

**North Atlantic Right Whale Recovery Plan
Right Whale US Implementation Team
October 29-30, 2019**

**Hampton Inn and Suites Baltimore Inner Harbor
Baltimore, MD**

KEY OUTCOMES MEMORANDUM

I. Overview

The North Atlantic Right Whale Recovery Plan U.S. Implementation Team (RWIT; composed of the Northeast Implementation Team (NEIT) and Southeast Implementation Team (SEIT)) conducted a two-day meeting on October 29 and 30, 2019, at the Hampton Inn and Suites Baltimore Inner Harbor in Baltimore, MD. The agenda is attached, and the Implementation Team deliberations focused on the following primary objectives.

- Introduce role and operational process for RWIT efforts.
- Become familiar with available joint expertise
- Exchange NMFS-management, science, and outreach updates/challenges for the East Coast
- Provide input to PET Subgroup
- Review regional action items and updates (NEIT and SEIT)
- Discuss process for and begin to identify top right whale priority action items for next 5 years
 - Review Purpose of Plan
 - Identify Areas for coordination, integration, communication
 - Identify implementation (e.g., partners, timetable)
 - Discuss Application
- Plan for next steps (Implementation Team coordination of coastwide project(s))

This Key Outcomes Memorandum summarizes the primary results of the team deliberations from the discussions noted above. In general, the synthesis integrates the main themes discussed at the meeting and are presented in five main sections: Overview, Participants, Meeting Materials, Key Outcomes, and Next Steps. The Key Outcomes section is further segmented into the following sections:

- Welcome and Meeting Kick Off. This section provides a brief overview of the meeting purpose and agenda review.
- Team Business. This section includes Team process and meeting planning.
- Focused team discussions. This section includes focused discussions, including any resulting in consensus actions and/or recommendations.
- Next Steps: This section summarizes what the team will focus on moving forward.

II. Participants

The meeting was attended by 18 members: Katie Moore^{1,2} (NEIT Team Lead), Joel Bell¹, Danielle Cholewiak¹, Cindy Driscoll¹, Cathy Merriman¹, William McLellan^{1,2}, Mark Baumgartner¹, Meghan Rickard¹, Erin Summers¹, Desray Reeb¹, David Wiley¹, Leslie Ward² (SEIT Team Lead), Lance Garrison², Clay George², Mike Getchell², Amy Knowlton², Becky Shortland², and Tom Wright². Team members Bob Glenn¹, Hardee Kavanaugh² and Sharon Young² were unable to attend and will be filled-in on team deliberations.

Diane Borggard (NEIT Liaison), Mike Asaro, Sean Hayes, Richard Pace, Barb Zoodsma (SEIT Liaison), and Shasta McClenahan represented NOAA Fisheries (NMFS). Meredith Moise attended both days to capture notes and key discussions. Mike Runge (USGS) attended October 30.

III. Meeting Materials

The following materials were provided to Team members via email prior to or at the meeting:

- Draft meeting agenda
- NMFS Workshop Report (Evaluating Effectiveness of U.S. Management Measures for North Atlantic Right Whales)
- Combined Summary of NEIT/SEIT Priority Recovery Action Items
- NEIT MAR 2019 Meeting Summary
- SEIT May 2018 Key Outcomes
- SEIT Recommended 5 Year Plan
- SEIT MAUS Recommended Actions
- NMFS Species in the Spotlight Five-Year Priority Action Plan examples

IV. Key Outcomes

Below is a summary of the main topics and items discussed during the meeting. This summary is not intended to be a meeting transcript and is not necessarily in chronological order of discussions. Rather, it provides an overview of the main topics covered, the primary points and options raised in the discussions, and areas of full or emerging consensus.

A. Welcome and Introductions

The meeting kicked off with a brief review from D. Borggaard and B. Zoodsma of the meeting purpose and draft agenda, as well as introductions. This included clarifying the structure of RWIT (i.e., one entity composed of regional teams) and that any Team recommendations would be directed to each team's NMFS regional office. D. Borggaard announced that NMFS identified the North Atlantic Right Whale as a Species in the Spotlight in the "Recovering Threatened and Endangered Species FY 2017-2018," and NMFS would be looking for input

¹ NEIT Member: See <https://www.fisheries.noaa.gov/new-england-mid-atlantic/endangered-species-conservation/north-atlantic-right-whale-recovery-plan-northeast-us-implementation-team> for affiliations, etc.

² SEIT Member: See <https://www.fisheries.noaa.gov/southeast/endangered-species-conservation/north-atlantic-right-whale-recovery-plan-southeast-us-implementation-team> for affiliations, etc.

from the team at this meeting on priority recovery actions to inform NMFS' Five-Year Priority Action Plan for right whales. NMFS Team Liaisons acknowledged the ambitious agenda and task at hand, but noted the importance of this effort to help inform NMFS' Species in the Spotlight efforts. Input from the RWIT helps identify important recovery actions at-large.

B. US Implementation Team Business

The first day of the two-day meeting primarily consisted of providing updates across the team, information sharing, emerging issues, and discussion on identifying the priority action items needed for recovery. B. Zoodsma provided various NMFS updates on management and research issues including efforts underway related to impacts such as entanglements and ship strikes (e.g., see NMFS' updates in the 2019 North Atlantic Right Whale Consortium Report Card³ for more information). C. Merriman also gave Canadian management and science status updates to the team, focusing on the two different departments (e.g., see Canada's updates in the 2019 North Atlantic Right Whale Consortium Report Card⁴ for more information). Both the US and Canada also gave updates on the known right whale human interaction incidents that have occurred on both sides of the border.

Members provided updates from their organizations. The members' updates were brief so that the team could focus on emerging issues and priority action item discussions. Future studies/issues noted by some members included, but were not limited to, satellite imaging studies on whales, acoustic detection studies, cargo ship that overturned in Georgia, UMEs (e.g., hindcast studies to see where vessel interactions are occurring), and seismic survey status.

Team business also involved updates and input to the Population Evaluation Tool (PET) Subgroup that was created to develop a tool to, among other things, characterize the North Atlantic right whale extinction risk taking into account current and future threats. A presentation was given by M. Runge and R. Pace which included updates such as the desired output metrics (e.g. populations growth rate), model components (e.g., threats represented), and planned scenarios. The RWIT provided feedback to the PET subgroup and gave ideas to help them improve the tool (e.g., consider a feedback loop between health index and entanglement/vessel strike; incorporate interactions between prey, collision and entanglement; label and describe the scenarios more broadly; continue to investigate wind energy development scenarios, connect disease to health). The PET Subgroup will continue to provide updates to the RWIT, and are currently expecting a report in 2020.

C. Focused Discussions:

Priorities

The SEIT and NEIT regional priorities and criteria used for selection were reviewed by the Team Leads (L. Ward and K. Moore, respectively; see meeting materials for additional background information). D. Borggaard also presented on a combined NEIT and SEIT priorities

³ <https://www.narwc.org/>

⁴ <https://www.narwc.org/>

spreadsheet which showed commonalities between the regional priorities to serve as a launching point for coastwide priority development and to acknowledge the previous efforts by both teams. Each action was binned into the following categories: habitat and distribution, population assessment, fishing, shipping⁵, mortality investigation, and other. The background and spreadsheet was structured to help the Team identify priorities actions for right whales for the next five years.

K. Moore led the Team through consideration of the combined priorities, as well as agreeing to conduct a poll where each member would use criteria for selecting priority action items. The purpose of the poll was to identify some topics of common priority amongst the team members to help start discussions on those topics during the RWIT meeting. The team ultimately decided on using the definition of Priority 1 Recovery Actions (actions that must be taken to remove, reduce, or mitigate major threats and prevent extinction and often require urgent implementation) from the "*Guidelines of Species Priority for Listing and Recovery*" (April 30, 2019; 84 FR 18243) for identifying coastwide priorities. Members were asked to individually look through the combined NEIT and SEIT priorities spreadsheet, and vote on 10 items to focus on over the next five years.

K. Moore (with L. Ward and larger team agreement) led the team through discussions on the 6 recovery action items that received the highest votes as well as those flagged by any team member as important to highlight and discuss by the end of the meeting. The team discussed each action item individually (e.g., partners, status) including the following topics where time allowed: 1) if the action contributed to information to support management (yes or no); 2) if the action was related to the application of a management action (yes or no); 3) if the action was transboundary (yes or no); and 4) and resources needed (high= over 10 million dollars; medium= 1-10 million dollars; low= under 1 million dollars). It was noted that some actions relate or are very similar to others.

The 6 actions receiving the most votes, as well as many of the other important actions members asked to talk about at the meeting, related to information to support management and was transboundary.

Appendix A includes a list of all actions that were voted on by team members, including the top 6 highest ranked and others that team members highlighted as important to discuss during the meeting. In general, the 6 high priority action bins included habitat and distribution (e.g., improved spatial/temporal distribution of whales); fishing (e.g., reduce fishing interactions; further ropeless⁶ gear options); shipping (e.g., reduce vessel collisions; assess effectiveness of ship strike rule); and population assessment (e.g., monitor right whale populations). Other important actions identified for consideration not specifically noted in Appendix A included bi-lateral cooperation between Canada and the US that incorporated implementing action, not just meetings, as well as broadscale speed reductions (e.g., what is the risk reduction by

⁵ Although the "shipping" term was originally used and is reflected here, this refers to vessels.

⁶ Ropeless is specific to vertical line here.

implementing that throughout the whale's range as we know it, management measures should consider lack of distribution information). Team members also emphasized the importance of ensuring a well-founded baseline is not lost and that includes the importance of maintaining critical data collection (e.g., continued mortality investigations whereby every right whale should be investigated, collect and maintain photo-ID data, update photo-ID catalog yearly) and maintaining a common assessment model (e.g., Pace et al., PET Subgroup efforts). These baseline efforts are important not only for population assessments, but many other actions as well.

Some general topics of interest that arose during the priority discussions included:

- Trans-boundary coordination (e.g., interest in information from Transport Canada on how they achieved a high rate of compliance and administer the regulations, location of Traffic Separation Schemes in relation to management areas, how does industry address dynamic management when planning portcalls).
- Monitoring: Important to coordinate with non-NMFS partners (e.g., regional teams) on monitoring workshop outcomes.

Given the RWIT just met and the timeline was ambitious, there were no consensus recommendations/actions sought from the meeting. However, the Team met NMFS' commitment identified in the "*Recovering Threatened and Endangered Species FY 2017-2018*" report to provide input to NMFS on priority cross-regional recovery actions to inform NMFS' Five-Year Priority Action Plan for right whales.

F. Next Steps

- Distribute draft meeting summary.
- Distribute population monitoring workshop report when available.
- Continue NMFS Liaison regional team coordination/communication efforts (e.g., terms of reference).
- NMFS GARFO (lead on RWIT organizing, etc.) will continue coordination with NMFS SERO on next steps for RWIT. This will include consideration of resources (personnel, funding, etc.) for meetings compared to directing these same resources to specific recovery actions, when full team discussions are needed versus regional teams, management needs, resources and efforts related to the RWIT PET Subgroup, etc. In the short-term, consideration will include some individual member input at the meeting (e.g., potential webinars of joint interest, encourage sharing amongst the Teams of relevant current events via e-mail list).
- NMFS will generate a SIS 5-Year Action plan based on IT input from this meeting.
- Continue NMFS and Canada bilateral coordination (e.g., consider this meeting summary).

Appendix A.

Action Items Identified by the U.S. Implementation Team to Further Discuss

U.S. Right Whale Implementation Team Recovery Action priority cross-regional recovery actions identified based on previous regional team efforts. The table includes all actions that received a vote from any RWIT member at the meeting. The number column indicates the order in which the action items received the highest number of votes to the lowest number of votes. The alternate shading between white and gray is to show relative ranking and bundle action items that had received the same number of votes. If a number has an asterisk next to it, that indicates an action item that was specifically discussed at the meeting as it was either voted as one of the top 6 six priority action items by the team, or was an action item flagged by a team member that needed to be discussed by the end of the meeting or at a future meeting.

Note: Bolded action items indicate that the action was a top six priority item for NEIT coordination and italicized action items indicate it was a top six priority action item for recovery at large in the Northeast US. The NEIT priorities reflect an acknowledgement that ongoing efforts to address commercial fishing interactions are a priority and are being addressed through the ALWTRT. If the action item is both bolded and italicized, it had received top priority for both. SEIT High impact priorities, both southeast and non-southeast specific, were added to show crossover between NEIT and SEIT Priorities.

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
1*	<i>Identify where the whales are, especially reproductive females. Consider prey modeling studies. (1) (2)</i>	*See MAUS Plan- Topic 1 actions 11&12 design research strategies for distribution/habitat (11. Design appropriately scaled research strategy to improve knowledge on species spatio-temporal distribution patterns; 12. Design appropriately scaled research strategy to improve knowledge on potential long term habitat shifts.)*	NEIT Identified Conservation Topics	Habitat & Distribution
		2c. Increase Sighting Information (Compare analytical outcomes from AMAPPS, PAM retrospective, and Duke model and evaluate consistency in patterns. Increase SEUS sighting information (USCG, Navy, social media, states, law enforcement))	Recovery Plan	

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
2*	Develop and implement strategies to modify fishing operations and gear to reduce the likelihood of entanglement, mitigate the effects of entanglements, and enhance the possibility of disentanglement, and assess the effectiveness of such strategies.	4b. Characterize gear (Inventory and characterize fishing gear and fishing practices of existing and emerging fisheries.)	Recovery Plan	Fishing
3*	Proactive management rulemaking for ropeless fishing so ready when gear is ready.	4h. Investigate ropeless gear (Ropeless gear options should be investigated and encouraged whenever possible. Golden crab fishery is used as an example of a ropeless fishery. Details of this fishery might be helpful in considering ropeless fishing in other areas.)	Scenario Planning Draft Priorities (2018)	Fishing
4*	Assess the effectiveness of ship strike measures and adjust, as necessary.	1a. Updated Risk Assessment (Conduct an updated risk assessment that incorporates habitat models, AIS ship data (including compliance), taking into account variation and uncertainty. Model optimal shipping patterns that improve risk-aversion. Identify and include risk variables associated with newer generation of mega-ships in comprehensive risk assessments.)(Topic: Vessel related Impacts)	Recovery Plan	Shipping
5*	Reduce or eliminate vessel collisions with right whales. Assess the potential need for modified or additional regulatory mechanisms. Compare recent mortality events with spatial gaps between management areas. (NOTE: IT noted this was all size vessels).	1b. Monitoring Strategy Effectiveness (Assess effectiveness of monitoring strategies to inform occurrence of collisions and impacts. Investigate ways to strengthen carcass detection at sea and salvage (drones, infrared technology, carcass tags, time window and accessibility to hind cast drift models etc))(Topic: Vessel related impacts)	SEIT Mid-Atlantic U.S. Priorities	Shipping
6*	NMFS should develop a long-term, cross-regional plan for monitoring right whale population trends and habitat use. (NOTE: IT notes interest in cross regional plan as raised by NEIT and SEIT, not just NMFS. Coordination with PET Subgroup important)	3a. Evaluate Population Monitoring(Evaluate SEUS population monitoring efforts in conjunction with anticipated NMFS monitoring guidance and effectiveness of monitoring approach in addressing status and threats. Assess and find opportunity for improved coordination and collaboration regarding actions that result in effective population monitoring and timely analyses in support of management needs. (Topic: Population Assessment and Monitoring)	Five Year Review	Population Assessment
		3c. Tagging/distribution		

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
7*	Reduce amount of line in water column through ropeless fishing including gear research, development, and testing (<u>NOTE: IT considered this broader than written as other contributors to line in the water; issue is reducing line in the water column; see number 3 above</u>)	4k. Monitor other sources of rope (Keep abreast of any other activities that might put rope in the water column (FADs, Navy parachute exercises, fish traps)).	Scenario Planning Draft Priorities (2018)	Fishing
		4d Monitor emerging fisheries in SEUS & 4c. Assess emerg. fisheries (Assess risk posed from existing and emerging fisheries. Identify risk factors. Monitor emerging fisheries in SEUS)		
8*	<i>Define existing fixed gear fishing locations with high degree of specificity. (NOTE: IT notes that this should not include ALWTRP exempted areas; concern not limited to lobster trap/pot.)</i>	4f Describe gear configuration and fishing practices (Describe the configuration of gear and fishing practices of existing and emerging fisheries to help assess potential risk. What stress load may a neonate withstand?) & 4a. Develop way to determine gear geo. origin (Develop more refined means of determining geographic origin of entanglements.)	NEIT Identified Conservation Topics	Fishing
9	Reduce or eliminate vessel collisions with right whales. Assess traffic patterns and evaluate compliance with existing regulations	1h. Evaluate Regulation Compliance (Evaluate compliance of regulations including MSR.)(Topic: Vessel related impacts)	SEIT Mid-Atlantic U.S. Priorities	Shipping
		1c. Track trends in shipping industry (ship designs, traffic patterns). (Topic: vessel related impacts)		
10	When possible and practicable in terms of safety, disentangle whales caught in fishing gear.	4l. Ent Report. mechanisms (Ensure that mechanisms to have fishermen report active entanglements are consistently requested from the industry, i.e. annual outreach.) (Topic: Emerging Fisheries/Reduce Entanglements)	Recovery Plan	Fishing
11*	Promote bi-lateral cooperative efforts with Canada to maximize protection for right whales.		Recovery Plan	Other
12	<i>Use necropsies to determine the cause of death, and use such data to reduce mortalities.(4)</i>		Recovery Plan	Mortality Investigations
13*	NMFS should continue to fund right	1g. Evaluate vessel wound findings (g. Evaluate findings	NEIT	Mortality

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
	whale mortality investigations.	from watercraft wound forensics)(Topic/Theme: Vessel Related Impacts)	Identified Conservation Topics	Investigations
14	Notify individual ships directly when their course is likely to bring them to or near a location where a whale was sighted by the aircraft. (NOTE: NEIT member clarified that NEIT specific conversations related to this topic included notifying vessels in real time in SMA and DMA. Given the source is a recovery plan item though, the language wasn't changed.)		Recovery Plan	Shipping
15*	Engage with industry to: (1) help solve problems, (2) develop incentives, (3) gain buy-in for solutions	4e. Stay engaged with fish. mgrs. (Actively engage fishery managers to stay informed about upcoming fishery issues of interest to right whale conservation efforts.)(Topic: Emerging fisheries/reduce entanglements)	Scenario Planning Draft Priorities (2018)	Other
16	<i>Modeling studies (present conditions and projected into the future) on (1) spatial and temporal movement of whales and copepods, (2) whale habitat and distribution, and (3) climate models</i>		Scenario Planning Draft Priorities (2018)	Habitat & Distribution
17	Conduct radio and satellite tagging studies to increase knowledge of right whale habitat use, distribution, and habits.	3c. Tagging/distribution	Recovery Plan	Habitat & Distribution
18*	Renewable industries including (1) aquaculture (be proactive and whale safe), (2) blue economy (e.g., wind farms) (NOTE: See number 21 and 27 too)	4j. Monitor developments in Aquaculture (Keep abreast of future aquaculture activities in the SEUS and coordinate with SERO regarding input on compatibility issues.)(Topic: Emerging Fisheries/Reduce Entanglements)	Scenario Planning Draft Priorities (2018)	Other
19*	NMFS should conduct research to improve gear modifications and gear marking to inform management for the development	4g. Gear load cell testing (Conduct load cell testing on gear: learn what is being used and what minimum load that is required to fish successfully.)	Five Year Review	Fishing

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
	of more finely scaled commercial fisheries regulations. (3) (NOTE: IT highlighted ropeless in other rows; not just NMFS for this action)			
20	Review and evaluate stranding and photo-identification data to monitor interactions with fishing gear and effectiveness of mitigation measures.		Recovery Plan	Fishing
21*	Identify emerging risks. (NOTE: IT discussed changing bin to "Habitat Protection")	2a. Emerging Issues (Assess and update plan annually with new agency information/emerging issues (i.e., SpaceX port in Camden County, commercial storage of CO2?) given dynamic character of overall cumulative impacts on seascape. Develop a practical means for SEIT to track issues.)(Topic: Cumulative Effect of Non-lethal Impacts/Noise)	NEIT Identified Conservation Topics	Other
		2d. Noise Profiles (d. Promote the development of metrics appropriate for monitoring chronic noise in relation to right whales. Evaluate the noise profiles of newer generation ships and track changes in SEUS. If PAM technology is deployed in right whale habitat, recommend combined whale specific information is concomitantly collected. Likewise, right whale monitoring projects should be combined with noise monitoring.)(Topic: Cumulative Effect of Non-lethal Impacts/Noise)		
		1f. Recreational Boat Changes (f. Evaluate changes in recreational boat traffic patterns. Evaluate availability of large yacht AIS data. Assess fishing tournament/race/special event permitting as it pertains to right whales.)(Topic: Vessel-related impacts)		
22	Assess the effectiveness of existing ship reporting systems and reporting areas.		Recovery Plan	Shipping
23	Long-term monitoring data on plankton		Scenario Planning Draft Priorities (2018)	Habitat & Distribution

#	<u>Item (NEIT Identified Priority)</u>	<u>SEIT High Impact Priorities including "Southeast Specific" and "Not Southeast Specific." Parentheticals represent SEIT overarching themes.</u>	<u>Source for NEIT Priorities</u>	<u>Bin</u>
24	Large whale behavioral research (e.g., Research on the distribution of large whales throughout their range in US waters (including behavior on the migratory corridor (large whale whales) and breeding grounds (for right whales)	See MAUS Plan- Topic 1 actions 11&12 design research strategies for distribution/habitat (11. Design appropriately scaled research strategy to improve knowledge on species spatial-temporal distribution patterns; 12. Design appropriately scaled research strategy to improve knowledge on potential long-term habitat shifts.)	ALWTRT Whale Research Activities and Select Priorities (2015) (see document for specific actions)	Habitat & Distribution
25	Investigate infectious diseases		NEIT Conservation Topics	Mortality Investigations
26	Analyze tissue collected from stranded right whales to determine and monitor contaminant levels.		Recovery Plan	Mortality Investigations
27*	Reduce human impact to habitat and NARWs from Ocean Energy Activities. Track BOEM and agency actions regarding permitting and development of plans (BMP)/next steps. Review monitoring plans and develop high priority questions/information gaps/data need to detect potential displacement and/or other impacts		SEIT Mid-Atlantic U.S. Priorities	Other

Footnotes From Appendix A: Action items that have a number in parentheses following them (i.e. (1)) indicate that there was another action item that was closely related to the one discussed, and was bundled together. However, to avoid confusion, they were taken out of the table above. These action items can be seen below:

Footnotes: Similar Action Items	Source for NEIT Priorities
(1) NMFS should continue to prioritize and fund a combination of acoustic, aerial, and shipboard surveys for right whale surveillance.	Five Year Review
(2) Use acoustic detection technology, surveys, and other technologies to monitor right whale occurrence	Recovery Plan

Footnotes: Similar Action Items	Source for NEIT Priorities
and distribution in the mid-Atlantic United States.	
(3) Fully support alternative gear practices, gear marking and other strategies developed by the ALWTRT	NEIT Additions
(4) Fully investigate ALL blunt trauma mortality designations (past and future) to determine if the event occurred outside of a SMA. If outside enlarge size and/or duration of SMA. Every Single Mortality Exceeds PBR.	NEIT Additions