

Draft
MAFAC Protected Resources Subcommittee
Recovery Actions Retrospective Analysis Report
October 5, 2015, Preliminary Pre-Decisional Document

Introduction

Recovery and conservation of endangered species is important to foster healthy and sustainable marine resources, habitats, and ecosystems and is a NOAA Fisheries' primary mandate under the ESA. Yet many times, recovery efforts fall short of their goals and are incomplete. This can be the result of recovery actions that are not well focused or not feasible. This can also be due to a lack of partnering with key stakeholders, states, tribal nations, and agencies that can influence recovery actions. The Department of Commerce Strategic Plan recognized this second shortcoming and called for NOAA Fisheries to increase collaboration in recovery efforts. Without completing the necessary recovery actions, criteria for recovery are often not met and consideration to down or de-list is delayed.

The Marine Fisheries Advisory Committee (MAFAC) holds a unique position with its broad membership across multiple stakeholder groups including industry, academia, nongovernmental organizations, and tribal nations. MAFAC was asked by NOAA Fisheries Leadership to draw on member expertise and other sources to assess how the agency could improve the recovery of listed species. MAFAC's Protected Resources Subcommittee was tasked with examining recovery actions by status category ('not started,' 'ongoing,' 'complete') to identify characteristics that may increase the likelihood of recovery action success and help inform development of future recovery actions. In a subset of recovery plans, MAFAC would review the 'not started' recovery actions, with an emphasis on recovery actions related to fisheries impacts, and suggest potential partners, strategies, revisions and clarifications to help implement these recovery actions.

MAFAC's strategy for completing this work was outlined in a Terms of Reference (Appendix A). This draft report describes the results of the work conducted to address the first of the two objectives contained in the Terms of Reference for this project. Specifically:

1. Charge its Protected Resources Subcommittee to conduct a retrospective analysis of a subset of recovery actions by status category ('not started,' 'ongoing,' 'complete') to identify characteristics that may increase the likelihood of success and help inform development of future recovery actions.
 - The initial analysis will examine the recovery actions in at least 6 recovery plans that represent the range of NMFS recovery plans. The analysis will characterize the recovery actions in each category, looking for commonalities that could inform future recovery actions.
 - The outcome of the analysis will be to provide guidance to recovery teams to define the characteristics of successful recovery actions.

- The subcommittee will work closely with Protected Resources staff in the regions.

MAFAC and NMFS Staff Participants

These MAFAC Protected Resources Subcommittee members participated in the project: Columbus Brown, Heather Brandon, Julie Morris, Pam Yochem, Paul Clampitt, Ted Ames and Terri Lei Beideman. Heidi Lovett in the NMFS Office of Policy and Therese Conant in the NMFS Office of Protected Resources provided key staff support. Joshua Gange took notes during several interviews, and Rachel Demma provided an initial meta analysis of the status of recovery actions. The Protected Resources Recovery Coordinators for the seven recovery plans provided the key insights at the center of these this report: Adam Brame, Shelley Norton, Lisa Rotterman, Nora Berwick, Rachel Sprague, Stacie Robinson, Charles Littnan, Greg Silbur, Barb Zoodsman, and Melissa Neuman.

Methods of Choosing of Recovery Plans and Recovery Actions for Focused Interviews

We tried two methods to select a representative sample of recovery actions for analysis. First we pulled a random sample of recovery actions from all recovery plans and concluded the sample was not representative. Over 70% of all recovery actions coordinated by NMFS are Pacific Salmon recovery actions, and each random sample was overwhelmingly dominated by Pacific Salmon. The second method used the four criteria listed below to select seven representative recovery plans for analysis.

- *Selected recovery plans are older than 12 months and represent a wide range of completion dates.* NMFS does not anticipate recovery actions to be completed within the first year of finalizing a recovery plan. We also do not report on the status of recovery actions that are less than 12 months under our Government Performance Results Act. Selecting a wide range of dates since completion will allow review of recovery actions in varying stages.
- *Selected recovery plans are not joint with U.S. Fish & Wildlife Service (FWS) or States.* We would need to seek FWS and/or State concurrence and input on the need for the review and willingness to participate in the review process, which may slow the review process.
- *Selected recovery plans represent diverse taxa and ecological niches.* Selecting a diverse taxa and ecosystem will allow for review of a broad range of recovery actions and partners responsible for those actions
- *Selected recovery plans represent all NMFS regions.* Selecting recovery plans from all regions and headquarters will allow for review of recovery actions developed across various NMFS program offices to capture possible differences in approaches to recovery plans.

These criteria were reviewed by the Protected Resources Subcommittee and accepted. Seven recovery plans were selected that met all four criteria. A quick description of each of the seven recovery species/population includes their habitat, recovery region, the age of the recovery plan, and the number of recovery actions contained in each plan.

1. *Hawaiian Monk Seal*. Vertebrate mammal pinniped that inhabits warm subtropical waters surrounding atolls, islands, and areas farther offshore on reefs and submerged banks in the Hawaiian Islands. Monk seals are also found using deepwater coral beds as foraging habitat. When on land, monk seals breed and haul-out on sand, corals, and volcanic rock. Sandy, protected beaches surrounded by shallow waters are preferred when pupping. Monk seals are often seen resting on beaches during the day. NMFS Pacific Islands Region. Recovery plan completed in 2007. 109 Recovery Actions.
2. *South-Central California Steelhead Trout, Mid Columbia Gorge Section*. Vertebrate anadromous fish with adults spawning in freshwater, and juveniles rearing in freshwater before migrating to the ocean to grow and sexually mature prior to returning as adults to reproduce in freshwater. The population occurs in watersheds from the Pajaro River (Santa Cruz and Monterey Counties) south to Arroyo Grande Creek (San Luis Obispo County). NMFS West Coast Region. Recovery Plan completed in 2013. Numerous recovery actions—possibly narrow down to a biographic population group.
3. *North Atlantic Right Whale*. Vertebrate mammal cetacean that occurs in the Atlantic Ocean, particularly between 20° and 60° latitude. The majority of the western North Atlantic population range from wintering and calving areas in coastal waters off the southeastern United States to summer feeding and nursery grounds in New England waters and north to the Bay of Fundy and Scotian Shelf. NMFS Greater Atlantic Region. Recovery plan completed in 2005. 154 Recovery Actions.
4. *Smalltooth Sawfish*. Vertebrate elasmobranch that inhabits shallow coastal waters of tropical seas and estuaries throughout the world. They are usually found in shallow waters (less than 32 feet (10 m)), very close to shore over muddy and sandy bottoms. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths. In the U.S., Smalltooth Sawfish are found in the peninsula of Florida, common only in the Everglades region at the southern tip of the state. NMFS Southeast Region. Recovery plan completed in 2009. 98 Recovery Actions
5. *Sperm Whale*. Vertebrate mammal cetacean that inhabits all oceans of the world. They can be seen close to the edge of pack ice in both hemispheres and are also common along the equator, especially in the Pacific. Sperm Whales are found throughout the world's oceans in deep waters between about 60° N and 60° S

latitudes. NMFS Headquarters. Recovery Plan completed in 2010. 64 Recovery Actions.

6. *Steller Sea Lion Western DPS*. Vertebrate mammal pinniped that inhabit colder temperate to sub-arctic waters of the North Pacific Ocean. Haul outs and rookeries usually consist of beaches (gravel, rocky or sand), ledges, rocky reefs. Steller Sea Lions are distributed mainly around the coasts to the outer continental shelf along the North Pacific Ocean rim from northern Hokkaido, Japan through the Kuril Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, southern coast of Alaska and south to California. NMFS Alaska Region. Recovery plan completed in 2008. 82 Recovery Actions.
7. *White Abalone*. Invertebrate mollusk occurs in open low and high relief rock or boulder habitat that is interspersed with sand channels usually at depths of 80-100 feet (25-30 m). Distributed in southern California through Baja Peninsula. NMFS West Coast Region. Recovery plan completed in 2008. 27 Recovery Actions.

With seven plans identified, we considered the logistics and methods of analysis. We chose a qualitative method based on interviews with the recovery coordinator for each plan. The subcommittee developed an interview guide (Table 1.) and a template for organizing the notes from the interview.

Table 1. Interview Guide

Is the recovery action described clearly and in enough detail that you know who, what, when, where, how the action will be completed?
Does the recovery action overlap with actions to recovery other protected species and, if so, does this overlap affect the outcome?
Is the recovery action linked to other actions that must occur and is it apparent and clear the sequence that is needed and are responsible parties aware of the link and are they coordinating efforts?
Is the recovery action appropriately linked to the recovery criteria (biological or threats) and does that affect the outcome (i.e., does it actually contribute to recovery or should it be categorized as Obsolete)?
Is the lead responsible party reported to and coordinated with a broader group of responsible parties?
Does the recovery action depend on other agencies for implementation, and if so, how does this affect the outcome?
Did the party (ies) responsible for the recovery action help identify and develop the recovery action during recovery plan development and did that affect the outcome?
Did NMFS reach out and coordinate with responsible party (ies) after finalizing the recovery plan and did the level of coordination affect the outcome?
Do the Priority 1-3 numbers assigned appropriately reflect the priority for the recovery action. Are the top priorities funded/ completed first or are the easiest actions completed first?
Are there any other factors the coordinator feels contributes to or hinders effective recovery of the species?

Therese Conant convened a conference call for the recovery coordinators to explain the overall goal of the recovery action analysis and the interview process. Heidi Lovett convened a conference call for the Protected Resources Subcommittee members to organize a schedule for the interviews to be conducted during July and August, with a lead interviewer, a second MAFAC participant, and a NMFS staff member taking notes (Table 2).

The interviews were scheduled to last 90 minutes. It became obvious that we would need to identify a subset of the recovery actions in each recovery plan for the interview discussion. Five recovery plans contained 80-150 recovery actions each, and the other two had 47 recovery actions (White Abalone) and 196 recovery actions (Steelhead Trout). In order to focus the analysis, we chose a subset of 10-25 recovery actions for discussion in each interview. In two interviews, the rich, detailed conversations allowed discussion of fewer than 10 recovery actions.

Table 2. Dates of each interview and the participants.

SPECIES	Recovery Coordinator	Interview Date	MAFAC Lead	2nd MAFAC Participant	NMFS Staff
Hawaiian Monk Seal	Rachel Sprague, Stacie Robinson, Charles Littnan	7/31/15	Pam Yochem	Terri Beideman	Heidi Lovett
Middle-Columbia River Steelhead Trout	Nora Berwick	7/17/15	Julie Morris	Liz Hamilton	Heidi Lovett
North Atlantic Right Whale	Barb Zoodsma	7/30/15	Ted Ames	Paul Clampitt	Heidi Lovett
Smalltooth Sawfish	Adam Brame, Shelley Norton	7/7/15	Columbus Brown	Julie Morris	Heidi Lovett
Sperm Whale	Greg Silbur	8/7/15	Paul Clampitt	Ted Ames	Joshua Gange
Steller Sea Lion, Western DPS	Lisa Rotterman	7/22/15	Heather Brandon	Paul Clampitt	Joshua Gange
White Abalone	Melissa Neuman	7/27/15	Terri Lei Beideman	Pam Yochem	Heidi Lovett

Each MAFAC lead interviewer drafted a summary of the interview, providing an overview as well as comments on the interview guide questions for each recovery action. This was accompanied by a spreadsheet that reported “yes, partially yes/no, no or NA” to each interview question for each recovery action discussed. The recovery actions discussed in the interviews were sorted by their status (Completed, Partially Completed, Ongoing Current, Ongoing Not Current, Not Started). For each status category, charts were prepared showing the responses to three key questions:

- Is the recovery action appropriately linked to the recovery criteria (biological or threats) and does that affect the outcome?
- Does the recovery action depend on other agencies for implementation, and if so, how does this affect the outcome?
- Did the party (ies) responsible for the recovery action help identify and develop the recovery action during recovery plan development?

Positive and Negative Factors Affecting Recovery Actions from Interviews with Recovery Coordinators

Cross-Cutting Positive Factors - Four of the seven recovery plans have developed stable, well-functioning and inclusive teams to move recovery actions forward. Four of seven recovery plans are undergoing, or planning to undergo, updates to review recovery actions and set new priorities based on advances in science and management knowledge. Management actions already implemented to reduce fishing and vessel interactions and protect habitat have improved recovery for four the seven species.

Table 3. Cross Cutting Positive Factors from Interviews (Hawaiian Monk Seal HMS, Middle Columbia Gorge Steelhead Trout MCGST, North Atlantic Right Whale NARW, Smalltooth Sawfish SS, Sperm Whale SW, Steller Sea Lion SSL, White Abalone WA)

Cross Cutting Positive Factors from Interviews	HMS	MCGST	NARW	SS	SW	SSL	WA
Recovery Actions undergoing/plan to undergo updates: adding measurable outcomes and reviewing priorities.	X	X	X	X			
Management actions to restrict fishing or vessel impacts or protect habitat have had a positive effect on recovery.	X		X		X		X
A stable, well-functioning, inclusive team coordinates recovery actions and research.	X	X	X	X		X	
Improved data collection technology is providing better data on range and movement.	X		X	X			
Section 6 Cooperative Agreements and research partnerships with states support recovery action success.	X			X		X	
Co-management with native entities		X				X	

Key Positive Factors

For several species, recovery coordinators noted that other resource management activities, improved data collection, and other actions that had a positive outcome for a species have overtaken the need to implement some recovery actions, caused them to become obsolete, or provided an opportunity for the focus of recovery work to shift. It is thus important to update recovery plan actions, or their implementation plans, to allow for this. One clear example was the impact that the designation of the Papahānaumokuākea Marine National Monument had, which encompassed the Northwest Hawaiian Islands (NWHI). Designation occurred just before the recovery plan was finalized, and before actions got underway. Longline fisheries were once a problem for Hawaiian Monk Seals in the NWHI, but monument designation closed the region to these activities. With no major fishing activities, several actions are no longer significant. For example, it is not necessary to “investigate competition with ... commercial and recreational fisheries in the NWHI”, although this action should continue in the main Hawaiian Islands, where fishing is primarily managed by the state of Hawaii. Other examples are the International Whaling Commission’s prohibition on the commercial harvest of Sperm Whales which allowed populations to stabilize. Habitat

protected in Marine Protected Areas along the California coast has also provided habitat protection for many populations of White Abalone.

Newly available technology to assess Sperm Whale and North Atlantic Right Whale movements is allowing stalled recovery actions to move forward. Previously, satellite tags attached to North Atlantic Right Whales caused tissue damage and threatened the health of tagged whales. New active and passive acoustic devices are helping researchers understand distribution and migration routes for North Atlantic Right Whales.

A strong interagency team and a process that includes stakeholders is a positive factor in completing recovery actions. For the North Atlantic Right whale, NMFS coordinated with Canada, the Fisheries Councils and State Agencies to develop new regulations through discussions with informed stakeholders. It appears that the level of coordination occurring among agencies has greatly improved compliance with regulatory changes and improved outcomes for the whales.

When a motivated and responsible party has adequate funding to implement an infrastructure recovery action, the action can move forward. For example, Mid-Columbia Gorge Steelhead Trout includes an action to soften and relocate floodplain infrastructure along the Klickitat River. This was a priority for the Yakima Nation and funding was provided by the Bonneville Power Authority. Great progress has been made on removing an old haul road and restoring shoreline habitat for Steelhead Trout.

Cross Cutting Negative Factors – Funding and staffing levels are below what is required for successful recovery actions in six of seven recovery plans, and future funding is uncertain. Data on behavior, distribution, limiting factors, reproduction, nursery habitat, and genetics limits recovery actions in six of seven recovery plans, and field work to collect these data is curtailed. Jurisdictional issues and conflicts among federal agencies interfere with recovery action progress in five of the seven recovery plans. Five of the seven recovery plans contain recovery actions that are not linked to limiting factors for the species or measurable recovery criteria.

Table 4. Cross Cutting Negative Factors from Interviews

Cross Cutting Negative Factors from Interviews	HMS	MCGST	NAR W	SS	SW	SSL	WA
Jurisdictional issues (access, permits), conflicts among federal agencies, and disagreements among state government entities interfere with recovery action implementation.	X	X		X		X	X
Funding and staffing levels are below what is required for recovery action success. Future funding is uncertain undermining planning.	X	X		X	X	X	X
Many recovery actions were not linked to limiting factors or measurable recovery criteria and are no longer a priority. Some actions are now outdated due to advances in science and management.	X	X	X	X	X		
Data on behavior, distribution, limiting factors, reproduction, nursery habitat and genetics limits recovery actions. Field work to gather data is curtailed by reduced funding, or dangerous field conditions.	X	X	X	X	X	X	
When recovery action depends on cooperation of foreign governments, progress can be difficult.				X	X		
When a joint mandate is lacking, NMFS staff must convince other agencies to prioritize completing assigned recovery action tasks.	X	X					

Key Negative Factors

In two recovery plans, the state does not have the structure that would allow greater sharing of resources for recovery. The State of Alaska has developed an agreement to limit the fisheries take of Steller Sea Lions and also comply with the MMPA, but the agreement falls short of a Habitat Conservation Plan for Steller Sea Lion Western DPS. A Habitat Conservation Plan would help recovery by making federal funds available to Alaska. In a second instance, Hawaii does not have Habitat Conservation Plan for Monk Seals or a dedicated marine wildlife program. Hawaii’s Division of Land and Natural Resources has received cooperative funding, but there is no coverage for Monk Seals taken in state fisheries.

Sequencing of recovery actions presented problems in recovery plans. In the Mid-Columbia Gorge, removal of the Conduit Dam was a recovery action for Steelhead Trout. Pacific Corp was responsible for pre-dam removal baseline studies and removal of the dam which were accomplished in a timely manner. But there is no lead responsible party for the post removal monitoring. Salmon and trout are returning to the White Salmon River in response to the dam removal, but there is no research to document their return and describe how river habitat is changing.

Research is paramount, particularly for data poor species. Improved information allows for recovery teams to better focus their limited budgets and staff resources to those

actions which can have the largest positive impacts. Additionally, when staff are writing a recovery plan for the first time, and there is not a lot of information, an action that can sound good in theory can turn out to be unrealistic or not make sense anymore. In several recovery plans, for example the Steller Sea Lion, basic information on life history, abundance, disease and reproduction are needed before modeling to determine limiting factors can be done. This information is currently insufficient and the sequence of actions to follow cannot be started. Lack of time, data, funding staffing also confounds the ability to develop population models for White Abalone.

When a population spans international borders or includes international waters, foreign governments and international agencies are key players in recovery, but coordination outside the U.S. can be difficult. It would be helpful to characterize Sperm Whale habitat in the Mediterranean, but this would depend on participation of foreign governments, which has not been forthcoming. The habitat conditions in Mexico for White Abalone are uncertain. So far, Mexico has not participated in a technical advisory team to coordinate White Abalone recovery on both sides of the border.

Permits for research on wild populations of protected resources are reviewed by various Federal and State agencies, as well as multi-state councils and commissions. This is an arduous process that limits research needed for recovery. Smalltooth Sawfish research permits are limited to a small number of individuals, leaving some central research questions unanswered. For Hawaiian Monk Seals, five agencies, four of them federal, have a say in the issuance of place-based permits. It is a time-consuming and continual struggle for NMFS to get the permits to undertake the research and management work required for the recovery action.

Limited funding and staff time prevent the implementation of many recovery actions. For example, NMFS is unable to assess how climate change and contamination are affecting Sperm Whales. Likewise, recovery efforts for Hawaiian Monk Seals need information on prey availability and the impact of oceanographic changes and drivers but obtaining this information is cost prohibitive.

Some recovery actions are not linked to limiting factors for species recovery and should not be implemented. One recovery action for Mid-Columbia Gorge Steelhead Trout calls for placing carcasses in the Klickitat River to fertilize the stream (add nutrients). The recovery team determined that placing carcasses would actually degrade the stream habitat for Steelhead Trout, and the action is “not started”, and should be obsolete. A White Abalone recovery action for calls for maintaining rockfish conservation areas but is no longer a priority, since abalone habitat does not overlap with rockfish conservation areas.

If there are jurisdictional issues or disputes over the importance of some actions, and a permit is required to complete an action, as is the case to address shark predation on juvenile Hawaiian Monk Seals species recovery can be significantly impaired.

All seven of the recovery plans that were the focus of the interviews either are benefiting from, or would greatly benefit from, having a written implementation plan. Many of the Sperm Whale recovery actions are stated too broadly, and specific implementable recovery actions are not defined. An action to protect Sperm Whale habitat in all U.S. waters is not actionable.

Overview of Interviews for Individual Recovery Species

Hawaiian Monk Seal

Factors contributing to the successful implementation recovery actions discussed in the interview:

- The recovery plan is very well written and overall is a very effective plan. The appropriate subject matter experts were involved in the writing of the plan. There is wide confidence in the plan, that it is based on science and not politics. It has enough detail to provide clear guidance on the actions, but is not so specific that it becomes obsolete quickly or hampers the agency's ability to modify its approach as needed (except in a few instances). Plans are underway to update some of the actions (staff capacity permitting). The actions are a good mix of low-hanging fruit and more difficult but still relevant/meaningful and do-able items.
- Commercial and recreational fisheries are not much of an issue for monk seals in the Northwest Hawaiian Island (NWHI) since the establishment of the national monument, allowing NMFS to shift some focus to the Main Hawaiian Islands. What fisheries remain are state-managed and, there are reports of seals dying from hook ingestion and entanglement in state nearshore fisheries. However there is no formal reporting and the state does not have ESA-MMPA authorization for the takes that occur in the state fisheries.
- Preventing and/or reducing the spread of infectious diseases require cooperation among many jurisdictions (federal, state, local; public health agencies as well as wildlife agencies). Coordination among groups is very good owing to good veterinarian-to-veterinarian communication and collaboration, even if other agencies (such as the state) are not listed as responsible agencies.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- The creation of a National Monument in the NWHI has resulted in significant jurisdictional issues (access, place-based permitting) that are hampering some recovery efforts. Removal of problem sharks is the most serious example of this. The scientific justifications showing risk/benefit for seals vs sharks are robust and yet shark removal is a continuing source of conflict among federal agencies. Although this action only affects one monk seal colony (French Frigate Shoals), the impact of sharks on pup cohorts there is significant.
- Some actions are outdated. There have been some significant advances in science and management since it was written. Also, when written, there was more focus on the NWHI, but much has been accomplished since the establishment of the Monument. Numbers of monk seals are up in the Main Hawaiian Islands, and those actions need more attention (should be higher priority). Staff noted they are making, or planning to make these updates. Actions are funded far below (\$2-4 million below) what the recovery

plan requires for success. For example, it costs about \$1 million just to rescue and rehabilitate injured seals with this work being done by partners and outside groups. . Field camps have been curtailed (fewer trips, shorter duration) and yet these deployments are key to data collection, population monitoring, and many direct management actions.

- Some recovery actions depend on cooperation among government entities, and disagreements among those entities sometimes delay implementation of the action. The State of Hawaii and at least two federal agencies (NMFS and USFWS) have to review and comment on every permit application related to recovery actions. In other instances, the state is an appropriate partner or responsible agency, but is not listed as such. Additionally, Hawaii does not have a dedicated marine wildlife program for ESA, a Habitat Conservation Plan, or coverage for the take of Monk Seals in state-managed fisheries.
- Hawaii does not have a strong NGO community to assist with recovery actions, though there are a few notable exceptions (e.g., The Marine Mammal Center, which is based in California, has established a monk seal hospital on the big island for rescue and rehabilitation).
- The monk seal recovery plan is one of the more ‘insular’ ones. It is sometimes a challenge to convince/encourage other agencies (state and federal) to do the work ‘assigned’ to them in the recovery plan. There is no joint mandate for management of monk seals as there is for sea turtles, which can result in 1) other agencies seeing action(s) as NOAA’s ‘problem’ (sole responsibility), and/or 2) other agencies putting monk seal actions lower on the priority list than NOAA would like to see them, and/or 3) other agencies seeking funding from NOAA’s budget to undertake the actions ‘assigned’ to their agency. Other contributing factors – Hawaii is an isolated state, doesn’t share border with other states.

Hawaiian Monk Seal	
Total recovery actions	109
Actions that are ongoing and current	65
Actions that are ongoing, not current	13
Actions not started	2
Partially complete actions	2
Obsolete or discontinued	15
Complete actions	12

Middle Columbia Gorge Steelhead Trout

Factors contributing to the successful implementation recovery actions discussed in the interview:

- The team that coordinates the recovery actions has worked together for many years and they have developed the social capital to be an effective recovery team.
- There is a great deal of local support for the recovery actions that implement projects identified in local subbasin plan projects.
- Recovery actions are being reassessed and reprioritized in light of better information about limiting factors and recovery criteria.
- A steering committee has been established to reprioritize recovery actions.

- Recovery actions with funding from the Bonneville Power Administration are able to move forward.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- The initial recovery actions were drawn from sub basin plans prepared by the Northwest Power and Conservation Council. These plans were developed to implement local projects with funds from the Bonneville Power Administration and many actions from the NPCC sub basin plans are not linked to Mid-Columbia Gorge Steelhead Trout limiting factors or criteria for recovery.
- Some recovery actions depend on cooperation among government entities, and disagreements among those entities delay implementation of the action.
- Initially, limiting factors for Steelhead Trout were generated using simulation models. Limiting factors for the Middle Columbia Gorge have not been ground truthed, and need to be ground truthed in order to prioritize the most effective actions.
- Funding for ongoing monitoring actions is difficult to maintain.
- Actions sometimes precede a thorough assessment.
- Too many recovery actions are intended to fix problems that don't exist or are unlikely to have a direct effect on limiting factors or recovery criteria for steelhead Trout.
- With sequenced actions, the first action was completed before the party responsible for the second action was identified, funded, and prepared to implement the next action.

Mid-Columbia Gorge Steelhead Trout	
Total recovery actions	196
Actions that are ongoing and current	168
Actions not started	26
Complete actions	2

North Atlantic Right Whale

What factors contribute to the successful implementation of this group of recovery actions?

- Recovery actions relating to vessel strikes and fishing gear modifications appear to have reversed the decline of Right Whales and this has allowed a gradual increase in their numbers for several years. With the development of better telemetric tags, continued improvements in reducing mortality from human interactions may become possible.
- Good collaboration among NMFS Office of Protected Resources, various participating agencies and the inclusion of responsible parties from shipping and fishing industries in discussions throughout the process has contributed greatly to these results. Ongoing reviews of recovery actions and adjusting priorities where needed has also improved the program's ability to better evaluate Right Whale behavior and distribution.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- The distribution and movements of Right Whales in the Atlantic is incomplete, complicating efforts to count them. The location of their whelping areas and feeding sites are but partially unknown.

- Up to the present, attempts to use telemetric tags on Right Whales to track their movements had to be stopped because the tags caused large areas of tissue to atrophy.
- Marine vessel traffic and fishing activity along the U.S. coast and western Atlantic is ubiquitous, making reductions, rather than the elimination of human interactions with Right Whales the goal.
- Critical aspects of Right Whale behavior are still unknown; yet studies to evaluate such behavior are considered too dangerous to Right Whales, researchers, or both.

North Atlantic Right Whale	
Total recovery actions	134
Actions that are ongoing and current	115
Actions that are ongoing, not current	10
Actions not started	0
Complete actions	9

Smalltooth Sawfish

The Smalltooth Sawfish is a data poor species. When the original plan was written, old records and anecdotal data were all that was available. Recent technology developments and better data should help the recovery team to identify more realistic and measurable outcomes that are indicative of recovery successes. NMFS is currently working on revising the recovery plan.

Factors contributing to the successful implementation recovery actions discussed in the interview:

- Part of the success of this particular recovery program is that it has a great recovery team.
- There is an annual implementation meeting that provides updates on research, discussions on work priorities, budget issues and the allocation of funds for priority actions.
- The implementation of this recovery plan is due to a great group of researchers that work well together.
- A little bit of money from NMFS has garnered a lot of collaboration from partners.
- The State of Florida is doing independent monitoring for all species, and NMFS gets data from that (piggybacks that work).
- Where possible, benefits are achieved due to overlaps with other projects.
- When the Habitat staff members go out on project sites, they provide the Protected Resources staff considerable feedback.
- When critical habitat was identified, there was some coordination with other Federal agencies, especially with regards to the crocodile.
- Coordination with other Federal agencies is mostly through Section 7 consultations, the Everglades Restoration Project, and some overlapping plans.
- With the listing of all sawfish species, opportunities to work with bordering countries (e.g. , Bahamas, Cuba and Mexico) have been enhanced.
- NMFS Protected Resources staff has done an excellent job of steering the recovery of the Smalltooth Sawfish in the right direction.
- NMFS is considering a contract to help update the plan.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- The greatest challenges are (inconsistent and insufficient) funding and the need to update the recovery plan with meaningful and measurable outcomes.

- Research capabilities have been limited. Approval under Section 10 permitting to allow internal tagging for satellite tracking was received recently. Presently, one of three Section 10 permits allow for internal tagging.
- When the original, first plan was written, there was hardly any data, so it was hard to identify what would be a good recovery action. NMFS is currently working on revising the recovery plan.
- Only three research permits are in place. The researchers can allow other people to work under their permits, for instance, some genetics work is done in NC by non-team members, but not a lot of work is done this way.
- NMFS does coordinate with the Army Corps of Engineers, National Park Service, and the FWS National Wildlife Refuges. In the Ten Thousand Islands – NMFS reviews park plans through Section 7 consultations. They coordinate and discuss any issues that may affect species recovery. Coordination with other Federal agencies can likely be enhanced.
- Dr. Greg Palatkis is studying the discharges from Lake Okeechobee into the Caloosahatchee River, which is a main nursery area. These studies may need to be carried out in additional areas.
- When you are writing a recovery plan for the first time and don't have a lot of information--an action that sounds good turns out to be unrealistic or new information comes along that can change your focus. Some existing actions in the original plan were accomplished; however, some no longer make sense.
- New recovery guidance now focuses on using measurable criteria. Now actions must be linked to the recovery criteria. Some of the actions in the current plan no longer seem appropriate because they were not viable from the beginning or need to be updated because of more reliable information.

Smalltooth Sawfish	
Total recovery actions	87
Actions that are ongoing and current	51
Actions that are ongoing, not current	6
Actions not started	26
Partially complete actions	2
Complete actions	1

Sperm Whale

Factors contributing to the successful implementation recovery actions discussed in the interview:

- Sperm Whales appear to be doing very well world wide, but global population estimates are lacking. The decision by the IWC to not hunt except for scientific purposes has allowed the Sperm Whale to make progress towards recovery.
- All of the recovery actions implemented for the Sperm Whale were developed for an ideal world. In other words, developed without taking into account the available resources needed to complete the recovery actions or the political ramifications of that completion.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- The fact that Sperm Whales are present in all the world oceans makes it very difficult to quantify their population, determine the rate of breeding success or identify discreet genetic populations.

- The study of Sperm Whales also depends on the cooperation of foreign governments.
- Delisting any species, including marine mammals gets very political. It also takes as much effort and many resources to delist a species, as it does to list one. Due to constraints on limited resources, the NMFS Office of Protected Resources has prioritized helping recover species that are close to extinction. When funds are available, more resources can target the work that needs to be completed to delist a species.

Sperm Whale	
Total recovery actions	47
Actions that are ongoing and current	41
Actions not started	4
Partially complete actions	2
Complete actions	0

Stellar Sea Lion Western DPS

The recovery plan was written for both the eastern and western DPS, and in 2013 the eastern DPS was delisted. Therefore, several of the recovery actions which are complete address only the eastern DPS. It is confusing to have the DPS's combined in one recovery plan, and it remains that way now.

Research & monitoring plans are in place for all projects that have a high probability of negatively impacting SSLs.

A mechanism (e.g., fishery management) is and will remain in place that ensures incidental take is less than 10% of PBR (as defined under the MMPA).

Recreation fisheries, tourism, and other types of disturbance are controlled sufficiently to minimize negative impacts on recovered populations.

An agreement is established with the State of Alaska, which describes their fishery management plan, minimizes the take of Steller Sea Lions, and describes how future actions taken by the State will comport with the MMPA. Yet this doesn't not constitute a Habitat Conservation Plan, and therefore the state is limited in what funding they can obtain from the federal government without the HCP in place.

Four actions are especially important to recovery:

1. Continue population monitoring and research on key threats to reduce and minimize uncertainty
2. Maintain current (or equivalent) fishery conservation measures [Action 2.6.6]
3. Design and implement an adaptive management program to evaluate fishery conservation measures [Action 2.6.8]
4. Develop a Recovery Implementation Plan

Factors contributing to the successful implementation recovery actions discussed in the interview:

- Historically, SSL has had good funding for research (and therefore good capacity and capability), but the future of funding is uncertain. There has been good rapport between the agency and non-agency researchers, including government/private and federal/state relationships, and also between regions (AK/WA/OR). Partnerships can be strong on one action but not on another. For example, ADF&G is strong on research, but not on

developing a Habitat Conservation Plan. Co-management (with native entities) are strong because NMFS provides the funding, gathers native priorities, and developed work plans/research that both entities agreed upon.

- The biggest factor for completing (or preventing completion of) a research/monitoring recovery action (which are the majority of actions in the SSL plan) was poor weather in the field. The biggest factor for completing (or preventing completion of) a management action was whether or not NMFS could take action directly.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- There is only one NMFS person devoted to the SSL recovery plan, but a whole program is needed because there is so much interaction and so many recovery actions. This challenge is not just about funding, but also about staffing and predictably knowing what resources are available in the long-term.
- Recovery on a landscape scale with GIS support would be helpful, but there is no GIS support for this within NMFS. A visual tool would allow for better planning, viewing trends, status review, integration of actions & research, and could track cumulative impacts geographically.
- A Recovery Implementation Plan has not been developed for western SSL. A Recovery Implementation Plan would produce a flowchart, greater prioritization, and a more focused, stepped-down plan for recovery actions. This would require NMFS staff time, but the staff is instead working on BiOps and other requests.

Steller Sea Lion	
Total recovery actions	82
Actions that are ongoing and current	70
Actions not started	10
Complete actions	2

White Abalone

Factors contributing to the successful implementation recovery actions discussed in the interview:

- Most of the habitat concerns within U.S. jurisdiction have been addressed by several Marine Protected Areas.
- The focus has now shifted on to captive propagation of this species for future out-planting. These projects are succeeding with three to four thousand animals in the growth process.
- The wild population estimates have increased slightly and the projection of extinction in 2010 was incorrect, thereby affording more time.
- Recovery actions are being addressed as funds and staff allow.
- Recovery actions for other species of abalone are providing additional relevant information for the species and its recovery efforts.

Factors representing a challenge to the successful implementation of recovery actions discussed in the interview:

- Data sharing with public and private entities that view work products as intellectual

property. Delays in providing this information slow the process.

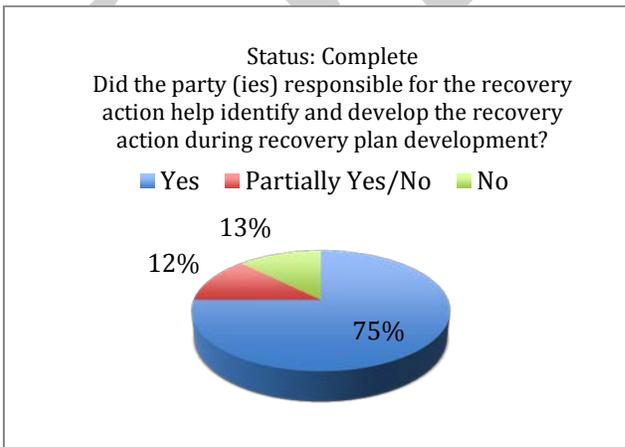
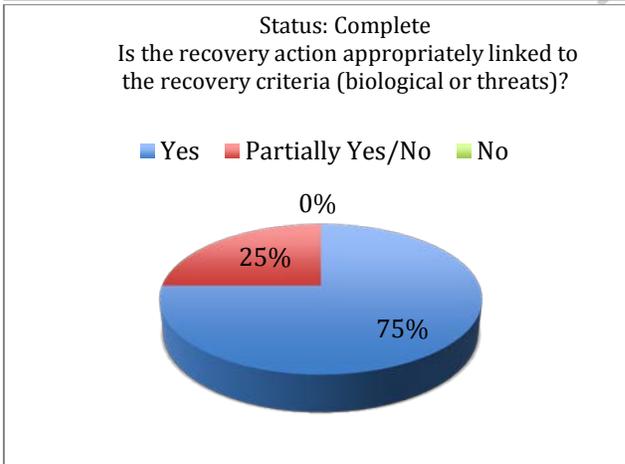
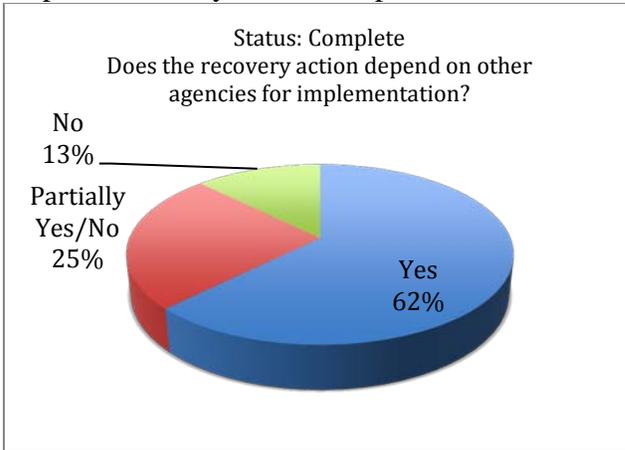
- Some recovery actions depend on cooperation among government entities and foreign governments. Disagreements among those entities delay implementation of the actions.
- Funding is always an issue of priority.
- Scientific support for special genetic and modeling actions is intermittent.
- The captive propagation project is planned to out-plant animals after they are five years old to help ensure greater survivability.
- The capacity needed to grow the animals until they reach that age is an impending problem.

White Abalone	
Total recovery actions	47
Actions that are ongoing and current	38
Actions not started	7
Complete actions	2

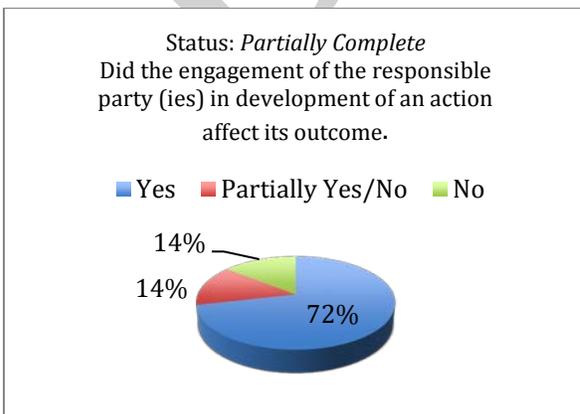
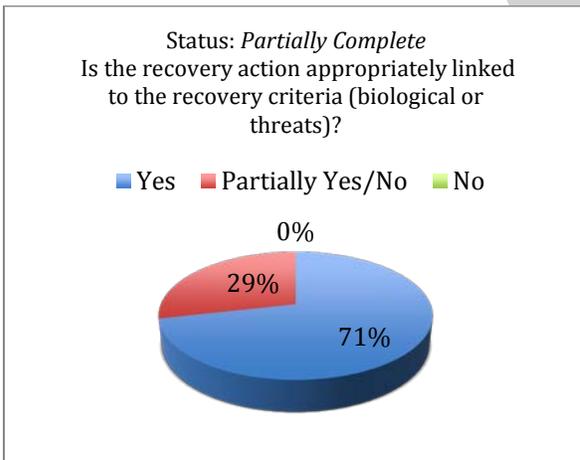
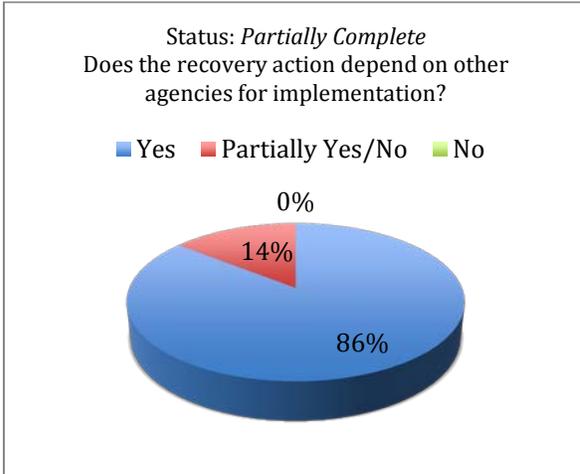
Excel Spreadsheet Analysis

In addition to the qualitative notes, each interviewer scored the answers to the eight interview questions as either “yes, partially yes/no, no, or NA.” This scoring was sorted by the status of the recovery action (complete, partially complete, ongoing current, ongoing not current, not started). The following charts show cumulative scoring by status of the recovery action across all seven interviews.

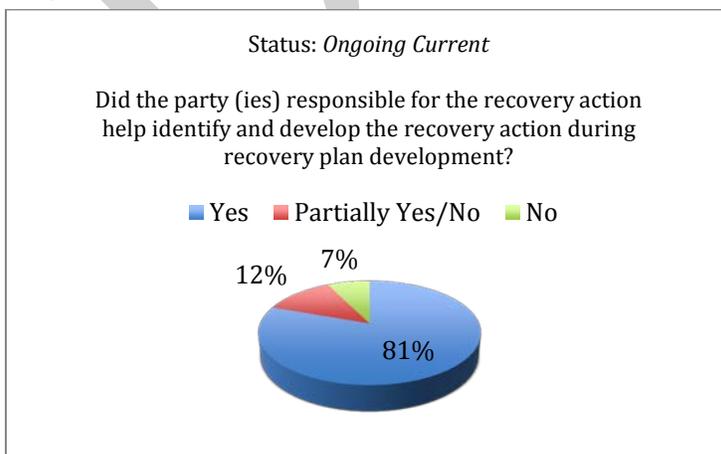
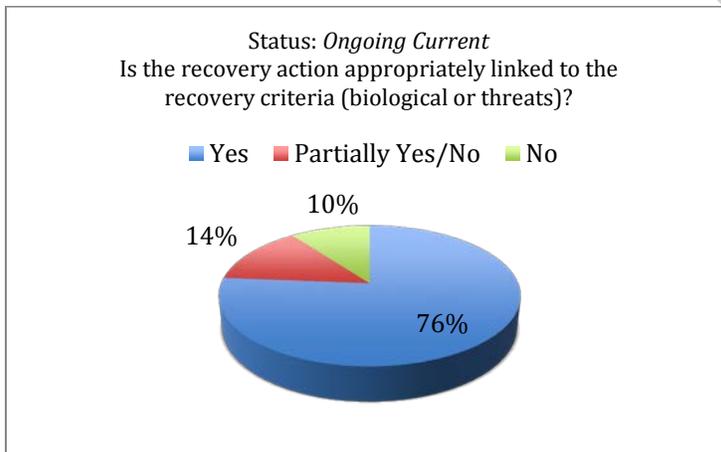
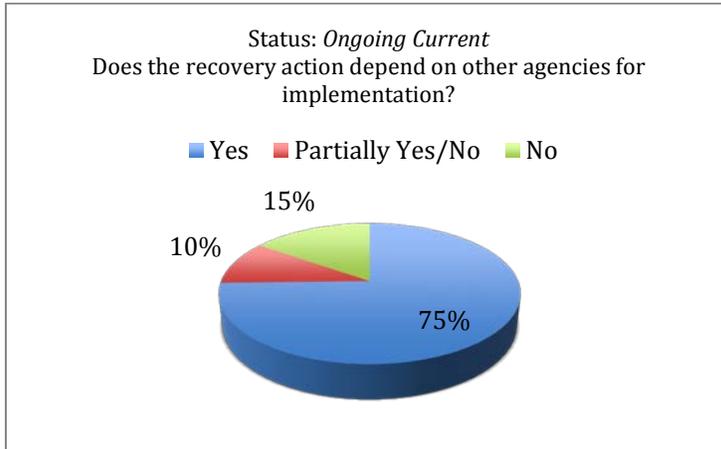
Status Complete: Of the completed recovery actions discussed during interviews, 87% were either partially or fully dependent on other agencies for implementation. 100% were appropriately linked or partially linked to recovery criteria. 87% of the parties responsible for the recovery action helped to identify and develop the recovery action or partially helped to identify and develop those actions.



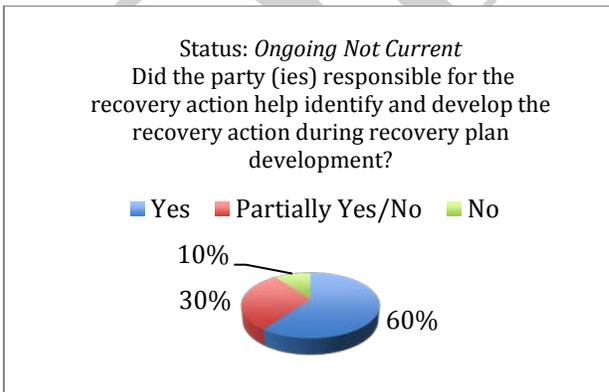
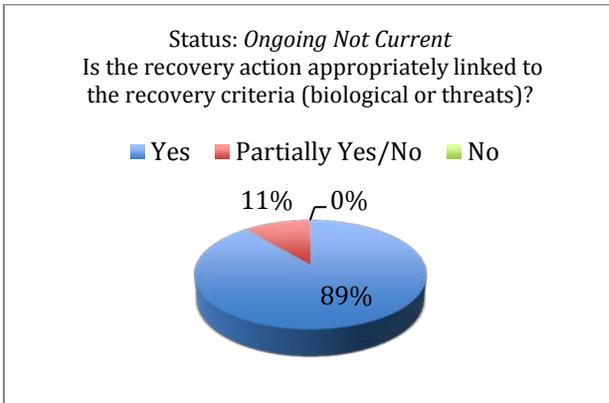
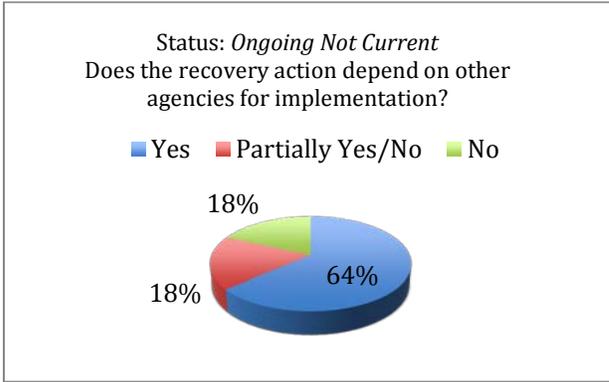
Status Partially Complete: All of the “partially complete” recovery actions discussed in the interviews depended, at least partially, on other agencies for implementation. Similarly, all of the “partially complete” actions were either partially or completely linked to the recovery criteria. The engagement of the responsible parties in the development of an action affected the outcome of the action in all but 14% of the “partially complete” actions discussed in the interviews.



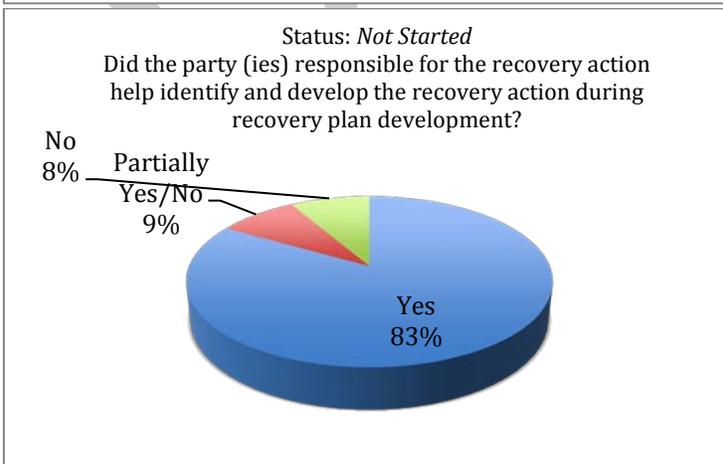
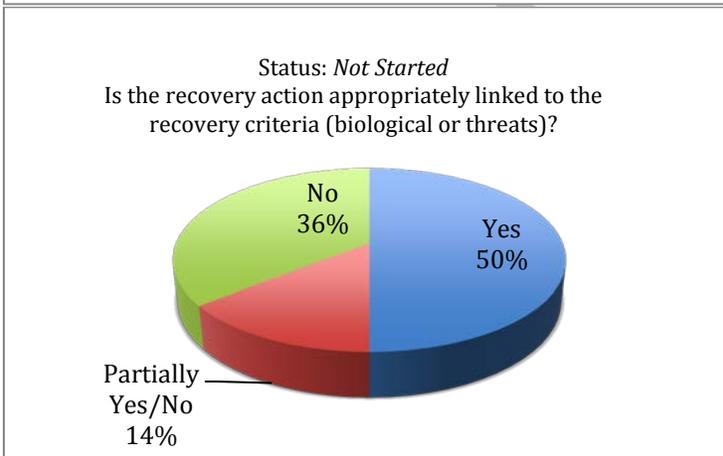
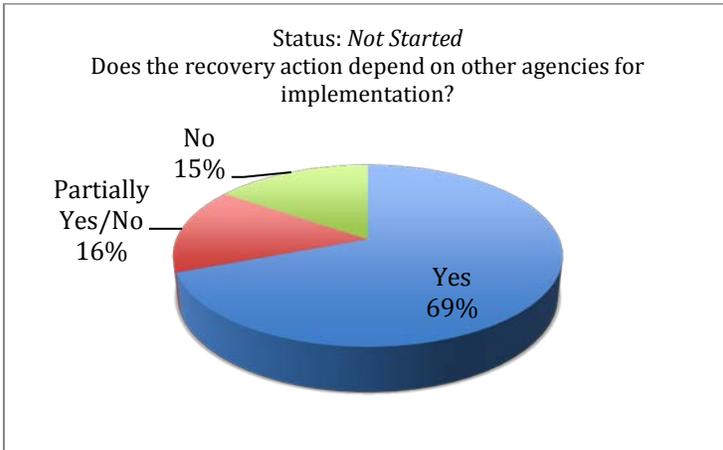
Status: Ongoing Current: Of the “ongoing current” recovery actions discussed in the interviews 85% depended either completely or partially on other agencies for implementation, 90% were either partially linked or linked to the recovery criteria, and 93% of the parties responsible for implementation were either partially involved or involved in the development of the recovery action.



Status Ongoing Not Current: 82% of the “ongoing not current” recovery actions discussed in interviews were either partially or completely dependent on other agencies for implementation. All of the recovery actions (100%) in this category were either completely or partially linked appropriately to the recovery criteria. The parties responsible for the action helped to identify or partially helped to identify the action in 90% of “ongoing not current” actions discussed.



Status Not Started: Recovery Actions discussed in the interviews that were “not started” were similar to other recovery actions in that 85% depended, at least partially, on other agencies for implementation and 92% had involvement by the responsible party been, at least partially, in the development of the recovery action. Where “not started” recovery actions differ from the other actions discussed in the interviews is a lower level of appropriate linkage to the recovery criteria (64%). 36% of “not started” recovery actions were not appropriately linked to the recovery criteria.



Conclusions, Next Steps: For subcommittee discussion
Appendices: Terms of Reference, attached

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Marine Fisheries Advisory Committee (MAFAC)
Endangered Species Act Recovery Project of the Protected Resources
Subcommittee

Terms of Reference
October 2014

Purpose

Conduct a retrospective analysis of a subset of NOAA Fisheries Endangered Species Act recovery actions by status category ('not started,' 'ongoing,' 'complete') to identify characteristics that may increase the likelihood of recovery action success and help inform development of future recovery actions. In a subset of recovery plans, review the 'not started' recovery actions, with an emphasis on recovery actions related to fisheries impacts and suggest potential partners, strategies, revisions and clarifications to help implement these recovery actions.

Background/Scope

Recovery and conservation of protected resources is important to foster healthy and sustainable marine resources, habitats, and ecosystems and is a NOAA Fisheries' primary mandate under the ESA. Yet many times, recovery efforts fall short of their goals and are incomplete. This can be the result of recovery actions that are not well focused or not feasible. This can also be due to a lack of partnering with key stakeholders, tribal nations, and agencies that can influence recovery actions. The Department of Commerce Strategic Plan recognized this second shortcoming and called for NOAA Fisheries to increase collaboration in recovery efforts. Without completing the necessary recovery actions, criteria for recovery are often not met and consideration to down or de-list is delayed. MAFAC holds a unique position with its broad membership across states, industry, academia, nongovernmental organizations, and tribal nations.

Objective

To help NOAA Fisheries meet its ESA recovery goals, the Marine Fisheries Advisory Committee (MAFAC) will:

2. Charge its Protected Resources Subcommittee to conduct a retrospective analysis of a subset of recovery actions by status category ('not started,' 'ongoing,' 'complete') to identify characteristics that may increase the likelihood of success and help inform development of future recovery actions.
 - The initial analysis will examine the recovery actions in at least 6 recovery plans that represent the range of NMFS recovery plans. The analysis will characterize the recovery actions in each category, looking for commonalities that could inform future recovery actions.
 - The outcome of the analysis will be to provide guidance to recovery teams to define the characteristics of successful recovery actions.

- The subcommittee will work closely with Protected Resources staff in the regions.
3. In a subset of recovery plans, the MAFAC Protected Resources Subcommittee will review the ‘not started’ recovery actions, with an emphasis on recovery actions related to fisheries impacts. The Subcommittee will suggest potential partners and strategies, and/ or provide revisions and clarifications to help implement these recovery actions.
- NMFS Protected Resources will poll staff with expertise in species recovery to see if these recovery actions match their needs or whether there are other recovery actions that would benefit from the Subcommittee’s expertise.
 - Based on consensus of which recovery actions the Subcommittee would assist with, the Subcommittee would work directly with the recovery coordinator and or/team(s).

Terms and Composition

Objective 1 will be conducted by the MAFAC Protected Resources Subcommittee with support from NOAA Fisheries protected resources staff from headquarters and regions. For Objective 2 (building partnerships and facilitating implementation of recovery actions), the MAFAC Protected Resources Subcommittee will work with NMFS protected resources recovery coordinators and recovery teams, as appropriate based upon the final list of recovery actions agreed to by the MAFAC Protected Resources Subcommittee and NOAA Fisheries. From the NOAA Fisheries side, work will be coordinated through Therese Conant from the Office of Protected Resources and Heidi Lovett from the Office of Policy.

Organization and Reporting

The MAFAC Protected Resources Subcommittee will meet during regular in-person meetings of MAFAC. Between meetings, work will be conducted by telephone or using other meeting technology. The Subcommittee may meet in person at other times, at the discretion of NOAA Fisheries.

The Protected Resources Subcommittee will report on its activities, findings, recommendations, reports, and other deliverables at regular meetings of MAFAC and to NOAA Fisheries Leadership. Individual members of the Subcommittee may provide feedback on specific topics that do not require consensus input, at the request of NOAA Fisheries outside of the MAFAC approval process.

Funding

Funding for travel and other expenses will be the joint responsibility of the Office of Policy and Office of Protected Resources.

Duration

The ESA Recovery Project will be the focused project work of the Protected Resources Subcommittee for one year with a possibility of extending that term if deemed necessary by NOAA Fisheries and MAFAC.

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