



NOAA FISHERIES

Office of Protected Resources

Endangered Species Act National Recovery Program Review Response & Timeline

Background

On April 19-22, 2016, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) convened an independent review panel to review the agency's implementation of its National Recovery Program under the U.S. Endangered Species Act (ESA) Section 4(f)—Recovery Plans. The objective of the program review was to evaluate whether the current NOAA Fisheries Recovery Program results in progress towards recovery, and, identify improvements to the recovery program that would increase the likelihood of recovering species. The review evaluated the efficacy of the recovery planning process, including the quality of the recovery plans, the implementation of recovery actions, and the monitoring of recovery progress.

This document identifies the key findings and recommendations of the panelists, our response to those recommendations and a timeline for implementing recommendations with which we concur. For further details, see the final synthesis report prepared by Consensus Building Institute on the program review process, synthesis of overarching themes across individual panelist's reports; key findings and recommendations by review questions; and individual panelist reports.

Key Finding

The recovery program review panelists found, overall, that NOAA Fisheries staff and leadership are assets to the recovery program because of their skills and expertise, commitment to the recovery program, and ability to manage a non-regulatory program that requires broad collaboration to be effective. The panelists also concluded that NOAA Fisheries recovery program, in general, is effective at focusing resources on those species at greatest risk of extinction. Several panelists cited the significant accomplishment associated with stabilizing or reversing declines in many species. However, panelists offered recommendations to build upon successes and improve the recovery program.

Key Findings & Recommendations by Thematic Area

Prioritization

The program is effective in focusing resources and recovery planning on those species at greatest risk of extinction. The joint NOAA Fisheries/U.S. Fish and Wildlife Service (FWS) 2004 Interim Endangered and Threatened Species Recovery Planning Guidance (Interim Guidance) is helpful in driving prioritization. A notable gap cited by many panelists is the lack of clear criteria to guide whether or when NOAA Fisheries should prioritize species found partially or completely outside U.S. waters (including species whose ranges historically included U.S. waters).

Recommendations:

- Strengthen the criteria and decision matrix in the Endangered and Threatened Species: Listing and Recovery Priority Guidelines (55 FR 24296 June 15, 1990) to more

effectively prioritize which species should have recovery plans. The criteria should consider:

- the degree to which transboundary and foreign species would benefit from a recovery plan;
- which type of plan would be appropriate (e.g., single versus multiple-species plans or ecosystem plans, multi-national species plans, etc.);
- which type of existing instruments (e.g., Marine Mammal Protection Act conservation plans, state wildlife action plans) should be incorporated into recovery planning; and
- which recovery actions are a priority given the threats they may abate. Provide opportunities for public comment and/or external review of agency decisions about which species should have recovery plans.

Timeliness

The panelists were unanimous that the recovery planning process takes too long. Panelists cited a number of undesirable consequences as a result of the long timelines for recovery plan creation, including the science becoming outdated, delayed implementation of recovery actions, lack of staff consistency over time, process fatigue, and outdated recovery planning documents.

Recommendations:

- Strive to meet or complete in less than the 2.5 – year time frame identified in the Interim Guidance and the 1994 Interagency Cooperative Policy on Recovery Plan Participation.
- Use recovery outlines in advance of drafting and finalizing recovery plans to ensure recovery starts early.
- Consider using existing conservation plans and analyses conducted for the listing document in recovery planning to streamline the process and avoid unnecessary redundancy of effort.
- Use online sources of existing population data and other information to streamline the time needed to prepare the species status assessment section of recovery plans.
- Consider adopting the FWS' Recovery Enhancement Vision or other flexible processes to streamline the recovery planning process, and update or revise existing recovery plans.
- Evaluate recovery teams across the various recovery planning efforts to determine those cross-cutting factors that facilitate an effective recovery planning and implementation process. Factors to consider in whether a recovery team will be effective at recovery planning and implementation include its size, composition, structure, and roles and responsibilities.

Consistency

Assuming the case studies were representative of the broader NOAA Fisheries recovery program, several panelists noted where consistency across planning efforts may improve efficiency and effectiveness.

Recommendations:

- Revise the Interim Guidance to ensure it represents current knowledge and best practices in all recovery planning efforts.
- Include objective, measurable criteria that are clearly mapped to both threats and recovery actions in all plans.
- Develop a more formal recovery plan template to provide structure and consistency to the plans themselves, and to ensure that the plans contain all required elements.

- Require threats analysis be more systematic, transparent, and logical, and better aligned with the reduction of threats with recovery objectives, criteria, and actions.
- Consider climate change impacts in a structured manner as an explicit threat to species recovery.
- Develop or revise the peer review policy to ensure consistent use of external peer review relative to the recovery planning process.

Integration

Several panelists felt that current recovery planning efforts fail to take full advantage of the potential synergy between recovery plans and other NOAA Fisheries programs, especially those associated with the ESA and, in particular, section 7 interagency consultations and section 10 permits.

Recommendations:

- Provide training on the application and/or integration of recovery plans into other NOAA Fisheries programs and ESA sections, especially section 7 consultations and section 10 permits.
- Increase coordination with other NOAA Line Offices to integrate their technologies and programs in recovery efforts.

Monitoring and Evaluation

Panelists noted that monitoring efforts should be enhanced, including an explicit analysis of the effect of management/mitigation actions on the focal species. The results of these monitoring efforts should be used as an adaptive management approach to guide ongoing recovery planning and management decisions.

Recommendations:

- Seek opportunities to more fully incorporate adaptive management into the Recovery Program, including plan criteria and management actions.
- Improve monitoring progress of recovery actions and more rigorously document the progress of recovery plans, which may include interim benchmarks or milestones to better track progress and inform stakeholders.
- Increase the use of data gathered under other ESA programs, such as section 7 consultations and section 10 in recovery planning and implementations.

Partnerships

Panelists felt that partnerships are essential to effective species' recovery, and every panel report underscored the imperative for NOAA Fisheries to redouble its efforts to strengthen its work with partners if recovery actions are to be successfully understood, implemented, and monitored. Panelists called out a range of critical partners including federal, state, tribes, academics, researchers, non-governmental organizations, and other stakeholders. Even when cross-jurisdictional management philosophies may make partnering difficult, the program needs to "continue seeking some common ground" to propel progress. Recovery planning and implementation for trans-boundary species is particularly problematic given the lack of authority

to address threats outside U.S. waters. While often challenging, more effective partnerships are needed to foster implementation of recovery actions outside U.S. waters.

Recommendations:

- Adopt existing conservation instruments for species that don't have ESA recovery plans. For example, adopt Marine Mammal Protection Act conservation plans, state conservation plans, and foreign recovery plans (if they meet or can be amended to meet the ESA legal requirements).
- Ensure major stakeholders are included, or have input in, the development of recovery plans.

Training and Tools

Many of the panelists emphasized the importance of enhancing the capacity and facility of NOAA Fisheries staff and the recovery teams in skills such as project management, facilitation, group leadership, and diplomacy.

Recommendations:

- Create and deploy a team consisting of ESA recovery plan specialists from the Regions and Headquarters to assist recovery planning teams in the development of recovery plans. The team of ESA recovery planning experts will share best practices and facilitate an efficient and effective recovery planning processes.
- Use outside facilitators for particularly contentious recovery planning efforts.
- Train NOAA Fisheries recovery coordinators in project management, conflict resolution, and other leadership skills.

Response

NOAA Fisheries is grateful to the recovery program review panelists. We acknowledge the panelists' task was considerable—reviewing a complex program on a national scale within a short time frame. Yet their individual reports reflect a thoughtful and thorough consideration of all aspects to the recovery program. We agree with many of the recommendations provided in their individual reports. To address many of the key recommendations, we will undertake the following as priority actions. For a complete list of actions, including priority actions see Table 2:

- Revise the 1990 Endangered and Threatened Species: Listing and Recovery Priority Guidelines. This work is underway. A working group was established in June 2016
- Revise how we report recovery results under the Government Performance Results Act (GPRA) and how we measure recovery progress. This work is underway. A working group was established in June 2016.
- Revise the 2004 Interim Recovery Guidance. Revising the 2004 Interim Recovery Guidance will address many of the individual panelist's recommendations. Discussions with FWS are ongoing. The Services intend to start the effort to revise the guidance in the fourth quarter of 2016.
- Develop training curriculum tailored to NOAA Fisheries staff. This work will be done following revisions to the recovery planning and implementation guidance.

Next Steps and Timeline

Table 1. Priority action items and timelines arising from the 2016 National Recovery Program Review.

ACTION ITEM	TIMELINE
Revise the 1990 Guidelines to Prioritize Recovery Plan and Implementation: A working group consisting of Headquarters, Region, and Center staff was established in June 2016 to revise the guidelines.	December 2016
Issue agency guidance on determining which species would not benefit from a recovery plan.	December 2016
Revise the 2004 Interim Guidance in coordination with FWS. NOAA Fisheries will implement many of the panelists' recommendations through the revision to the Interim Guidance. Those recommendations include, among other things, alternatives to the traditional approach to using recovery teams, alternatives to the traditional approach of recovery planning, threats assessment analyses, specifically link recovery actions to criteria, objectives and de-listing factors, guidance for transboundary and international species, integrating recovery and regulatory (section 7 and 10 programs) implementation, and addressing climate change impacts. (See Table 2. for a full list).	September 2016-2017
Develop new ways to measure progress towards recovery, including interim benchmarks. A working group consisting of Headquarters, Region, and Center staff was established in June 2016 and is tasked with defining terms for population status for the Government Performance Results Act as well as developing a way to measure recovery progress	2017
Seek staff and funding support for a team of in-house recovery planning & implementation experts to assist recovery coordinators in managing the recovery process, especially related to recovery teams and building and maintaining partnerships. Expand training modules on project management and partnership building for the recovery planning class offered by the Services at the National Conservation Training Center	2017
Building on the revised 2004 Interim Guidance, adopt streamlined recovery planning and implementation processes. For example, consider web-based technologies for 'living' dynamic recovery plans that would be drafted, edited, and published online, taking advantage of the many benefits of transitioning from paper documents to	2017-2018

interactive online content.	
Develop training curriculum tailored to NOAA Fisheries staff. This work will be based on revisions to the Interim Guidance.	2017-2018
Integrate recovery with other NOAA Programs and ESA sections. Efforts are underway—OPR established a section 7(a)(1) working group; Species in the Spotlight outreach to NOAA programs and external partners is ongoing; NOAA Fisheries West Coast Region adopted Guidance for Integrating Recovery and Regulatory Work in February 2016 and efforts to assess, share, and expand implementation of the guidance are ongoing.	Ongoing
Maximize the integration with the ESA Section 6 Species Recovery Grants by increasing collaborations between section 6 coordinators and recovery coordinators. Work together with states to identify targeted sets of annual funding priorities.	Ongoing
Partner with academics, scientific societies, and other species experts to assist in the research and analysis necessary to produce effective recovery plans. Work continues to build partnerships with States, Tribal governments, private conservation organizations, academia (e.g., Species in the Spotlight, 2016 Interagency Cooperative Policy).	Ongoing

Table 2. Recommendations from individual panelist reports and NOAA Fisheries Response. Recommendations based on similar concepts across reports were combined and the exact language of the recommendation may differ from the individual reports. Original text can be found at the page number under each report in the third column. Recommendations considered a priority are identified as ‘HIGH’ in the No. column and are in **bold text**.

No.	RECOMMENDATION	REVIEWER REPORT # (PAGE #)	RESPONSE
<i>Prioritization</i>			
1	Create a decision matrix to prioritize which species should have recovery plans, and if so, which type of plan might they benefit from (e.g. multiple species plan or ecosystem, or potentially multi-national species plans if a significant portion of their range occurs outside the US). Criteria should consider historical range as well as current range.	1(1); 3(2); 4(1&4); 5(2&5); 6(2)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop internal guidance
2	Set a range or population threshold for exclusion (or	1(1); 2(2)	NOAA Fisheries agrees that more refined criteria would assist in determining which species would

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	conversely for mandating a multi-national plan) for species that have a very small percentage of their range in US waters (and there are no significant breeding sites within their small range in the US), and where the majority of known threats are operating outside of US jurisdiction.		benefit from a recovery plan, but whether that is a threshold population percentage of range or degree of threat under U.S. jurisdiction or some combination will need to be evaluated. NOAA Fisheries will address through revision to Interim Guidance
3	Consider whether and how international partnerships, multi-lateral environmental agreements, and partnerships with non-profit organizations and academics might be leveraged to assist with the recovery of those species for which no recovery plan will be completed.	6(2)	NOAA Fisheries agrees and will address through revision to Interim Guidance
4	For entirely domestic species currently without a recovery plan, prioritize recovery plan development and/or partnering with other existing conservation instruments (MMPA, State Conservation Plans, etc.) to potentially streamline the recovery planning process. In other words, already established state or other conservation plans may be able to serve as the background to develop an ESA recovery plan.	1(1-2); 2(2&3); 6(4)	NOAA Fisheries agrees and will address through revision of 1990 Recovery Priority Guidelines
5	Develop guidelines for joint jurisdiction species that occur at the interface of freshwater, terrestrial and marine systems (such as mangroves, eels, salt marshes, etc.). Consider guidelines for species that are harvested commercially or for subsistence as there may be conflicting management actions and recovery criteria.	1(2)	NOAA Fisheries agrees and will address through revision to Interim Guidance
6	Prioritize actions within current 1,2,3 categories based on relative impact of threats and/or benefit of the action.	2(5); 5(6)	NOAA Fisheries agrees and will address through revision of 1990 Recovery Priority Guidelines
7	Consider allowing public comment on recovery planning decisions—could be informal process to provide transparency	6(2)	NOAA Fisheries disagrees as this would add time to the process possibly without the predicted benefit. However, we will assess its feasibility with General Counsel.

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	and allow for consideration of information about which the agency might otherwise be unaware.		
<i>Timeliness</i>			
8	Ensure completion of recovery plans within the 2.5-year time frame	5(3); 6(2&5)	NOAA Fisheries agrees that we should ensure timely recovery plans. However, we will reassess the time frame in the revised Interim Guidance and implement ongoing capacity building/best practices to expedite the recovery planning process.
9	Revise timelines to a draft recovery plan within 1 year of the outline, a final within 1 year of the draft recovery plan, and a mandatory revision within 2 years of the final to catch things overlooked in the speedy development of the plan as well as other changes. Then move to a more standard revision cycle of every 10 to 15 years, although more frequent revisions should be possible if needed to account for unexpected changes.	3(3); 4(4)	NOAA Fisheries agrees that we should ensure timely recovery plans. We will reassess the time frame in the revised Interim Guidance and implement ongoing capacity building/best practices to expedite the recovery planning process. However, this recommended timeline may not be possible given existing resources. This recommended timeline may also not be necessary (e.g., mandatory revision within 2 years) for some plans.
10	Conduct scoping workshop with targeted stakeholders and define a shared vision early in the process.	1(3); 6(4)	NOAA Fisheries agrees that a shared recovery vision is important, but believe that scoping should be case specific. We will address through revision to Interim Guidance; develop training material
11	Require recovery outlines for domestic and trans-boundary species without recovery plans immediately (e.g., within 60 days) upon listing and used for the duration until a draft plan is available.	2(2); 3(2&3); 6(4&8)	NOAA Fisheries agrees and will address through revision to Interim Guidance
12	Develop recovery outlines even if a recovery plan is not anticipated to document the agency's intention and provide at least a minimal level of guidance for agency management staff, partners, and stakeholders.	3(2)	NOAA Fisheries agrees and will address through revision to Interim Guidance
13	Form a small scientific panel to develop a rough draft of the recovery plan, to be presented to stakeholders in order to maintain engagement and receive feedback.	1(3&6)	NOAA Fisheries agrees that a scientific panel may enhance recovery planning, but its use should be case specific. We will address through revision to Interim Guidance; develop training material
14	Start planning immediately upon listing so as to utilize the scientific analysis from the	2(3); 5(3)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop training material

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	listing document and not have to do a separate or subsequent analysis.		
15	Use the best data available to implement recovery actions rather than delaying plan implementation to conduct more research (or producing a plan that relies heavily on research rather than action).	6(4&7)	NOAA Fisheries agrees, but recognizes there may be cases where additional research is essential to ensuring recovery. We will address through revision to Interim Guidance; develop training material
16 HIGH	Consider alternatives to the traditional approach to using recovery teams. For example, use small teams for specific purposes and timeframe; consider expert elicitation rather than teams, provide more emphasis on goals, roles, and responsibilities; don't shift recovery staff in mid-process.	2(3)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop training material
17	Consider sequestration of the recovery plan team for a few days to focus solely on discussion and writing to help maintain focus and efficiency in producing a comprehensive draft.	1(3&6); 5(3)	NOAA Fisheries agrees that sequestration of a team may be helpful in some cases and will address through revision to Interim Guidance; develop training material
18 HIGH	Consider alternatives to the traditional approach of recovery planning such as FWS' Recovery Enhancement Vision to enhance efforts	4(4)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop training material. We also adopted this approach for the draft recovery plan for the Atlantic Salmon Gulf of Maine Distinct Population Segment and are considering the approach for several other recovery planning efforts.
19	Carefully consider teams as stable teams can be effective in developing recovery plans and implementation	3(2-3); 5(3&4); 6(5&7)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop training material
20	Develop criteria (quantitative if possible) regarding whether to establish a Recovery Team or have the plan produced by a single individual.	5(2)	NOAA Fisheries disagrees. Criteria would likely not enhance decisions about use of recovery teams. Rather, we will address through revision to Interim Guidance and develop training material.
21	Use more web-based supporting information on both underlying science and implementation activities, thereby allowing flexibility to update these elements while focusing plans themselves on the logic chain for the recovery	2(4 &7); 3(4); 5(3)	NOAA Fisheries agrees and will address through the revision to Interim Guidance; implement through ongoing capacity building/best practices

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	strategy and statutory elements.		
22	Implement a streamlined, expedited process for recovery plan revisions so that plans may be revised more often and/or as needed by changes in species status, what is known about the species and its conservation, and/or partner and stakeholder involvement, etc.	3(4)	NOAA Fisheries agrees and will address through revision to Interim Guidance
<i>Consistency</i>			
23	Develop a more formalized template for recovery plans.	5(3)	NOAA Fisheries agrees and will address through revision to Interim Guidance
24	Develop guidelines on how to identify and define sites for management. Sites for management should try to align with the biology of the species, in addition to political management units. One way to define sites can be to use the location and scope of the threats to delineate the site or sites for management actions.	1(4)	NOAA Fisheries agrees and will address through revision to Interim Guidance; develop training material
25	Develop and implement a regulation requiring the use of the best available science for recovery planning.	6(4)	NOAA Fisheries agrees that we should explore the feasibility of developing regulations for section 4(f) and will coordinate with FWS on this effort.
26	Develop or revise the peer review policy to ensure consistent use of external peer review relative to the recovery planning process.	6(5)	NOAA Fisheries uses external peer review in accordance with existing policy. This recommendation may reflect upon older case studies presented in the program review. We will ensure the revision to the Interim Guidance stresses external peer review.
27 HIGH	The threats assessment analyses (e.g. as recommended in the Recovery Plan Guidelines) should be a required component of the Recovery Plan, and potentially be expanded to show the location or locations of each operating threat. This will allow for better identification of research needs on the impact of threats, on the locations for site-specific management actions, and for aligning the reduction of threats with recovery	1(5); 2(4); 5(3&6); 6(8)	NOAA Fisheries agrees that the recovery plan should rely on a threats assessment analyses and will address through revision to Interim Guidance [note: for an example of a geographic based threats assessment see the Draft Puget Sound/Georgia Basin Rockfish Recovery Plan released in August 2016 http://www.nmfs.noaa.gov/pr/recovery/plans.htm]

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	objectives, criteria and actions.		
28 HIGH	Use an agreed upon systematic taxonomy for threats to allow sorting species by threat, facilitating development of generic threat abatement approaches.	2(4&5)	NOAA Fisheries agrees that we should explore the feasibility of a generic threat abatement approach across taxa. We will address through internal guidance; ongoing capacity building
29 HIGH	Specifically link recovery actions to criteria, objectives and de-listing factors to provide a clearer logic between actions and species recovery.	1(6)	NOAA Fisheries agrees and will address through revision to Interim Guidance
30 HIGH	Ensure recovery criteria are based on the listing factors	3(4)	NOAA Fisheries agrees and will address through recovery plan review process
31 HIGH	Require climate change impacts section to the recovery plans.	1(5); 5(6)	NOAA Fisheries agrees and will address through revision to Interim Guidance building on the June 17, 2016, revised guidance for treatment of climate change in ESA decisions.
32	Build adaptive management approach in recovery criteria and actions	2(5&7)	NOAA Fisheries agrees and will address through revision to Interim Guidance
33	Conduct a workshop in collaboration with NOAA Fisheries Science Centers to investigate the degree to which more precise, and when possible, quantitative interpretations of language in the ESA and Interim Guidance would benefit the recovery program.	5(6)	NOAA Fisheries agrees and will convene workshop in advance of revision to Interim Guidance
34	Ensure recovery plans are based on the species biological needs and threats to the species. Politics and 'real-world feasibility' should not dictate content. If an objective or action is not feasible, they should be included with an explanation of why it is not feasible and the plan should seek alternatives.	6(7)	NOAA Fisheries agrees and will address through revision to Interim Guidance
<i>Integration</i>			
35 HIGH	Increase integration with other ESA sections particularly section 7 and 10	3(6); 4(6&7); 6(9)	NOAA Fisheries agrees that recovery of ESA listed species is dependent on implementation of all sections of the ESA. Thus, it is important that recovery plans include current information based on relevant section 7 consultations and section 10 permits as well as provide information that will assist with implementation of those sections of the ESA. We will address integration with section 7

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			and 10 through the revision to the Interim Guidance; ongoing capacity building; including implementation of the 2/1/2016 West Coast Region Guidance for Integrating Recovery and Regulatory Work; develop training material
36 HIGH	Place high priority on section 7 consultations on actions that exacerbate threats to habitat identified in recovery plans or facilitate implementation of recovery actions to ensure recovery goals are met.	4(7)	NOAA Fisheries agrees this is important and will implement this recommendation by continuing to implement the 2/1/2016 West Coast Region Guidance for Integrating Recovery and Regulatory Work and assessing whether it can be applied more broadly
37 HIGH	Promulgate guidelines specifying what federal agencies need to do to comply with their responsibility to use their authority to carry out programs for the conservation of species (16 U.S.C. § 7(a) (1)), specifying that federal agencies with substantial conflicts with endangered species must develop conservation plans that are consistent with species recovery plans.	4(7)	NOAA Fisheries agrees that we should assess the feasibility of developing guidelines or some other mechanism to highlight the importance of section 7(a)(1). We will address through the revision to the Interim Guidance.
38 HIGH	Develop and implement section 7(a) (1) conservation programs in partnership with Federal agencies.	4(7)	NOAA Fisheries agrees and will address through ongoing capacity building/best practices
39	Increase integration with other NOAA Fisheries programs.	3(6); 4(5); 5(5)	NOAA Fisheries agrees and will address through ongoing capacity building/best practices
40	Encourage and reinforce linkage between management and science sides of NOAA Fisheries—the default source of science required by the recovery program should be the NOAA Fisheries Science Centers.	5(5)	NOAA Fisheries agrees and will address through ongoing capacity building/best practices
41 HIGH	Identify high-value restoration opportunities to provide guidance for advance mitigation or mitigation banks consistent with FWS.	4(6)	NOAA Fisheries agrees and will address through the Mitigation Policy that will be developed in 2017.
42	Further leverage Section 6 to develop cooperative agreements to work together would allow the States to have more influence, ownership and accountability for ESA and would foster collaboration	4(7)	NOAA Fisheries will increase the level of communication and collaboration with our state partners through our Section 6 program to help ensure implementation of recovery actions in our grant program.

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	between recovery, regulatory, and habitat restoration.		
<i>Monitoring and Evaluation</i>			
43 HIGH	Create an internal decision-matrix to document progress of recovery plan and rank “effectiveness” as measured by a number of different factors. Factors could potentially include 1) strength of implementation team and other partners, 2) progress on implementation of actions, 3) progress toward recovery criteria, 4) public awareness of species status, 5) species population trends, 6) change in impact of threats, etc. One way might be to keep a database of Recovery objectives, Criteria and Actions, with the % completed for each metric, in order to provide more detailed progress information.	1(6&7); 2(7); 3(5); 4(7); 5(4); 6(6&9)	NOAA Fisheries agrees that we should improve how we measure recovery progress/effectiveness and will address through GPRA working group; the West Coast Region will continue using the Recovery Action Mapping Tool (RAMT) database for reporting progress on implementing recovery actions. We will evaluate expansion of the RAMT database to include more recovery plans, data fields, metrics, and geospatial layers.
44 HIGH	Tie adaptive management to the results of monitoring.	2(6); 6(9)	NOAA Fisheries agrees and will address through revision to Interim Guidance [note: example of monitoring and adaptive management includes reviewing the effectiveness of vessel regulations in 2016 as part of adaptive management for the Southern Resident killer whale recovery program]
<i>Partnerships</i>			
45	Develop a comprehensive “cheat sheet” or web-based summary of key recovery objectives, criteria, and actions for the general public.	1(4)	NOAA Fisheries agrees and will address through revision to Interim Guidance; ongoing capacity building/best practice
46	Increase use of social media and publicity campaigns to raise awareness and identify potential key partners.	1(6)	NOAA Fisheries agrees and will address through ongoing capacity building/best practice
47 HIGH	Partner with academics, scientific societies, and other species experts for assistance with the research and analysis necessary to produce effective recovery plans. Such partnership accords with agency policy. See Interagency Cooperative Policy (“Outside expertise in	6(4&9)	NOAA Fisheries agrees and will address through ongoing capacity building/best practice

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	the form of recovery teams, other Federal agencies, State agency personnel, Tribal governments, private conservation organizations, and private contractors shall be used, as necessary, to develop and implement recovery plans in a timely manner.”).		
48	State and tribal fish and wildlife agencies need to be considered as co-trustees of the resource being managed where those agencies acknowledge and accept that responsibility. Where differences in management philosophies and understanding of the resource exist, keep lines of communications open and continue seeking some common ground.	3(2 & 5)	NOAA Fisheries agrees and will address through ongoing capacity building/best practices; implementation of the 2016 Revised Interagency Cooperative Policy Regarding the Role of State Agencies in ESA Activities
49	Ensure major stakeholders are included, or have input in, the development of recovery plans.	3(5); 4(5)	NOAA Fisheries agrees and will address through revision to Interim Guidance; Ongoing capacity building/best practices
50	Use implementation teams with key partners and stakeholders.	3(5)	NOAA Fisheries agrees and will address through revision to Interim Guidance; ongoing capacity building/best practices
<i>Training and Tools</i>			
51	Provide training in project management, facilitation, group leadership and diplomacy to assist with the people management aspect of the recovery planning process. Alternately, skilled facilitators and/or social scientists from the region could be hired (budget dependent).	1(3); 2(3); 3(3)	NOAA Fisheries agrees and will develop training material
52	Provide training on application and/or integration of recovery plans into other NOAA programs and ESA sections.	1(6)	NOAA Fisheries agrees and will develop training material
53	Establish a dedicated cadre of recovery plan experts to assist in recovery planning development.	5(3&4)	NOAA Fisheries agrees and will work with Regions to determine feasibility; develop training material
54	Hold annual or bi-annual meeting or workshop for all NOAA coordinators to meet and share progress, successes, failures, etc. so that they can	1(6)	NOAA Fisheries agrees and will strive to hold workshops about every 3 years; continue quarterly national coordinator calls; consider other mechanisms for sharing information

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	learn from each and gain new strategies to overcome challenges.		
55	Identify people from other sections of NOAA and State Agencies that can work together to help support the workload and skill-set of NOAA recovery coordinators, where portions of their job duties might overlap.	1(6)	NOAA Fisheries agrees and will address through ongoing capacity building/best practice
56	Provide more tools: social media, templates, issue specific guidance, access to modelers, GIS, etc. Perhaps a tools website. Lists of experts to turn to.	2(3); 3(5)	NOAA Fisheries agrees and will address through ongoing capacity building/best practice
<i>Other</i>			
57 HIGH	Evaluate and revise the Interim Guidance on a regular basis in partnership with NOAA Fisheries' Science Centers.	5(5)	NOAA Fisheries will strive to update the Interim Guidance on a regular basis in coordination with FWS. We will coordinate with and seek Science Center input, where appropriate.
58	Conduct dedicated meta-analysis project designed to identify a set of general and transferable rules for success/best practices for producing effective plans.	5(5)	NOAA Fisheries agrees and the Marine Fisheries Advisory Council retrospective analysis of recovery actions was a first step towards implementing this recommendation. We will consider other internal or external avenues to conduct focused and useful meta-analysis of recovery plans.