

Report of the National Marine Fisheries Service's

National Seabird Workshop

**Building a National Plan to Improve the State of Knowledge and
Reduce Commercial Fisheries Impacts on Seabirds**

September 9–11, 2009, Alaska Fisheries Science Center, Seattle, WA

Kim S. Rivera, Lisa T. Ballance, Lee Benaka, Eric R. Breuer, Samantha
G. Brooke, Shannon M. Fitzgerald, Philip L. Hoffman, Nicole LeBoeuf,
Gordon T. Waring



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

NOAA Technical Memorandum NMFS-F/SPO-139
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U.S. Department of Commerce
Penny S. Pritzker, Secretary

National Oceanic and Atmospheric Administration
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National Marine Fisheries Service
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Executive Summary

A. Context for Workshop

Seabirds are of interest to and are studied by the National Oceanic and Atmospheric Administration (NOAA). Although the primary trust responsibility for seabird management and conservation rests with the Department of the Interior's U.S. Fish and Wildlife Service (USFWS), NOAA's National Marine Fisheries Service (NMFS) has a responsibility through various statutory authorities and agency actions to monitor, understand, and mitigate the effects of seabird bycatch, as well as to manage the coastal and marine habitats that seabirds depend on for various life stages within the U.S. Exclusive Economic Zone (EEZ).

In 2001 the United States finalized its National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds) resulting in the establishment of NMFS' National Seabird Program (NSP). The primary focus of the NPOA-Seabirds and of the NSP is to mitigate the direct takes of seabirds by fisheries (e.g., incidental catch or bycatch, gear entanglement). The NPOA-Seabirds addresses both domestic and international fishery issues. Thus, NMFS' interests and concerns with seabirds focus on the long-term effects of seabird bycatch in NMFS-managed fisheries and in fisheries conducted in many areas of the world's oceans.

A second priority for the NSP is to understand seabirds exclusive of bycatch issues. Seabirds are valuable and long-recognized ecosystem indicators. Their distribution and abundance can reflect physical and biological oceanography,

abundance and distribution of mid trophic-level organisms, and the effects of climate change on apex predators. Contaminant levels in seabirds can provide insight into the health of a particular ecosystem. And, unlike so many marine organisms, seabirds are relatively easy to sample. Because ecosystem state directly affects the resources for which NMFS has management responsibility, ecosystem integrators and indicators such as seabirds provide great potential to advance the science of ecosystem management for NMFS.

The NSP is led by a National Coordinator and implemented regionally through seabird contacts at each Regional Office, Science Center, and Headquarters office. The program has received a small allotment of funds since FY 2004 and has allocated these funds through modest budgets to NMFS regions and centers and non-governmental organizations (NGOs) to conduct projects consistent with the objectives of the NPOA-Seabirds. New mandates, such as those under the 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), have increased the requirements on the NSP over and above present funding levels, creating a shortfall in funds. Although the NSP is aware of and monitors agency activities related to seabird research and conservation, no formal mechanism is in place to fund priority projects in a cohesive and comprehensive manner. The NSP recognized that the development of a National Seabird Strategic Plan could help identify NMFS priorities and target funding toward key seabird projects, and to generally elevate awareness regarding the value of seabirds and seabird research to agency leadership.

In January 2009, the NSP National Coordinator convened a steering committee for the purpose of planning and hosting a National Seabird Workshop. This workshop was the first comprehensive planning exercise for the NSP. The steering committee was supported by Philip Heller with Learning Design Associates, an organizational consulting firm with experience facilitating strategic planning meetings within NOAA.

B. Workshop Goals and Process

The primary goal of this workshop was to initiate the development of a National Seabird Implementation Plan that can be used to:

- Describe NMFS seabird activities and important partnerships with other management agencies;
- Guide NMFS seabird management and science; and
- Provide seabird-related input to NOAA’s strategic planning and budgeting process.

The workshop took place September 9–11, 2009, at NMFS’ Alaska Fisheries Science Center in Seattle, Washington. Representatives were requested to attend from each of the NMFS regional offices, science centers, and headquarters offices. Experts were invited from NOAA International Affairs, U.S. Fish and Wildlife Service, University of Washington, Washington Sea Grant, and the North Pacific Fishery Management Council. Thirty-eight people attended.

NMFS participants were asked to complete a questionnaire in advance of the workshop in an attempt to understand the current activity, resources (both current and needed), and partnerships associated with seabirds.

Questionnaire responses are summarized in Section II of this report.

The first day of the workshop was a plenary session; workshop themes were introduced with presentations from and Q&A discussions with invited speakers.

Four themes formed the focus for breakout groups on days 2 and 3 of the workshop:

- Pelagic seabird abundance and distribution and overlap with fisheries;
- Anthropogenic impacts (e.g. bycatch/entanglement/habitat alteration) and mitigation;
- Management and coordination within and between agencies and with stakeholders on shared objectives; and
- Ecosystem approach to management—seabirds as indicators of marine health (i.e. sentinel species).

The thematic breakout groups considered what an ideal (i.e., “minimum yet meaningful”) regional strategy might be to address issues associated with their respective topic and then worked to consider a national strategy.

C. Results and Next Steps

Several themes emerged from the workshop, which were considered necessary areas of focus, particularly in the near term (within five years):

Continue working on seabird bycatch issues. Participants agreed on the necessity to conduct regular seabird bycatch assessments of fisheries documented to incidentally take seabirds, develop and/or prescribe measures to reduce this bycatch where it is a conservation problem, and

expand these bycatch assessment and reduction efforts to other fisheries as appropriate. Participants also noted the success of a collaboration with Washington Sea Grant for addressing Alaska fishery seabird bycatch issues and suggested that a similar approach could be successful with other fisheries.

Improving connections, networks, and educational outreach. Workshop participants suggested more symposia at conferences (e.g., Pacific Seabird Group, American Fisheries Society, Society for Conservation Biology, World Seabird Conference, International Council for the Exploration of the Sea (ICES), North Pacific Marine Science Organization (PICES)); more formal ties with the USFWS for sharing responsibilities and interagency coordination (using marine turtles as a model); and more joint efforts, plans, and assessments among NMFS centers and offices and with external agencies (e.g. other NOAA line offices, Department of Defense (DOD), U.S. Geological Survey (USGS)) and among regional inter-stakeholder networks. Development of a communications plan was recognized as critical to educate decision makers, citizens, and NGOs.

Creating a multi-agency/entity inventory of spatial/temporal coverage of existing data and data collection methods. Participants agreed that creation and maintenance of a seabird metadatabase was important. Such a database would include information on geographic region, species, years, and seasons for which seabird data were available and a listing of the general types of data. In addition to providing an inventory of available data, this database would be valuable in identifying data gaps. Creation of this inventory would be consistent with efforts needed to carry out NOAA's Coastal

and Marine Spatial Planning (CMSP) process.

Using seabirds as indicators to improve ecosystem-based approaches to management. Seabirds are well-known indicators of ecosystem state. Seabird data can, therefore, potentially be used to improve ecosystem-based management, for example, by facilitating predictive effects of climate change on directly managed species or contributing to coastal and marine spatial planning. Participants suggested integrated national and international partnerships to advance modeling work (ecosystem, climate change, fish stock assessment, and coastal and marine habitat models) and to further bycatch reduction efforts. Results of these various efforts could be used in predictive climate and ecological models, stock assessments, off-site mitigation efforts, and global marine assessments. Annual national and regional data and progress reports should be available. Participants envisioned incorporation of seabirds into NMFS' annual national and regional strategic plans.

Formalizing the seabird program and adding necessary infrastructure. Participants expressed a strong desire to find an organizational "home" for the program and to give it dedicated regional and national staff with clear position descriptions and performance measures. Participants suggested that roles be clearly defined for the NSP's Points of Contact and they expressed needs for more fisheries observers and staff specialists (e.g., staff seabird ecologists, data base managers).

Augmenting policy approaches. Participants noted that there are several existing statutory, regulatory, and other policy tools that the agency can use to conserve seabirds. They also noted that these tools, in some cases, could be more fully utilized. For

example, section 316 of the Magnuson-Stevens Act calls for a bycatch reduction engineering program that is regionally based. This section of the law is being implemented, but increased activities in this area were encouraged. There are also ongoing efforts to implement Executive Order 13186, including the finalization of a memorandum of understanding with the U.S. Fish and Wildlife Service to enhance cooperation between the two agencies for the conservation of migratory birds. In other cases, additional tools (e.g., new laws or changes to existing laws), are needed. For example, participants noted that more work was needed to continue to support the Agency's position that seabirds be included in the definitions of "bycatch" and of "protected living marine resources" in the Magnuson-Stevens Act. Amending each of these definitions accordingly could potentially strengthen the agency's ability to reduce seabird bycatch both domestically and internationally. Regarding efforts to join the Agreement on the Conservation of Albatrosses and Petrels, participants supported the work with Congress in the adoption of implementing legislation and supported these efforts wholeheartedly.

Many participants wanted to extend what was to be accomplished in the near term (i.e., meeting 100% of legislative, regulatory and policy requirements) to a longer time frame.

Participants suggested three major next steps to begin implementation of these priorities:

1. Create a NOAA report of this workshop as early as possible;
2. Create a National Seabird Strategic Plan; and

3. Create alternatives for the fiscal year cycle of NOAA's strategic planning and budgeting process.

D. After the Workshop

Following the workshop, the NSP and its seabird steering committee reviewed the workshop recommendations and findings and developed the following mission statement and goals for the Program:

National Seabird Program Mission:

- Maintain seabirds as integral components of healthy and resilient ocean ecosystems by conducting research on and mitigating threats to seabirds in the ocean and near-shore environment, and by raising awareness of NMFS seabird-related activities and responsibilities.

National Seabird Program Goals:

- Quantify, reduce, and mitigate impacts on seabirds due to fisheries.
- Incorporate seabird ecology into NMFS Ecosystem Approach to Management by using seabirds as indicators of ecosystem state, and understanding variation in seabird distribution, abundance, and other biological parameters over space and through time.
- Raise awareness of NMFS' seabird research, management, and responsibilities with our partners, constituents, and the general public.
- Develop, implement, and maintain a National Seabird Program strategic plan.

- Support NMFS regional seabird activities through obtaining funding and other resources.
- Facilitate communication among NMFS regional seabird programs to identify issues of common interest and opportunities for collaboration.

Home for the National Seabird Program

Also in response to the workshop recommendations, the National Seabird Program was transferred within NMFS headquarters from the Office of Protected Resources to the Office of Science and Technology (ST). Given that many of the NSP activities in the field occur at Science Centers and address scientific topics under the purview of ST (e.g. observer programs, ecosystem-based science, stock assessment and research surveys), ST is an obvious home for the NSP.

I. Introduction

A. Background

Seabirds are well-known indicators of marine and coastal ecosystem state and as such, are an element of interest and study by scientists and managers within the National Oceanic and Atmospheric Administration (NOAA). NOAA's National Marine Fisheries Service (NMFS) continues to be concerned about the long-term ecosystem effects of seabird bycatch in NMFS-managed fisheries and in fisheries conducted in many areas of the world's oceans, as well as managing coastal and marine habitats that seabirds depend on for various life stages within the U.S. EEZ. Additionally, seabird abundance and distribution can inform scientists about qualitative and quantitative marine trophic relationships, climate change, and coastal and marine contaminants.

Whereas the primary trust responsibilities for seabirds rest with the U.S. Department of the Interior and its U.S. Fish and Wildlife Service (USFWS), NMFS plays a significant role and has responsibilities for managing coastal and marine habitats through various statutory authorities and agency policies (See Appendix A for list of the authorities and policies). Both domestic and international seabird-fishery interaction issues continue to be addressed by NMFS.

Several of NOAA's Fisheries science centers and regional offices have been working on a broad suite of seabird issues since the early 1980's. This work involves seabird bycatch monitoring and reporting, coordination with other federal agencies (USFWS and U.S. Geological Survey), addressing Endangered Species Act issues, and collaborative work (with industry and

academia) to develop seabird bycatch reduction approaches. Some work also explored or described the role of seabirds in marine ecosystems and how they quickly respond to changes in the ocean environment with a view toward using seabirds as ecosystem indicators for those marine resources that NMFS directly manages.

The need for coordination, and development of funding sources led to the establishment of a National Seabird Program (NSP) within NMFS by Dr. Hogarth in 2001. The NSP is led by a National Coordinator and implemented regionally through seabird contacts at each regional office, science center, and headquarters office. The NMFS seabird contacts are also part of an Interagency Seabird Working Group (ISWG). Other ISWG members include regional and national representatives from the USFWS, staff from the U.S. Department of State (DOS) Office of Marine Conservation and Bureau of Oceans and International Environmental and Scientific Affairs, and representatives from each of the eight regional fishery management councils. The full ISWG has not met in person. Rather, various sub-groups of the ISWG work together on a variety of seabird-fishery topics that reflect issues of joint concern.

The NSP has received a small allotment of funds since FY 2004 and has allocated these funds through modest budgets to NMFS regions and centers and non-governmental organizations (NGOs) to conduct projects consistent with the objectives of a US National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds). This funding has not grown in step with new mandates,

including those under the 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The NPOA-Seabirds was completed in 2001 and calls for assessments of longline fisheries to determine if seabird bycatch is a problem. If a problem exists, it is addressed through a variety of efforts: gear research, requirements for mitigation measures, outreach, and continued monitoring and estimation of bycatch. To date, two regions (Alaska and Pacific Islands) have completed these NPOA-Seabird assessments, and efforts are underway in other regions. The NPOA-Seabirds also calls for addressing seabird bycatch in international fishery organizations.

A comprehensive strategic planning exercise for the NSP had not been conducted prior to the September 2009 workshop. Additionally, although regional meetings have occurred, NMFS members of the ISWG have never met jointly to share information on their respective seabird activities, to reach common understandings of the NSP, and to identify priority action areas.

In January 2009, the NSP national coordinator convened a steering committee for the purpose of planning and hosting a national seabird workshop to address these identified needs. The steering committee was supported by Philip Heller with Learning Design Associates, an organizational consulting firm with experience facilitating strategic planning meetings within NOAA. The steering committee established Terms of Reference (See Appendix B) for the workshop and identified the following goals and objectives.

B. Workshop Goals

The primary goal of this workshop was to initiate the development of a national seabird strategic plan that can be used to:

- Describe and provide insights regarding NMFS seabird activities and important partnerships with management entities, including the USFWS;
- Augment NMFS seabird management and science; and
- Provide input to the NMFS long-term planning and budget process with regard to seabirds.

Specific objectives and outcomes expected from this workshop included:

1. Meet other NMFS and other ISWG seabird contacts;
2. Learn about NMFS regional seabird activities and important partnerships with management entities, including the USFWS;
3. Think strategically to identify regional and national seabird priorities (e.g., research, monitoring, assessment, outreach) and resource gaps;
4. Address implementation of seabird-specific requirements of MSA (e.g., bycatch reduction engineering program, coordination on seabird interactions), regionally and nationally; and
5. Develop seabird-related performance measures.

C. Workshop Design

Themes. The steering committee identified five themes to be included in the workshop:

- Pelagic seabird abundance and distribution, and overlap with NMFS fisheries;
- Anthropogenic impacts (e.g., bycatch, entanglement, habitat alteration) and mitigation;
- Management and coordination among agencies and stakeholders on shared objectives;
- Ecosystem approaches and seabirds as indicators of ecosystem state; and
- International aspects and needs.

Experts were invited to present on each of these themes, and the first four themes were used to form breakout groups to develop draft goals and strategies.

Pre-Workshop. Information available to workshop participants included a pre-workshop questionnaire sent to all NMFS participants one month prior to the workshop to assess the current state of NMFS seabird activities. Also prior to the workshop, participants were asked to review materials (See Appendix C) for discussions.

Workshop Agenda. The workshop was planned for 2-1/2 days. The first day was devoted to presentations to help develop a common background of the issues. The remainder of the workshop was devoted to small breakout group sessions (attended by government employees only) to create the goals, measures, and activities needed to begin the development of a seabird implementation plan (For detailed daily agendas, see Appendix D). The breakout groups followed a process adapted from the Nominal Group Technique.¹ Group roles were assigned at the onset: chart notetaker, laptop recorder, timer, and group reporter.

¹ Delbecq, A., Van de Ven, A., & Gustafson, D. Group Techniques for Program Planning. Scott, Foresman & Co. Glenview, IL. 1975.

Individuals were given time to list their own responses and ideas. Then, sequentially, one idea from each member was reported to the group and written on chart paper without discussion. Once all ideas were recorded, the group discussed the ideas to clarify and reorganized them as needed. A vote was taken on the top three ideas to help create consensus. Each group's top three, high-priority ideas were reported to all the workshop participants for feedback (see Appendix E for sample worksheets used by each breakout group). During the breakout group discussions of national goals, part of that time was specifically focused on international priorities and actions.

D. Workshop Attendees

Including presenters, there were 38 total attendees at the workshop. A list of participants is shown in Appendix F.

Steering Committee. The steering committee took the lead in deciding the key outcomes expected from the event; planning the workshop; identifying and soliciting participation from experts and potential attendees; setting up logistics; developing an agenda, and producing reference, questionnaire, and handout materials to support group discussions and decisions. Once the workshop began, the steering committee helped to facilitate the breakout groups, provided daily feedback for ongoing adjustment to the agenda, and participated as Next Step Panel members at the close of the workshop.

Upon conclusion of the workshop, the steering committee was expanded to include additional NMFS staff to assist with the tasks of drafting the Workshop Report and the Seabird Strategic Plan (i.e., seabird implementation plan). The steering committee also developed a mission

statement and goals for the NSP based on results and recommendations from the workshop.

Participants. Since the NSP is implemented regionally, participation was sought from the ISWG contacts at each NMFS regional office, science center, and headquarters office. Additionally, the Steering Committee identified specific staff from headquarters to help inform the group about program planning and in-reach strategies and invited several guests from the USFWS, University of Washington, and North Pacific Fishery Management Council.

Presenters. Nationally recognized seabird experts and program planners from within NMFS, USFWS, and academia were invited to make presentations. Each presenter had 20 minutes to make a presentation followed by a short Q&A session with all the participants.

Breakout Group Facilitators. Within each of the theme breakout groups, a facilitator was pre-assigned to oversee the process, encourage participation, and ensure that the

group roles of notetaker, digital recorder, and reporter were assigned.

Summarizers/Reactors. Several participants were asked to serve as summarizers and reactors for the entire workshop. They helped identify common themes, interesting areas to pursue, further clarifications that may be needed, and practical advice.

Next Steps Panel. On the last day of the workshop, a panel was convened to discuss the follow-up steps, products, and communication processes that could be expected as a result of the workshop.

Workshop Facilitator. In addition to facilitating the workshop itself, the facilitator met with the steering committee to plan the detailed workshop agenda, provided ideas for maximizing collaborative participation, and developed follow-up actions. The facilitator also developed drafts of workshop handouts, summarized evaluation data, and prepared the initial draft of the workshop report.

II. Pre-Workshop Questionnaire Responses

Overview. The workshop included a pre-workshop questionnaire (See Appendix G) sent to all NMFS participants 1 month prior to the workshop to assess the current state of NMFS seabird activities. Participants were asked to complete the assessment within two weeks to allow sufficient time to compile the data prior to the workshop. Also, a request was made to confer with other NMFS colleagues that may also do seabird work at the participant's regional office, science center, or headquarters office.

Once all the data were collected, the information was collated and made available to each participant prior to the workshop (summarized in Figure 1). Responses were identified by NMFS regional office, science center, or headquarters office. During the workshop, highlights were presented by a member of the Steering Committee and discussed.

Objectives. The specific objectives of the questionnaire were to:

- Understand the level of current activity, resources, and partnerships that are associated with seabirds and how this might vary by region. This information would be invaluable in helping to assess needs given the current capability.
- Begin to form a sense of what is happening with respect to seabirds in other regions. This may provide a common baseline for the seabird science community within NMFS.
- Jump-start collective strategic thinking by considering seabird program needs and present and future program gaps prior to the workshop.

Summary of Questionnaire Responses.

General Observations:

- Diverse work is ongoing around the country, from public outreach to international negotiations to habitat restoration to gear research.
- Activities are specialized by region (e.g., some focus on bycatch mitigation, others on ecological studies, and others on at-sea surveys).
- Fishery interaction activities are prominent, including training and deployment of observers, cooperative research with industry, and development of effective bycatch mitigation techniques.
- A variety of seabirds are being studied/assessed/conserved, from alcids to cormorants to albatrosses.

Strengths/Resources:

- Expertise exists in several important areas (e.g., seabird identification, observer training, gear research, ecological studies, modeling, and at-sea distribution of seabirds).
- Many partnerships and collaborations exist within and outside of NMFS.
- NMFS-generated data are being used by many outside stakeholders.
- Bycatch estimation is ongoing in fisheries where data and methods are available.
- Approximately 40 NMFS staff or contractors (not including commercial fisheries observers) are working on seabird issues.

Challenges/Concerns:

- Only three of 21 respondents have a good understanding of the NMFS National Seabird Program as a whole.
- Support is lacking for expansion and, in some cases, continuation of seabird activities.
- Gaps are known to occur in seabird data collection and bycatch reduction research.
- Clarity is needed regarding NMFS' role in state-managed fisheries.
- Additional resources are needed to address priority gaps through the nation.
- Some fisheries with known potential for seabird bycatch are not observed and are without bycatch estimates.
- Assuring that any needs of ESA-listed species in the Pacific and the Atlantic Oceans associated with NMFS actions are being adequately addressed.

What We Want to Know More About:

- What the Fishery Management Councils are doing regarding seabird bycatch.
- How NMFS staff in the field can engage in the budget process to get more resources.

- Whether the regional observer programs are interacting/coordinating on seabird issues.
- Whether NMFS efforts are actually reducing seabird bycatch.
- Whether NMFS is truly considering seabirds as a part of the ecosystem.
- What climate change will mean for seabirds and for the NSP.

Emerging Issues/Considerations:

- Undertaking National Environmental Policy Act (NEPA) analyses consistently.
- Taking advantage of NMFS and NOAA's expertise and ships/platforms to help conserve seabirds.
- Using seabirds as indicators of ecosystem health, i.e. sentinel species of ocean ecosystems.
- Increasing public awareness of seabird threats and conservation.
- Sharing formal responsibility for seabirds with USFWS, as is the case for sea turtles.

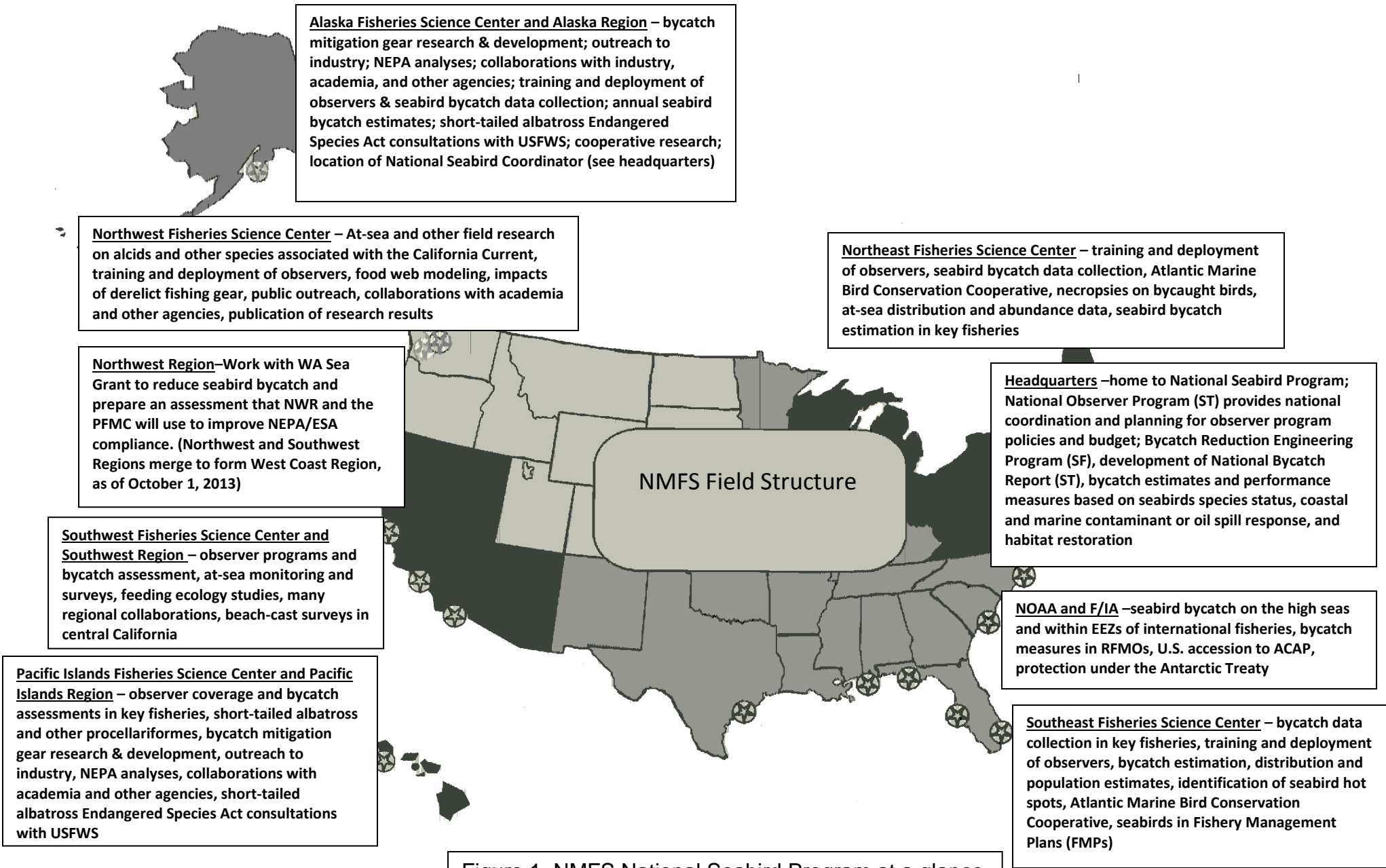


Figure 1. NMFS National Seabird Program at a glance

III. Presentations

The first day of the workshop included presentations designed and selected to provide baseline information for all participants and to provide material that would assist the small breakout groups on days two and three in addressing questions aimed at initiating the development of a NMFS Seabird Strategic Plan. The PowerPoint presentations are available at <http://alaskafisheries.noaa.gov/protectedresources/seabirds/presentations/workshop/092009.htm>. Each presentation was followed by a brief Q&A discussion session.

Opening Remarks

NMFS and Seabirds: The Importance of These Feathered Oceanographers to NOAA *George Hunt, University of Washington*

NMFS, as the federal agency responsible for the management of marine resources in the federal waters of the United States, has a responsibility for the management and protection of seabirds at sea. In particular, the Magnuson-Stevens Fishery Conservation and Management Act of 1996, as amended, requires NMFS to manage fisheries in an ecosystem context, and to protect ecosystem components such as top predators like seabirds. Fishers have long used observation of seabird foraging flocks to identify areas where commercially or recreationally valuable fish are likely to be caught. Seabirds are also attracted to fishing vessels and their waste streams. This food may aid seabirds when naturally available prey are scarce, but this source of food comes at a price; many seabirds die on the hooks of long-liners and in other types of gear (e.g., gillnets, trawl). When endangered species are caught, the result

may be the closing of a fishery. NMFS has addressed the problem of bycatch through

innovative methods of discouraging birds from seizing baited hooks during deployment of the longline gear. Reduction of plastic in the oceans has also been important because plastics can disable birds or cause starvation when their stomachs fill with indigestible trash.

NMFS has a long history of working with marine ornithologists, particularly in providing the platforms for marine surveys along the coasts of the United States, and was a full partner in the Outer Continental Shelf Environmental Assessment Program (OCSEAP) in the 1970s and 1980s that launched major efforts to survey seabirds in coastal waters. But only recently has NMFS recognized the importance of seabirds as ocean samplers. Seabirds drew attention to the presence of DDE (dichlorodiphenyldichloroethylene, results from the breakdown of DDT) and other pollutants in the ocean, and increasingly seabirds are used as indicators of the abundance of forage species that are difficult to sample with conventional gear. This workshop is an important milestone for NMFS. It provides an opportunity for NMFS to resolve its identity crisis regarding seabirds—to establish which agencies are responsible for what, and how they may be able to work together seamlessly to meet the needs of seabirds and the demands of the MSA. This workshop also provides an opportunity for the coordination of these important activities between the NMFS regions. But perhaps the best reason of all for NMFS to step up its efforts to manage seabirds at sea is that the public wants it to do so.

Workshop Introduction

Kim Rivera, NMFS (AKR)

The Workshop Chairperson outlined answers to the “why, what, how” type questions—why are we having this workshop? What are we going to do during the workshop and how are we going to do it? Extensive background information was provided on the National Seabird Program (also available in Appendices A, B, and C). NMFS’ seabird responsibilities were outlined, including statutory requirements and agency policies. The National Seabird Program’s structure was described, identifying the contacts in each of the regional offices, science centers, and headquarters offices. The goals and objectives for the Workshop were described as well as the facilitated process to be used to achieve those goals and objectives. The four small breakout groups (based on four of the five presentation themes from day 1) each will address seven key questions that aim to focus on the identification of near-term and long-term goals (i.e., strategies) for that theme, identification of needed resources to achieve those goals (i.e., gap analysis), and the measures that would indicate the goals/strategies have been accomplished.

Pre-Workshop Questionnaire Summary

Nicole LeBoeuf, NMFS (IA)

As the NMFS National Seabird Program was gathering as a group for the first time, it was decided that participants would complete a questionnaire in advance of the workshop to get a better sense of what seabird-related activities were occurring in each of the NMFS regional offices, science centers, and headquarters offices. Such an exercise could help us at the workshop and allow us to better understand the strengths and gaps of the program as a whole. The results were illuminating and informative about the current capabilities and needs of the National Seabird Program. Some general observations indicated a wide range of ongoing

work, specialization of activities across the regions, training and deployment of observers in key locations, ongoing and significant cooperation with industry and academia, and significant strengths in expertise throughout the staff participating in the Program. Areas of challenge included the lack of adequate financial and staffing resources and a need to better communicate the importance of the Program within the rest of NMFS. Overall, participants were eager to learn more about the Program and were pleased to be brought together to learn from one another and to build upon their existing efforts. Taking advantage of future opportunities and making use of existing relationships was an important theme for moving forward. Overall, the outlook on the Program is quite positive, and staff are interested in learning more about how they can increase their involvement and/or prioritize their current activities to meet the needs of the Agency.

How to Get Seabirds from the Twilight Zone to NOAA’S Strategic Planning and Budgeting Process

Gordon Waring, NMFS (NEFSC)

Developing a strategic planning and budgeting process for seabirds will be facilitated by developing and implementing a comprehensible and concise sequence of steps. As such, the following “Steps on the Road,” with examples from prior protected species strategic planning and budgeting initiatives, are recommended for the NMFS Seabird Program.

Steps on the Road

Identify clear program goals and objectives:

Once the goals are identified, then the objectives necessary to achieve this goal must be delineated. For example, Goal: Achieve mandates of the MMPA. Objectives: 1) Restore abundance of all marine mammal species to levels greater than Optimum Sustainable

Populations (OSP); and 2) Monitor health of marine mammals.

Develop performance measures to evaluate progress: They need to be concrete, measurable, and doable. These measures define what you want to do operationally, and you need a minimum of one Management and one Science measure. The performance measures can be hierarchical with respect to Goals and Objectives, and the NSP should work with headquarters to have NMFS formally recognize higher level performance measures. Examples of Government Performance Results Act (GPRA) higher level performance measures are: 1) number of populations with stable or increasing abundance; and 2) percentage of living marine resources with adequate assessments.

Develop plan to achieve objectives and performance measures: Examples are the Fisheries and Protected Species Stock Assessment Improvement Plans (SAIPs). At their simplest they should 1) describe the overarching strategy (national goals and objectives); 2) enumerate and describe the performance measures; and 3) define where you want to get to and, if possible, describe how you are going to get there.

Access resources: This includes current, 100% requirement, and plan to achieve 100%. The current is the level of resources (staff, contractors, survey platforms) currently devoted to the work. 100% is what you need to accomplish all your goals and objectives and performance measures. The Delta (100% minus current) is likely to be very large. Therefore, develop a phased plan to achieve the Delta; this is where NOAA'S strategic planning and budgeting process comes in.

Develop the Strategic Planning and Budgeting Process Alternative: Working through headquarters staff, develop proposal initiatives

to fund the Delta, and defer to Philip Hoffman for details on this part of the process. Without the accepted performance measures and requirements documents, it is hard to build the case for funds.

NOAA's Strategic Planning and Budgeting Process for the National Seabird Program *Philip Hoffman, NMFS (PR)*

Like all federal agencies, NMFS has a process for making critical budget and resource allocation decisions. This process is known as the NOAA Strategic Planning and Budgeting Process. Like most such systems in the federal government, it is poorly understood by most agency employees, which leads to missed opportunities, significant push-back, and misunderstanding of what can be accomplished within the system.

In order to help the National Seabird Program make decisions about its strategic focus, information was presented to provide participants with an understanding of how the planning and budgeting process works. Each phase of the planning and budgeting process was described, the major players were outlined, and the opportunities for the Seabird Program to engage along the way were discussed. How an idea moves from an Alternative to a funded budget activity was discussed as well as staff responsible for these activities.

Specific recommendations were made to the Seabird Program for ways to improve success in the planning and budgeting process. It was suggested that the Program find a single home both within the budgeting and planning process structure and within NMFS, and the benefits of three possibilities were outlined. How the Seabird Program can benefit from working in all four phases of NOAA's strategic planning and budgeting process was demonstrated, and specific guidance for when, and with whom, to partner for these actions was discussed.

Pelagic Seabird Abundance and Distribution and Overlap With Fisheries

George Hunt

For NMFS, understanding the distribution and abundance of seabirds at sea is important, as it is there that seabirds and fisheries have the greatest opportunity to interact. Seabirds respond to the ocean at a wide range of spatial and temporal scales, from “warm regions” at the mesoscale and larger, to tidal fronts and Langmuir circulation cells only a few meters in scope. Warm regions are areas of heightened production, where both commercially important fish and seabirds will be found in elevated concentrations. These areas may be impractical to protect, but they are where, at smaller spatial scales, fisheries and seabirds are likely to interact. Within the warm regions there are “hotspots” where exceptional concentrations of seabirds (and marine mammals) may aggregate to forage on concentrated prey resources. These prey concentrations, which are predictable in time and space, may be driven by localized production or by interactions between physical processes and the behavior of prey. Hotspots are likely to be areas of major conservation importance. “Hotspots” should be differentiated from “patches,” which are important for trophic transfer but are not predictable in either time or space. Although hotspots may be predictable, overall, there is considerable spatial and temporal patchiness in seabird distribution and abundance. Thus, “baselines” of at-sea distributions are of limited value if much time passes between surveys and events for which knowledge of seabird distributions is important. To protect adult seabirds from fishery- and pollution-imposed mortality at sea, the most successful management strategies will employ a steady effort to identify and monitor the at-sea distributions of seabirds and the hotspots at which they aggregate. Additionally, protection of prey resources within the foraging arenas of central-place-foraging seabirds and pinnipeds is

a key tie between ocean management and colony/rookery management.

Anthropogenic Impacts (e.g., bycatch/entanglement) and Mitigation: Developing Mitigation Solutions to Seabird Mortality in Fisheries

Kim Dietrich, Consultant (presenter) and Edward F. Melvin, Washington Sea Grant

Incidental catch or bycatch of seabirds is an international conservation problem. Quantifying seabird bycatch has been challenging due to lack of catch and effort data in global fisheries. Estimates in U.S. fisheries are also lacking with a few exceptions. For instance, annual catch estimates have been made in Alaska since 1993 using data collected by independent fisheries observers. The demersal longline industry was a leader in initiating deterrent testing in Alaska due to high seabird catch rates and the potential of catching an Endangered Species Act-listed species, the short-tailed albatross.

Washington Sea Grant (WSG) has implemented a collaborative approach to developing conservation solutions. The steps of the process include: 1) identify a problem and develop clear objectives for solutions; 2) include all stakeholders (i.e., fishers, management agencies, NGOs) in process; 3) employ an advisory body to identify the most practical solutions; 4) perform the research on active fishing vessels; 5) develop recommendations based on research results; 6) implement rules (mandatory or voluntary) and 7) monitor success and return to #3 as necessary.

Although WSG has worked in a variety of fisheries, Alaska demersal longline was used as a case study. From 1993 to 1998, mean seabird catch by this fleet exceeded 12,000 birds/year. The research goal in this case was to reduce seabird catch rates without decreasing target catch or increase catch of other non-target species. In 1999–2000, WSG tested six

mitigation techniques in two target fisheries/fleets. Although five techniques reduced catch significantly, one—paired streamer lines—stood out due to nearly 100% reduction across both target fisheries. Paired streamers were recommended and regulations were implemented. For the demersal longline project there has definitely been an improvement. Since 2002, catch declined by nearly 73% when compared to the 1996–2000 time period.

This collaborative approach has proven successful in multiple cases of bycatch mitigation research and is a model for finding conservation solutions in general.

Management and Coordination in/among Agencies and Stakeholders on Shared Objectives: An Alaska Case Study

Greg Balogh, USFWS (Alaska Region); Shannon Fitzgerald, NMFS (AFSC); Kristin Mabry, NMFS (AKR); Kim Rivera; Kim Trust, USFWS (Alaska Region); Thorn Smith (past Executive Director, North Pacific Longline Association); and Bill Wilson, North Pacific Fishery Management Council

Rather than a more traditional (PowerPoint) presentation, this interagency and multi-partner Alaska team performed a scripted skit to illustrate what happened in Alaska in 1996 when longline fishing vessels in the Alaska groundfish fisheries accidentally caught an endangered short-tailed albatross on their demersal longline gear. The skit glimpsed at a 13-year time period and depicted scenes from a North Pacific Fishery Management Council meeting, interagency ESA section 7 consultations, and meetings with scientific researchers at the Washington Sea Grant to discuss designing seabird avoidance gear (i.e., streamer lines) that had been scientifically proven to keep birds from taking baited hooks as the fishing gear is deployed. The skit illustrated a successful collaborative and

cooperative approach between the fishing industry (North Pacific Longline Association), scientific researchers (Washington Sea Grant), the fishery managers and analysts (NMFS), the USFWS biologists and seabird experts, and the North Pacific Fishery Management Council (representative body that makes recommendations to NMFS) at addressing a bycatch problem with workable solutions. The skit also showed the science-based approach of managing bycatch and the many partners that the government resource management agencies work with to arrive at these solutions (Sea Grant, university scientists, fishing industry, environmental groups). The skit also clearly illustrated that it can take significant financial resources to achieve these solutions.

Ecosystem Approach to Management—Seabirds as Indicators of Marine Health *Doug DeMaster, NMFS (AFSC)*

Ecosystem approach to management (EAM) requires that the U.S. ocean and coastal resources within the U.S. EEZ should be managed to reflect the relationships among all ecosystem components, including human and nonhuman species and the environments in which they live. In waters off Alaska, NMFS has implemented EAM through a number of actions, including:

- Appropriately precautionary single species management (e.g., total removals).
- Appropriately precautionary management of bycaught species.
- Appropriate protection of habitat.
- Combination of fishery-dependent and fishery-independent management.
- Adaptive management, where possible.

It was noted that changes in the community composition of the Bering Sea marine ecosystem are impacted by anthropogenic effects (e.g., climate change, commercial fishing) and environmental change (e.g., regime

shifts). Monitoring of seabird foraging ecology (e.g., food habits, diving behavior) offers a unique and cost-effective method for better understanding of changes in ecosystem function and composition. Because of the diversity of seabird species in the Bering Sea, it is possible to collect information on four distinct habitats (i.e., nearshore, surface; nearshore, subsurface; offshore, surface; and offshore, subsurface). Because seabird ecology and life history can be studied from shore-based studies, they are some of the least expensive marine research efforts possible. It was suggested that a number of studies along these lines be coordinated with USFWS/USGS and implemented as long-term “monitoring” studies related to climate change in the Arctic and sub-Arctic.

Priorities and Opportunities for Marine Bird and Forage Fish Research in the North Pacific

John Piatt, USGS (Alaska Science Center, Anchorage)

The priorities and opportunities for marine bird and forage fish research in the North Pacific Ocean are informed by four components:

- 1) North Pacific Research Board seabird research priorities
- 2) North Pacific Pelagic Seabird Database
- 3) Functional relationships between seabirds and forage fish
- 4) Marine Ecoregions.

The North Pacific Research Board (NPRB) has produced a Science Plan that can be used as a guideline for these priorities. Since 2003, the NPRB has dedicated nearly \$4M for 21 projects directly related to seabirds, amounting to 10% of the total funds distributed. This creates opportunities for marine bird projects. One such project was number 516 “Seabirds as indicators of marine ecosystems: An Integrated NPRB Science Plan for Alaska”. This work supported an international symposium and resulted in

several journal articles within a theme section of the Marine Ecology Progress Series on seabirds as indicators of marine ecosystems (available free online at <http://www.int-res.com/abstracts/meps/v352/#theme>). A simplified ecosystem model of seabirds shows three spheres of influence on populations: the surrounding water mass, outside human impacts, and the Ocean-Atmosphere system. Within the water mass strong links exist between birds and their forage base. The other components can affect seabirds through the forage base by direct (e.g., fisheries) or indirect (climate) effects on prey populations. Eight plans are cited that provide perspectives on priority work for seabirds across a range of conservation concerns. One such component is the impact of fisheries and other human-related factors across a wide range of species in Alaska. Each year in the NPRB Request for Proposals, funds are usually dedicated to direct research on seabird-fishery interactions, forage fish studies, and cooperative research with industry for bycatch reduction. Another category that could include funding for seabird studies is the human social and economic stakes of bycatch and bycatch reduction.

The North Pacific Pelagic Seabird Database (NPPSD) provides comprehensive geographic data on the pelagic distribution of seabirds in Alaska and the North Pacific. It was established by the USGS and the USFWS to provide data on the distribution and abundance of seabirds. These data are critical for understanding the basic ecology of marine birds, monitoring population trends, assessing impacts of human activities, identifying critical marine habitats, and educating the public about seabird conservation. The database serves as a repository for pelagic seabird survey data from a broad suite of researchers over many years. A primary source of data for the NPPSD were the seabird surveys completed as part of the OCSEAP work in the 1970’s for oil and gas exploration on the outer continental shelf. Many

other surveys have been conducted since, including the NPRB-funded work by Kathy Kuletz in coordination with US Coast Guard Icebreakers and NMFS Research vessels. It is a useful tool for researchers and can show the distribution of species both common (Northern Fulmar) and rare (Short-tailed Albatross).

The functional relationship between seabirds and forage fish has been a major research focus and should remain so. Prey acquisition at sea during the breeding season is dependent on prey density around colonies, which in turn affects many post-acquisition life history parameters at the colony, including laying success, chick growth rates, overall breeding success, body condition at fledging, and survival. Cairns (1987) predicted relationships between population and behavioral parameters of seabirds and their food supply. Revisiting these issues based on studies done in Cook Inlet over a 5-year period (Piatt et al, 2007) provides some interesting perspectives on different species' ability to respond to changes in food availability. Common murre's are able to buffer against fluctuations in prey abundance by adjusting their daily activity patterns; i.e., by reallocating loafing time to foraging time and thereby maintain steady food supplies to themselves and their chicks. In contrast, kittiwakes could maintain adult body condition but chick fledging success fell off abruptly under the same changes in prey density. For both murrees and kittiwakes, their responses to prey fluctuations were strongly non-linear. Cod, seabirds, whales -- all respond in a non-linear way but have different functional responses in their population and behavioral responses to changes in prey density. It would be useful for multi-species management if we knew what the thresholds of prey density were, so we could maintain stocks above threshold value.

Marine ecoregions of Alaska were delineated by Piatt and Spring in 2007, looking at a suite of factors such as underwater topography, currents, water masses, patterns of distribution of plankton, fish and birds, and some other factors. These ecoregions indicate a very complex system in Alaskan waters, with a mosaic of ecoregions constituting each of the several large marine ecosystems that are traditionally recognized, and sometimes modeled, in Alaska. These eco-regional differences may account for a lot of the geographic variability we observe in breeding success of seabirds such as the black-legged kittiwake across many areas in a single year.

International Aspects of the NMFS Seabird Program

Nicole LeBoeuf

Due to the global distribution of and threats to seabird populations, international cooperation and diplomacy are required for their conservation. Regarding U.S. efforts to reduce seabird bycatch in high seas fisheries, there are some species of particular interest to the U.S., including those that breed and forage in the North Pacific Ocean. When the U.S. participates in international fisheries meetings, it promotes best practices for seabird bycatch mitigation and brings important expertise and interests to the table. For example, U.S. researchers are expert in bycatch mitigation technologies, and the U.S. longline fishing industry in Alaska and Hawaii have been leaders in reducing albatross bycatch in their fisheries. U.S. fisheries managers and policymakers bring to international negotiations related to reducing seabird bycatch strong collaborative relationships with other nations and other bodies expert in seabird conservation. Some of the U.S.'s key partners include nations that are a party to the Agreement on the

Conservation of Albatrosses and Petrels (ACAP). The U.S. has been pursuing accession to ACAP since 2007, and has made significant progress. NMFS and USFWS staff in particular

have led efforts to join ACAP and believe that U.S. membership would be beneficial to the conservation of North Pacific and all ACAP-listed albatross species.

IV. Workshop Results

A. Breakout Group Process

Introduction. Workshop participants formed into four groups to examine the following four themes:

- Pelagic seabird abundance and distribution and overlap with NMFS fisheries.
- Anthropogenic impacts (e.g., bycatch, entanglement, habitat alteration) and mitigation.
- Management and coordination among agencies and stakeholders on shared objectives.
- Ecosystem approaches and seabirds as indicators of ecosystem state.

Each of the four groups was assigned to a single theme in order to identify theme-specific goals and strategies for the NSP. The NSP goals and strategies were identified first at the regional level and then at the national level. To create a balance of offices, interest, and numbers, participants and a facilitator were pre-assigned to these breakout groups to develop the regional goals and strategies. Except for the facilitator and the rapporteur, participants were then randomly assigned to the groups to develop national goals and strategies. Each of the four thematic breakout groups addressed key questions (see Appendix H):

1. Thinking strategically, identify a strategy that could be used at the regional level to achieve NSP goals and/or objectives ...in the near term (five years) and in the long term (to meet 100% of legislative, regulatory, and policy requirements, also known as the “100% requirement”). The strategy should reflect the minimum needed

that would still be meaningful to NMFS and of significant interest to our stakeholders.

2. How will you know when you’ve implemented this strategy, or achieved these goals?
3. What new research, data, skills, etc. do you need?
4. What changes in policy, management, coordination, etc. may be needed?
5. How can the regional strategies be supported nationally, and what would that national strategy look like—in the near term, in the long term?
6. How will you know when you’ve implemented this national strategy?

Examples of the detailed worksheets used by the breakout groups illustrating the process used are provided in Appendix E.

B. Breakout Group Results

Pelagic Seabird Abundance and Distribution and Overlap with NMFS Fisheries (Tables 1 and 2)

Near-term goals:

- Complete an inventory of spatial/temporal coverage of existing pelagic seabird abundance and distribution data and data collection methods;
- Track spatial and temporal changes in pelagic seabird abundance; and
- Build NMFS staff infrastructure to carry out these tasks.

Longer term, the group was interested in data accessibility and having seabirds be a component of ecosystem management on a national and global scale with national and international predictive climate change models

(i.e., predicting the impacts of climate change on seabird abundance and distribution) and models predicting the overlap of seabird abundance and distribution with fisheries.

Table 1. Near-term national and regional goals identified by pelagic seabird abundance and distribution breakout group

| National Near-Term Goals/Strategies for Pelagic Seabird Abundance and Distribution | Regional Near-Term Goals/Strategies for Pelagic Seabird Abundance and Distribution |
|---|---|
| <p>Build national inventory of seabird abundance and management capabilities</p> <ul style="list-style-type: none"> • Spatial and temporal coverage of existing data, method of collection • Fiscal support – travel and staff time to attend workshop and produce report • Report from meeting and analysis • Gap analysis and fund accordingly | <p>Identify existing resources, e.g., effort, expertise, and data that we currently have including international partners Measures: Strategic plan Needs</p> <ul style="list-style-type: none"> • Regional seabird coordinators • Regional workshop to identify existing resources • Strategic plan to include available platforms, existing data, expertise and efforts ongoing, tie strategies to NOAA vision, incorporates climate change, lays out standardized data collection measures, engages other partners • Priority toward seabird research as part of ecosystem enterprise and therefore commitment by leadership |
| <p>Extend/Refine monitoring and surveying</p> <ul style="list-style-type: none"> • Develop a standard method for data collection applicable to multiple platforms • Track changes in abundance/ranges of seabirds and their overlap with existing fisheries • Extend survey and monitoring to high seas beyond 200nm • Directive from HQ • Funding | <p>Analyze products from abundance and distribution data, annually, seasonally Measures: Models Needs</p> <ul style="list-style-type: none"> • Gap analysis • Models: climate change, abundance and distribution, fisheries interactions, colony vs at-sea data, seabird diet requirements and consumption rates to feed into trophic models • Capacity building – quantitative ecologists • Networking – communication about work that is done – not just modeling behind closed doors |
| <p>Build infrastructure (staff) and develop seabird teams</p> <ul style="list-style-type: none"> • Hire staff (seabird specialists) • Set aside regional monetary support for observers • Report that identifies new data collected as a result of additional coverage and the benefits thereby gained • Promote Atlantic marine cooperative as an organization that could address Atlantic seabird needs and a holistic approach to seabird ecology | <p>Get resources and Implementation, e.g. Ensure effective data management, put observers on vessels Measures: Increase observer coverage and biological sampling Needs</p> <ul style="list-style-type: none"> • Education and outreach to stress important of seabirds as ecological indicators to NOAA vision; • Model for data management • Survey design and protocols • Capacity building – additional staff – from biologists to data programmers with necessary infrastructure, ship time, seabird ID training, infrastructure; priority toward seabird research as part of ecosystem enterprise and therefore commitment by leadership |

Table 2. Long-term national and regional goals identified by pelagic seabird abundance and distribution breakout group

| <u>National Long-Term</u> Goals/Strategies for Pelagic Seabird Abundance and Distribution | <u>Regional Long-Term</u> Goals/Strategies for Pelagic Seabird Abundance and Distribution |
|--|---|
| <p><i>Seabirds are an established component of NOAA ecosystem management</i></p> | <p><i>Ensure long-term integration of seabird research into NMFS operations</i></p> |
| <ul style="list-style-type: none"> • Annual NMFS strategic plan report includes seabirds • Annual NMFS Business Report includes seabirds • Global seabird database made available to public, management | <p>Measures: National Seabird Lab</p> |
| <p><i>Integration of national and international modeling efforts and new technology</i></p> | <ul style="list-style-type: none"> • Education/Outreach on the importance of seabirds • Annual reports summarizing progress • Advanced training for senior-level leadership • Obtain base funding for seabird activities • Leadership commitment |
| <ul style="list-style-type: none"> • Workshop report from experts • Interagency efforts | <p>Analysis Measures: Predictive models; Data access site</p> |
| <p><i>Capacity Building – new seabird experts sufficiently knowledgeable to collect and analyze data</i></p> | <p>Needs</p> <ul style="list-style-type: none"> • Predictive models of overlap of seabird distribution and fisheries and of seabird density • Making data and model output available to public and management via data access sites • Training and capacity building • Formalize partnerships with climate modelers |
| <ul style="list-style-type: none"> • Increased funding, FTEs, survey coverage • Assess/Reassess – revisit Gap Analysis • National Seabird program (network) | <p>Assess/Reassess Measures: Identify new/viable technologies, eg. Underwater Autonomous Vehicle (UAV); Re-evaluate program</p> |
| | <p>Needs</p> <ul style="list-style-type: none"> • Identify new technologies and conduct research to assess their feasibility and effectiveness • Seek partnerships to defray costs • Partnerships and training with new technology • Acceptance/embracing effectiveness of new technology in producing scientific advice |

Anthropogenic Impacts and Mitigation Tables 3 and 4

The Anthropogenic Impacts Group noted that whereas “bycatch” is the primary anthropogenic impact on seabirds that NMFS has addressed to date, other anthropogenic impacts on seabirds may be of concern to the Agency (e.g., effects of marine debris/derelict gear, vessel strikes, effects of artificial light, pollution, habitat alteration).

Near-term goals:

- Develop NSP strategic plan with resource needs identified;
- Encourage the NSP to fully engage in collaborative research and outreach when funding seabird projects;
- Ensure that any bycatch reduction measures do not have unintended adverse impacts on other protected resources;
- Ensure adequate and consistent seabird data protocols in fishery observer programs, including seabird identification training; and
- Create an inventory of bycatch data and identify fisheries where seabird bycatch data are not collected or available.

Long-term goals:

- Consider incorporation of “compensatory (or off-site) mitigation”² into ecosystem approaches;

² A new approach to offset a major anthropogenic threat such as fisheries bycatch whereby mandated restrictions on fishing activities are replaced or reduced with compensatory activities (e.g. removal of introduced predators from islands) that are funded by a bycatch levy on fishers. See Finkelstein M., Bakker V., Doak DF, Sullivan B, Lewison R, et al. (2008) Evaluating the potential effectiveness of compensatory mitigation

- Engage foreign entities in bycatch reduction through work with ACAP and at RFMOs; and
- Augment existing statutory authority to reduce seabird bycatch.

strategies for marine bycatch. PLoS ONE 3(6):e2480. doi:10.1371/journal.pone.0002480. (Editor’s note: NMFS’s Bycatch Strategy would still require active engagement with bycatch reduction in fisheries, therefore, this approach could not be fully implemented in the form as described here.)

Table 3. Near-term national and regional goals/strategies for anthropogenic impacts (e.g., bycatch, entanglement, habitat alteration) and mitigation

| <p align="center">National Near-Term Goals/Strategies for Anthropogenic Impacts (e.g. bycatch) and Mitigation</p> | <p align="center">Regional Near-Term Goals/Strategies for Anthropogenic Impacts (e.g. bycatch) and Mitigation</p> |
|---|---|
| <p>Develop a national plan that lays out staffing and other resource needs at the regional level to implement a national seabird program and support the planning and budgeting process Measures: 100% requirements are provided for National Seabird Program.</p> <p>Encourage National Sea Grant to more fully engage in bycatch solutions Measures: Seabird bycatch reduction becomes a Sea Grant priority resulting in a National request for proposals</p> <p>Same types of seabird data are available for all fisheries Measures: Seabird bycatch data are available to the public via web-based portal or other mechanism</p> | <p>Assure that bycatch reduction measures do not have unintended adverse impacts on other protected resources. Measures: Ensure that solutions for one species do not exacerbate problems for other species; Identify a process for conflict resolution if conflicts are unavoidable; Ensure that regulations have anticipated effects</p> <p>Needs</p> <ul style="list-style-type: none"> • Obtain underlying data related to conflicting regulations <p>Grow the “Washington Sea Grant” model of addressing bycatch solutions Measures: Increase amount of funds & grants for collaborative problem-solving; Increase number of collaborative research / cooperative problem-solving efforts</p> <p>Needs</p> <ul style="list-style-type: none"> • Increase Sea Grant’s ability to conduct education/outreach on bycatch solutions • Increase education/outreach effort to management/staff • Encourage opportunities to train future collaborative researchers in seabird mitigation • Encourage National Sea Grant to set aside increased funding for seabird mitigation <p>Conduct a multi-agency/multi-entity inventory of seabird bycatch data collection, management, and analysis resources; identify gaps; develop solutions and recommendations to address the gaps. Measures: Produce inventory; Identify gaps. Implement measures to address gaps; Evaluate measures, and transfer successes internationally; Produce Regional seabird bycatch success story bycatch fact sheets</p> <p>Needs</p> <ul style="list-style-type: none"> • Explore new technologies to address data gaps (e.g., electronic monitoring) • Conduct education/outreach to develop solutions to address gaps in data • Identify agencies, organizations to work with on seabird mitigation, & increase management support for such collaborations through MOUs, etc. • Set up process for Regional meetings to coordinate seabird mitigation efforts • Develop one national alternative for the planning and budgeting process that addresses regional bycatch needs |

Table 4. Long-term national and regional goals for anthropogenic impacts (e.g. bycatch) and mitigation

| National Long-Term Goals/Strategies for Anthropogenic Impacts (e.g. bycatch) and Mitigation | Regional Long-Term Goals/Strategies for Anthropogenic impacts (e.g. bycatch) and Mitigation |
|---|---|
| <p><i>Engage all applicable and appropriate foreign entities in bycatch reduction via ACAP and RFMOs, bilateral and trilateral treaty meetings, and science and technology agreements.</i> Measures: Increased number of countries in consensus with U.S. seabird bycatch recommendations</p> <p><i>Enhance statutory authority to reduce seabird bycatch via MSA amendment or creation of comparable statutory authority</i> Measures: NMFS achieves statutory authority to reduce seabird bycatch</p> | <p>Establish an off-site mitigation program. Measures: Establish land-based conservation measures to offset bycatch at sea, for example, habitat improvements on albatross breeding colonies such as lead removal on Midway Island, control of invasive species on colony sites, and establishment of new colonies</p> <p>Needs</p> <ul style="list-style-type: none"> • Promote land-based conservation measures among agency leadership, especially at agencies that are unfamiliar with this type of seabird impact mitigation • Prioritize/list habitat mitigation projects and conduct study to determine effectiveness of habitat conservation or restoration as mitigation for impacts on seabirds; • Evaluate NOAA role in offsite mitigation (hands-on or funding only?) • Identify offsite mitigation subject matter experts and necessary equipment for offsite mitigation (e.g., traps, rodenticide) • Ensure habitat management programs are incorporated into ecosystem approaches to seabird management • Develop seabird policy for Policy Directives System that supports anthropogenic impacts and habitat mitigation programs <p>Increase staffing for surveys, data analysis, mitigation work, and outreach. Measures: Obtain 100% requirements through an alternative in the planning and budgeting process</p> <p>Needs</p> <ul style="list-style-type: none"> • Refine successful bycatch mitigation/minimization strategies • Train new staff in planning and budgeting • Develop one national alternative in the strategic planning and budget process that addresses regional bycatch needs <p><i>Engage all applicable and appropriate foreign entities in bycatch reduction (e.g., successful mitigation strategies) via ACAP and RFMOs.</i> Measures: Ensure RFMO language/resolutions include bycatch minimization and mitigation measures. Increase international research efforts for bycatch mitigation, for example, based on Washington Sea Grant model</p> <p>Needs</p> <ul style="list-style-type: none"> • Obtain and/or increase seabird bycatch reporting data from overseas sources • Increase outreach efforts to RFMOs • Provide resources, training to RFMOs, member countries (e.g., observer training, free streamer lines) • Coordinate NMFS response to international requests for assistance regarding seabird bycatch |

Management and Coordination among Agencies and Stakeholders on Shared Objectives

Tables 5 and 6

Near-term goals:

- Create a formal seabird program for NMFS with an organizational home and assigned staff and
- Develop an outreach communication plan and network.

Long-term goals:

- Incorporate seabird data into marine spatial planning and ecosystem science and management;
- Fully use seabird data by fishery management councils; and
- Augment the ability of NMFS to manage seabird bycatch through amendments to MSA and/or, in the event the United States joins ACAP, implementing legislation for ACAP.

Table 5. Near-term national and regional goals for management and coordination among agencies and stakeholders

| <u>National</u> Near-Term Goals for Management and Coordination among Agencies and Stakeholders | <u>Regional</u> Near-Term Goals for Management and Coordination among Agencies and Stakeholders |
|---|---|
| <p>Formalize/Institutionalize Program Measures: Leadership/NMFS support, policy directive, budget development; National seabird program coordinator (FTE), additional staff required for larger scale program; House program in one place (parallel national observer program), at HQ level; Policy directive (NMFS strategic plan, NMFS strategic plan for fisheries research); Engage leadership support through NMFS Leadership Councils and Science Board, and Fishery Management Council coordination committee (decision makers); Rotational duty assignments (between agencies, within NOAA, etc, to fill gap before FTE positions are developed)</p> <p>Education/Buy-in/Coordination Measures: Communication plan; Interagency groups, More formal interagency cooperation (EO 13186, MOU/MOA); Regular regional/national discussion; Person at HQ would serve in DC higher level network (meetings required, yearly?); National support for stakeholder network (e.g., legislation to support advisory committees), and a national network to share cross-region experiences</p> <p>Human resource requirements Measures: Seabird coordinators</p> | <p>Formal seabird representative in each region and center (FTE or performance plan) Measures: FTE or performance plan; Day to day work Needs</p> <ul style="list-style-type: none"> • Work with human resources staff to define performance plan, will need to write up job description if full FTEs • Develop seabird program description and sell to management • Develop communication plan (encompassing outreach, in-reach and communications) <p>Develop regional inter-stakeholder network Measures: Formal, informal networks; Industry/FMCs/NGOs/Fed Agencies; PSG model for the Atlantic Needs</p> <ul style="list-style-type: none"> • Workshop at the Atlantic Marine Bird Co-operative to help it evolve into what it needs to be for NMFS (similar to PSG) • Develop communication plan (encompassing outreach, in-reach and communications) <p>Implement regional seabird program Measures: Work with planning officer (planning and budget process) Funnel information; Incorporate national objectives as appropriate; Time series and reports Statutes Needs</p> <ul style="list-style-type: none"> • Develop communication plan (encompassing outreach, in-reach and communications) |

Table 6. Long-term national and regional goals for management and coordination among agencies and stakeholders

| <u>National</u> Long-Term Goals for Management and Coordination among Agencies and Stakeholders | <u>Regional</u> Long-Term Goals for Management and Coordination among Agencies and Stakeholders |
|---|---|
| <p>Highly functioning national seabird team and national program Measures: Maintain presence at meetings and conferences, seabirds in appropriate reports and assessments; Stable funding; Meeting conservation and management goals; Meeting bycatch reduction goals; Birds incorporated into climate change models and improve models; Incorporate into planning and budget process (secure stable funding); Accede to ACAP (draft legislation, fixes to MSA); Ensure consistent with Annual Guidance Memorandum; Develop national seabird communication plan; Many elements have international components.</p> <p>Develop national needs plan Measures: Marine Spatial Planning; National database? Climate change – NOAA climate group and need for international coordination; Ensures seabirds are incorporated into RFMO work at national and regional levels, RFMO commissioners meetings; Incorporate seabird data into international fisheries assessments through RFMO science work; Maintain presence at RFMO meetings</p> <p>MSA or other legislative fixes, including ACAP. Measures: Maintain a presence at Council meetings; Encourage USFWS regions as appropriate to participate in Council meetings; Accede to ACAP (draft legislation, fixes to MSA)</p> | <p>Highly functioning integrated regional entity that implements a national plan Measures: Meeting bycatch reduction targets; Stable funding Needs</p> <ul style="list-style-type: none"> • Identify one office that the seabird program sits in. • Policy change – to implement the national seabird plan and integrate it into an alternative of the planning and budget process that is funded • Develop seabird program description and sell to management • Develop communication plan (encompassing outreach, in-reach and communications) <p>Incorporate seabird data into marine spatial planning, ecosystem science and management Measures: Full utilization of seabird data; Implementing external funding for science; Contracts with universities; Collaborative databases; Outreach products Needs</p> <ul style="list-style-type: none"> • Need to create data reports • Develop seabird program description and sell to management • Develop communication plan (encompassing outreach, in-reach and communications) • Create data reports in usable format for each region <p>Council and other groups use of seabird data for management Measures: Explicit seabird regulations in fisheries management plans; Seabird report documents from each region provided annually to councils, meeting NEPA and other needs Needs</p> <ul style="list-style-type: none"> • Develop seabird program description and sell to management • Develop communication plan (encompassing outreach, in-reach and communications) • Create data reports in usable format for each region |

Ecosystem Approaches and Seabirds as Indicators of Marine Health

Tables 7 and 8

Near-term goals:

- Educate federal leadership (e.g. NMFS, NOAA, USFWS) of the importance of seabirds as indicators of ecosystem state;
- Incorporate seabirds into climate change models and ecosystem management strategies; and

- Develop and hold a national symposium on seabirds as a monitor of healthy marine ecosystems; publish the symposium proceedings.

The long-term goals were to conduct longer-term ecosystem studies and incorporate results into global marine species assessments, ecosystem management, strategic regional fishery management planning, and fish stock assessments.

Table 7. Near-term national and regional goals/strategies for ecosystem approaches

| National Near-Term Goals for Regional Ecosystem Approaches | Regional Near-Term Goals for Regional Ecosystem Approaches |
|--|---|
| <p>Leadership needs to be convinced of the importance of seabirds in NMFS's work.</p> <p>National symposium with goal of publication using seabirds for monitoring marine health</p> | <p>Educate decision makers on the idea of Seabirds as Indicators. What can seabirds do for NOAA? What can NOAA contribute to an integrative approach?</p> <p>Measures: Funding \$\$\$, program alternative</p> <p>Needs</p> <ul style="list-style-type: none"> • Education materials: coloring book, video one-pager, website (audience specific), brown bag seminars on seabirds at headquarters. Generate industry/NGO support • Expand and/or stabilize new field research on seabird distribution, habitat use, and trophic links • Dedicated staff: Trained Seabird Ecologist; Database Manager; Trophic Ecologist; Communications Specialist • Training and equipment for staff • Dedicated budget line • Seabirds as part of marine stewardship in domestic and international work; Explicit incorporation of seabirds in strategic regional planning documents • Interagency coordination; Annual meetings with USFWS by region • Enhanced coordination within NOAA line offices; Choose most appropriate single home for seabirds (e.g. ST) • MSA revision to improve/enhance seabird work <p>Plan and design how to incorporate seabirds into ecosystem management; Assess what is being done already; Identify data gaps, species and parameters; Identify opportunities for collaboration/integration</p> <p>Measures: Completed national seabird strategic plan</p> <p>Needs</p> <ul style="list-style-type: none"> • Data management system, compatibility • Modeling Exercises • Dedicated staff: Trained Seabird Ecologist; Database Manager; Trophic Ecologist; Communications Specialist • Training and equipment for staff • Dedicated budget line • Platforms • MOU among partners; Responsibilities; Data collection, data archiving, and data sharing |
| <p>Integrate seabirds into NOAA's Annual Guidance Memorandum...e.g. climate change, programs, models, marine spatial planning, Arctic</p> | <p>Integrate seabirds into NOAA's Annual Guidance Memorandum... How do seabirds fit in? Climate change programs and models; Arctic; Marine spatial planning</p> <p>Needs</p> <ul style="list-style-type: none"> • Expand and/or stabilize new field research on seabird distribution, habitat use, and trophic links • MSA revision to include seabirds |

Table 8. Long-term national and regional goals for ecosystem approaches

| <u>National</u> Long-Term Goals for Ecosystem Approaches | <u>Regional</u> Long-Term Goals for Ecosystem Approaches |
|--|---|
| <p><i>Maintain and continue short term goals</i> <i>Develop and maintain budget line</i> <i>Fund long-term seabird research; Incorporate models with budget for long term studies...need unbroken, continuous effort and budget support...e.g. Long Term Research (LTR) grants from National Science Foundation (NSF); Develop post-doc focusing on seabird issues...long-term..e.g. National Research Council (NRC) post-doc at science centers</i></p> | <p><i>Implement the plan that incorporates seabirds into ecosystem management and integrate the results into Stock assessment, Integrated Ecosystem Assessments, models predicting impacts of climate change, etc.</i> Needs</p> <ul style="list-style-type: none"> • Expand and/or stabilize new field research on seabird distribution, habitat use, and trophic links • Data management system, compatibility • Modeling Exercises • Dedicated staff • Training and equipment for staff • Advanced Technology • Platforms • Dedicated budget line • MOU among partners • Seabirds as part of marine stewardship • Enhanced NOAA coordination • Choose most appropriate single home for seabirds • MSA revision to enhance/improve seabird work <p><i>Adapt to emerging climate change and ecosystem issues</i> Needs</p> <ul style="list-style-type: none"> • Modeling Exercises • Dedicated staff • Training and equipment for staff • Dedicated budget line • MOU among partners • Seabirds as part of marine stewardship • Enhanced coordination within NOAA line offices • MSA revision to improve/enhance seabird work |

C. International Priorities

Each of the breakout groups was asked about their priorities, recommended actions, and important meetings or target dates related to NMFS international seabird activities.

Pelagic seabird abundance and distribution and overlap with NMFS-managed fisheries.

There was discussion of how to initiate or enhance connections with scientific organizations such as the International Council for the Exploration of the Seas (ICES) Seabird Working Group, Pacific Seabird Group (PSG), and North Pacific Marine Science Organization (PICES). The group discussed the possibility of sharing information with colleagues in Canada regarding seabird data collection in fisheries observer programs. It was also noted that the Pacific Islands Regional Office's (PIRO) Observer Program provides training and support to observer programs in the Western and Central Pacific, including education about seabird mitigation techniques and safe-handling guidelines. Specifically, PIRO has provided training support to fisheries observer programs in Japan, Taiwan, Korea, and the South Pacific Tuna Treaty Area managed by the Western and Central Pacific Fishery Commission (WCPFC).

Anthropogenic impacts (e.g., bycatch, habitat alteration) and mitigation. The group discussed the need for NMFS to have clear statutory authority to reduce seabird bycatch, either within the Magnuson-Stevens Act (MSA) or some other statute (e.g., ACAP implementing legislation). There was also a desire to replicate the success of the Washington Sea Grant bycatch mitigation program in other U.S. regions and internationally. It was also noted that it is important for all NMFS delegations attending international meetings with a seabird bycatch topic to be fully briefed and informed on the topic, and for these delegations to include a seabird expert, as appropriate.

Management and coordination among agencies and stakeholders on shared objectives. The group discussed an opportunity to present information on the NMFS National Seabird Program at the World Seabird Conference. Leading a symposium was also discussed, including encouraging NMFS staff throughout the country to attend and present their seabird work. The breadth of the work associated with the Regional Fisheries Management Organizations (RFMOs) should be more widely recognized and considered as a part of the Strategic Planning Document. The need to provide information to U.S. Commissioners to the RFMOs about NMFS's ongoing seabird work was raised.

Ecosystem approaches and seabirds as indicators of ecosystem state. The idea of considering seabirds within the larger context of the ongoing global marine assessments was discussed. This includes expanding beyond regional efforts to look at species that travel beyond national boundaries. PICES and PSG or the American Fisheries Society (AFS) might be good venues for holding symposia on seabirds as ecological indicators, and many attendees of the workshop have contacts within those groups already. Participants also supported enhancing international partnerships to advance modeling work (ecosystem, climate change, fish stock assessment, and coastal and marine habitat models) and to further bycatch reduction efforts.

Important Events. The following events were noted by the groups:

- Annual PSG meetings
- U.S. Commissioners to RFMOs meeting
- Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management meetings
- World Seabird Conferences
- PICES meetings

D. Feedback from All Participants and Designated Reactors

Feedback on Regional Goals. In a plenary session, participants were given the opportunity to make comments and ask questions after each group reported. The following comments and observations were made:

- Focus greater attention on international issues (e.g., research, problems, and opportunities).
- Actively integrate seabird data into fish stock assessment models—both to account for fish removals as prey items of seabird consumers and to allow for maintenance of a sustainable forage foodbase for seabirds
- Integrate and/or reference seabirds into key NOAA/NMFS planning and budget processes, directives (e.g. NOAA’s Annual Guidance Memorandum, NOAA’s Strategic Planning and Budget Process, NMFS Science Board, NMFS Leadership Council).
- Consider the seabird topic in several new and emerging issues—climate change, Arctic, marine spatial planning.
- There is overlap among the four themes, particularly the Seabird Abundance and Ecosystem themes.
- The use of new technology presents new opportunities for seabird data collection (e.g., Autonomous Underwater Vehicle).
- It would be helpful to have a seabird “cost/benefit analysis” (the costs to fishermen associated with use of seabird avoidance measures weighed against the benefit to the seabird populations). This analysis should also consider the ever-rising economic benefits from recreational marine wildlife viewing.
- Many of the national goals and strategies are also regional in nature, and the coordination of their implementation is required.

- The relationship and interactions of seabirds with ESA-listed fish species must be considered (e.g., salmon in the Pacific Northwest).

Feedback on National Goals. In a plenary session, participants were given another opportunity to make comments and ask questions after each group presented their national goal highlights and additions to regional goals. The following comments and observations were made:

- Develop scientific meeting proposals for symposia that focus on seabirds, fisheries, and ecosystem health (e.g. annual AFS meeting).
- Create an awareness of and generate support for the NSP with the NMFS leadership.

Reactors’ Overall Comments. Four “reactors,” chosen from among the participants, were asked to comment on the workshop products. Their comments focused on major directions and common themes, interesting or surprising ideas, components that were missing or that required clarity, and recommendations for action.

Common Themes.

- Strategically place the NSP in a NMFS headquarters office with the intent of improving capacity and getting an adequate budget to carry out NSP goals and objectives.
- Develop an NSP outreach and communications plan that will effectively create awareness and provide information within the agency as well as sharing information with constituents, stakeholders, and the public.
- Increase awareness within NOAA on the use seabirds as indicators to improve ecosystem-based approaches to management.

- Improve coordination of seabird topics within NMFS, between NOAA line offices, and with agencies outside of NOAA that are involved with fisheries-related seabird issues.

Interesting or Surprising Ideas.

- Coordinate within NMFS and across agencies to advance workshop goals.
- Integrate seabirds into climate change models with two goals: a) use seabirds as predictive tools for understanding broader ecosystem changes resulting from climate change; b) predict the effects of climate change on seabird abundance and distribution.

Missing or More Clarity Needed.

- Make NMFS/NOAA budget training and/or information available, as needed and appropriate, to NMFS seabird contacts.

- Seek regional input into the development of a seabird alternative for the NOAA strategic planning and budget process.

What is Doable.

- Although implementing the full set of goals and strategies identified at this workshop would be challenging, NMFS staff currently working on seabird issues are very dedicated and enthusiastic.
- The workshop report will be a useful resource to guide future seabird work and direction at NMFS.
- Working more closely with USFWS and other agencies across a range of seabird issues is possible.

V. Next Steps

A. Next Steps Panel

The final day of the workshop featured a panel that was assembled to discuss the immediate and follow-up steps, products, and communication process that could be expected as a result of this workshop. At the conclusion of the workshop, participants completed a Workshop Evaluation (summarized in Appendix D).

B. Role of the Steering Committee

The initial role of the Steering Committee was to develop the workshop. The Steering Committee will now work to develop a National Seabird Strategic Plan. This new role may require a change in membership and new Terms of Reference. Additional and new potential roles include promotion of the National Seabird Program, facilitation of the transition to a new programmatic home, and development of an NSP web page.

C. Major Next Steps

Three major next steps were suggested:

- Create a NMFS report of this workshop as soon as possible.
- Create a National Seabird Strategic Plan.
- Create alternatives for the fiscal year NOAA strategic planning and budget cycle.

Development of a National Seabird Strategic Plan will include consideration of the many near- and long-term regional and national strategies, goals, measures, and needs that were identified at the workshop. These two documents, the Workshop Report and the

National Seabird Strategic Plan, can then be used to develop a seabird alternative to be considered in the next cycle of the NOAA strategic planning and budget process.

D. Follow-up Tasks

Several additional actions pertaining to international issues were recommended:

- Follow up with NMFS and National Observer Program staff who train fisheries observers for international fleets to determine what seabird identification training is currently provided and whether it is adequate. This task should be coordinated through the National Observer Program and could occur through attendance at National Observer Program Advisory Team (NOPAT) meetings.
- Explore the potential collaborations and connections between international and U.S. science groups that have a seabird component or focus (e.g., North Pacific Marine Science Organization (PICES) and the Pacific Seabird Group (PSG)).
- Participate at the World Seabird Conference by sponsoring/leading a symposium.
- Disseminate information regarding the World Seabird Conference to all NMFS staff and the National Seabird Program POCs, and encourage them to attend and present their work.
- Brief the U.S. Commissioners to the RFMOs at their next annual meeting with an oral presentation.

- Continue efforts to join ACAP and adopt implementing legislation that provides clear authority for the reduction of seabird bycatch by NMFS.
- Work with National Sea Grant or other regional sea grant programs to expand upon the Washington Sea Grant model, seeking Sea Grant to prioritize the use of its resources toward this activity in the near future.
- Continue to send representatives to the Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management meeting to retain seabird bycatch as a priority issue at the Migratory Bird Table.

The following communications and networking actions were suggested to expand the communication between seabird-focused NMFS staff and to provide additional avenues of promoting the National Seabird Program:

- Regular e-mail to all NMFS seabird contacts, including a NSP Steering Committee;
- Creation of a National Seabird Program website hosted by NMFS to post updates and highlight individual work;
- Regular (e.g., quarterly) conference calls with NMFS and external stakeholders. These could include video conferences to facilitate interactions between Science Centers;
- NMFS–sponsored sessions or meetings at conferences (e.g., regular meetings of Pacific Seabird Group and World Seabird Conference); and
- Building on the information that will be presented in NMFS’ National Bycatch Report (specifically focus on expanding the information on protected species to fully include seabirds; highlighting seabird data gaps).

E. The Growing Buzz about Seabirds

This discussion centered on a consideration of such questions as: Who cares about seabirds? Why should NOAA/NMFS be concerned and why now? What does the National Seabird Program mean to me? Who is the Seabird Program’s target audience? What is the Program’s most important message?

Participants were also asked to consider how the NSP can best convey its goals and objectives and why it is important for NMFS to be involved in a very coordinated way with seabird issues. This was viewed as the “NSP message” and suggestions were made for how to create and/or engender general interest in that message. These included:

- Engaging the public with why some seabird populations are declining;
- Creating seabird fact sheets, including photographs and illustrations;
- Developing a very concise and succinct NSP description, including why it is important for NMFS to work on seabird issues;
- Seeking ways to share information with the media; and
- Publishing an annual report of accomplishments.

VI. List of Acronyms

AFSC – NMFS Alaska Fisheries Science Center

AKR – NMFS Alaska Region

CMSP – NOAA’s Coastal and Marine Spatial Planning

DOD – Department of Defense

EAM – Ecosystem Approaches to Management

EOP – Ecosystems Observations Program

F – NMFS Office of Fisheries (headquarters)

FED – NWFSC Fish Ecology Division

FMP – Fishery Monitoring Program

FRAM – NWFSC Fishery Resource Analysis and Monitoring Division

HC – NMFS Office of Habitat Conservation

IA – NMFS Office of International Affairs

IPL – Integrated Priorities List

ISWG – Interagency Seabird Working Group

LTR – Long-Term Research

MMPA – Marine Mammal Protection Act

MSA – Magnuson-Stevens Fishery Conservation and Management Act (as amended January 12, 2007)

NEFSC – NMFS Northeast Fisheries Science Center

NEOP – NMFS NEFSC Observer Program

NEPA – National Environmental Policy Act

NGO – Non-governmental organization

NMFS – NOAA’s National Marine Fisheries Service

NSF – National Science Foundation

NRC – National Research Council

NSP – NMFS National Seabird Program

NOAA – National Oceanic and Atmospheric Administration

NOPAT – National Observer Program Advisory Team

NPOA-Seabirds – National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries

NPPSD – North Pacific Pelagic Seabird Database

NWFSC – NMFS Northwest Fisheries Science Center

NWR – NMFS Northwest Region

OCSEAP – Outer Continental Shelf Environmental Assessment Program

PICES – North Pacific Marine Science Organization

PIFSC – NMFS Pacific Islands Fisheries Science Center

PIRO – NMFS Pacific Islands Regional Office

PR – NMFS Office of Protected Resources

PRD – Protected Resources Division

PSB – NMFS NEFSC Protected Resources Branch

PSG – Pacific Seabird Group

SAIP – Stock Assessment Improvement Plan

SEFSC – NMFS Southeast Fisheries Science Center

SF – NMFS Office of Sustainable Fisheries

SFD – Sustainable Fisheries Division

ST – NMFS Office of Science and Technology

SWFSC – NMFS Southwest Fisheries Science Center

SWR – NMFS Southwest Region

UAV – Underwater Autonomous Vehicle

USFWS – U.S. Fish and Wildlife Service

WCPFC – Western and Central Pacific Fisheries Commission

Appendices

Appendix A. National Seabird Workshop White Paper

The National Marine Fisheries Service's National Seabird Program NMFS National Seabird Workshop 'White Paper'

Seabirds are valuable and long-recognized ecosystem indicators and are an obvious element of interest and study by NOAA scientists and managers. Their distribution and abundance can reflect physical and biological oceanography, abundance and distribution of mid trophic-level organisms, and the effects of climate change on apex predators. Contaminant levels in seabirds can provide insight into the health of a particular ecosystem. And, unlike so many marine organisms, seabirds are relatively easy to sample. Because ecosystem state directly affects the resources for which NMFS has management responsibility, ecosystem integrators and indicators such as seabirds provide great potential to advance the science of ecosystem management for NMFS.

NMFS continues to be concerned about the long-term ecosystem effects of seabird bycatch in NMFS-managed fisheries and in fisheries conducted in many areas of the world's oceans, as well as managing coastal and marine habitats that seabirds depend on for various life stages within the U.S. EEZ. Additionally, seabird abundance and distribution can inform scientists about qualitative and quantitative marine trophic relationships, climate change, coastal and marine contaminants, and other important trust concerns.

Seabird connections to NMFS range from survey scientists observing them at-sea on research and stock assessment survey cruises that are a regular part of NMFS's practice to fishery observers recording them as incidental catch in the samples they observe onboard fishing vessels. Whereas the primary trust responsibilities for seabirds rests with the

Department of Interior and its U.S. Fish & Wildlife Service (USFWS), NMFS plays a significant role and has responsibilities through various statutory authorities and agency policies. Our role in seabird monitoring and reduction of seabird bycatch and managing coastal and marine habitats that seabirds depend on is guided by the following³:

- Magnuson-Stevens Fishery Conservation and Management Act (MSA) (e.g. Bycatch Reduction Engineering Program (BREP) and seabird language at Section 316)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA) (e.g. assessing impacts/effects of fishery actions on the seabird component of the marine environment)
- *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*
- *Oil Pollution Act (OPA)*
- *National Marine Sanctuaries Act (NMSA)*
- *Fish and Wildlife Coordination Act (FWCA)*
- U.S. National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds)
- FAO's Best Practice Technical Guidelines for IPOA/NPOA-Seabirds (BPTG) (new, March 2009)
- NMFS's Strategic Plan—FY2005 to FY2010
- NMFS's Strategic Plan for Fisheries Research (to be updated in 2010)

³ Links to many of these items can be found in the 'NMFS Seabird Workshop Reference List'. Also see Appendix A1 for summary information on these statutory and policy mandates for NMFS's seabird responsibilities.

- NMFS National Bycatch Strategy & National Bycatch Report
- Executive Order (EO) 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds”
- US Fish & Wildlife Service’s List of Birds of Conservation Concern (BCC)

Workshop Objective: The primary objective of this workshop is to initiate the development of a seabird strategic plan at both the national and regional levels that can be used to (1) describe and provide insights regarding NMFS seabird activities and important partnerships with management entities including the U.S. Fish and Wildlife Service, (2) guide NMFS management and science, and (3) provide input to the NMFS long-term planning and budget process.

BACKGROUND: The NMFS’ National Seabird Program (NSP) was formed in 2001 when the United States finalized its National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds) . The NSP is led by a national coordinator and implemented regionally through seabird contacts at each region, center, and headquarter office. The seabird contacts were identified upon request of the NMFS Assistant Administrator (Dr. William Hogarth). Prior to 2001, NMFS’ engagement on seabird projects reflected its focus on ocean resources and various regional interests and needs. Some examples of this seabird work include seabird surveys on NOAA research and stock assessment cruises in both the Pacific and Atlantic Oceans, collaborations on research and development of seabird bycatch reduction methods, and collection of seabird data by fishery observers.

Although seabirds may be impacted by both direct (e.g. incidental catch, gear entanglement, bycatch) and indirect (e.g. prey availability, ecosystem interactions) effects, the primary focus of the NPOA-Seabirds and thus of the

NSP to date has been to address the direct impacts of fisheries on seabirds. The NPOA-Seabirds addresses both domestic and international fishery issues. The NPOA-Seabirds calls for assessments of longline fisheries to determine if seabird bycatch is a problem. If a problem exists then it is addressed through a variety of efforts: gear research, requirements for mitigation measures, outreach, continued monitoring and estimation of bycatch. NMFS regions are at various stages of NPOA implementation, with the Alaska and Hawaii regions having the most fully completed NPOA-Seabird assessments. This likely reflects that at various times, the highest levels of documented seabird interactions were with NMFS fisheries in these two regions.

Interagency Seabird Working Group : The NMFS seabird contacts are also part of the [Interagency Seabird Working Group \(ISWG\)](#). Other ISWG members include regional and national representatives from the USFWS, staff from the Department of States’ (DOS) Office of Marine Conservation and Bureau of Oceans and International Environmental and Scientific Affairs, and representatives from each of the eight regional fishery management councils. The full ISWG has not historically met in person. Rather, various sub-groups of the ISWG work together on a variety of seabird-fishery topics that reflect issues of joint concern. For example, ISWG members from the three agencies (NOAA, USFWS, DOS) worked together to draft the US’s NPOA-Seabirds and continue to collaborate on the US’s participation at the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and seabird bycatch reduction issues at international regional fishery management organizations (RFMOs) and at US governmental (fishery and migratory bird) bilateral meetings with other countries. Regional seabird-fishery issues are addressed by the regional ISWG members of NOAA, USFWS, and the fishery management councils. This work can include the Councils’

Advisory Panels, Science and Statistical Committees, and the USFWS representative that sits on each of the fishery management councils. The regional issues generally will involve coordination by ISWG members in preparation of NEPA documents (e.g. environmental assessments or environmental impact statements) that include an analysis of the impacts of fishery actions on the environment (including the seabird component of the marine environment), annual SAFE reports (stock assessment and fishery evaluation) with ecosystem considerations chapters that include treatment of the seabird ecosystem component prepared jointly by fishery management councils and NMFS, and the work of fishery plan teams. In the special circumstance of a fishery action that may impact a seabird species listed under the Endangered Species Act (ESA), the ISWG contacts are also the likely government staff to be involved with the issue and potentially any needed ESA section 7 consultations. The ISWG list of contacts is a key resource when a fishery-seabird issue arises involving the federal government and you need to know who to contact that may be involved or have information on that issue.

NMFS has been implementing the NPOA-Seabirds since 2001 and numerous activities have been undertaken such as: seabird avoidance regulations (AKR, PIRO, SWR), FMP development addressing seabird mitigation (West Coast HMS FMP), cooperative mitigation research with the longline industry (AKR, PIRO, NWR), fisheries observer training and education and outreach materials for fishermen and the public (AFSC, AKR, PIR, SWR, NWFSC, NEFSC, SEFSC), and international efforts at regional fishery management organizations (CCAMLR, ICCAT, IATTC, WCPFC), bilateral fisheries meetings (Brazil, Canada, Chile, China, EC, Japan, Korea, Mexico, Russia, Taiwan), fishers forum, fisheries observer conferences, albatross and seabird conferences, and the Agreement for

Conservation of Albatrosses and Petrels (ACAP). In addition to government staff, the work and collaborative input by multiple partners (Sea Grant, universities, fishing industry associations, environmental groups) has been essential to addressing the seabird-fishery issues.

NMFS National Bycatch Strategy: Although seabirds are not included within the MSA’s “bycatch” definition⁴, efforts to reduce the incidental take (or bycatch) of seabirds in fisheries are consistent with the MSA’s objective to conserve and manage the marine environment. In addition, NMFS’ guidelines for implementing the MSA’s national standards for fishery conservation and management note that other applicable laws, such as the Marine Mammal Protection Act, the ESA, and the Migratory Bird Treaty Act (MBTA), require that Councils consider the impact of conservation and management measures on living marine resources other than fish; i.e. marine mammals and birds.

In 2003, consistent with then recent amendments to the MSA, the reduction of the incidental catch of seabirds in fisheries was incorporated into [NMFS National Bycatch Strategy](#). The National Bycatch Strategy is based on the 1998 NMFS report, *Managing the Nation’s Bycatch*, which contains the agency’s national bycatch goal, “to implement conservation and management measures for living marine resources that will minimize, to the extent practicable, bycatch and the mortality of bycatch that cannot be avoided.” The national strategy outlines how NMFS will improve upon and expand current bycatch

⁴ MSA definition of ‘bycatch’: the term “bycatch” means fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch and release fishery management program. (See MSA Section 3(2)).

reduction efforts and undertake new bycatch initiatives, such as: assessing regional progress toward meeting national bycatch objectives and strategies; developing a national approach that standardizes bycatch reporting; implementing the national bycatch goal through regional implementation plans; expanding international approaches to bycatch reduction; undertaking new education and outreach efforts; and identifying long-term funding requirements. Reducing the take of migratory birds is specifically addressed in [NMFS' National Bycatch Strategy](#). Both the 1998 report and the National Bycatch Strategy use a working definition of "bycatch" that is more expansive than the legal definition in the MSA and includes the incidental take of seabirds as "bycatch"⁵.

NMFS National Bycatch Report: NMFS has begun work on a National Bycatch Report. This report will provide a comprehensive summary of regional and national estimates of: (1) at-sea discards of fish and (2) bycatch of protected species (e.g., marine mammals, sea turtles, seabirds, and other endangered or threatened living marine resources) in select commercial fisheries. The report will also outline actions to enhance bycatch data collection and estimates, and to develop estimates for more of the nation's fisheries. This collaborative project is coordinated by the National Observer Program, with broad participation by staff experts located in headquarters offices as well as Regional Offices and Science Centers. The National Bycatch Report will be periodically updated.

Federal at-sea observer programs and other data collection programs (e.g. logbook, dealer reports) that provide bycatch, landings and effort data are the primary sources of data used

⁵ 1998 NMFS Bycatch Report and NMFS National Bycatch Strategy definition of 'bycatch': "Discarded catch of any living marine resource plus retained incidental catch and unobserved mortality due to a direct encounter with fishing gear."

to estimate bycatch in commercial fisheries. Currently, observer data are available for 40 commercial fisheries. Industry reports provide supplementary catch and bycatch information for many additional U.S. fisheries.

As part of NMFS' National Bycatch Strategy, the National Bycatch Report will serve as a strategic document to guide future data collection and monitoring and will provide valuable input for setting management goals. The enhanced bycatch estimates will be used for stock assessments, in-season fisheries management, and developing bycatch reduction measures for both protected species and fish.

With respect to the bycatch of seabirds, seabird populations of management importance (those listed under ESA or identified on the USFWS's *Birds of Conservation Concern*) will be regionally evaluated in a quantitative approach that considers those species for which bycatch estimates are available. A qualitative evaluation, in consultation with USFWS, may be used for species of concern that are not ESA or BCC-listed or for which bycatch estimates are not available.

The first edition of the National Bycatch Report is projected to be released in 2010 and it uses the BCC 2002 list. The subsequent edition of the National Bycatch Report will use the most current BCC list.

Bycatch Reduction Engineering Program: The Bycatch Reduction Engineering Program (BREP) was established in 2007 by amendment to the MSA (Section 316). The BREP mission is to develop technological solutions and investigate changes in fishing practices designed to minimize bycatch of fish (including sponges and deep sea and shallow, tropical corals) and protected species (including marine mammals, seabirds, and sea turtles) as well as minimize bycatch injury and mortality (including post-release injury and mortality). Section 316(c)

“Coordination on Seabird Interactions” is the first time that the MSA explicitly references seabirds and authorizes projects to reduce seabird bycatch.

The [NMFS Policy Directive \(01-107, January 25, 2008\)](#) implements the BREP and the first “[Annual Report to Congress on the Bycatch Reduction Engineering Program](#)” became available in 2009.

The BREP serves as a point of contact among NOAA managers, the NSP, and regionally based bycatch reduction engineering programs. The NSP Coordinator is included in a group of NMFS representatives that work with the BREP National Coordinator to coordinate BREP activities and develop final BREP recommendations on spending plans, policy issues, and other topics.

Budget: Before 2004, seabird actions by NMFS were solely funded through existing regional budgets, being integrated into staffs’ current workloads or through existing budget readjustments. NSP received its first direct budget in FY04 as a line item in NMFS’s ‘Reducing Bycatch’ initiative. This spending plan was initiated to provide resources for needs and priorities identified through NMFS’s National Bycatch Strategy and the NSP was an identified element of the bycatch strategy requiring funds. Table A.1 shows NSP funding by fiscal year. With the inclusion of the BREP in the MSA reauthorization in 2007, subsequent funding for the NSP was directed through the BREP funding line item. The NSP is currently one of two allocations in the BREP funding and its budget is managed by the National Seabird Coordinator. The BREP has also encouraged that international seabird projects be funded through an internally competitive process of cooperation and assistance related to MSA’s defined Protected Living Marine Resources administered by the NMFS International Affairs (IA) office. Since 2008, IA has contributed

funding to seabird bycatch projects in Russia, Mexico, and Peru.

‘Calls for proposals’ are made annually by the NSP Coordinator to the NMFS regions and centers and proposals are awarded via a simple process based on specified criteria that address NSP objectives. Annual funds have been fully disbursed since FY04 and several NMFS regions and centers have received funding for projects (AFSC, SWFSC, NEFSC, SEFSC, PIRO). Project awards are typically small (~\$5,000 to \$25,000) and are viewed as ‘seed’ money, encouraging matching funds by the regional budget. Project awards have also been made to non-governmental organizations that engaged in work that met the selection criteria. From FY04 to FY09, the annual NSP budget has been approximately \$225K. The primary budget components are projects (~\$120K), travel (~\$30K for Coordinator and invitational travel), and salary (~\$75K, toward the Coordinator’s ½ FTE). The NSP is resource-limited and allocations have not fully addressed stated needs, particularly given the expensive nature of projects like mitigation studies. There has been no mechanism to fund necessary projects in a cohesive and comprehensive manner. Now with added mandates and statutory direction to act and report, additional budget resources are critical.

In 2007, the NSP was introduced in the NOAA Strategic Planning and Budget Process via FY2010-2014 budget alternative requests for the Ecosystems Observations Program (EOP) & the Fishery Monitoring Program (FMP). The ‘100% requirement’ (i.e. what would be needed to fully fund a program) was estimated at \$1.4M annually for the NSP. The NSP was not funded in this 5-year cycle. The next opportunity for integration into the strategic planning and budget system would be FY2013-2017.

A comprehensive (national and regional) strategic planning exercise for the NSP has not

been conducted. The program would benefit from such an effort. Thus, one of the objectives of the 'NMFS National Seabird Workshop' is to consider NMFS seabird needs, with input from our working seabird partnerships (e.g. universities, Sea Grant, USFWS, fishery

management councils), and develop documentation which can be used effectively to guide our fulfillment of seabird responsibilities in management and research. This input can be integrated into the NMFS long-term planning and budget processes.

Table A.1. NSP funding.

| <i>FY</i> | 04 | 05 | 06 | 07 | 08 | 09 | % change |
|---------------|-----|-----|-----|-----|-----|-----|----------|
| \$ Amt | | | | | | | |
| Requested | 227 | 253 | 409 | 564 | 564 | 443 | 49% |
| Received | 200 | 227 | 227 | 227 | 229 | 229 | 13% |

The Workshop: BUILDING A NATIONAL PLAN FOR NMFS TO IMPROVE THE STATE OF KNOWLEDGE AND REDUCE FISHERIES IMPACTS ON SEABIRDS

Where to From Here?

Get motivated! To varying degrees, NMFS has been successful at addressing the need for integration of seabird considerations into its sustainable fishery practices and management. Seabird work has been undertaken to varying degrees in the NMFS regions, centers, and offices and has typically depended on regional priorities, resources, seabird species involved (e.g. ESA-listed or not), and available expertise.

Can More Be Done?

Yes! The National Seabird Program and its seabird contacts from the regions, centers, and headquarter offices have not had an opportunity to all meet in one place and review NMFS seabird activities and responsibilities. Although regional meetings have occurred, many benefits could be gained by everyone meeting together to reach common understandings of the NSP and identify priority action areas and develop a strategic planning document.

What Can Be Achieved at a NMFS Seabird Workshop?

A lot! This workshop will be a starting place for continued progress on this important issue. Objectives and achievements could include:

NMFS seabird contacts meet each other as well as other ISWG contacts;

Initiate the development of a seabird implementation plan at both the national and regional levels that:

- describes and provide insights regarding NMFS seabird activities and important partnerships with management entities including the U.S. Fish and Wildlife Service,

- describes information about NMFS regional seabird activities, such as: seabird bycatch
- estimation analyses, observer program seabird training, seabirds as components of ecosystem models, mitigation gear research and applications, outreach and education;
- ‘Strategic thinking’ --Identify regional and national seabird priorities (e.g. research, monitoring, assessment, outreach) and resource gaps;
- guide NMFS management and science;
- provide input to the NMFS long-term planning and budget process.
- Address how to implement MSRA Section 316 requirements, regionally and nationally
- Develop seabird-related performance measures

What happens after the Workshop?

Get Started! The Workshop Report will be produced and distributed as a NOAA Technical Memorandum. Other post-Workshop actions and activities could include:

- The Seabird Implementation Plan will be developed and submitted to the NMFS planning and budget process.
- Plan for future workshops or other means to progress on some of the above objectives and achievements that we didn’t have time to do at this first Workshop and to address the newly identified ones.
- Incorporate workshop results into regional management systems and Regional Bycatch Implementation Plans within 1-2 years.
- Identify/develop ‘standard operating procedure’ for regional seabird issues.

- Improve/enhance working relationships and collaborations with USFWS, Councils, Sea Grant programs, university scientists, seabird experts, mitigation gear technologists, fishing industry, environmental NGOs, stakeholders.
- Consider a review and update of the NPOA-Seabirds.
- Initiate implementation of the FAO's Best Practice Technical Guidelines on IPOA/NPOA-Seabirds.

LIST OF ACRONYMS

| | |
|-----------------|--|
| ACAP – | Agreement on the Conservation of Albatrosses and Petrels |
| AFSC – | NMFS’s Alaska Fisheries Science Center |
| AKR – | NMFS’s Alaska Region |
| BCC – | Birds of Conservation Concern |
| BPTG – | Best Practice Technical Guidelines |
| BREP – | Bycatch Reduction Engineering Program |
| CCAMLR – | Commission for the Conservation of Antarctic Living Marine Resources |
| DOS – | Department of State |
| EC – | European Commission |
| EO 13186 – | Executive Order 13186: Federal Agency Responsibilities to Protect Migratory Birds |
| EOP – | Ecosystem Observations |
| ESA – | Endangered Species Act as revised in 1973 |
| FAO – | United Nations’ Food and Agriculture Organization |
| FMC – | Fishery Management Center |
| FMP – | Fishery Management Plan |
| FMP – | Fishery Monitoring Program |
| HMS – | Highly Migratory Species |
| IATTC – | Inter-American Tropical Tuna Commission |
| ICCAT – | International Commission on the Conservation of Atlantic Tunas |
| IPOA-Seabirds – | International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries |
| ISWG – | Interagency Seabird Working Group |
| MSA – | Magnuson-Stevens Fishery Conservation and Management Act |
| MBTA – | Migratory Bird Treaty Act |
| NEFSC – | NMFS’s Northeast Fisheries Science Center |
| NEPA – | National Environmental Policy Act |
| NGO – | Non-governmental organization |
| NMFS – | National Marine Fisheries Service |
| NOAA – | National Oceanic and Atmospheric Administration |
| NPOA-Seabirds – | National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries |
| NSP – | NMFS’s National Seabird Program |
| NWFSC – | NMFS’s Northwest Fisheries Science Center |
| PIRO – | NMFS’s Pacific Island Regional Office |
| SEFSC – | NMFS’s Southeast Fisheries Science Center |
| SWFSC – | NMFS’s Southwest Fisheries Science Center |
| SWR – | NMFS’s Southwest Region |
| USFWS – | U.S. Fish & Wildlife Service |
| WCPFC – | Western Central Pacific Fisheries Commission |

Appendix A1: Statutory Mandates and Policies for NMFS's Seabird Responsibilities

Magnuson-Stevens Fishery Conservation and Management Act (MSA, Magnuson-Stevens Act)

The Magnuson-Stevens Act is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976 and amended in 1996. Most notably, the Magnuson-Stevens Act aided in the development of the domestic fishing industry by phasing out foreign fishing. To manage the fisheries and promote conservation, the Act created eight regional fishery management councils. The 1996 amendments focused on rebuilding overfished fisheries, protecting essential fish habitat, and reducing bycatch.

Several areas of the Act are noteworthy with respect to 'seabirds': some definitions at Section 3, Section 303—Contents of Fishery Management Plans, Section 316—Bycatch Reduction Engineering Program, and a definition at Section 610--Equivalent Conservation Measures. Also to be considered here are the guidelines for National Standards. The National Standards for Fishery Conservation and Management are at Section 301 and the guidelines were published in the Federal Register.

[Information](#) about the Magnuson-Stevens Act amendments through 2007 and the Magnuson-Stevens Act [text](#) is available.

Bycatch Definition Section 3 “(2) The term "bycatch" means fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch and release fishery management program.”

Noteworthy is that this definition does not include “seabirds”.

Conservation and management Definition Section 3 “(5) The term "conservation and management" refers to all of the rules, regulations, conditions, methods, and other measures

Which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment; and....”

Noteworthy is that seabirds are a component of the marine environment.

Contents of Fishery Management Plans Section 303 (b) includes discretionary provisions that fishery management plans may ... (12) include management measures in the plan to conserve target and non-target species and habitats, considering the variety of ecological factors affecting fishery populations; and (14)[sic]15 prescribe such other measures, requirements, or conditions and restrictions as are determined to be necessary and appropriate for the conservation and management of the fishery.”

Noteworthy is that seabirds that are incidentally taken in fisheries would qualify as 'non-target species'.

Bycatch Reduction Engineering Program

Section 316 states,

“(a) BYCATCH REDUCTION ENGINEERING PROGRAM.—Not later than 1 year after the date of enactment of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, the Secretary, in cooperation with the Councils and other affected interests, and based upon the best

scientific information available, shall establish a bycatch reduction program, including grants, to develop technological devices and other conservation engineering changes designed to minimize bycatch, seabird interactions, bycatch mortality, and post-release mortality in Federally managed fisheries. The program shall—

“(1) be regionally based;

“(2) be coordinated with projects conducted under the cooperative research and management program established under this Act;

“(3) provide information and outreach to fishery participants that will encourage adoption and use of technologies developed under the program; and

“(4) provide for routine consultation with the Councils in order to maximize opportunities to incorporate results of the program in Council actions and provide incentives for adoption of methods developed under the program in fishery management plans developed by the Councils.

“(b) INCENTIVES.—Any fishery management plan prepared by a Council or by the Secretary may establish a system of incentives to reduce total bycatch and seabird interactions, amounts, bycatch rates, and post-release mortality in fisheries under the Council’s or Secretary’s jurisdiction, including—

“(1) measures to incorporate bycatch into quotas, including the establishment of collective or individual bycatch quotas;

“(2) measures to promote the use of gear with verifiable and monitored low bycatch and seabird interactions, rates; and

“(3) measures that, based on the best scientific information available, will reduce bycatch and seabird interactions, bycatch mortality, post-release mortality, or regulatory discards in the fishery.

“(c) COORDINATION ON SEABIRD INTERACTIONS.—The Secretary, in

coordination with the Secretary of Interior, is authorized to undertake projects in cooperation with industry to improve information and technology to reduce seabird bycatch, including—

“(1) outreach to industry on new technologies and methods;

“(2) projects to mitigate for seabird mortality; and

“(3) actions at appropriate international fishery organizations to reduce seabird interactions in fisheries.

“(d) REPORT.—The Secretary shall transmit an annual report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Resources that—

“(1) describes funding provided to implement this section;

“(2) describes developments in gear technology achieved under this section; and

“(3) describes improvements and reduction in bycatch and seabird interactions associated with implementing this section, as well as proposals to address remaining bycatch or seabird interaction problems.”.

Protected Living Marine Resources (PLMR)

Definition Section 610—Equivalent Conservation Measures addresses international fishery issues and at paragraph (e) defines PLMR as ...” (1) means non-target fish, sea turtles, or marine mammals that are protected under United States law or international agreement, including the Marine Mammal Protection Act, the Endangered Species Act, the Shark Finning Prohibition Act, and the Convention on International Trade in Endangered Species of Wild Flora and Fauna; but

(2) does not include species, except sharks, managed under the Magnuson-Stevens Fishery Conservation and Management Act, the Atlantic

Tunas Convention Act, or any international fishery management agreement.

Noteworthy is that this definition does not include ‘seabirds’.

With respect to large-scale driftnet fishing which is addressed in Section 206, the definition of ‘living marine resource’ at paragraph (h) does include ‘seabirds’.

National Standard 9 Guideline Section 301 (a) states that ‘Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the following national standards for fishery conservation and management:(9) Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

As required at Section 303(b), the Secretary of Commerce established advisory guidelines (known as national standard guidelines) to assist in the development of fishery management plans. The guideline for National Standard 9 (63 Federal Register 24212, May 1, 1998) states that “Councils (i.e. fishery management councils) consider the impact of conservation and management measures on living marine resources other than fish; i.e., marine mammals and birds.” (50 CFR 600.350(e)).

Endangered Species Act (ESA) of 1973. The USFWS is responsible for listing seabird species under the ESA. NMFS’s role is as the consultative agency, undertaken when evaluating the impact of its fishery actions on ESA-listed seabird species. Information, policies, guidance and regulations associated with the [Section 7 consultation process](#) are available.

Some examples of biological opinions (document that states the opinion of the USFWS

as to whether or not the NMFS action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat) from [Alaska](#) and [Hawaii](#) are available.

National Environmental Policy Act (NEPA)

NEPA is a law that requires Federal agencies to consider environmental impacts during their decision-making for major Federal actions. NEPA establishes a national environmental policy and provides a framework for environmental planning and decision-making by Federal agencies. NEPA directs Federal agencies, when planning projects or issuing permits, to conduct environmental reviews to consider the potential impacts on the environment by their proposed actions. The NEPA process consists of a set of fundamental objectives that include interagency coordination and cooperation and public participation in planning and project development decision-making. NEPA also established the Council on Environmental Quality (CEQ), which is charged with the administration of NEPA. As stated in the CEQ regulations ([40 CFR 1500.1](#)), NEPA is designed to allow for informed decision-making by government officials and public participation in the process.

Public involvement is an important part of NEPA. NEPA’s success as an environmental disclosure and problem-solving law depends on full disclosure and open discussion. Public disclosure leads to government accountability for the environmental effects of Federal decisions. The NEPA review process is intended to disclose all pertinent facts and possibilities associated with Federal decisions, and to ensure that the public has the opportunity to comment and contribute to those decisions in an environmentally meaningful way.

For many proposed NMFS (e.g. fishery) actions, the ‘affected environment’ may include a seabird component. The ‘affected environment’

is typically described in Chapter 3 of a NEPA document. The fishery action may be directly related to seabirds, such as proposed regulations for seabird avoidance gear, or it may be for some general fishery action not related to seabirds. Some examples of NEPA documents for specific seabird-related actions include the [Final Draft EA/RIR/IRFA for a Regulatory Amendment](#) to Revise Regulations for Seabird Avoidance Measures in the Hook-and-Line Fisheries Off Alaska in IPHC Area 4E, January 16, 2009 and the [Final Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis](#) for a Regulatory Amendment to Revise Regulations for Seabird Avoidance Measures in the Hook-and-line Fisheries off Alaska, October 2007, and the [Final Environmental Impact Statement; Seabird Interaction Avoidance Methods and Pelagic Squid Fishery Management \(April 2005\)](#).

Some examples of seabird treatments in more general fishery actions and NEPA documents from Alaska fisheries include--- the [Final Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement \(June 2004\)](#) (scroll down to Chapter 3: Affected Environment, Section 3.7 Seabirds) and the Alaska [Groundfish Harvest Specifications Final EIS, 2007](#) see Chapter 9, Seabirds).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund) and the Oil Pollution Act (OPA)

Under these statutes, two types of liability are assigned for releases of oil or hazardous substances: responsibility for cleanup of the environment (which is overseen by the lead cleanup agency) and responsibility for addressing injury to natural resources (which is overseen by natural resource trustees). Natural resource trustees include federal and state agencies as well as tribal governments. As a natural resource trustee, NOAA acts on behalf of the public to protect and restore coastal and

marine resources and their services. Natural resources include all fish, plants, birds and any other wildlife, and their habitats; soil and sediments; the entire water column; and both surface and groundwater sources of water. Therefore any birds inhabiting the coastal or marine environment are protected by and within NOAA's jurisdiction under these statutory authorities and responsibilities, as well as the habitats and food sources that birds depend on.

National Marine Sanctuaries Act

The National Marine Sanctuaries Act (NMSA) prohibits the destruction, loss of, or injury to any sanctuary resource and any violation of the Act, any regulations, or permits issued pursuant to the NMSA. The Secretary of Commerce (Secretary) is required to conduct such enforcement activities as are necessary and reasonable to carry out the Act. The Secretary may issue special use permits which authorize specific activities in a sanctuary, in order to establish conditions of access to and use of any sanctuary resource, or to promote public use and understanding of a sanctuary resource.

The NMSA also establishes liability for response costs and natural resource damages for injury to sanctuary natural resources. Under the Act, the Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury. Furthermore, the Secretary shall assess damages to sanctuary resources. The Act defines natural resource damages to include the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource; the value of the lost use of the resource pending its restoration the cost of damage assessments; and reasonable monitoring costs. The Secretary is required to use recovered response costs and damages to finance response actions and damage assessments to restore, replace or acquire the equivalent of the injured

sanctuary resource, and to manage and improve national marine sanctuaries.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires that federal agencies consult with NOAA's National Marine Fisheries Service, DOI's USFWS, and state wildlife agencies for federal activities that affect, control or modify waters of any stream or body of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. The FWCA requires federal agencies to take into consideration the effects that water-related projects would have on fish and wildlife resources; take action to prevent loss or damage to these resources; and provide for the development and improvement of these resources. This is generally incorporated for federal activities during the process of complying with the Clean Water Act, NEPA, or any other federal permit, license or review requirements. The FWCA is often used by NOAA's habitat and biological resource conservation programs (i.e., Community-based Restoration Program, DARRP, etc.), especially for providing federal financial assistance (via contracts, grants, etc.). These FWCA funds are specifically used to conserve and restore coastal and marine habitats and biological resources (i.e., fish, seabirds and other wildlife).

U.S. National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds)

The United States voluntarily developed the [NPOA-Seabirds](#) in 2001 to fulfill a national responsibility to address seabird bycatch in longline fisheries, as requested in the *International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (IPOA-Seabirds). The IPOA-Seabirds applies to "States" (hereafter Countries) in whose waters longline fishing is being conducted by their own or foreign vessels, and to Countries that conduct longline fishing on the high seas and in the exclusive economic

zones (EEZs) of other Countries. The IPOA-Seabirds is a voluntary measure that calls on Countries to: (1) assess the degree of seabird bycatch in their longline fisheries; (2) develop individual national plans of action to reduce seabird bycatch in longline fisheries that have a seabird bycatch problem; and (3) develop a course of future research and action to reduce seabird bycatch. The NPOA-Seabirds is to be implemented consistent with the FAO *Code of Conduct for Responsible Fisheries* and all applicable rules of international law, and in conjunction with relevant international organizations.

Development of the NPOA-Seabirds was a collaborative effort between NMFS, the USFWS and the Department of State, carried out in large part by the Interagency Seabird Working Group (ISWG) consisting of representatives from those three agencies. This partnership approach recognizes the individual agency management authorities covering seabird interactions with longline fisheries. NMFS manages U.S. fisheries under the authority of the Magnuson-Stevens Fishery Conservation and Management Act and the High Seas Fishing Compliance Act. USFWS manages birds predominately under the authority of the Endangered Species Act and the Migratory Bird Treaty Act. In addition, DOS has a lead role in international negotiations on fisheries conservation and management issues that should help promote IPOA implementation by encouraging other nations to develop NPOAs. Given each agency's responsibilities, the NPOA-Seabirds was developed collaboratively by NMFS and USFWS. This collaborative effort has increased communication between seabird specialists and fishery managers in USFWS and NMFS. Maintaining this cooperation is a high priority for both agencies.

The NPOA-Seabirds contains the following themes:

Action Items: NMFS, with the assistance of the Regional Fishery Management Councils (Councils), the NMFS Regional Science Centers, and USFWS, as appropriate, should conduct the following activities:

- Detailed assessments of its longline fisheries for seabird bycatch within 2 years of the adoption of the NPOA-Seabirds;
- If a problem is found to exist within a longline fishery, measures to reduce this seabird bycatch should be implemented within 2 years. These measures should include data collection, prescription of mitigation measures, research and development of mitigation measures and methods, and outreach, education, and training about seabird bycatch; and;
- NMFS, in collaboration with the appropriate Councils and in consultation with FWS, will prepare an annual report on the status of seabird mortality for each longline fishery, including assessment information, mitigation measures, and research efforts. FWS will also provide regionally-based seabird population status information that will be included in the annual reports.

Interagency Cooperation: The continuation, wherever possible, of the ongoing cooperative efforts between NMFS and FWS on seabird bycatch issues and research.

International Cooperation: The United States' commitment, through the DOS, NMFS and USFWS, to advocate the development of National Plans of Action within relevant international fora.

The development of the NPOA-Seabirds has emphasized that all U.S. longline fisheries have unique characteristics, and that the solution to seabird bycatch issues will likely require a multi-faceted approach requiring different fishing techniques, the use of mitigating equipment, and education within the affected

fisheries. Therefore, the NPOA-Seabirds does not prescribe specific mitigation measures for each longline fishery. Rather, this NPOA-Seabirds provides a framework of actions that NMFS, FWS, and the Councils, as appropriate, should undertake for each longline fishery. By working cooperatively, fishermen, managers, scientists, and the public may use this national framework to achieve a balanced solution to the seabird bycatch problem and thereby promote sustainable use of our nation's marine resources.

FAO's Best Practice Technical Guidelines for IPOA/NPOA-Seabirds (BPTG) (March 2009)

The guidelines have been prepared to:

- (i) assist countries in preparing and implementing more effective NPOA-Seabirds;
- (ii) provide regional fisheries management organizations with guidance on implementing IPOA-Seabirds within a regional framework; and
- (iii) address incidental mortality of seabirds from relevant fishing gear. The guidelines emphasize the importance of a cyclical framework of data collection, research and monitoring to quantify and reduce the incidental mortality of seabirds in an adaptive manner.

Best Practice Technical Guidelines are:

- 1) Extend the IPOA-Seabirds to other relevant fishing gear including trawls and gillnets
- 2) Uptake of seabird measures by RFMO/Arrangements
- 3) Defining an incidental catch problem
- 4) Mitigation measures and related standards
- 5) Mitigation research

- 6) Education, training and outreach
- 7) Observer program
- 8) Seabird incidental catch reduction objectives
- 9) Monitoring and reporting framework for NPOA–Seabirds and regional plans
- 10) Periodic performance review

The BPTG are from [Report Of The Expert Consultation on Best Practice Technical Guidelines for IPOA/NPOA–Seabirds](#). Bergen, Norway, 2–5 September 2008; FAO Fisheries and Aquaculture Report No. 880, FIIT/R880, Rome, 2008

NMFS’s Strategic Plan—FY2005 to FY2010: New Priorities for the 21st Century—National Marine Fisheries Service Strategic Plan, Updated for FY2005-FY2010

NMFS’s mission statement is the “Stewardship of living marine resources through science-based conservation and management, and the protection and restoration of healthy ecosystems.” The [NMFS Strategic Plan](#) provides a look into a future of ecosystem approaches to management, rebuilding and sustaining fishery and protected species stocks to their long-term potential. This will help ensure future performance, productivity, and biological diversity of marine ecosystems for the greatest benefit to the Nation.

The NMFS Strategic Plan is an important link between budget and performance. It is a critical tool to steer us in the direction of ecosystem approaches to management and to help us design and create programs, allocate resources, and perform with better accountability for results.

Most of NMFS’s programmatic activities support achieving NOAA’s strategic goal to

“protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management.” NMFS activities also support NOAA’s goal to “understand climate variability and change to enhance society’s ability to plan and respond.” Finally, NMFS provides agency-wide services to “provide critical support mission for NOAA’s mission.”

The Strategic Plan’s definition of the term ‘protected species’ also includes seabirds, which NMFS has a responsibility to protect.

NMFS’s Strategic Plan for Fisheries Research

The Magnuson-Stevens Act reauthorization in 1996 called on the Secretary of Commerce to develop and publish a strategic plan for fisheries research. The resulting plan is the [NMFS Strategic Plan for Fisheries Research](#) which is regularly updated.

NMFS is responsible for the science-based management, conservation, and protection of living marine resources within the U.S. Exclusive Economic Zone (EEZ). Fisheries in the EEZ beyond state jurisdiction (3 n.mi. in most states) are the responsibility of the Federal Government, specifically NMFS, as advised by eight regional Fishery Management Councils. In addition to its primary responsibilities within the EEZ, NMFS also plays a supportive and advisory role in the management of living marine resources in coastal areas under state jurisdiction, provides scientific and policy leadership in the international arena, and implements international conservation and management measures as appropriate.

NMFS stands at the forefront of fisheries research, both domestically and internationally. For more than 135 years, the agency’s long-term commitment to scientific excellence via internal and external peer-reviewed scientific publications has materially advanced marine science and policy. Since 1871, Federal fisheries

scientists have collected, researched, analyzed, and published peer-reviewed data on the Nation's living marine resources and marine ecosystems and on the benefits they provide. Using this peer-review process, important agency findings are published in many highly respected journals. NMFS uses its science quality assurance program to consistently monitor and review NMFS research efforts. Further, this program identifies gaps in infrastructure, facilities, and resources that may affect the productivity of NMFS scientists. The agency's comprehensive scientific research and publishing efforts provide the foundation for developing sound policies that govern the use, protection, restoration, and conservation of living marine resources, marine habitats, and related aquatic environments.

This NMFS Strategic Plan for Fisheries Research incorporates research planning elements across several NOAA dimensions: from the overarching NOAA Strategic Plan and the NOAA Research Plan, to the NMFS Strategic Plan (NSP), and lastly, to the six Fisheries Science Center research plans. Lying across this planning agenda is a NOAA 20-Year Research Vision, which presents a longer-term perspective of the environmental and ecological challenges our Nation faces and the technological and scientific advances we expect will help meet those challenges.

The scope of the NSPFR is specific to the requirements of the Magnuson-Stevens Act with respect to fisheries, habitat, and certain protected resources research. It does not include the regulatory and enforcement components of the NMFS mission, nor those research elements conducted under non-fisheries mandates, such as the Marine Mammal Protection Act (MMPA) and the ESA. This Plan covers current research activities as well as strategies for improving data collection, analysis, and dissemination.

Seabird-related research (e.g. mitigation gear designed to reduce/avoid gear interactions with

seabirds are a part of conservation engineering research. Conservation engineering research is intended to make fishing gear more efficient and to reduce fishing costs, bycatch mortality, and habitat destruction. It is also intended to improve the data provided by scientific surveys of fish populations. This research area includes studies related to gear performance and fish behavior to be used in the development of selective fishing gear to reduce bycatch. The 2007 version of the NMFS Strategic Plan for Research is currently being updated.

NMFS National Bycatch Strategy & National Bycatch Report

The [NMFS' National Bycatch Strategy](#) is based on the 1998 NMFS *Managing the Nation's Bycatch*, which contains the agency's national bycatch goal, "to implement conservation and management measures for living marine resources that will minimize, to the extent practicable, bycatch and the mortality of bycatch that cannot be avoided." The strategy outlines how NMFS will improve upon and expand current bycatch reduction efforts and undertake new bycatch initiatives, such as: assessing regional progress toward meeting national bycatch objectives and strategies; developing a national approach that standardizes bycatch reporting; implementing the national bycatch goal through regional implementation plans; expanding international approaches to bycatch reduction; undertaking new education and outreach efforts; and identifying long-term funding requirements.

In the NMFS National Bycatch Report, with respect to the bycatch of seabirds, seabird populations of management importance (those listed under ESA or identified on the USFWS's *Birds of Conservation Concern*) will be regionally evaluated in a quantitative approach that considers those species for which bycatch estimates are available. A qualitative evaluation, in consultation with USFWS, may be used for species of concern that are not ESA or BCC-

listed or for which bycatch estimates are not available.

The first edition of the National Bycatch Report is projected to be released in 2010 and it uses the BCC 2002 list. The subsequent edition of the National Bycatch Report will use the BCC 2008 list.

Executive Order (EO) 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” This 2001 [Executive Order](#) is intended to promote the conservation of migratory bird populations and calls on Federal agencies to develop and implement a Memorandum of Understanding (MOU) with USFWS if its actions have, or are likely to have, a measurable negative effect on migratory bird populations. NMFS and USFWS are working together to draft an MOU.

US Fish & Wildlife Service’s List of Birds of Conservation Concern (BCC) (2008) The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA.” [Birds of Conservation Concern 2008 \(BCC](#)

[2008](#)) is the most recent effort to carry out this mandate. The overall goal of this report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent our highest conservation priorities. While all of the bird species included in *BCC 2008* are priorities for conservation action, this list makes no finding with regard to whether they warrant consideration for ESA listing. USFWS’s goal is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservation actions. USFWS recommends that these lists be consulted in accordance with Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds.” This report should also be used to develop research, monitoring, and management initiatives. *BCC 2008* is intended to stimulate coordinated and collaborative proactive conservation actions among Federal, State, Tribal, and private partners. USFWS hopes that, by focusing attention on these highest-priority species, this report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby contributing to healthy avian populations and communities.

Appendix B. Workshop Terms of Reference as Provided to Workshop Participants

NMFS NATIONAL SEABIRD WORKSHOP

“BUILDING A NATIONAL PLAN FOR NMFS TO IMPROVE THE STATE OF KNOWLEDGE AND REDUCE FISHERIES IMPACTS ON SEABIRDS”

TERMS OF REFERENCE

OVERVIEW/BACKGROUND

Seabirds are considered to be important indicators of ecosystem health and are an obvious element of interest and study by NOAA scientists and managers. NMFS continues to be concerned about the long-term ecosystem effects of seabird bycatch in NMFS-managed fisheries and in fisheries conducted in many areas of the world’s oceans. Additionally, seabird abundance and distribution can inform scientists about oceanic prey abundance, climate change, and contaminants.

Seabird connections to NMFS range from survey scientists observing them at-sea on research and stock assessment survey cruises that are a regular part of NMFS practice to fishery observers recording them as incidental catch in the samples they observe onboard fishing vessels. Whereas the primary trust responsibilities for seabirds rest with the Department of Interior and its U.S. Fish & Wildlife Service (USFWS), NMFS plays a significant role and has responsibilities through various statutory authorities and agency policies.

The NMFS’ National Seabird Program (NSP) was formed in 2001 when the United States finalized its National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds). Prior to

2001, NMFS’ engagement on seabird projects reflected its focus on ocean resources and various regional interests and needs. Some examples of this seabird work include seabird surveys on NOAA research and stock assessment cruises in both the Pacific and Atlantic Oceans, collaborations on research and development of seabird bycatch reduction methods, and collection of seabird data by fishery observers.

Although seabirds may be impacted by both direct (e.g. incidental catch, gear entanglement, bycatch) and indirect (e.g. prey availability, ecosystem interactions) effects, the primary focus of the NPOA-Seabirds and thus of the NSP to date has been to address the direct impacts of fisheries on seabirds. The NPOA-Seabirds addresses both domestic and international fishery issues. The NPOA-Seabirds calls for assessments of longline fisheries to determine if seabird bycatch is a problem. If a problem exists, then it is addressed through a variety of efforts: gear research, requirements for mitigation measures, outreach, continued monitoring and estimation of bycatch. NMFS regions are at various stages of NPOA implementation. Recent guidance from the United Nations’ Food & Agriculture Organization’s Committee on Fisheries called on nations to also address these issues in other relevant fishing gears (e.g. trawl, gillnet).

WORKSHOP OBJECTIVES

The primary objective of this workshop is to initiate the development of a seabird implementation plan at both the national and regional levels that can be used to:

- describe and provide insights regarding NMFS seabird activities and important partnerships with management entities including the USFWS;
- guide NMFS management and science; and
- provide input to the NMFS long-term planning and budget process.

Within this context, other objectives that will be addressed include:

- NMFS seabird contacts meet each other;
- Become informed about NMFS regional seabird activities;
- ‘Strategic thinking’ --Identify regional and national seabird priorities and resource gaps;
- Address how to implement MSRA Section 316 requirements, regionally and nationally; and
- Develop seabird-related performance measures.

DATE/VENUE

September 9 to 11, 2009
Alaska Fisheries Science Center,
NOAA Facility, Seattle, WA

PARTICIPANTS

Representatives were requested from each of the NMFS regions, science centers, and headquarters offices. Experts were invited from NOAA International Affairs, USFWS, University of Washington, Washington Sea Grant, and the North Pacific Fishery

Management Council. Thirty-six invitees have confirmed participation.

WORKSHOP APPROACH

Participants will complete a questionnaire in advance of the workshop. The objectives of the questionnaire are to understand the level of current activity, resources and partnerships that are associated with seabirds, how this might vary by region, what current resources are being used, and what resources are needed for seabird programs. This activity will also serve to build a sense of community and understanding about what others are doing on seabirds.

The first day of the workshop will be a plenary session, and workshop themes will be introduced with presentations from invited speakers.

- Pelagic seabird abundance and distribution and overlap with fisheries---Dr. George Hunt, University of Washington
- Anthropogenic impacts (e.g. bycatch/entanglement) and Mitigation---Ed Melvin, Washington Sea Grant (invited)
- Management and Coordination within and between Agencies and with Stakeholders on Shared Objectives: Alaska Case Study---Greg Balogh (USFWS), Kristin Mabry (NMFS), Bill Wilson (North Pacific Fishery Management Council)
- Ecosystem Approach to Management—Seabirds as Indicators of Marine Health—Dr. Doug Demaster (NMFS)
- International Aspects and Needs—Nicole LeBoeuf (NMFS)

The first four themes, along with leading questions, will form the focus for working groups on days 2 and 3 of the workshop. The international theme will be incorporated into each of the working groups. The thematic working groups will first consider what regional

seabird strategies might look like and then work similarly to consider a national strategy.

FACILITATOR/RAPPORTEURS

Dr. Philip Heller
Learning Design Associates,
Seattle, WA
www.learningdesignassociates.com

Rapporteurs will be selected from the workshop participants.

STEERING COMMITTEE

A steering committee composed of NMFS staff (Kim Rivera, Lee Benaka, Shannon Fitzgerald, Nicole LeBoeuf, Richard Merrick) planned the workshop and developed its agenda and written materials. The Committee was assisted by Dr. Philip Heller in the workshop design.

INPUTS

Participants will have electronic access to the following materials:

- “NMFS & Seabirds: The NMFS National Seabird Program”
- Workshop Agenda
- Workshop Terms of Reference
- Participant List
- Hotel Information Sheet
- Resource/Reference List

Documents selected for the Resource/Reference List represent an array of documents from US government and international sources that are pertinent to seabird bycatch and seabird conservation.

OUTPUTS

A workshop report will be produced and distributed as a NOAA Technical Memorandum.

Appendix C. Reference Documents

REFERENCE DOCUMENTS FOR NMFS NATIONAL SEABIRD WORKSHOP September 9-11, 2009, Seattle, WA

BUILDING A NATIONAL PLAN FOR NMFS TO IMPROVE THE STATE OF KNOWLEDGE AND REDUCE FISHERIES IMPACTS ON SEABIRDS

Helpful to Read/Scan Prior to Workshop

[US's National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries \(NPOA-Seabirds\), 2001](#)

Section 316 of [Magnuson-Stevens Fishery and Conservation and Management Act](#) (text of the Bycatch Reduction Engineering Program, including Coordination on Seabird Interactions)

[FAO's Best Practice Technical Guidelines for IPOA/NPOA-Seabirds, 2009](#)

Examples of alternatives in the NOAA Strategic Planning and Budget Process⁶:

- EC-FMP Conservation Engineering FY12-16 Alternative
- EC-FMP Reducing Bycatch FY11-15 Alternative
- EC-PSP Marine Animal FY11-15 Alternative

General Resource References and Materials

⁶ See 'Reference List Documents' folder for files for these respective alternatives in the NOAA Strategic Planning and Budget Process

NMFS, Fisheries, Other
[Seabird Bycatch ---NMFS information--- national, international, regional](#)

[NMFS. New Priorities for the 21st Century: National Marine Fisheries Service Strategic Plan—Updated for FY 2005 – FY 2010](#)

NMFS 2004. [A Requirements Plan for Improving the Understanding of the Status of US Protected Marine Species—Report of the NMFS National Task Force for Improving Marine Mammal and Turtle Stock Assessments—September 2004 NOAA Technical Memorandum NMFS-F/SPO-63](#)

NMFS 2006. [Report of the Protected Species SAIP Tier III Workshop 7-10 March 2006, Silver Spring, MD; April 2007, NOAA Technical Memorandum NMFS-F/SPO-78](#)

[NMFS 2007. NMFS Strategic Plan for Fisheries Research. US Department of Commerce. NOAA. NMFS. August.](#)

[NMFS 2009. Annual report to Congress on the Bycatch Reduction Engineering Program. US Department of Commerce, NOAA, NMFS, 2009.](#)

[FAO 1999. FAO's International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries \(IPOA-Seabirds\), 1999, Rome, Italy.](#)

[NMFS 1998. Managing the Nation's Bycatch. Programs, activities, and recommendations for the National Marine Fisheries Service. US Dept of Commerce, NOAA, Washington, DC. NMFS National Bycatch Strategy](#)

[NMFS 2004. Evaluating Bycatch: A national approach to standardized bycatch monitoring programs. US Department of Commerce, NOAA Tech Memo, NMFS-F/SPO-66, 108pp.](#)

[Dietrich K, VR Cornish, KS Rivera, TA Conant. 2007. Best practices for the collection of longline data to facilitate research and analysis to reduce bycatch of protected species: report of a workshop held at the International Fisheries Observer Conference, Sydney, Australia, November 8, 2004; US Dept Commerce, NOAA Technical Memorandum NMFS-OPR-35, March 2007, 88pp.](#)

NOAA's National Marine Fisheries Service National Bycatch Report--information sheet, December 2008.⁷

NMFS. Annual Stock Assessment and Fishery Evaluation (SAFE) Reports for the Bering Sea/Aleutian Islands Management Area and Gulf of Alaska; SAFE reports include chapter on [Ecosystems Considerations](#), search for 'Seabird' section

[Lokkeborg, S. 2008. Review and assessment of mitigation measures to reduce incidental catch of seabirds in longline, trawl and gillnet fisheries. FAO Fisheries and Aquaculture Circular No 1040, FIIT/C1040, FAO, Rome.](#)

Examples of NEPA documents from Alaska and Hawaii that have seabird sections:

[Final Draft EA/RIR/IRFA for a Regulatory Amendment to Revise Regulations for Seabird Avoidance Measures in the Hook-and-Line Fisheries Off Alaska in IPHC Area 4E, January 16, 2009](#)

[Final Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendment to Revise Regulations for Seabird Avoidance Measures in the Hook-and-line Fisheries off Alaska, October 2007](#)

[Final Environmental Impact Statement; Seabird Interaction Avoidance Methods and Pelagic Squid Fishery Management \(April 2005\)](#)

[Final Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement \(June 2004\)](#) (scroll down to Chapter 3: Affected Environment, Section 3.7 Seabirds)

Alaska [Groundfish Harvest Specifications Final EIS, 2007](#) see Chapter 9, Seabirds

Washington Sea Grant publications

[Washington Sea Grant---Reducing Seabird Mortality in Fisheries](#)

[Dietrich KS and EF Melvin. 2007. Alaska trawl fisheries: potential interactions with North Pacific albatrosses. Washington Sea Grant Program. Final Report Contract No. NFFS7200-6-00063. December 2007.](#)

[Melvin EF, JK Parrish, KS Dietrich, and OS Hamel. 2001. Solutions to seabird bycatch in Alaska's demersal longline fisheries. Washington Sea Grant Program. Project A/FP-7. WSG-AS-01-01.](#)

[Melvin EF and MD Wainstein 2006. Seabird avoidance measures for small Alaskan longline](#)

⁷ See 'Reference List Documents' folder, document named "NMFS's National Bycatch Report—Information Sheet"

[vessels. Washington Sea Grant Program. Project A/FP-7.](#)

[Melvin EF, MD Wainstein, KS Dietrich, KI Ames, TO Geernaert, and LL Conquest. 2006. The distribution of seabirds on the Alaskan longline fishing grounds: implications for seabird avoidance regulations. Washington Sea Grant Program. Project A/FP-7.](#)

[Melvin EF, KS Dietrich, and MD Wainstein. Solving seabird bycatch in Alaskan fisheries. A case study in collaborative research. Washington Sea Grant.](#)

[Melvin EF 2009. Albatross mortality in West Coast hook-and-line fisheries for groundfish. Washington Sea Grant.](#)

Ecosystems

[Piatt, J., W. Sydeman, A. Harding, V. Byrd, D. Irons, A. Springer, K. Kuletz. 2006. Seabirds as indicators of marine ecosystems: an Integrated NPRB Science Plan for Alaska. Final Report. NPRB Project 516, August 2006.](#)

USFWS, Seabirds, Other

[Kushlan JA, Steinkamp, MJ, Parsons KC, Capp J, Cruz MA, Coulter M, Davidson I, Dickson L, Edelson N, Elliot R, Erwin RM, Hatch S, Kress S, Milko R, Miller S, Mills K, Paul R, Phillips R, Saliva JE, Sydeman B, Trapp J, Wheeler J, Wohl K. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan, Version 1. Waterbird Conservation for the Americas, Washington, DC, USA 78 pp.](#)

[USFWS Breeding Status, Population Trends and Diets of Seabirds in Alaska---Annual Time Series](#)

[USFWS 2005. Regional Seabird Conservation Plan, Pacific Region. USFWS, Migratory Birds](#)

[and Habitat Programs, Pacific Region, Portland, Oregon.](#)

[USFWS 2008. Short-tailed Albatross \(*Phoebastria albatrus*\) Recovery Plan: Prepared by the Short-tailed Albatross Recovery Team for Region 7, USFWS, Anchorage, Alaska.](#)

[USFWS 2008. Birds of Conservation Concern 2008. US Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. Waterbird Conservation for the Americas: regional seabird conservation plans \(where available\) by USFWS and its partners](#)

[Executive Order 13186, Responsibilities Of Federal Agencies To Protect Migratory Birds](#)

[Agreement on the Conservation of Albatrosses and Petrels \(ACAP\)⁸](#)

[BirdLife International. 2004. Tracking ocean wanderers: the global distribution of albatrosses and petrels. Results from the Global Procellariiform Tracking Workshop, 1-5 September, 2003, Gordon's Bay, South Africa. Cambridge, UK: BirdLife International.](#)

[Small, CJ. 2005. Regional fisheries management organizations: their duties and performance in reducing bycatch of albatrosses and other species. Cambridge, UK: BirdLife International.](#)

[Naughton MB, Romano MD, Zimmerman TS. 2007. A Conservation Action Plan for Black-footed Albatross \(*Phoebastria nigripes*\) and Laysan Albatross \(*P. immutabilis*\), Version 1.0.](#)

⁸ See 'Reference List Documents' folder, document 'ACAP Text' for text of the Agreement

Appendix D. Daily Workshop Agendas

Agenda, Wednesday, September 9, 2009

- 8:30 - 9:00 Welcome & Introductions / Dr. Doug DeMaster, AFSC Director
- 9:00 - 9:20 Opening Remarks “NMFS and Seabirds: The Importance of these Feathered Oceanographers to NOAA” / Dr. George Hunt, University of Washington
- 9:20 - 9:55 NMFS’s National Seabird Program / Kim Rivera, NMFS, National Seabird Coordinator
- 9:55 - 10:15 Pre-workshop Questionnaire Summary / Nicole LeBoeuf, NMFS, International Fisheries Biologist
- 10:15 – 10:30 Break
- 10:30 - 11:10 How To Get Seabirds from the Twilight Zone to NOAA’s Strategic Planning and Budget Process/ Gordon Waring, NEFSC, Fisheries Resource Biologist
- 11:10 - 11:50 NOAA’s Strategic Planning and Budget Process for the National Seabird Program/ Philip Hoffman, Protected Species Program Coordinator
- 11:50 - 1:15 Lunch
- 1:15 - 1:30 Introduction To Themes/ Kim Rivera
- 1:30 - 2:00 Determinants of the Distribution and Abundance of Seabirds at Sea: Potential for Interaction with Fisheries/ Dr. George Hunt
- 2:00 - 2:30 Anthropogenic impacts (e.g. bycatch/entanglement) and Mitigation / Kim Dietrich, Natural Resource Consultant
- 2:30 - 3:00 Management and Coordination within and between Agencies and with Stakeholders on Shared Objectives: An Alaska Case Study / Greg Balogh, Kim Trust—USFWS; Shannon Fitzgerald, Kristin Mabry, Kim Rivera—NMFS; Bill Wilson—North Pacific Fishery Management Council
- 3:00 - 3:15 Break
- 3:15 - 3:45 Ecosystem Approach to Management—Seabirds as Indicators of Marine Health / Dr. Doug DeMaster
- 3:45-4:15 Priorities and Opportunities for Marine Bird and Forage Fish Research in the North Pacific / Dr. John Piatt, Research Biologist, USGS Alaska Science Center, Anchorage
- 4:15 - 4:45 International Aspects of the NMFS Seabird Program / Nicole LeBoeuf
- 4:45 - 5:00 Close Out, Kim Rivera
- 6:30 Dinner

Agenda, Thursday, September 10, 2009

- 8:30 - 8:40 Welcome & Agenda for the Day
- 8:40 - 9:15 Current Seabird Interests and Activities / Posters & Questionnaire
- 9:15 - 11:00 Short/Long-term Regional Strategies and Measures / Thematic Breakout Groups:
Seabird Abundance, Distribution

Bycatch: Anthropogenic Impacts and Mitigation
Management: Coordinating Shared Objectives
Ecosystem Approach

Break (Managed by each group)

11:00 - 12:00 Group Reports and Feedback / Plenary

12:00 - 1:30 Lunch

1:30 - 3:45 Strategy Implementation: Research, Models, Systems, Skills, Equipment, Training,
Education and Outreach, Policy or Management Changes / Thematic Breakout Groups
Seabird Abundance, Distribution
Bycatch: Anthropogenic Impacts and Mitigation
Management: Coordinating Shared Objectives
Ecosystem Approach

Break (Managed by each group)

3:45 - 4:45 Group Reports and Feedback / Plenary

4:45 - 5:00 Close Out and Adjourn

Agenda, Friday, September 11, 2009

8:30 - 8:35 Welcome & Agenda for the Day

8:35 - 8:45 Review of Regional Strategies and Revisions
Thematic Breakout Groups:
Seabird Abundance, Distribution
Bycatch: Anthropogenic Impacts and Mitigation
Management: Coordinating Shared Objectives
Ecosystem Approach

8:45 – 10:30 Short/Long-term National Strategies and Measures /
Thematic Mixed Breakout Groups:
Seabird Abundance, Distribution
Bycatch: Anthropogenic Impacts and Mitigation
Management: Coordinating Shared Objectives
Ecosystem Approach

10:30 – 11:00 Group Reports and Feedback / Plenary

11:00 – 12:00 Next Steps Panel

12:00 – 12:30 Workshop Product Review / Reactants
Common Themes
Interesting, Surprising Points
Additional Clarity Needed
What's Doable, Suggestions

12:30 – 1:00 Closing Remarks, Evaluation, Adjourn / Kim Rivera

Appendix E. Breakout Group Worksheets—sample from one of the four groups

Seabird Abundance Group Product and Process

Seabird Abundance Group Product

Summary report of top voted minimum yet meaningful strategies, their measures and any timeline of incremental gains.

Near Term

Draft Strategy 1:

Measures:

Draft Strategy 2:

Measures:

Draft Strategy 3:

Measures:

Long Term

Draft Strategy 1:

Measures

Draft Strategy 2:

Measures

Draft Strategy 3:

Measures

Group Process

• *Decide roles: Chart, Digital Recorders, Timer, Reporter*

• *Alone list ideas*

• *Round robin report: 1 idea per individual until all are charted*

• *Review each item organize, change for clarity*

• *Straw vote for top 1 to 3 practical strategies—minimum yet meaningful*

• *Prepare report out*

Seabird Abundance Group Process

1. Group Support Roles: Assign a recorder to take chart notes, a laptop recorder to capture all the chart notes in digital form, a timer to keep track of group time and a reporter to make a 5 minute report of the group's final decision.
2. Alone, list ideas. Then, in the group, record each idea on flipchart paper, taking one idea from one person at a time. Label each page with group name/question #. Number each of the individual responses. Don't discuss any item until all items are recorded.
3. Review each item to clarify what the Group (not the author) means. Take notes on the group sense. Re-organize and combine if that makes obvious sense.
4. Decide on top 1 – 3 strategies to report out for the near and long term. Use straw voting (3 votes/participant) for top three strategies to help create consensus.
5. Then choose or revise final strategies that are practical about budget considerations. They should reflect the minimum needed that would still be meaningful to you and of significant interest to our stakeholders. If known, indicate a timeline associated with any incremental gains in these strategies. Prepare a report of these to the whole group.

Seabird Abundance Group
Q-1: Regional Strategy

Alone

- *Create own list*

Individual Thoughts

Although we have been working with seabirds for several decades, we are to the point where we would like to see seabirds become a more integral and ordinary component of NMFS science and management to fully meet its policy and statutory requirements. The NOAA/NMFS Strategic Plan for Fisheries Research is currently being updated and we want seabirds to be a more direct part of this next iteration and to garner stable funding through our Strategic Planning and Budget Process. To do this, we are asking you to think even more cohesively and strategically about NMFS's approach to seabirds.

List your own ideas below. Use a few key descriptors to describe each.

Q-1. Thinking strategically, what could a regional strategy look like for estimating and analyzing pelagic seabird abundance, distribution and overlap with fisheries?

a. In the near term (5 years)

b. In the long term (meet 100% of legislative, regulatory and policy requirements)?

Seabird Abundance Group

Q-2: Reg. Strategy Measures

Alone

- *Create own list*

Individual Thoughts

Q-2. For each of the top strategies the group decided on, what indicators, measures or criteria would you use to demonstrate that we have accomplished this strategy?

Near Term Strategy 1

Measures

Near Term Strategy 2

Near Term Strategy 3

Long Term Strategy 1

- #### ***Group Process***
- *Round robin report:
1 idea per individual
until all are charted*
 - *Review, organize,
change for clarity*
 - *Decide on measures
for each strategy*
 - *Record the
strategies & measures*

Long Term Strategy 2

Long Term Strategy 3

Q-3: New Efforts Needed to Implement Reg. Strategies

Alone

- *Write responses*

Individual Thoughts

Q-3. Thinking more specifically about the broad regional strategy or strategies that your group came up with this morning, what new research, data, models, information management systems, or education and outreach efforts are needed to implement the strategy (strategies) that was (were) developed by your group earlier today?

Group Process

- *Decide roles: Chart, Digital Recorders, Timer, Reporter*
- *Round robin report: 1 idea per individual until all are charted*
- *Review organize, change for clarity*
- *Straw vote*
- *Report top 1 to 5*

Working Group Products

1. Charts of all the individual draft ideas. Please label each page with theme and question number. Number each of the individual responses.
2. Summary report of 1-5 of the most important minimum yet meaningful efforts. Use the format:

New Implementation Efforts for *(Insert Group Name Here)*

- 3.1.
- 3.2.
- 3.3.
- 3.4.
- 3.5.

Q-4: Resources Needed to Implement Reg. Strategies

Alone

- *Write responses*

Individual Thoughts

Q-4. What new skills, equipment or training might be needed to implement the strategy (strategies) that was (were) developed by your group earlier today?

Group Process

- *Decide roles: Chart, Digital Recorders, Timer, Reporter*

- *Round robin report: 1 idea per individual until all are charted*

- *Review organize, change for clarity*

- *Straw vote*

- *Report top 1 to 5*

Working Group Products

1. Charts of all the individual draft ideas. Please label each page with theme and question number. Number each of the individual responses.
2. Summary report of 1-5 of the most important minimum yet meaningful resources needed. Use the format:

Needed Resources for (*Insert Group Name Here*)

4.1.

4.2.

4.3.

4.4.

4.5.

Q-5: Changes Needed to Implement Reg. Strategies

Alone

- *Write responses*

Individual Thoughts

Q-5. What are the most important changes in policy, management, coordination, or science administration that may be required to implement the strategy (strategies) that was (were) developed by your group earlier today?

Group Process

- *Decide roles: Chart, Digital Recorders, Timer, Reporter*
- *Round robin report: 1 idea per individual until all are charted*
- *Review organize, change for clarity*
- *Straw vote*
- *Report top 1 to 5*

Working Group Products

1. Charts of all the individual draft ideas. Please label each page with theme and question number. Number each of the individual responses.
2. Summary report of 1-5 of the most important minimum yet meaningful policy, management, coordination or administration changes needed. Use the format:
Policy, Coordination, Mgmt. Changes for (*Insert Working Group Theme Here*)
 - 5.1.
 - 5.2.
 - 5.3.
 - 5.4.
 - 5.5.

AM Workshop Feedback on Reg. Strategies, Measures

Group Process

- *Review feedback*
- *Decide response*
- *Modify draft*
- *Feedback, response, rationale, revisions in laptop digital report*
- *Turn in charts and digital records of your group's ideas and final report*

Working Group Products

1. For each item of feedback received, decide on your group's response.
2. Capture as a digital summary, the feedback, your response, rationale and revisions to your draft as part of the laptop report for the group. Use the format

(Insert Group Name Here)

Feedback Received

Working Group
Brief Response, Rationale

PM Workshop Feedback On Efforts, Needs & Changes

Group Process

- *Review feedback*
- *Decide response*
- *Modify draft*
- *Feedback, response, rationale, revisions in laptop digital report*
- *Turn in digital document(s):*
 - Your group's ideas and responses to ?s*
 - Your final report of strategies/measures*
 - Feedback and group response*

Feedback and Group Responses

For each item of feedback received, decide as a group your response and the revisions if any, you want to make to your draft responses to all questions.

Capture as a digital summary, the feedback, your response, rationale and revisions to your draft as part of the laptop report for the group.

(Insert Group Name Here)

Feedback Received

Working Group
Brief Response, Rationale

Appendix F: List of Participants

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Appendix G. Workshop Questionnaire

National Seabird Pre-Workshop Questionnaire “VITAL SIGNS FOR NATIONAL SEABIRD PROGRAM”

Name _____

Division/Office Affiliation _____

FMC _____

Email _____

Phone _____

1. Does your region/center/hq office currently work on any seabird issues?

If yes, provide a brief narrative describing the projects or types of seabird work that are conducted. Indicate which division does the work, is responsible for it. Be sure to include the following information, as appropriate –

- Seabird bycatch assessments of specific fisheries
- Seabird bycatch data collection (e.g. observer data – other seabird data collection)
- Research and development of mitigation methods/gear
- Types of outreach, education, training about seabirds and/or seabird bycatch
- Reporting: references to seabirds in your reports/documents/papers---NEPA (e.g. chapter 3, effects on the environment), SAFE (e.g. seabird work by FMP plan teams, seabird sections in ecosystem considerations chapter)
- Collaborations on seabird issues (e.g. within NMFS, with other agencies, universities, industry or environmental NGOs)

If yes to #1, please list the names of each person (including yourself) in your region/center/office who currently works on seabird issues.

For each individual named, please indicate the following as appropriate:

- a. Are they NMFS staff or Contracted Staff?
- b. What is your estimate of the percentage of their time that is spent working on seabird-related issues?
- c. Are seabird-related issues an explicit part of their individual performance plan?
- d. Finally, what is your best estimate of the amount of money your region/center/hq office spends annually in working on seabird issues (include both human resource costs (i.e. FTEs) and any other associated costs)?

2. Are there significant seabird-related issues going unaddressed in your region?
 - a. If so, why is this?

- b. What are those issues?
3. Did your region/center/office do seabird work in the past or do you anticipate it in the future?
4. Do you have adequate resources to address what you consider to be the priority seabird-related needs of your region/office/center?
 - a. If not, what would be your top priority if you had additional resources?
 - b. What level of additional resources would this activity require?
5. If applicable, please provide a description of the seabird-related aspects of your observer program. Does your region's observer program collect seabird bycatch data or any other seabird-related data?
 - a. Is the data analyzed?
 - b. By whom and how often?
 - c. How is it used?
 - d. Do you calculate or use seabird bycatch estimates for management purposes?
 - e. Who uses it?
 - f. Is this information made available on a regular basis in reports or on the Internet?
 - g. Who does your seabird identification training?
6. Are there ESA-listed seabird species in your fishery areas?
 - a. If so, does your region engage in section 7 consultations (formal or informal) with USFWS?
7. Do you work with other NMFS offices, NOAA line offices or other federal or state agencies on seabird-related issues (e.g. USFWS)?
 - a. If so, who?
 - b. Are there data and information needs of these offices and agencies that you currently meet?
 - c. If so, what are they?
8. Do you feel like you have a good sense of the national seabird program and/or seabird-related activities in other regions?
 - a. Is there anything in particular that you would like to know more about?
9. Is there any other information, including any emerging or pressing issues related to seabirds in your region that you want to mention?

Appendix H. Breakout Group Questions

Breakout Group Questions

1. Although we have been working with seabirds for several decades, we are to the point where we would like to see seabirds become a more integral and ordinary component of NMFS science and management to fully meet its policy and statutory requirements. The NOAA/NMFS Strategic Plan is currently being updated and we want seabirds to be a more direct part of this next iteration and to garner stable funding through our strategic planning and budget process. To do this, we need to think even more cohesively and strategically about NMFS's approach to seabirds.

Thinking strategically, what could a regional strategy look like for your theme?

- a. In the near (5 year term)?
 - b. In the long term (meet 100% of NMFS legislative, regulatory and policy requirements)?
2. For each of the top strategies that the group decided on, what indicators, measures or criteria would you use to demonstrate that we have accomplished this strategy?
3. Thinking more specifically about this broad regional strategy or strategies that your group came up with, what new research, data, models, information management systems, or education and outreach efforts are needed to implement the strategy (strategies) that was (were) developed by your group earlier today?
4. What new skills, equipment or training might be needed to implement this strategy (strategies) that was (were) developed by your group earlier today?
5. What are the most important changes in policy, management, coordination, or science administration that may be required to implement the strategy (strategies) that was (were) developed by your group earlier today?
6. Are there things we should be doing at a national level that would support the strategies already discussed? Thinking strategically, but from an even broader perspective, what could a national strategy look like for your theme?
- a. In the near term (5 years)?
 - b. In the long term (meet 100% of NMFS legislative, regulatory and policy requirements)?
7. For each of the top national strategies that the group decided on, what indicators, measures or criteria would you use to show that we have accomplished this national strategy?

Appendix I. Workshop Evaluation

Participants were given a workshop evaluation sheet at the close of the workshop. In addition to evaluating the mechanics and structure of the workshop itself, several key findings regarding the results of the workshop emerged. Overall, participants were satisfied with what was accomplished and believed that the workshop was well organized and productive.

- Participants noted the benefit of having other agencies participate, as well as NMFS employees from a variety of agency offices and with varied roles all of which contribute to the success of the National Seabird Program. Several participants indicated that they now have a much better big-picture view of the National Seabird Program, and were pleased to have the opportunity to discuss varied aspects of the NSP with a diverse group of individuals. Workshop participants believed that they now have a clearer direction forward, but that advancing the goals of the NSP will require significant follow-up to organize a diverse array of ideas. They expressed the need to maintain energy and momentum generated by the workshop. Several participants were pleased to be brought together for the first time as a NSP and expressed a greater appreciation for the scope of the work that occurs both domestically and internationally.
- Workshop participants from other agencies expressed a new-found appreciation for NMFS' work on a range of seabird-related issues.
- Some of the themes that left the most indelible impressions: a strong commitment within NMFS to get long-term base funding to address seabird issues in a cohesive manner, the high level of commitment of NMFS seabird researchers, the importance of succinct and powerful justifications for NMFS work on seabirds, the need to actively advocate for the NSP, the need to augment existing policy approaches, and the need to deepen (and in some cases, establish) relationships with regional fisheries councils.
- A majority of participants expressed that they would like to have another workshop sometime in the future and that in the interim, they would like to keep up communications (e.g., via email updates, periodic phone calls, an annual report, web site postings, etc.) among the workshop participants to ensure that the NSP continues to advance in a cooperative fashion and to facilitate awareness of the NSP's progress for all.
- Regular meetings; one suggestion was that another meeting could be held to develop a more detailed implementation strategy for the strategic plan. It was also clear that there are several more key topics that workshop participants would have liked to discuss further and that holding smaller meetings in conjunction with other conferences and symposia (e.g., Pacific Seabird Group annual meetings) might be a good way to get NSP participants together from time to time.