OCEANWATCH AUSTRALIA

WHALE ENTANGLEMENT MITIGATION WORKSHOP 2025

Australian Government
Department of Industry, Science and Resources

The Whale Entanglement Mitigation Program is supported by OceanWatch Australia, through funding provided by the Australian Government's Our Marine Parks Round 3 Grant and the Australian Government's Threatened and Migratory Species Bycatch Mitigation Grant.

Contents

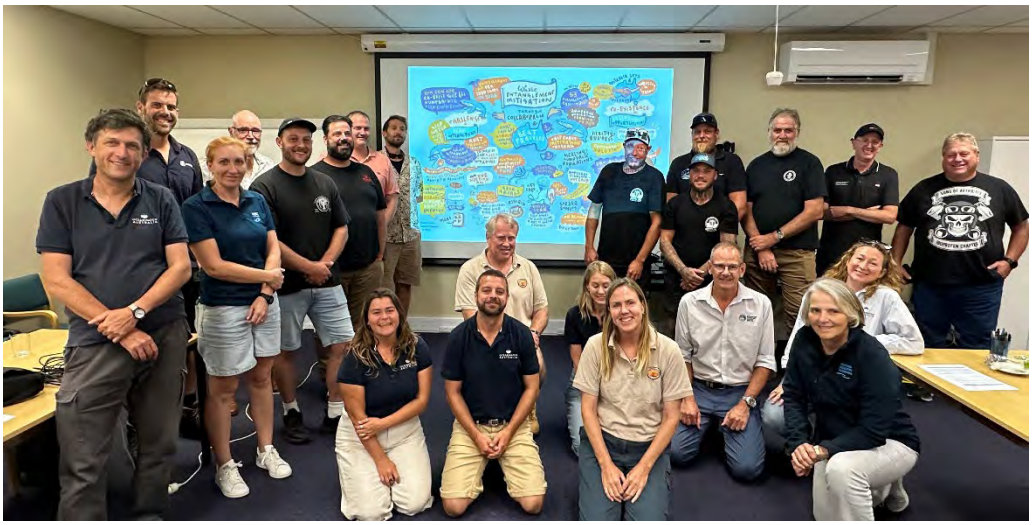
EXECUTIVE SUMMARY

OceanWatch Australia facilitated a dual project finalisation workshop at the Sydney Fish Market on 21 February, 2025. The workshop priority was to bring stakeholders together to discuss progress made in NSW, Queensland, and Tasmania regarding the East Coast Whale Entanglement Mitigation Program, and challenges faced through gear trials and the 2024 whale migration season.

The key takeaways from the workshop included:

1) An acknowledgement of the increasing humpback whale population and entanglement incidents.
2) The value of gear trials, and the importance of finding cost-effective, "simple" solutions that would allow fishers to continue operating without posing a threat to migrating whales.
3) The importance of collaboration between fishers, management, disentanglement teams, and conservation to work together towards coexistence
4) Need for proactive messaging and community education regarding this program and the efforts set-gear fishers have put towards coexistence strategies
5) Strong coordinated approach to problem-solving and increasing public awareness, highlighting Australia's potential role as a leader in co-management of whale entanglement risk

The workshop was attended by 31 participants, including 4 via Zoom teleconferencing. Participants included; 11 professional fishers with endorsements in the NSW Ocean Trap and Line and Lobster Fisheries, Queensland Spanner Crab Fishery, South Australian Southern Rocklobster Fishery, and Tasmanian Southern Rocklobster fishery, 5 gear developers from North America (Ashored, LiftLabs LLC, and Sub Sea Sonics), and staff from; NSW Wild Harvest Fishers Association, Seafood Industry Tasmania, NSW Department of Primary Industries and Regional Development, NSW National Parks and Wildlife Service, Queensland Parks & Wildlife Service, Fisheries Research and Development Corporation, Marine Stewardship Council, Department of Climate Change, Energy, the Environment and Water, Department of Agriculture, Water and the Environment, and OceanWatch Australia.

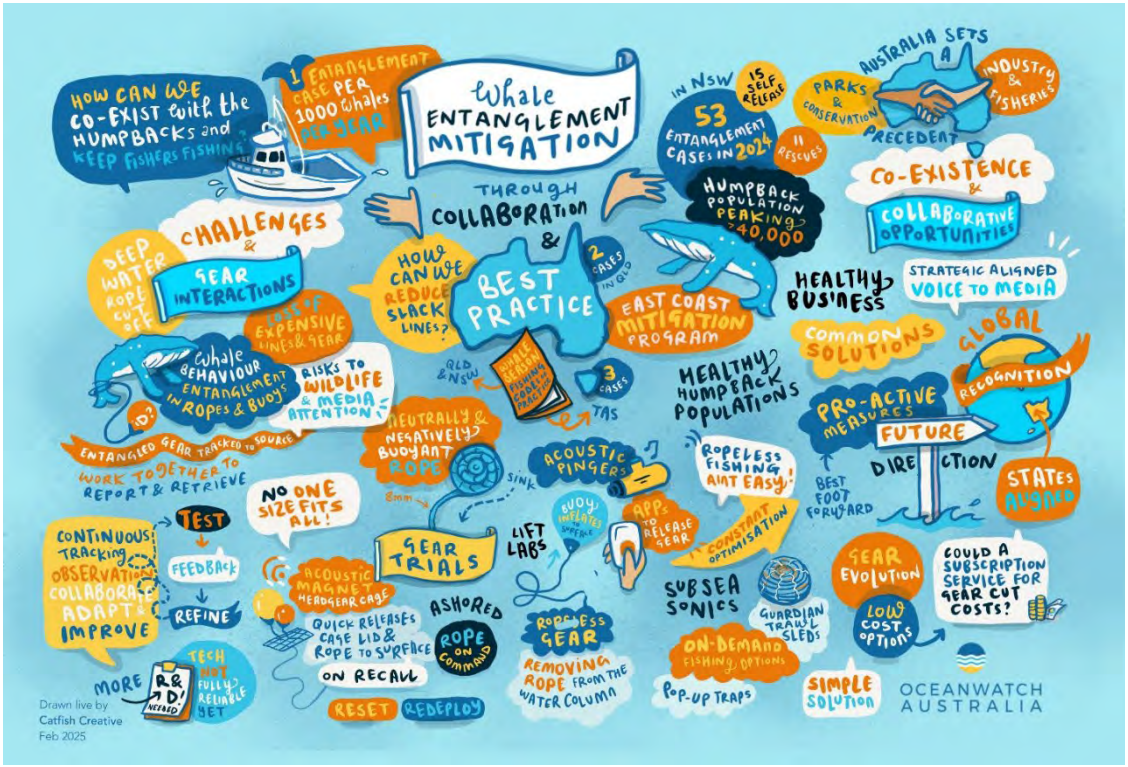


The workshop agenda included progress updates from the NSW, Queensland, and Tasmania extensions of the program, discussions surrounding 2024 “ropeless”/rope-on-command gear trials in NSW, and presentations related to the 2024 whale migration season and reported entanglements.

Workshop participants were encouraged throughout the workshop to discuss their fishery-specific challenges and any insights they have for potential solutions. Additionally, they were encouraged to discuss potential benefits and challenges of different gear modifications and novel gear technology. Towards the end of the workshop, participants were encouraged to think about and discuss what the idea of coexistence between fisheries and whales looks like and what are ways we can better promote the unique and incredible collaborative effort this program has facilitated.

Future priorities for the program were identified and included:

- Improving communication and public education about industry’s commitment to reducing whale entanglements
- Further innovation for more gear trials of *low-cost, simple* options
- Continued promotion and refinement of best fishing practices during whale season
- Ongoing open collaboration and communication between industry, government agencies, and conservation organisations involved



Agenda

Workshop agenda 21st February, 2025 – Sydney Fish Market	
9:00	1. Introduction/welcome to workshop
9:05	2. East Coast Whale Entanglement Mitigation Program - NSW Update a. Overview of program b. Whale Safety Management Plans and gear trials c. 2024 Challenges for NSW fishers
9:25	3. NSW "Ropeless" Gear Trials Video
9:35	4. Ashored Gear Developer Update + Q&A
10:00	5. LiftLabs LLC Gear Developer Update + Q&A
10:30	6. NSW "Ropeless" Gear Trials Update a. Overview of Results b. Discussion with gear trial participants re: experience and opinions on the gear
11:00	**Morning Tea Break**
11:15	7. Tasmania Gear Trials Video
11:25	8. East Coast Whale Entanglement Mitigation Program - Tasmania Update a. Preliminary Gear Trials
11:55	9. Sub Sea Sonics Gear Developer Update + Q&A
12:15	**Lunch**
1:00	10. East Coast Whale Entanglement Mitigation Program – Queensland Update a. Co-design workshop and Code of Practice b. Gear Trials
1:30	11. 2024 Whale Migration Season – Queensland Update
1:50	12. 2024 Whale Migration Season – NSW Update
2:10	13. Disentangled gear return discussion
2:30	**Afternoon Tea Break**
2:45	14. Coexistence Discussion a. How to define coexistence? b. Ways to promote it?
3:15	15. Future Directions
3:45	16. Final Thoughts
4:00	**Workshop Finish**

**Green highlight denotes presentations/discussions relevant to NSW Ropeless Gear Trials

East Coast Whale Entanglement Mitigation Program:

- Primary objectives:
  - Find ways for Australian set-gear fishers to coexist with the migrating whale populations by reducing the risk of entanglements;
  - Developing and trialling various gear modifications that may be potential viable options that help fishers minimise interactions between whales and fishing gear.
- Achievements thus far:
  - Since 2019, the program has successfully developed Codes of Practice for fishing during the whale season for set-gear fisheries in New South Wales, Queensland, and Tasmania
  - Initial gear trials have been conducted in all involved states, and feedback from fishers has been integral to further refining modifications and identifying future gear modifications to trial
  - Regulation changes for NSW Ocean Trap & Line fishery to allow for sinking of headgear, reflecting the successes from initial gear trials in NSW
  - Effective ongoing collaboration between the fishing industry, government agencies, and environmental organisations

2024 "Ropeless" Gear Trials in New South Wales

- Primary Objectives:
  - Address the challenge that the NSW OTL offshore demersal fish trap industry faces, as previously trialled straightforward gear modifications were deemed unsuitable for their needs
  - Adapt and trial two novel fishing gear technologies in the NSW Ocean Trap & Line fishery to help reduce the amount of rope in the water column
  - Assess the practicality of such systems for broader industry adoption to reduce whale entanglement risk

BACKGROUND

- Novel fishing gear technology has emerged from North America in the past ten years in efforts to help protect the critically endangered North Atlantic Right Whale population. Two systems were identified from attending the 2023 Ropeless Consortium as having potential for offshore NSW fisheries: Ashored and LiftLabs LLC.
- Two NSW OTL demersal fish trap/Easter Rock Lobster fishers trialled both systems from May 2024-February 2025
- 2024 NSW "Ropeless" Gear Trials video

ASHORED

- Determined with NSW fishers how to best rig the gear for their fishing operations, and came up with two primary options: MOBI cage fixed atop trap, or MOBI cage system connected to trap as a separate sled

- Key learnings from working with NSW fishers:
    - Need an onboard quick start guide for the technology
    - Metal degrades faster in warmer water, so some issues arose with the stainless steel cages and keys without zinc anodes attached

LIFTLABS LLC

- Brainstormed and troubleshot with NSW fishers how the inshore and offshore Lift systems might work
- Inshore system didn't have enough lift in them to get the fish traps off the bottom on it's own
- Offshore system could lift traps at depth fine, but the size and weight was cumbersome to handle on deck and on retrieval
- Tested multiple set-ups of the offshore system as a sled within long blue cage, a sled within a NSW lobster trap frame, and upright within a fish trap
- Key learnings from working with NSW fishers:
    - Despite its weight out of the water, the Lift adds unexpected buoyancy to the traps, making setting the gear challenging. Currently working to address the weight of the system by making it smaller, lighter, and less buoyant.
    - The larger buoys deflate too slowly for use in regular operation. Currently providing NSW fishers a quick swap buoy option and a lift bag option to reduce system resetting time
    - An larger internal pressure relief valve is necessary for systems that will spend time at depth to prevent canister blow-outs

"ROPELESS" GEAR TRIAL PARTICIPANTS FEEDBACK

- Neither system proved reliable enough for consistent use, and successful acoustic retrieval outside the initial training days was low for both systems (Table 1)

Table 1. Percentage of successful acoustic gear retrievals throughout trial period

System	Fisher 1	Fisher 2	Training	Overall	Excl. training
Ashored	52%	61%	57%	61%	46%
LiftLabs	31%	0%	25%	55%	20%

- One fisher found success with using the Ashored system atop his trap, and the other liked the idea of it as a back-up, however had less success with system itself
- One fisher likes the idea of the LiftLabs system upright within his fish trap, but has experienced challenges with malfunctions once getting the system to that stage and will continue to trial this with the new lift bag.
- Both fishers experienced challenges with the gear performance for both systems in instances of high currents, larger swell, and at depth
- Neither system would be something that fishers would swap their entire operations over to

- The need for gear that is easy to use and does not add significant time to their fishing operations was emphasized.
- Fishers expressed concerns about the complexity of the novel technology as a major barrier to future use and the steep learning curve associated with getting used to the gear.
- Fishers identified the importance of gear reliability and durability, as gear failure impacts their business operations on multiple levels
- High cost of these ropeless/rope-on-command technology was a major concern, as such solutions would need to be affordable to be a viable option for broader fisheries uptake
- Both fishers highlighted the importance of having some sort of backup system in case of gear failure to ensure they could retrieve their traps if the technology fails.
- Ultimately, still open to trialling and adapting both systems on a longer-term, however at their current state, neither system is recommended as practical for broader industry adoption.

POTENTIAL FOR WIDER EXTENSION

- The current state of both acoustically triggered systems does not seem totally suitable for single-set fishing operations as the technology is not yet reliable enough for fishers to trust their traps and catch with, and outfitting an entire single-set fishing operation would be too costly to be viable.
- Although the Ashored system showed to be slightly more reliable, it is still likely unsuitable for the lightweight single-set beehive style pots used in the Southern Rock Lobster fishery.
- Close collaboration between the trial fishers and the gear developers was crucial to help ensure the technology could be adapted as best as currently possible to NSW OTL fishing strategies. This model would be wise to follow for other fisheries (e.g. those interested to reduce entanglement risk with southern right whales), however it is suggested to work with Australian-based inventors/gear developers, as the time difference provided an additional challenge throughout the gear trials.
- There is no one-size-fits-all solution when it comes to reducing whale entanglement risk, and thus extending gear trials more broadly would be beneficial in helping address whale season challenges around Australia.

2024 Whale Season

NEW SOUTH WALES

- 53 confirmed entanglements in 2024 season, all were humpback whales
- Current rate of entanglement is about 1 case per 1000 whales annually, and increases in entanglement numbers seem to be associated with the increases in humpback whale populations
- 32% of entanglements this year were from the NSW shark drumlines, which are designed to self-release, 58% of the entanglements were involved with rope +/- floats

- The importance of timely reporting of entanglements was emphasised to increase chances of successful rescues as the majority of reported entanglements are only seen once
- Fishers expressed that often they're not around their gear when entanglements likely occur, and they also lose their gear to shipping cut-offs and currents, so it can be difficult to report with certainty if your gear goes missing during the whale season
- Working to expand the network of disentanglement responders along the NSW coast to increase the probability of successful disentanglements
- Collaboration with fishers and other stakeholders is a priority to help improve disentanglement outcomes

GEAR IDENTIFICATION/RETURN IN NSW

- Collaboration between NSW NPWS and NSW DPIRD Fisheries
- NSW NPWS reports the suspected tangle materials and any images they have to NSW DPIRD and if there are any clearly visible identifiers (e.g. LFB numbers) DPIRD will contact the fisher to discuss and confirm missing gear and collect any information about the location and timing of likely entanglement, and seek permission to share the details with NSW NPWS. From there, NSW NPWS and fishers can connect to facilitate gear return
- This only happens rarely, as often visible identifiers aren't on the pieces entangled on the whale as only a small proportion of the gear needs to be marked
- No repercussions to fishers for having their gear entangled, so reiterated the importance of notifying NSW NPWS and NSW DPIRD if fishers can confirm they've lost gear to a whale

Coexistence

- OceanWatch Australia attendance at the 2024 SMM Conference on the Biology of Marine Mammals was discussed as the major conference theme was "Culture and Conservation: Fishing for Change." OceanWatch Australia voiced concerns regarding the widespread perception by conservation sector of fisheries as the problem instead of needing to effectively collaborate with fisheries towards viable solutions.
    - Theme of "coexistence" was brought up throughout the conference and at workshops, and raised the question of how we actually define coexistence.
    - Attending two full-day workshops based around large whale entanglements in fishing gear reaffirmed how unique and crucial the Whale Entanglement Mitigation Program is in helping set a precedent for what effective industry collaboration looks like and how identifying and promoting pathways towards coexistence needs to include the industry from the outset
- Fishers were asked to respond to the question "What does coexistence between fisheries and whales look like?"
- Common themes that emerged from the responses were:

- Promoting a balance of the importance of fishers' livelihoods with the importance of whale conservation efforts
- To minimise negative interactions with whales while promoting viable and healthy fisheries
- The value of education and community support surrounding industry practices

o The primary goal is to achieve a sustainable coexistence where both healthy fisheries and whales can thrive together along our coasts.

Future Directions and Recommendations

1. Continue gear trials, prioritising cost-effective, straightforward gear modifications to further build and refine the industry "toolkit" for the whale migration season
2. Encourage continuous innovation and improvement towards viable gear solutions through industry-driven research and development. Consider and assess the practicality of simpler emerging on-demand technology, such as what was trialled in Tasmania, for fisheries in New South Wales and Queensland
3. Develop comprehensive educational community outreach programs through various media platforms to better inform the public about industry practices and the commendable collaborative efforts being made to help reduce whale entanglement risk.
4. Establish a unified media response strategy for whale entanglements that promotes messaging of the aim for coexistence between fisheries and the migrating whale population.
5. Extend vessel-specific whale safety management plans based on fishery Codes of Practice for fishing during the migration season more widely to other Australian set-gear fisheries.
6. Explore strategies to better integrate industry knowledge and experience throughout the whale migration season and streamline reporting for confirmed whale interactions or unusual whale behaviours. This would supplement and inform research to better understand how changes in whale behaviour, in relation to fishing gear, vessels, and environmental factors, impact whale entanglement risks.
7. Develop safety initiatives and programs for boaters to address the growing risk of whale-related boating incidents. As the humpback whale population continues to increase, ensuring boater safety becomes increasingly important.
8. Continue to foster trusting relationships between fishers, management, compliance, disentanglement teams, and community in efforts to communicate potential solutions to whale conservation concerns.

Workshop Outcomes

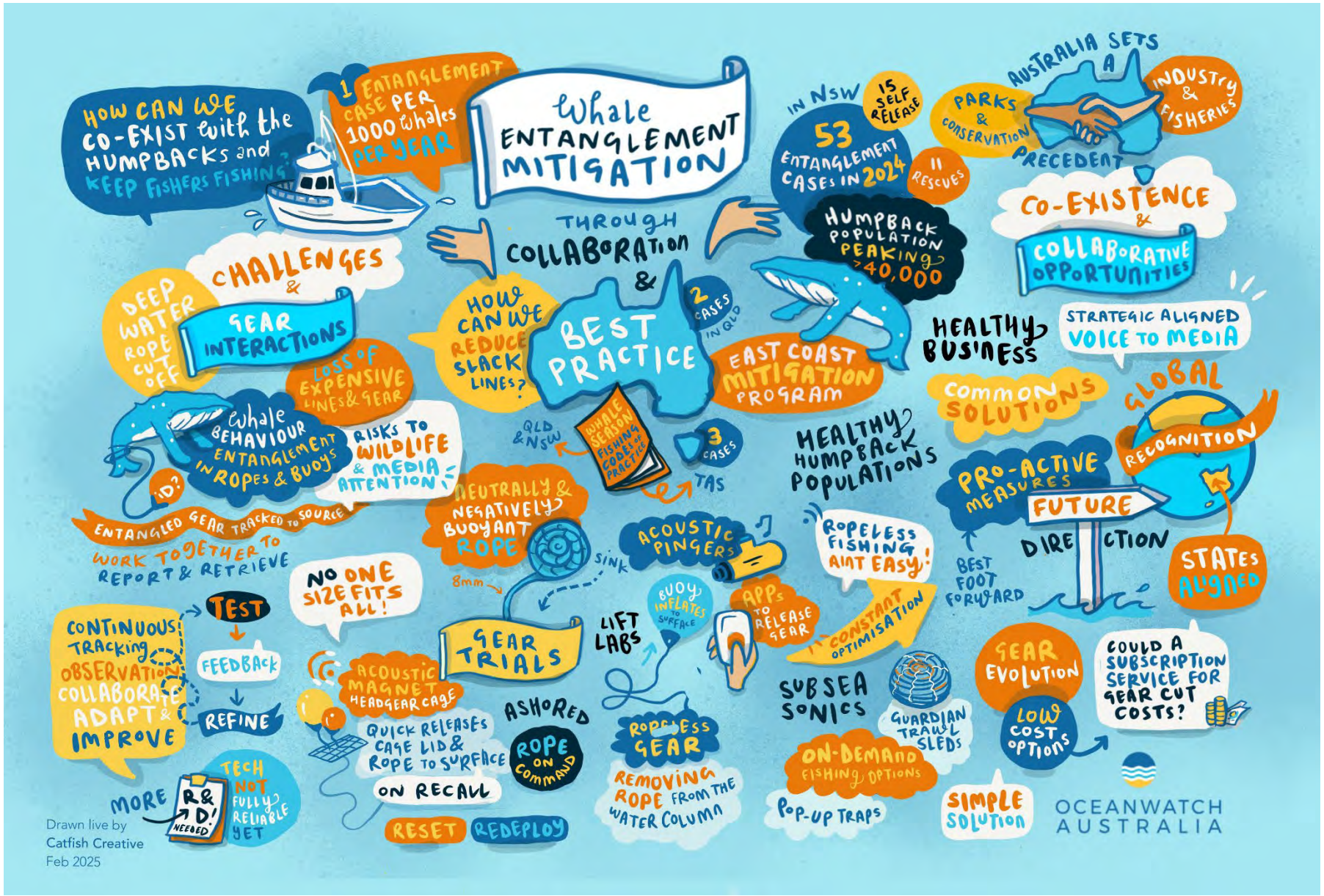
- Promote creation of vessel-specific whale safety management plans based on Codes of Practice in Queensland and Tasmania
- Strong commitment to continued collaboration and open communication between fishers, government agencies, and conservation organisations.
- Continued need to explore new gear modifications and technologies to help reduce whale entanglement risk, with an emphasis on simple, low-cost options.
- Ongoing collaborative research and monitoring of whale behaviour and interactions with fishing gear

- Encourage further stakeholder engagement to deal with issues related to whale entanglements and engage more of the NSW, Queensland, and Tasmanian set-gear fishing industry.
- Discussions with peak industry bodies regarding an organised message to promote and appropriate response to media attention during the whale migration season.
- Seek out opportunities to engage more with the conservation sector on Australian set-gear fisheries' commitment to promoting coexistence between fishers and migrating whale populations.
- Explore appropriate funding opportunities to continue the program in terms of project management, facilitating further trials, data collection procedures and continued communication and extension with relevant fishers, industry bodies, fisheries managers, compliance, disentanglement teams, etc.
- Explore opportunities to further extend the information to South Australian, Victorian and West Australian industry bodies/associations.

Workshop Conclusion

The collaboration achieved throughout the program between East coast set-gear fishers, Peak Industry Bodies in New South Wales, DPIRD Fisheries, National Parks & Wildlife Service, and OceanWatch Australia has been exceptional. The 2024 gear trials in New South Wales have served as a crucial look into development and adaption of potential mitigation methods to minimise interactions between Australian set-gear fisheries and whales, but indicates there is still a lot of work to be done to find viable solutions for both the fishing industry and migrating whale populations. Although there is various emerging technology in development around the globe to help fishers address the challenge by removing rope from the water column, these systems are not easily adaptable to the single-set nature of the NSW Ocean Trap & Line demersal fish trap fishery and still require further research and development if they are to be a suitable option for broader industry adoption. Discussions also proved that there may be a greater need for advances in deterrents over promoting "ropeless" fishing, as whale behaviour changes witnessed over the past few whale migration seasons have raised industry concerns about on-water safety and the almost unavoidable potential for whale interactions with vessels or fishing gear. Additionally, there is a pressing need to further educate the community more widely about this collaborative effort as whale populations continue to grow and the challenge facing the fishing industry further evolves. Ultimately, the progress and dedication that has been made through these "ropeless" gear trials highlights the continued commitment the NSW Ocean Trap & Line industry has to promoting coexistence with whales and identifying/developing mutually beneficial solutions.

Whilst there may be challenges of funding and other policy obstacles to overcome as the challenge evolves, the collective endorsement of professional fishers by openly participating and working towards viable solutions has been the core-strength of OceanWatch Australia's Whale Entanglement Mitigation program throughout the past six years. It is important that this work continues, and the resound commitment of NSW fishers is not lost through disengagement.


Whale ENTANGLEMENT MITIGATION
HOW CAN WE CO-EXIST with the HUMPBACKS and KEEP FISHERS FISHING?
1 ENTANGLEMENT CASE PER 1000 whales PER YEAR
THROUGH COLLABORATION & BEST PRACTICE
IN NSW 53 ENTANGLEMENT CASES IN 2024
15 SELF RELEASE
11 RESCUES
HUMPBACK POPULATION PEAKING >40,000
AUSTRALIA SETS A PRECEDENT
PARKS & CONSERVATION
INDUSTRY & FISHERIES
CO-EXISTENCE & COLLABORATIVE OPPORTUNITIES
CHALLENGES & GEAR INTERACTIONS
DEEP WATER ROPE CUT OFF
LOSS OF EXPENSIVE LINES & GEAR
whale BEHAVIOUR ENTANGLEMENT IN ROPES & BUOYS
RISKS TO WILDLIFE & MEDIA ATTENTION!
ID?
ENTANGLED GEAR TRACKED TO SOURCE
WORK TOGETHER TO REPORT & RETRIEVE
HOW CAN WE REDUCE SLACK LINES?
2 CASES IN QLD
EAST COAST MITIGATION PROGRAM
HEALTHY BUSINESS
STRATEGIC ALIGNED VOICE TO MEDIA
COMMON SOLUTIONS
GLOBAL RECOGNITION
QLD & NSW
WHALE SEASON FISHING CODES OF PRACTICE
3 CASES TAS
HEALTHY HUMPBACK POPULATIONS
PRO-ACTIVE MEASURES
FUTURE DIRECTION
BEST FOOT FORWARD
STATES ALIGNED
NEUTRALLY & NEGATIVELY BUOYANT ROPE
8mm
SINK
ACOUSTIC PINGERS
ROPELESS FISHING AINT EASY!
CONSTANT OPTIMISATION
NO ONE SIZE FITS ALL!
GEAR TRIALS
LIFT LABS
BUOY INFLATES TO SURFACE
APPS TO RELEASE GEAR
CONTINUOUS TRACKING OBSERVATION COLLABORATE ADAPT & IMPROVE
TEST
FEEDBACK
REFINE
ACOUSTIC MAGNET HEADGEAR CAGE
QUICK RELEASES CAGE LID & ROPE TO SURFACE
ON RECALL
ASHORED
ROPE ON COMMAND
ROPELESS GEAR
REMOVING ROPE FROM THE WATER COLUMN
SUBSEA SONICS
GUARDIAN TRAWL SLEDS
GEAR EVOLUTION
LOW COST OPTIONS
COULD A SUBSCRIPTION SERVICE FOR GEAR CUT COSTS?
ON-DEMAND FISHING OPTIONS
POP-UP TRAPS
SIMPLE SOLUTION
MORE R&D NEEDED
TECH NOT FULLY RELIABLE YET
RESET
REDEPLOY
OCEANWATCH AUSTRALIA
Drawn live by
Catfish Creative
Feb 2025

APPENDIX:

WORKSHOP ATTENDEES

Name	Affiliation
Kristin Hoel	OceanWatch Australia
Lowri Pryce	OceanWatch Australia
Dave Schubert	OceanWatch Australia
Simon Rowe	OceanWatch Australia
Jane McGann	Seafood Industry Tasmania
Chris Melham	NSW Wild Harvest Fishers' Association
Elesha Curran	Department of Climate Change, Energy, the Environment, and Water
Andy Marshall	NSW National Parks and Wildlife
Britt Anderson	NSW National Parks and Wildlife
Daniel Johnson	NSW Department of Primary Industries and Regional Development
Steve Hoseck	Queensland Parks & Wildlife
Kris Cooling	Fisheries Research & Development Corporation
Steve Eayrs	Fisheries Research & Development Corporation
Steph Martin	Marine Stewardship Council
Aaron Stevenson	Ashored, Inc.
Cormac Hondros-McCarthy	LiftLabs, LLC
Paul Williams	LiftLabs LLC
Bart Chadwick	Sub Sea Sonics
Ryan Halonen	Sub Sea Sonics
Simon Rowe	South Australia – Southern Rock Lobster
Pat Richardson	NSW – Ocean Trap & Line, Eastern Rock Lobster
Ryan Starkey	Queensland – Spanner Crab

Gary Bordin	NSW – Spanner Crab
Danny Stewart	NSW – Ocean Trap & Line, Eastern Rock Lobster
Bryce Way	Tasmania – Southern Rock Lobster
Andre Gorissen	Queensland – Fraser Isle Spanner Crab
Kurbi Househam	NSW – Ocean Trap & Line, Eastern Rock Lobster
Mark Cranstone	NSW – Ocean Trap & Line, Eastern Rock Lobster
Mitch Sanders	NSW – Ocean Trap & Line, Eastern Rock Lobster
Troy Billin	NSW – Ocean Trap & Line
Cat Leach	Catfish Creative

PRESENTATIONS


NSW "Ropeless" Gear Trials


Ashored - Rope-on-Command


LiftLabs - Ropeless Liftbag


2024 NSW Whale Season


NSW Gear ID/Return Protocol