Dog Moree Beach reserve	Coffs Harbour	Conflict over resource use and access
4	Anti-Social Behaviour	Affected social benefits related to enjoyment	1?	N	Increase	Compliance data	Qld visitor – expectation 4WD, boating etc.	Coffs Harbour	Anti-Social Behaviour
5	Conflict over resource use and access	Public Safety Socialising values		N	Increase	 Rapid significant population growth Illegal camps Ad hoc access of river banks Competition for space in estuaries Kite surfers/surfers Env. Dive companies launching power boats Surfers vs dive boats If strong rains, won't surf for 3 weeks. Swell picks up and discolours water Blackwater – industries not following laws Water based industries impacted from land use activities where land manager not adhering to regulations Wakeboarding – Tweed River. Conflict between different water use Tourism venture Growing demand on Council and marine parks for ecotourism ventures Conflict between locals and tourism. Big impact in Brunswick because it's such a small system 		Ballina	Conflict over resource use and access



Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
6	Conflict over resource access and use	Conflict over resource access	1,2,3	S	Increase risk level – both consequence and likelihood	Police reports and court appearances?		Kiama	Conflict over resource use and access
7	Conflict over resource access and use		21	S	Increase risk level – both consequence and likelihood	South coast more likely to have conflict given the nature of the area; People expects crowds in Central region – here they expect a different experience		Kiama	Conflict over resource use and access
8	Conflict over resource access and use		5,6,1	S	Should be higher	Cultural conflicts between traditional areas and restricted areas; loss of traditional practices, livelihoods, habits and customs. Restrictions and zoning causing human problems	Bateman's Retaliation/Vigil anty Groups Mogo	Narooma	Conflict over resource use and access
9	Conflict over resource access and use			S	Agree should be High in relation to abalone issues	People claiming recreational take of abalone but selling commercially	Mogo – abalone	Narooma	Conflict over resource use and access
10	Conflict over resource access and use	Cultural heritage and use	5,6	S	Moderate	Outside groups deliberately and accidently destroying culturally significant sites; careful not to restrict cultural sites and ensure restrictions in other areas don't displace people to cultural sites		Narooma	Conflict over resource use and access
11	Loss or decline of marine industries	Effect social and economic benefits	28,29,35,36	S	High	Loss of marine industries have particular impact on south coast given existing marginal employment; this has flow on effects to the entire community	Bermagui, Ulladulla, Reduction in Fishing Fleets	Narooma	Loss or decline of marine industries
12	Excessive or illegal take	Viability of business	37, 40,41	S	Should be higher than Moderate	Illegal practices due to loss of traditional practices Illegal take of abalone could significantly affect market profitability		Narooma	Excessive or illegal take
13	Conflict over resource access and use	Safety, health and well being		S	Review risk levels	Risk needs to take into account effect of cleaning and disposing of fish at boat ramps attracting sharks in known swimming areas	Kianinni Boat Ramp Tathra Wharf	Narooma	Conflict over resource use and access
14	Conflict over resource access and use	Safety, health and well being		С	Review risk levels – potentially higher	Likely to increase in Sydney harbour over time re interaction with cruise ships;	Sydney Harbour	Sydney	Conflict over resource use and access
15	Conflict over resource access and use	Enjoyment of the marine estate		С	Review risk levels – potentially higher	In general in terms of marine access and navigation in highly used estuaries – will get worse as use increases	Estuaries particularly in peak periods	Sydney	Conflict over resource use and access
16	Marine incursions	Effects on social and economic benefits		С	New policy emerging in terms of marine incursions	Need to assess if this has been taken into account as part of the TARA re. pests and disease noting this may decrease risks from ports and large commercial vessels		Sydney	n/a



'Governance of the marine estate including public safety and access availability that affect the Social and Economic benefits derived from the marine estate'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Lack of access	Employment and value of production	Low 233	N,C,S	Should be moderate at least	Lost areas in Marine Parks		Newcastle	Access Issues
2	Lack of access = loss of public access due to development should be separate to closures	Consumer surplus Enjoyment values		N,C,S	Review risk levels	General comment		Newcastle	n/.a
3	Resource use conflict	Commercial viability		С	Closures shift effort and cause conflict see Ocean watch and PFA submissions	Evidence papers		Newcastle	Access Issues
4	Community engagement	Lack of community engagement	161	N,C,S	Low – needs to be much higher Need better engagement – talk to fishers at Coops Overload of information Reforms an impact too.			Newcastle	Engagement and Consultation
5	Lack of compliance/not enough compliance,	Enjoyment		Ν	Recreational fishing in sanctuary zones Generally agree with risk rating	Photos	Local examples to provide around SIMP	Coffs Harbour	Compliance Issues
6	Over regulation	Engagement and viability of business	152 145	Ν	Higher Commercial fishers have not been left alone since 1977. Have to keep defending yourself. Happy with regulation. We were made socially unacceptable.			Coffs Harbour	Over regulation
7	Loss of access to areas	Commercial viability	226 to 234	N	No way is low, High impact to industry Don't support spatial closures			Coffs Harbour	Access Issues
8	Public safety Wildlife interaction	Enjoyment	183	Ν	Min to Mod	Reduction in engagement through increased shark awareness		Coffs Harbour	Public Safety
9	Lack of information	All categories		N,C,S	Social and Economic Study in regard to all fishing businesses lack of community engagement More education – where food comes from so fishers not questioned are you allowed to fish here			Coffs Harbour	Lack of Information
10	Lack of compliance	Viability of business; Participation and Enjoyment		N,C,S	If implement reforms – must police them Need more compliance officers and education Don't remove fishers and increase fees If user pays system introduced there will be no fishers left Recreational fishing increasing			Ballina	Compliance Issues



Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
11	Governance	Participation and Enjoyment		N,C,S	As population grows will need more regulation; Protecting the environment will result in social and economic impact to some people			Ballina	n/a
12	New threat category needed on political threats			N,C,S	New government changes. Too much political interference			Ballina	n/a
13	Lack of compliance		177	S	Large take of abalone by aboriginal fisherman Everyone should be treated equally – not allowed more than others			Kiama	Compliance Issues
14	Loss of access	Viability of businesses	233	S	Low risk – yet if Lake Illawarra closed will put people out of business			Kiama	Access Issues
15	Compliance – over regulation	Viability of businesses		C,S	If new regulations introduced then they need to be implemented; fishing industry already over-regulated			Kiama	Compliance Issues
16	Seafood contamination	Viability of businesses Public health and safety		S	Ratings possibly underrated noting the consequence is higher			Kiama	Public Safety (Seafood contamination)
17	Governance – Over Regulation		145	S	Agrees with impact of over regulation			Narooma	Over regulation
18	Lack of community engagement		155,156	S	Should be higher than low	Recreational fishers feel left out of decision making despite being largest stakeholder group		Narooma	Engagement and Consultation
19	Information provision by Government		163,164,165	S		Government does not get the information out effectively		Narooma	Engagement and Consultation
20	Lack of compliance		172,173,174	S	Peak season would be High risk; high incidence of illegal fishing	Illegal recreational fishing; DPI can't keep up with compliance effort required		Narooma	Compliance Issues
21	Public safety – angel rings infrastructure		n/a	S	NPWS not agreeing to insurance issues but noting these have saved 87 people in 5 years PFDs being trialled – targeting recreational fishers			Narooma	Public Safety
22	Lack of access	Viability of business	229, 233	S	Evidence is biased Marine park restrictions have created lack of access or closure of iconic areas (particularly GNS areas)			Narooma	Access Issues
23	Governance – Over Regulation of Commercial Fishing industry	Viability of business Health, Safety and Wellbeing	145,146, 147,148, 152	S	High risks to viability of business (estimated loss of \$2.5 m) and flow on effects to social values such as mental health MP has meant a loss of the provision of local seafood to residents Flow on effects to other industries (bait, ice, fuel, etc.)	Longbeach inshore prawn trawl stopped but Beach haul still allowed – no evidence there has been impacts – this area should not have been locked out noting the effort to fish is 15-20 min prawn shots All other marine parks in Australia have general use zones that allow trawling – no scientific justification in	Unregulated recreational fishing has now fished out all the prawns in Lake Coila	Narooma	Over regulation



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
						Batemans Marine park for removal. No compensation paid for 11 years; last minute changes to the areas that become no take with no consultation			
24	Lack of access to infrastructure		217 226-234	S	Should change from Moderate to High	Restriction to access in Batemans result in having to travel 10 km both ways to access areas sometimes adverse weather (safety risk). Habitat Protection Areas are much closers Forcing fishers into the estuary fishery and placing additional pressure on it.		Narooma	Access Issues
25	Lack of Compliance/Governance – commercial fishing		179	S	Risk should be higher on South Coast Need to work better/in collaboration between Commercial/Recreational and Government Inefficiencies in access and use and competing for use of the same areas	No regulation of recreational fishing in Lake Coila in peak periods – need education	Can't fish the Clyde Leave Sanctuary closed but open yellow zones Wagonga Inlet – should have gill net and cantrap allowed Eel trap endorsements is devaluing business	Narooma	Compliance Issues
26	Human health issues associated with seafood safety	Governance	190, 197	N,C, S	Major issue not being looked at adequately across TARA	Unclear governance issues. Who is monitoring/responsible? Need to update Guidelines for Environmental Health		Sydney	Public Safety (Seafood contamination)
27	Over-regulation – loss of access	Commercial viability Social enjoyment values Affects sense of community Consumer surplus (direct economic)	152, 224, 233	N, C	Risk could be higher – particularly if new controls implemented	Higher cost burden on everyone – on government to enforce on fishers to comply Access to beaches affected by Council controls on vehicles and walkways – displacing recreational fisherman Closure on water by marine parks Social licence of commercial fisherman compromised Implications of native title on fishing operations Lack of effective communication/consultation		Sydney	Access Issues
28	Lack of Compliance effort	Commercial viability Social enjoyment values	179	N, C	Disparity between rules and regulations for commercial versus recreational fishers – agree moderate rating	Getting worse as more effort and catch effort		Sydney	Compliance Issues



Workshop Evaluation

Table A-7 Red/Black Session 2 – Collected Comments on Social and Economic TARA

'Environmental threats (including climate change) that affect the Social and Economic benefits derived from the marine estate'

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
1	Pests and diseases		115	С	Consequence – should it be higher	Potential impacts on other businesses related to aquaculture 115 = possible but refers to 109 which uses 'Likely'. Inconsistent. Evidence? or at least confusing		Newcastle	Pests and diseases
2	Habitat physical disturbance	Viability of business	98	С	Trade-off between future business and current business – evidence states trade off vs example			Newcastle	Habitat physical disturbance
3	Water pollution - Point sources		46	С	Estuaries is high – so why not high? Sewage overflow impacts on beaches (e.g. Bondi) Health and safety because can't swim Should not be minimal – should be moderate Contradictory to have minimal rating when chart says moderate to high in estuarine waters	Sydney Harbour Water Quality Improvement Plan Beachwater Council water quality data		Newcastle	Water pollution - Point sources
4	Habitat loss and disturbance		93	С		Complaints data from Councils SFS calls Insurance estimates Media coverage Council management plans		Newcastle	Habitat loss and disturbance
5	Erosion			С	Erosion should be in this (below high tide) which affects enjoyment of beauty and use of space and people's properties (even perceived) Community survey said complaints low but may not be representative of foreshore property owners	Insurance estimates Data on Council complaints? Media SES calls Gosford City Council Management Plan		Newcastle	Erosion
6	Sediment contamination			N,C,S	Major problem in regions at shipways. Impacts on S&E remediated site failed at Closing of businesses. 1900 sites across NSW – crown lands - Include – shipways in stressor depth			Coffs Harbour	Sediment contamination
7	Pests and disease			N	Low employment and value of production. Impacts of whole industry Define – of consequences in App A and consideration of management			Coffs Harbour	Pests and disease



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
8	Water pollution - Point sources		46	N	One piece of data being used too broadly Evidence is not adequate – minimal risk should not be inferred from the evidence Most people don't know where the sources are i.e. Red Rock people sitting under effluent runoff. EPA monitoring data should be included			Coffs Harbour	Water pollution - Point sources
9	Water pollution – litter, plastics			N	Risks should be higher in Northern Region for health, safety and well being Central has moderate	Personal observation of plastics at beach National Parks data on amount of rubbish collected Refs on plastics in seabirds New evidence: NSW food – govern on closures of Jann Gilbert – Southern Cross University on effects of plastics on sea birds		Coffs Harbour	Water pollution – litter, plastics
10	Water pollution - sewerage	Employment of production	53	Ν	Should not be minimal, should be moderate			Coffs Harbour	Water pollution - sewage
11	Wildlife interactions	Safety, health and wellbeing		N	Check if the assessment category captured this issue – if not then expand to include disposing of whale carcasses – may attract sharks	Refer contentious issue listing for current research project		Coffs Harbour	Wildlife interactions
12	Historic cultural heritage and use			N,C,S	Why has Aboriginal (tangible) heritage been recognised but not European heritage (maybe because they came under the Coastal reforms but these didn't do a threat and risk assessment)			Ballina	n/a
13	Reduction and abundance of species		100	N	Reduction in abundance of species would have an impact on participation (of fishing) so should be high/mod instead of low Should not just be captured in consumptive use as some people don't eat the fish. (e.g. deep sea fishing)			Ballina	Reduction and abundance of species
14	Water pollution (point source)	Employment values	53	N,C,S	All three regions should be low Yes there is greater industrial points in central but north and south have more septics and more oyster industry whether are dependent on water quality, so rating should be low (not min)			Ballina	Water pollution (point source)
15	Water pollution (point sources)	Employment/value		N	Vessels that discharge/moor (lack water near oyster farming or in an estuaries – not regulated properly/hard to regulate Extreme impact on oyster growers and have flow on impact on estuaries/enjoyment and consumption Vessels not captured in water pollution point source. E.g. house boats that are moored permanently and hired out			Ballina	Water pollution (point sources)



Workshop Evaluation

Outputs from Interactive Session on Risk Ratings and Evidence

ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
16	Water, pollution – littler, microplastics etc.			N	Boat maintenance/boat sanding – has potentially negative impact on the marine environment caused by social activity Cumulative effects on oysters			Ballina	Water, pollution – littler, microplastics etc.
17	Habitat disturbance from foreshore development	Enjoyment		N	Higher risk as population increases Increasing in region over the next 10 – 20 years and should be considered		Example of Lennox heads with 15000 population increase	Ballina	Habitat disturbance from foreshore development
18	Water, pollution – littler, microplastics etc.	Intrinsic and Bequest values Participation benefit		N	Both considered low risk in Northern Region and should be higher Reflects growth strategies in the region and expected population increase	Local government studies on this in Far North and cost benefit analyses by Councils		Ballina	Water, pollution – littler, microplastics etc.
19	Reduction in abundance of species and trophic levels	Participation (safety and health) Individual enjoyment value (direct economic)		N	Considered low risk but should be higher in northern region			Ballina	Reduction in abundance of species and trophic levels
20	Seafood contamination	Viability of businesses Public health and safety	111,112	S	Ratings possibly underrated noting the consequence is higher			Kiama	Seafood contamination
21	Point source water pollution	Enjoyment	46	S	Should be higher based on reputation of the area being affected			Kiama	Point source water pollution
22	Climate change	All social cells	136-138	S	Possibly overrated for south region			Kiama	Climate change
23	Point source water pollution	Economic – (all three)		S	All can affect commercial fishing catch and tourism		Lake Illawarra (destruction of prawn industry) Burkley Warrawong	Kiama	Point source water pollution
24	Urban stormwater	Economic – (all three)		C,S	All can affect commercial fishing catch and tourism	Study of pollution from roads (Sydney beaches?)	Lake Illawarra (destruction of prawn industry) Burkley Warrawong	Kiama	Urban stormwater
25	Agricultural diffuse	Economic – (all three) Enjoyment values		S	All can affect commercial fishing catch and tourism		Lake Illawarra (destruction of prawn industry) Burkley Warrawong Lake Conjola and Burrill	Kiama	Agricultural diffuse



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
26	Modified hydrology	Economic Social	57, 118 – 120, 125	S	Implication on tourism from changes to water quality and hydrology (ICCOL is closed)	12 weeks of tourism affected Cells 118 to 120 – differing perceptions of natural	Lake Illawarra (destruction of prawn industry) Burkley Warrawong Lake Conjola and Burrill	Kiama	Modified hydrology
27	Water quality (algal blooms)	Economic Social	57, 118 – 120, 125	S	Implication on tourism from changes to water quality and hydrology (ICCOL is closed) Including algal blooms Local versus widespread – should this be same as Central	 12 weeks of tourism affected Cells 118 to 120 – differing perceptions of natural Where is algal blooms in TARA – can have a massive impact on social and economic benefits (even after the bloom has cleared) 	Lake Illawarra (destruction of prawn industry) Burkley Warrawong Lake Conjola and Burrill	Kiama	Water quality (algal blooms)
28	Point source water pollution	Social – health safety and wellbeing	Minimal	S	Change insignificant consequence to minor and likelihood to likely = low risk	Stress on infrastructure Increase in population Sewerage and septic outfalls and aging sewage pipes	Narooma and Batemans surf beach sewage overflows and Wadonga Inlet	Narooma	Point source water pollution
29	Urban stormwater pollution	Viability of business		S	Risk should be higher for oyster farming			Narooma	Urban stormwater pollution
30	Climate change	Tangible and intangible cultural heritage	140,141	S	Should be higher risk particularly the effect of extreme events to adversely impact these areas – considered major consequence			Narooma	Climate change
31	Point source water pollution	Enjoyment values	48	S	Should have higher risk here	Stress on infrastructure Increase in population Sewerage and septic outfalls and aging sewage pipes	Narooma and Batemans surf beach sewage overflows and Wadonga Inlet	Narooma	Point source water pollution
32	Habitat disturbance	Social – health safety and wellbeing and socialising sense of community		S	Currently low should be higher	Disturbance from resource users, campers (trampling), 4WD habitat damage and destroy intrinsic value	Wakeboarding on the Clyde Ongoing tension between users	Narooma	Habitat disturbance
33	Pests and diseases	Employment and value of production	116	S	Query around low rating	Pacific oysters, Green pacific crabs, mud worm impacts		Narooma	Pests and diseases
34	Reduction in abundance of top and low order tropic levels	Direct values	102, 108	S	Is moderate high enough?	Spin off effects of not having large fish affecting snorkelling, diving and other marine industries including marine tourism		Narooma	Reduction in abundance of top and low order tropic levels
35	Climate change (increase in storm events)	Social – health safety and wellbeing Enjoyment		S	Potential increased public safety issues from climate change on recreational activities	Increased poor weather conditions reduce usage and enjoyment		Narooma	Climate change (increase in storm events)



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36	Water pollution – septic and sewage	Safety Health and Wellbeing Enjoying the Marine Estate Consumptive Use		С	Risk to seafood safety should be higher particularly in Central Region given greater pollution risk	Septic system having an impact in the Hawkesbury People don't want to eat product because of suspected pollution Upstream caravan parks – high use and discharge during holiday periods Need to understand what is coming out of these septic systems (hormones, etc.) Algal blooms/shut down of activities Legacy issues	Noted and supplied location of various caravan parks that could be having an impact	Sydney	Water pollution – septic and sewage
37	Modified hydrology/salinity	Safety health and wellbeing Viability of business		С	Risks should be reviewed	Effects of freshwater flows from STP Need to understand effect of this plant on hydrology and salinity of the River Variable with rainfall Needs to be considering ecological timing for species like Australian Bass, Freshwater Prawns, etc. Uncertainty related to gaps in research on how can affect business	St Mary's Treatment Plant Brooklyn Treatment Plant	Sydney	Modified hydrology/salin ity
38	Seismic testing for oil and gas	Potentially affects environmental and s/e TARA		С	Issue not covered by the TARA - an issue			Sydney	n/a
39	Water pollution – landfills and impacts on groundwater	Safety health and wellbeing Enjoyment of the Marine Estate		С	Need to be mapped and better understand leachate issues into our waterways	A lot of old landfills Bega Council recently fined for storm related overflows	Adock Park Central Gosford	Sydney	Water pollution – landfills and impacts on groundwater
40	Pests and Diseases	Business Viability	116?	С	Risk should be higher (low to moderate)	Fish translocation (including fish release) Stocking practices Offal disposal by restaurants and fishmongers		Sydney	Pests and Diseases
41	Disturbance of habitat	Enjoyment of the marine estate	93	С	Moderate in Central should be a High	Limited amount of habitat left – scarcity – particularly for roosting birds	Boat harbour Tonrapt? Proposal for resort	Sydney	Disturbance of habitat
42	Modified hydrology	Social values affected by environmental impacts	118-126 120	N,C,S	Low ratings are surprising; Minor and local scale not the case in Northern Region (estuaries) and ICCOLs in the South	ASS impacts in Northern Estuaries causing fish kills ICCOLs in South and effects of opening	Shoalhaven Heads; community perceptions about opening	Sydney	Modified hydrology
43	Reduction in abundance of top and bottom trophic predators	Enjoyment of the marine estate Consumptive use Intrinsic value	102	N,C,S	High risk as it affects the entire community (flow on in terms of fresh seafood)	Ratings across consumptive use and enjoyment should be same (people care about both)		Sydney	Reduction in abundance of top and bottom trophic predators



ID #	Activity/Threat/Stressor Category	Asset/Benefit Category	Specific Risk Cell #	Region (N,C,S)	Comment on or Suggested Changes to Risk Rating	New/Additional Evidence	Local Examples	Session Location	Topic Keyword
44	Pest and disease	Viability of business	116	С	Should be much higher for central across all categories but especially viability of business	Impacts on oyster farming families – cultural issues		Sydney	Pest and disease
45	Water pollution – urban stormwater	Enjoyment of the marine estate	46	С	Should be increased	Particularly closure of beaches after major rain events	North Coogee stormwater flows and health impacts	Sydney	Water pollution
46	Reduction in abundance of top and bottom trophic predators	Enjoyment Consumer surplus (direct economic impacts)	102, 107	N,C,S	Should change from Moderate to High Why is central different to other regions?	Reduced enjoyment from not being able to catch fish		Sydney	Reduction in abundance of top and bottom trophic predators
47	Wildlife disturbance	Viability of business	89	С	Review risk rating	Behaviour of vessels affecting whale watching industry		Sydney	Wildlife disturbance
48	Non-Point Source water pollution – septic and sewage	Safety Health and Wellbeing Enjoying the Marine Estate Consumptive Use	46 - 48	С	Risks from sewage overflows should be higher in Central Region	Sewage overflows; more runoff since greater level of development	St Kilda Bay	Sydney	Water pollution – septic and sewage
49	Water pollution, litter	Safety Health and Wellbeing Enjoying the Marine Estate Consumptive Use	73-74	N,C,S	Not just an issue in Central – needs to be considered in the context of increased population in the north and south			Sydney	Water pollution - litter
50	Habitat disturbance	Safety Health and Wellbeing Enjoying the Marine Estate Consumer surplus	91,92	С	Risk could be higher	4WD effects on beach amenity; need to be better managed by Councils Recreational activity is affecting tourism and businesses		Sydney	Habitat disturbance



Workshop Evaluation

Appendix B Key Issues Raised During Sessions

A register issues raised by participants during the six workshops was collated and is listed in Table B-1 to Table B-6 below. The issues are generally listed in the chronological order in which they were raised (not related to any hierarchy of importance or significance).

Issue ID	Newcastle Workshop
Nw1	It was noted under current management arrangements aquaculture leases are not permitted over seagrass beds so questioned why the risk is so high (a moderate risk)
Nw2	Questioned how the risk levels were assigned, definition of likelihoods and explanation of the 20 year timeframes(and 50 years for climate change)
Nw3	Questioned who develops new management controls and what agencies are involved.
Nw4	Questioned who were the field of experts or board of experts used to determine risk levels
Nw5	Questioned what is the longevity of the TARA
Nw6	Noted there is no search function on the online tool and therefore need to know the categories. Suggested a search function would be useful.
Nw7	Noted beach erosion is not included as a priority threat but should be, and not specific to development. Also sought qualification of what is a threat and what is a stressor.
Nw8	Queried the approach from risk assessment to management options and management changes and who are involved in decisions.
Nw9	Noted pests and disease are underdone in the risk levels
Nw10	Suggest 'dunes' are added as an environmental asset
Nw11	Suggested boating and boating infrastructure are two separate issues and need to be separated
Nw12	Suggested septic and sewage should be separated
Nw13	Queried if endangered species living in saltmarsh are being picked up under the Threatened Species Conservation Act category
Nw14	Suggested that conflict over resource use should be a high risk to health and wellbeing (in particular between Crowdy Head and Newcastle)
Nw15	Queried consultation with commercial fishers in this process as it was believed most fishers will not engage in the process

Table B-1 Issues raised at Newcastle Workshop



Table B-2	Issues	raised	at	Coffs	Harbour	Workshop
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Issue ID	Coffs Harbor Workshop
C1	Queried if evidence from other regions can inform a different region risk level
C2	Noted ocean haul risk level (high) is of concern as current management meets EPBC Act provisions and queried the evidence behind the risk levels.
C3	Queried if there was a lack of evidence was the risk level then rated low
C4	Disagreed with the online tool options of YES / NO / UNSURE as it allows people to lobby and click on yes hundreds of times
C5	Sought clarification on if the TARA is assessing perceived threats or actual threats and raised suspicions about how information collected could be used against stakeholders.
C6	Queried when was the cut-off date to literature being added, as there are new studies from 2016 that will be of interest
C7	Notes the process is a good start, don't muck it up and it has to be a moveable feast. Notes the health of the marine environment is most important and we need to start managing it better.
C8	Discussion about periods of review and process to provide information and improve evidence beyond current consultation period.
C9	Noted that management agencies looking at current management and assessing effectiveness is good as it makes agencies accountable
C10	Questioned if there is an on-line bibliography to see what evidence has not been included.
C11	Asked if there is there a key word search function in the online tool
C12	Noted there will be a gap in information from commercial, recreational and indigenous fishers as they won't give feedback.
C13	Noted the project could get hijacked by groups when providing standardized email submissions
C14	Discussed the priority threats in the presentation and ranking in the TARA and queried the ranking.
C15	Noted the new blueberry industry as a threat that is expanding unregulated and using 50+ chemicals that run into waterways locally
C16	Further noted water extraction from the blueberry industry in Clarence River catchment is also a major threat and council has limited powers to deal with it
C17	Noted that recreational fishers are not a threat but may cause impacts/stressors from fishing activities and that they won't have input if seen as a threat. Further, in the list of priority threats recreational fishing is listed as number 3 but fishers pride themselves on doing the right thing and these are perceived threats listed not real threats. Queried where is diving in the list of threats
C18	Noted that the TARA includes individual threats but questioned collective/cumulative threats such as urbanization and water quality



Issue ID	Ballina Workshop
B1	Noted that the risk of being discreet / targeted with specific threats is that it dilutes the integrated approach
B2	Queried who implements and who funds the outputs of the process
B3	Noted that the TARA works at state and regional level but queried if the strategy will have a regional component
B4	Queried economic evaluation and how tangible market and non-market values are considered.
B5	Queried why climate change is not integrated across all threats
B6	Noted scenarios are broad (e.g. dredging is 'moderate' but can depend on many things such as setting and implementation) and queried how you get from risk to management options

Table B-3 Issues raised at Ballina We	orkshop
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Issue ID	Kiama Workshop
K1	Sought clarification on what is evidence
K2	Sought clarification on who were the experts involved in determining risk levels
K3	Queried if there is a mapping component to the TARA e.g. to display a risk map over time
K4	Queried how risks were rated when uncertain
K5	Queried how to find eutrophication in report and online tool
K6	Queried how threats were prioritized and if priority threats have more evidence
K7	Queried aspects of the process and use of the online tool
K8	Noted the submission period is not long enough and the material is very complex and technical and will take time to talk to stakeholders and collate responses
K9	Queried how perceived vs actual impacts were considered e.g. in the social and economic TARA
K10	Sought clarification on local council's role in this process
K11	Noted link to coastal management SEPP and that criteria to be addressed needs to be side by side to TARA process and TARA could be used to inform coastal reforms
K12	Questioned the inclusion of the effect of fishing on marine food webs, due to widespread knowledge gaps and noted that pollution/water quality is the main issue to be addressed.
K13	Noted concerns about the lack of recognition of biosecurity risk – pests and disease and referred to QX disease in oysters, whitespot in prawns and future risk
K14	Suggested marine pollution from shipping is under rated and noted, whilst there have been few incidences there have been many close calls and consequence rating should be higher. Gave example of Gippsland offshore drilling platforms off the south coast which is a remote area with high natural values and big seas

Table B-4 Issues raised at Kiama Workshop



Table B-5 Issues raised at Narooma Wo	orkshop
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Issue ID	Narooma Workshop
Na1	Sought clarification on if there was weighting to reflect the frequency/abundance/scarcity of the environmental assets
Na2	Noted shipping is low in the southern region yet individual ports could be high and that there is lots of detail in the draft TARA but a huge broad brush applied to rankings
Na3	Queried the next stage of the process and whether it is at a regional or state scale
Na4	Queried the purpose of the workshop
Na5	Raised issues with the online tool as it did not collate responses before submitting and the use of YES / NO / UNSURE buttons
Na6	Queried how NSW Biodiversity Reforms fit in to this process
Na7	Raised concerned with the framework as it is directed towards economic concepts, benefits and wellbeing. Queried the methodology used and suggested the risk matrix international standards (ISO31000) were not followed. Noted concerns over lack of community engagement on the decision around using the TARA process and the lack of evidence.
Na8	Queried how you rate a risk for 20 years in advance
Na9	Noted that a high risk level as opposed to a minimal risk level could be influenced by peoples/experts interests or the inverse scenario where it was the lack of information that may have raised a risk level.
	Suggested that in the Southern Region there are limited studies, no evidence with regard to estuary entrance modification, yet it is a priority threat.
	Queried if cumulative threats will be a significant issue for the final TARA and strategy and that climate change has so many different components therefore how do you address it?
Na10	Queried how submissions be reported

Table B-6 Issues raised at Sydney Workshop

Issue ID	Sydney Workshop
S1	Queried where on the website is the link to current agency work plans and what is the work and current budgets to deal with current threats and discussion around process and timeframes.
S2	Noted issue with use of definitions and how legacy issues have been taken in to account suggesting the TARA doesn't address historical issues that have caused threats e.g. urchin barrens
S3	Noted resilience was considered in the assignment of the risk levels e.g. saltmarsh has low resilience therefore threats associated rated higher
S4	Queried where are the 'opportunities' in the TARA
S5	Question the use of data as some risk levels have 60-70% uncertainty
S6	Queried who are the experts that verified the risk levels and if community were involved
S7	Noted lack of social and economic information is concerning and that economic systems are fragile, particularly in the regions, so before initiatives are undertaken, more data is needed. Suggest more research into threats and potential impacts before management options decided and will need data pre and post-implementation



Issue ID	Sydney Workshop
S8	Noted that seafood safety and heavy metals are an issue. and queried who monitors fish to ensure they're safe. Also queried salinity levels and monitoring.
S9	Noted that gaps in knowledge / evidence makes it difficult to evaluate commercial benefit (boating) vs broader community benefit vs environmental benefit
S10	Frustration noted at the different perspectives involved in making decisions on the risk levels, made by people with limited direct knowledge or information who haven't been in industry or on boats and note that subjective viewpoints have led to higher risk levels. Noted that fishers are being treated as guilty unless proven innocent and perceived expert viewpoints are weighted more heavily than fishers input.
S11	Agreed the methodology is subjective
S12	Queried why are oyster leases are a priority threat and suggested introducing natural oyster reefs as an alternative
S13	Queried how priority threats are rated (moderate and high only)
S14	Queried if Hawkesbury bioregion submissions were used in this TARA and what changes were made from Hawkesbury to the Central TARA?
S15	Queried why the report did not consider non-Indigenous (e.g. historic) cultural heritage associated with the marine estate
S16	Outlined that new evidence is available on run off from roads into the marine environment as a potential impact to water quality
S17	Noted that the regulatory agency for Food Safety (NSW Food Authority) was not present or otherwise engaged in the process noting seafood safety is a critical issue for social and economic benefits from the marine estate.





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