2018 National Saltwater Recreational Fisheries Summit Report

About the Summit Organizers

The 2018 National Saltwater Recreational Fisheries Summit was co-hosted by NOAA Fisheries and the Atlantic States Marine Fisheries Commission. A Steering Committee of key leaders from the recreational fishing community from across the nation provided advice and support throughout Summit planning. Meridian Institute provided meeting design and facilitation services, and prepared this report.

About Meridian Institute

Meridian Institute is a not-for-profit organization that helps people solve complex and controversial problems, make informed decisions, and implement solutions that improve lives, the economy, and the environment. We design and manage collaboration, providing services such as facilitation, mediation, convening power, and strategic planning. Drawing from over two decades of experience, we help people develop and implement solutions across a wide range of issue areas, including oceans, coasts, freshwater, climate change and energy, agriculture and food systems, forests, and health. As a neutral third-party, we bring people together to listen to one another, build trusted working relationships, and forge consensus.

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Executive Summary

On March 28-29, 2018, the recreational fishing community, the National Oceanic and Atmospheric Administration's Fisheries Service (NOAA Fisheries), the Regional Fishery Management Councils (Councils), the Interstate Marine Fisheries Commissions, and other stakeholders came together at the *2018 National Saltwater Recreational Fisheries Summit* (Summit) in Arlington, Virginia with the overarching goal of improving opportunity and stability in recreational fisheries. The Summit had three core objectives:

- Share information and perspectives within and across regions about innovative management alternatives and approaches, uses of electronic data collection and reporting, socioeconomics in recreational fisheries management, and conservation actions to improve opportunity and stability in saltwater recreational fisheries.
- Identify opportunities for collaborative actions that improve opportunity and stability in recreational fisheries.
- Discuss implementation strategies and solutions to overcome challenges and seize opportunities.

Planning for the Summit was collaborative, involving a Steering Committee of recreational fisheries community leaders from around the United States and a Planning Team composed of staff from NOAA Fisheries, the Atlantic States Marine Fisheries Commission (ASMFC), and Meridian Institute, which provided meeting design and facilitation services. In addition, the Steering Committee and Planning Team distributed a pre-Summit survey to registered participants to gather input on four suggested core topic areas for the Summit to ensure the agenda was designed around the topics of highest interest to the community. These topics were:

- Innovative Management Alternatives and Approaches
- Socioeconomics in Recreational Fisheries Management
- Angler Engagement in Data Collection and Reporting
- Expanding Recreational Fishing Opportunity through Conservation

On Day One, Wednesday, March 28, Summit participants were welcomed by NOAA Fisheries leadership and by keynote speakers Mr. Bill Shedd, President and Chairman of the American Fishing Tackle Company, and Rear Admiral Timothy Gallaudet, Assistant Secretary of Commerce for Oceans and Atmosphere and Acting Undersecretary of Commerce for Oceans and Atmosphere. Summit participants then observed panel presentations on Innovative Management Alternatives and Approaches and had the opportunity to ask questions of the panelists. Following the presentations, participants separated into breakout groups by region to further discuss Innovative Management Alternatives and Approaches. After lunch, Steering Committee members offered reflections on their regional breakout groups. Participants then heard talks on Socioeconomics in Recreational Fisheries Management and engaged in plenary discussion on the topic with the panelists. The first day of the Summit culminated with a networking reception.

Day Two, Thursday, March 29, began with panel presentations on Angler Engagement in Collaborative Data Collection and Reporting, followed by the opportunity for participants to pose questions to the panelists. Participants continued their discussion on Angler Engagement in Collaborative Data Collection in regional breakout groups. Following the breakout groups, Steering Committee members shared their reflections on major outcomes of the regional breakout discussions. During lunch, NOAA Fisheries held a session to update participants on the transition to a new fishing effort survey in the Atlantic and Gulf of Mexico. Following lunch, Secretary of Commerce Wilbur Ross offered keynote remarks on ways the Department of Commerce can support a strong future for America's recreational fisheries. Panelists then shared presentations on Expanding Recreational Fishing Opportunity through Conservation, followed by regional breakout groups on the subject. Participants reconvened to close out the Summit with a final Reflection Panel and remarks from Chris Oliver, NOAA Assistant Administrator for Fisheries.

Major Themes of Discussion from the Summit

Over the course of the Summit, participants discussed the key obstacles impeding increased opportunity and stability in recreational fisheries. Participants identified collaborative solutions and next steps to address those obstacles, focusing on the four Summit topic areas: Innovative Management Alternatives and Approaches, Socioeconomics in Recreational Fisheries Management, Angler Engagement in Data Collection and Reporting, and Expanding Recreational Fishing Opportunity through Conservation. Major themes from participant discussion are summarized below.

Cross-cutting themes

In discussing the four Summit topic areas, a number of cross-cutting themes emerged. These included building trust, improving data, enhancing collaboration, testing innovative approaches with pilots, and addressing discard mortality.

Building trust: Throughout the Summit, participants highlighted the need to bolster trust between the recreational fishing community, managers, and scientists. Improved data, fishing opportunity, and fishery stability all depend on and, in turn, enhance trust. Participants highlighted that a key element for increasing trust is more communication and transparency among anglers, managers, and scientists. In his remarks, Mr. Oliver commented that increasing trust throughout the nation would be a priority for the agency going forward.

Data improvements are essential: Participants continually referenced the centrality of accurate, timely, and useful data collection, reporting, analysis, and application in decision making. They expressed optimism that electronic reporting and other kinds of collaborative data collection would provide more timely and accurate data and would ultimately lead to enhanced fishing opportunity and stability. They also expressed a hope that better and more timely data would allow for testing and implementation of a variety of innovative management approaches being considered. During the Summit, there was significant energy and a sense of commitment to

address the existing data challenges and find innovative solutions in collaboration with managers and scientists.

Collaboration is key: Over the course of two days, participants emphasized that many of the next steps that anglers, managers, and scientists envision depend on increased collaboration. Notably, participants articulated that it was not only important to increase collaboration across sectors, but also across regions so that regions might learn from one another's successes and missteps. Whether it be improving data collection and reporting, further implementing innovative management approaches, incorporating socioeconomics into recreational fisheries management, or enhancing conservation, effective collaboration will be critical going forward.

Pilots for innovative management approaches: There was enthusiasm for testing new ideas through pilot programs. In particular, given that there are many different types of alternative management measures that could be pursued, it was suggested that Councils try different approaches on a limited basis first, learning through implementation of pilot projects. In addition, given the strong interest and complex challenges associated with electronic reporting, participants identified that electronic reporting is another area where phased testing and pilot approaches could add value. Iterative, adaptive approaches can provide important lessons learned while proactively moving the community's priorities forward in a measured way.

Discard mortality: Participants also highlighted the critical challenge of discard mortality throughout the Summit. Discard mortality poses several challenges: it is difficult to measure; it is challenging to predict the impacts of discard morality on fish stocks; and the social factors that lead to discard mortality are diverse and complex. Participants repeatedly called for collaboration and improved understanding of the causes and impacts of discard mortality to integrate more accurate estimates of discard morality into fisheries management.

Topic-specific themes: obstacles and solutions

In discussing the four main topics of the Summit, participants identified a number of key obstacles and solutions that appeared to resonate across regions and sectors.

Innovative Management Alternatives and Approaches

Alternative management approaches, including harvest rate management, depth-distance management, harvest tags, and managing species aggregates, were identified as having the potential to improve management of certain species under certain scenarios. Several participants noted that the Magnuson-Stevens Fishery Management and Conservation Act allows managers the flexibility to design and implement alternative approaches, yet some participants expressed frustration that progress in advancing these approaches is too slow.

Numerous obstacles were identified as limiting the implementation of alternative management approaches, including limited funding, the time required to develop innovative management approaches, the need for angler engagement and buy-in, the challenge of accounting for discard mortality and bycatch, and the robust data requirements necessary for many alternative

approaches. Participants also identified potential solutions to address these obstacles and advance the implementation of innovative management approaches. Their ideas included:

- The recreational fishing community, scientists, and managers should work together to ***advance cooperative research partnerships*** to improve recreational fisheries management and increase angler confidence in data and decision making.
- NOAA Fisheries and the Councils should ***enhance outreach to the recreational fishing community*** regarding management approaches, management challenges, and data needs. They should also work together to ***increase willingness to try new approaches and speed up the pace of change.***
- ***Increase cross-regional information sharing*** by creating a central repository of fishery management information and information about different approaches from around the country and/or establishing a nationwide advisory panel that would serve a similar function.
- ***Conduct pilot programs*** of innovative management approaches. Exempted fishing permits were identified as key to creating such pilots.
- ***Explore region-specific solutions*** such as potentially managing by number of fish instead of pounds caught, particularly for New England haddock and cod; assessing the strengths and weakness of community-based subsistence fishing areas in the Pacific Islands; and considering implementation of a tag lottery for tilefish in the Mid-Atlantic.

Socioeconomics in Recreational Fisheries Management

Better understanding and use of socioeconomic information in fisheries management was a topic of interest to many Summit participants and one that is currently being explored by NOAA Fisheries and the Councils. It was clarified during the Summit that the majority of socioeconomic data collected by NOAA Fisheries and Regional Fisheries Science Centers generate higher level trends across the nation or a region. However, fishermen want, and managers often require, species-specific information for decision making and, unfortunately, socioeconomic information is rarely available at that scale. Summit panelists identified the main obstacles as limited funding and the intensive time required to conduct the specialized surveys that generate species-specific socioeconomic information. In short, complex, time intensive, and expensive surveys that create highly usable socioeconomic information may be not be possible for every fishery around the nation at this time. Several participants also expressed a concern that even when usable socioeconomic information is available to mangers, they may overlook such data because ecological considerations seem to outweigh economic considerations.

Participants and presenters engaged in thoughtful discussion to identify solutions to overcome these obstacles. Potential solutions identified included:

- ***Enhance coordination*** between NOAA Fisheries, Councils, and social scientists.
- ***Ensure meaningful stakeholder involvement*** in generation of socioeconomic information to build trust and encourage sharing of information.

- Convene the recreational fishing community, managers, and social scientists to ***develop shared research and data collection priorities*** so that socioeconomic data can be more applicable to fisheries management and responsive to stakeholder concerns.
- The recreational fishing community, managers, and social scientists should work together to ***develop clear guidance on the ways in which socioeconomic information should be incorporated into fisheries management decisions.*** Such guidance was identified as critical to informing socioeconomic research priorities.
- ***Explore the use of electronic reporting platforms*** as a scalable way to collect the type of specialized and detailed information needed to generate data useful to fishery managers.

Angler Engagement in Collaborative Data Collection and Reporting

Participants and speakers at the Summit emphasized that recreational fisheries management around the United States would be greatly improved with more timely and accurate data. The Marine Recreational Information Program (MRIP) was a topic of frequent discussion, including reflection on the 2016 National Academies Review of MRIP, which found the program to be effective and accurate given the constraints in which it operates. The review also found that MRIP administrators need to better communicate with recreational anglers and that there are additional information needs for certain fisheries.

Participants focused most of their comments on electronic reporting programs and the potential benefits, including:

- Electronic reporting tools can collect information on catch and effort as a way to supplement the data provided through MRIP. This could improve the data that managers use to make decisions, and thereby increase timeliness, stability, and ultimately opportunity.
- Electronic reporting provides opportunities to collect other scientific information, such as data on species distribution that can be used to inform broader scientific assessments and socioeconomic information to better understand angler behavior and impacts.
- These platforms can be designed to serve as tools for anglers themselves, storing their information on trips, gear, bait type, weather, and other factors that affect the success of each trip. Such tools can improve the angling experience, while also facilitating participation in catch reporting through the platforms.
- Finally, because the process of developing electronic reporting platforms must be collaborative to be successful, the design process itself can help build trust between managers and anglers.

Participants also identified obstacles to implementing electronic reporting programs, including the challenge of sustaining angler participation over time, accessibility for diverse user groups with varying capacities and willingness to use technology, safe use on the water, costs associated with validating data gathered through electronic reporting platforms, the need to standardize data from regional electronic reporting platforms with MRIP data, privacy

concerns, and communications challenges surrounding the complexity of the statistical analyses required to make electronic reporting effective.

Through discussion in plenary and breakout groups, Summit participants identified numerous solutions to address the obstacles listed above, including:

- The recreational fishing community and managers must work together to ***ensure angler engagement in the development of electronic reporting platforms***. Engagement is essential for sustained participation in the programs. This can be achieved through collaboration between scientists, managers, fishing clubs, tackle companies, and other recreational fishing interest groups.
- The recreational fishing community and managers must work together to ***conduct trainings and outreach*** to explain the science behind the platforms and help address the concern that fishing opportunity could ultimately be curtailed as a result of providing data.
- ***More clearly communicate the benefits*** that anglers see from participating in electronic reporting platforms.
- ***Build off regional case studies*** that have been successful in Gulf of Mexico, the South Atlantic, and the West Coast.

Expanding Recreational Fishing Opportunity through Conservation

Conservation actions, including habitat protection, enhancement, and restoration, forage fish conservation, barotrauma reduction activities, and mortality reducing gear were identified as critical to enhancing stability and opportunity in recreational fisheries. By working with the partners such as the National Fish Habitat Partnership and the Coastal Conservation Association, anglers around the country have observed improved fishing experiences. In particular, participants identified that it is critical to protect, enhance, and restore forage fish habitat and juvenile fish habitat. Additionally, through efforts of for-hire and private anglers, the use of descending devices on the West Coast led to re-opened and expanded recreational fishing opportunities. In Hawaii, the use of barbless circle hooks has decreased fish mortality, decreased monk seal mortality, increased safety for anglers, and proved to be as effective for catching fish as using barbed hooks.

While a number of successful conservation examples were shared at the Summit, challenges remain in implementing conservation measures. Participants noted that often groups engaged in conservation activities may have different goals and resulting protracted debates can slow or stop implementation of conservation activities. A key obstacle inhibiting many anglers from using barotrauma reduction devices is the time required to descend and release a fish with the devices. Addressing discard mortality more broadly is even more challenging, as the causes and scale of discard mortality vary by species and season.

Through engaged discussion, participants identified a number of ways to increase conservation activities among anglers, including:

- ***Increase education and outreach*** regarding conservation activities.
- Engage recreational fishermen, scientists, and managers in ***collaborative efforts around improving water and habitat quality.***
- ***Explore mortality reduction devices and methods*** further to identify those most suited for specific regions and species of interest. Anglers should collaborate with scientists and managers to conduct further research on the best descending devices for particular fisheries.
- ***Collaboration with scientists to provide real time information*** regarding invasive species, range shifts, and impacts of climate change.

Conclusion

The recreational fishing community appeared to be energized around a number of potential solutions described above and managers attending the Summit expressed support for working collaboratively with the fishing community to further explore those opportunities and advance greater opportunity and stability in recreational fishing.

Background

Recreational fishing is an essential American pastime, providing treasured opportunities to spend time with family and friends, fostering deep and sustained connections to the natural environment, and providing food for subsistence fishers around the county. It is also a vital engine for the American economy. According to the Department of Commerce, in 2015 expenditures on marine recreational fishing related durable goods and fishing trips generated more than $63 billion in sales impacts; $23 billion in income impacts; and a $36 billion contribution to the nation's Gross Domestic Product (GDP). Moreover, in 2015 marine recreational fishing directly supported 439,000 jobs across the United States.

In recognition of the growing importance of recreational fishing in the United States, in 2009, the National Oceanic and Atmospheric Administration's Fisheries Service (NOAA Fisheries) launched the Recreational Fisheries Initiative to significantly expand engagement of the recreational fishing community, build trust, and improve recreational fisheries management. One of the first actions of the Recreational Fishing Initiative was to convene the 2010 Recreational Saltwater Fishing Summit. During the 2010 Summit, recreational fishing representatives and managers developed a set of recommendations to guide NOAA Fisheries' actions and strategies for recreational fisheries. These strategies were reflected in NOAA Fisheries' 2010 Recreational Saltwater Fisheries Action Agenda. In 2014, NOAA Fisheries and the Atlantic States Marine Fisheries Commission (ASMFC) convened a second Summit to generate input for the next National Action Agenda, strengthen and open lines of communication, highlight the most important challenges facing anglers in order to develop collaborative solutions, and develop a framework of activities to improve management of saltwater recreational fishing.

In 2015, as a direct outcome of the 2014 Summit, NOAA Fisheries adopted the National Saltwater Recreational Fisheries Policy (National Policy) and developed national and Regional Saltwater Recreational Fisheries Policy Implementation Plans. By 2018, three years after the launch of the National Policy and eight years into the Recreational Fishing Initiative, it was time to again convene the recreational fishing community, scientists, and managers to identify ways to make further progress in advancing the guiding principles of the National Policy, which are to:

- Support ecosystem conservation and enhancement.
- Promote public access to quality recreational fishing opportunities.
- Coordinate with state and Federal management entities.
- Advance innovative solutions to evolving science, management, and environmental challenges.
- Provide scientifically sound and trusted social, cultural, economic, and ecological information.
- Communicate and engage with the recreational fishing public.

About the 2018 Summit

The 2018 National Saltwater Recreational Fisheries Summit (Summit) brought together recreational fishing community representatives from across the nation, NOAA Fisheries staff, and staff from the Regional Fishery Management Councils (Councils), and Interstate Marine Fisheries Commissions with an overall focus on improving opportunity and stability in recreational fisheries. The Summit was designed around three objectives:

- Share information and perspectives within and across regions about innovative management alternatives and approaches, uses of electronic data collection and reporting, socioeconomics, and conservation actions to improve opportunity and stability in saltwater recreational fisheries.
- Identify opportunities for collaborative actions that improve opportunity and stability in recreational fisheries.
- Discuss implementation strategies and solutions to overcome challenges and seize opportunities.

NOAA Fisheries and ASMFC co-hosted the Summit and engaged Meridian Institute to provide meeting planning and facilitation. Together, staff from NOAA Fisheries, ASMFC, and Meridian Institute comprised the Planning Team[1]. A Steering Committee of key leaders from the recreational fishing community from across the nation provided advice and support throughout Summit planning. A list of Steering Committee Members can be found in Appendix A. To inform the development of the Summit Agenda, the Planning Team and Steering Committee worked together to develop the Pre-Summit Survey which assessed attitudes and topical priorities of pre-registered participants. During an opening session of the Summit, Meghan Massaua, Meridian Institute, presented an overview of the Pre-Summit Survey results to participants. A summary of the Pre-Summit Survey results can be found in Appendix B.

Using the results of the Pre-Summit Survey as a guide post, the Planning Team and Steering Committee developed an agenda centered around four topics:

- Innovative Management Alternatives and Approaches
- Socioeconomics in Recreational Fisheries Management
- Angler Engagement in Data Collection and Reporting
- Expanding Recreational Fishing Opportunity through Conservation

A full copy of the Summit Agenda can be found in Appendix C.

During the Summit, each topic was covered by a panel of expert speakers, plenary discussion, and in most cases small group discussions in breakouts where participants were asked to self-organize by region (defined as the region in which they fish, live, or have the greatest interest).

[1] Planning Team members included: NOAA Fisheries staff: Russell Dunn, Tim Sartwell, Gordon Colvin, Bob Williams, and Chris Meaney. ASMFC staff: Patrick Campfield. Meridian Institute Staff: Ingrid Irigoyen, Meghan Massaua, and Kiera Givens.

Regions were divided as follows: Greater Atlantic (consisting of the states in the Northeast and Mid-Atlantic Regions), South Atlantic and Caribbean, Gulf of Mexico, West Coast and Alaska, and Pacific Islands. Following the breakout groups, Steering Committee members reflected on key points raised in their regional breakout groups. The questions and background information provided to participants in the regional breakout groups is located in Appendix D.

Overall Summit facilitation was provided by Ingrid Irigoyen, Meridian Institute. NOAA Fisheries staff facilitated and documented the breakout group conversations and worked with ASMFC staff to provide numerous other forms of support during the meeting.

Over 130 participants attended the Summit. They represented every region of the United States and a variety of sectors and perspectives, including anglers, charter boat operators, tackle companies, fisheries managers, and scientific research institutions, among others. A full list of participants is located in Appendix E.

In the Post-Summit Survey, the vast majority of this diverse group of participants found the Summit to be successful, with over 85% of respondents indicating they were satisfied or very satisfied with the Summit. More information about the Post-Summit Survey can be found in Appendix F.

About this Report

This report summarizes the presentations and main discussion points covered during the Summit. It was developed by Meridian Institute in consultation with NOAA Fisheries, ASMFC, and the Steering Committee. In drafting the report, Meridian Institute strove to summarize the major points of discussion as accurately as possible, both in terms of content and the spirit in which comments were offered. Several sections summarize participant ideas and comments. It is important to note that these points of input are not necessarily endorsed by NOAA, ASMFC, or any other management entity by virtue of being captured here, but rather are a neutral reflection of what was said by individuals participating in the Summit.

The report also includes Appendices that provide additional detail about the Steering Committee (Appendix A), the Pre-Summit Survey (Appendix B), the Summit Agenda (Appendix C), background documents that included breakout questions and contextual information (Appendix D), a list of Summit participants (Appendix E), the Post-Summit Survey (Appendix F), and the presentation slides (Appendix G).

Acknowledgments

An effort of this magnitude could not be successful without the help of many dedicated people. In particular, the Planning Team thanks:

- The members of the Steering Committee for their wisdom, guidance, and active participation: Rip Cunningham, April DePaola, Ken Franke, Mike Leonard, Scott McBain, Dave Sikorski, Greg Stunz, Ed Watamura, David Webb, and Richard Yamada.
- Keynote speakers for bringing insight and inspiration to the meeting: Secretary Wilbur Ross, Department of Commerce; Rear Admiral (RDML) Timothy Gallaudet, Assistant Secretary of Commerce for Oceans and Atmosphere & Acting Undersecretary of Commerce for Oceans and Atmosphere; and Bill Shedd, President and Chairman, American Fishing Tackle Company.
- The presenters for their engaging and informative presentations.
- ASMFC and NOAA Fisheries leadership for supporting the Summit and ASMFC and NOAA staff for their contributions, including as speakers, facilitators, logistics support, and other important roles prior to and during the Summit itself.

NOAA Opening Remarks

Russell Dunn, National Policy Advisor for Recreational Fisheries at NOAA Fisheries, welcomed Summit participants and introduced the four key topics of the Summit: Innovative Management Alternatives and Approaches, Socioeconomics in Recreational Fisheries Management, Collaborative Data Collection and Reporting, and Expanding Recreational Fishing Opportunity through Conservation. He expressed that the overarching goal for the Summit was to identify collaborative actions that NOAA and the recreational community can take together to identify challenges and find solutions. Mr. Dunn also stated that although he and others would use the term "recreational fisheries" throughout the Summit, the intention is to understand the term in a broad sense that is inclusive of non-commercial activity and cultural practices.

Mr. Dunn acknowledged that the recreational fishing community was currently engaged in conversations about legislative efforts to reauthorize and amend the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Given that the outcomes of such legislative debates are impossible to predict, he asked participants to focus their discussion at the Summit on solutions that can be implemented under the current law. Mr. Dunn concluded his remarks by challenging participants to engage deeply over the course of the Summit and think creatively about actions that can be accomplished jointly between fishermen and managers to ensure a vibrant future for recreational fisheries.

Chris Oliver, Assistant Administrator for NOAA Fisheries, followed Mr. Dunn by offering welcoming remarks and emphasizing NOAA Fisheries' commitment to recreational fisheries. He reflected on his own cherished memories fishing with friends and family, and shared a story about his recent trip to the Miami Boat Show in which he witnessed first-hand the "power of the economic engine that is recreational fisheries."

Mr. Oliver noted that 91% of fish stocks under NOAA Fisheries management processes are not subject to overfishing and that 84% are not overfished. He stated that despite these gains, there is further room to improve management methods. He described NOAA Fisheries' recent guidance on review of allocations, which was developed in partnership with the Councils, as an example of NOAA's commitment to hearing the concerns of stakeholders and making improvements. He highlighted NOAA's new fisheries-related priorities, which state that in addition to ensuring sustainability of fisheries and communities, NOAA should seek to maximize fishing opportunity and regulatory efficiency. He further shared that the Trump Administration is advancing a more business-minded approach to America's fisheries.

Mr. Oliver concluded by emphasizing that he recognizes the challenges and opportunities facing America's recreational fisheries, including improving recreational fisheries data collection and use. He closed by sharing that he intends to follow up on the outcomes of the Summit and work collaboratively with the recreational fishing community to move towards better and more stable fishing opportunity in a sustainable manner.

Keynote Addresses

Three prominent keynote speakers reflected on the future of America's saltwater recreational fisheries at the Summit: Secretary of Commerce Wilbur Ross; Assistant Secretary of Commerce for Oceans and Atmosphere RDML Timothy Gallaudet; and President and Chairman of the American Fishing Tackle Company, Bill Shedd. Their remarks are summarized below.

Secretary of Commerce Wilbur Ross

In his address, Secretary Ross emphasized the Department of Commerce's commitment to improving the recreational fishing experience and increasing recreational anglers' access to sustainable, healthy, delicious, and beautiful fish. He reflected on his personal experience spending summers casting on the New Jersey shore, crabbing on Shark River, and chumming for bluefish at night. He discussed the important benefits of recreational fishing to the nation, referencing that in 2016, spending on recreational fishing and boating totaled $38.2 billion and that in 2015, marine recreational fishing generated 439,000 jobs. Moreover, Secretary Ross highlighted that recreational fishing plays a critical role in getting Americans away from their electronic devices and into the outdoors.

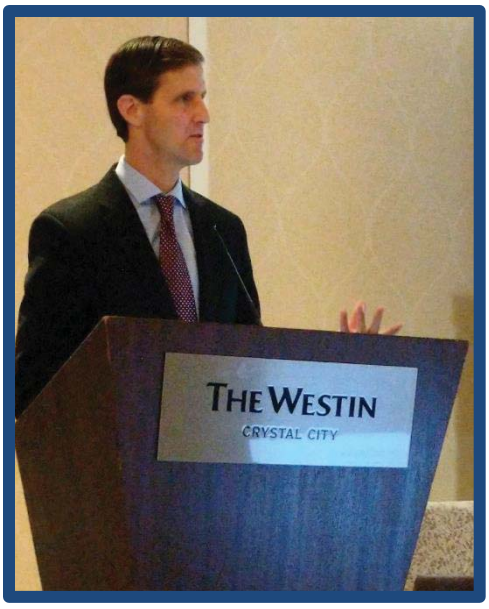
Secretary Ross then highlighted some of NOAA Fisheries' recent actions to support recreational fisheries, including approving alternative management methods for summer flounder in summer 2017, extending the red snapper season in fall 2017, working to open a red snapper season in the South Atlantic in summer of 2018, and authorizing the use of midwater long leader gear for recreational fishing off the coast of Oregon.

He then turned to discussing the Department of Commerce's commitment to improve recreational fisheries data to maximize access for recreational anglers. He emphasized that NOAA Fisheries is working to incorporate state produced data, implement the use of electronic reporting, and holistically seek new ways to reduce uncertainty in fisheries stock assessments. The Secretary also touched on the Department of Commerce's goal of reducing the United States' seafood trade deficit by supporting American aquaculture, especially the shrimp aquaculture industry. He also noted the Department of Commerce's commitment to streamline regulations.

The Secretary concluded his talk by expressing that he looks forward to further collaboration with recreational fishermen to ensure the continuation of America's strong tradition of recreational fishing. In his words, "there is nothing more virtuous than fishing on saltwater to clear the mind and replenish the soul."

Assistant Secretary of Commerce for Oceans and Atmosphere, RDML Timothy Gallaudet

RDML Gallaudet began by reflecting on the important role of recreational fishing in his life, including numerous family fishing trips. RDML Gallaudet affirmed the critical role of recreational fisheries in the United States, especially the economic contributions of this sector. He also shared his appreciation for the quality experience that recreational fishing offers as an American pastime.



RDML Gallaudet emphasized NOAA's commitment to increasing the stock of fish that recreational fishermen can access through increased habitat, better data, and better science. He stated that we need to better leverage technology and allow for more innovative management. He also highlighted the Trump Administration's priority of lessening the regulatory burden and conducting government business in a smarter and more economical fashion. RDML Gallaudet concluded his talk by sharing that he looks forward to continued engagement with the recreational fishing community.

Bill Shedd, President and Chairman of American Fishing Tackle Company

Mr. Shedd opened his address by stating that to increase opportunity and stability in recreational fishing, recreational fishermen need to take three actions:

- Take better advantage of the "improved situation" of recreational fisheries today;
- Take advantage of recreational fisheries' two biggest assets: fishermen's roles as conservationists and their ability to generate income for the nation; and
- Figure out how to grow the recreational fishing "slice of the pie."

He also shared his perspective that another important action recreational fishermen can take is to support the Modern Fish Act, and he thanked those who had developed the Bill. Mr. Shedd then offered historical perspective to illuminate what he meant by taking advantage of the improved situation of recreational fisheries. He reflected on the state of recreational fisheries 40 years ago, noting that when the Magnuson-Stevens Act was first created, NOAA Fisheries paid very little attention to recreational fisheries and the presence of national trade associations for recreational fishing was limited. He contrasted this history with today, when many of the species that recreational fishermen cherish have recovered, when managers are more effectively balancing commercial and recreational interests, and when recreational fishermen have a more effective and unified voice for stabilizing opportunity in recreational fishing.

Mr. Shedd urged the recreational fishing community to take advantage of its two biggest assets: its identity as marine conservationists and its ability to create a large economic benefit to the country while using relatively few fish. He emphasized that the community must work harder to highlight both its conservation core and its economic impact.

He also shared the perspective that the recreational fishing community can grow its opportunity to fish through support of aquaculture and increased fish habitat. He said that open ocean aquaculture is a significant opportunity for ocean management in the United States because he believes it can increase fish populations and reduce the seafood trade deficit while generating limited environmental impacts. He also highlighted the critical role that artificial reefs play as fish habitat. Mr. Shedd closed his talk by urging the recreational fishing community to seize the moment and work with NOAA to implement the ideas generated at the Summit.

Innovative Management Alternatives and Approaches

Presentation Summaries

This section summarizes presentations by Ken Haddad, Alan Risenhoover, John Carmichael, and Richard Yamada on innovative management alternatives and approaches. This panel was moderated by Tim Sartwell, Fishery Management Specialist for NOAA Fisheries. Each panelist presented for approximately 15 minutes, after which participants engaged in a question and answer session. The key points of participant input are covered in the next section of this report, titled *Key Points from Participant Discussion: Innovative Management Alternatives and Approaches*.

Ken Haddad, American Sportfishing Association | Approaches for Improved Federal Saltwater Recreational Fisheries Management

Mr. Haddad provided an overview of four alternative management approaches:

- Harvest Rate Management sets targets based on rate of removal. It is currently being used in the Atlantic striped bass fishery by ASMFC and requires annual recruitment indices. This approach recognizes recreational fishing participation and effort is correlated with stock abundance
- Depth-Distance Based Management occurs when managers close recreational fishing for single or multiple species beyond a certain depth or distance from shore to allow higher production outside the fishing zone, potentially replenishing the fishing zone and reducing release mortality. There has been limited application of this type of management.
- Harvest Tags are often used to limit and/or account for animals harvested during hunting. Harvest tags could be especially effective for managing rare species or species with low Annual Catch Limits (ACLs). One challenge with harvest tags is ensuring fair distribution among a diversity of angler interests.
- Managing species aggregates occurs when managers group fish together to create a season for the group aggregate. This method could be particularly effective for managing reef fish.

Mr. Haddad also identified key obstacles to advancing innovative management approaches. He noted that angler harvest and species population data must be improved to accommodate innovative management methods that require new types of analyses. He also stated that release mortality must be reduced and better incorporated into stock estimates. Finally, he commented that many of these management approaches require extensive technical vetting before they can be implemented by the Councils. He closed his presentation by asking NOAA to facilitate a new and innovative way forward.

Alan Risenhoover, NOAA Fisheries | Alternative Management in the Context of the Magnuson-Stevens Act

Mr. Risenhoover's presentation began with a brief overview of the Magnuson-Stevens Act, providing definitions of National Standard One (NS1), Optimum Yield, Maximum Sustainable Yield, Overfishing Limits (OFLs), Acceptable Biological Catch (ABC), and ACLs. He then reviewed the tools that the 2016 NS1 Guidelines provide to support flexibility in managing recreational fisheries, including:

- Conditional accountability measures;
- Stocks in need of conservation and management;
- Carry-over of unused quota;
- Phasing in changes to catch levels;
- Multi-year overfishing determinations;
- Increasing flexibility in rebuilding plans; and
- Alternative approaches for setting status determination criteria.

He closed his talk noting that the Magnuson-Stevens Act provides the flexibility to enact many of the alternative management approaches listed in the Theodore Roosevelt Conservation Partnership and American Sportfishing Association Report *Approaches for Improved Federal Saltwater Recreational Fisheries Management*, and welcomed additional ideas from the recreational fishing community.

John Carmichael, South Atlantic Fishery Management Council: The ACL- Abundance Quandary

During this presentation, Mr. Carmichael discussed fishery characteristics, data challenges, and management approaches that lead to situations in which fishermen are seeing more fish but are not permitted to catch them due to ACLs. He termed this the "ACL-Stock Abundance Quandary" and used South Atlantic red snapper as a case study. His talked aimed to answer the question: why does this happen? Mr. Carmichael explained a number of important disconnects between management methods, management tools, and the abundances of highly volatile species.

- ACLs are based on the removal rate and annual stock abundance. The problem arises in that ACLs are based on previous years' data, although they are used to manage fishing in the future.
- With an ideal model species, ACLs work because backward-looking stock assessments can accurately predict the state of stocks in the future.
- With "boom and bust" species like red snapper that exhibit dramatic shifts in abundance every few years, the backward-looking stock assessment does not predict the future state of the stock as well, which can lead to a mismatch between ACLs and the reality of stock abundance that fishermen experience.

- Discard mortality also plays a key role in perpetuating the ACL- Stock Abundance Quandary. In certain species, discarded fish can account for large removals from the population. If landings are high due to a spike in abundance, managers must also account for the high discard mortality and loss of biomass associated with unintentional catches. Consequently, a stock may remain under the ACL but still be considered to be experiencing overfishing due to high discard mortality removals. This leads to reductions in future ACLs even when landings of target species were not the primary driver of previous years' overfishing.

Mr. Carmichael concluded that to address the ACL-Stock Abundance Quandary, ACLs must reflect current stock realities and managers must better understand the episodic recruitment in boom and bust fisheries.

Richard Yamada, Alaska Charter Association | Recreational Quota Entity within Alaska's Halibut Individual Fishing Quota Program

Mr. Yamada presented a brief history on Alaska's commercial halibut Individual Fishing Quota (IFQ) Program and the recent development of a Recreational Quota Entity (RQE), which would provide a market based means to transfer quota from the commercial sector to the recreational sector.

Mr. Yamada described the history and circumstances surrounding the decreased access to recreational halibut for guided anglers. Pacific halibut is the only federally managed recreational fishery in Alaska, and is an important part of charter boat businesses. In 1995, the commercial Pacific halibut fishery was rationalized in a catch share program. In 2014, the charter sector was placed into a catch sharing plan with the commercial sector, separating guided anglers from private anglers. In this plan, the charter fleet received 18% of a combined catch limit. The new catch sharing program posed numerous challenges. For one, more severe bag limit restrictions were placed on charter clients, but not the private angling sector. This has led to anglers migrating to bare boat rentals or private boats posing as friends, where anglers fish with less restrictions. This activity may be putting the public at greater risk of safety as well as creating issues with enforcing regulations. This has also resulted in charter businesses losing their competitiveness with other national and international fishing destinations.

Under these circumstances, the concept of an RQE was developed as a means to increase the quota available to the charter sector and their clients. The RQE would purchase commercial quota from willing sellers and hold the shares in common for the benefit of all guided anglers. Purchased quota would result in less restrictive bag limits. The RQE has been approved by the North Pacific Fishery Management Council, and now the program is exploring funding avenues.

Key Points from Participant Discussions: Innovative Management Alternatives and Approaches

This section summarizes participant discussions that took place during a number of Summit sessions on the topic of Innovative Management Alternatives and Approaches, including: question and answer following the Innovative Management Alternatives and Approaches Panel (9:15 am on Day One), the Innovative Management Alternatives and Approaches Breakout Groups (11:00 am on Day One), and the Innovative Management Alternatives and Approaches Steering Committee Reflection Panel (1:15 pm on Day One). It captures key obstacles to implementing innovative management, the needs that must be addressed to adopt and successfully implement innovative management approaches, and the potential solutions and next steps identified by Summit participants. Many of these points emerged in multiple regional discussions—where a point was deemed important to specific regions in particular, that distinction has been noted.

Obstacles to implementing innovative management

Shortage of funding: Shortage of resources was commonly identified as an obstacle. In some cases, funding shortages are characterized by disparate funding between regions. Shortages of funding impact effectiveness of management and also hamper the research needed to improve stock assessments, the establishment of meaningful and timely ACLs, appropriate recreational catch accounting, and the compilation and reporting of the socioeconomic benefits of recreational fishing.

Precautionary approaches: It was stated that the precautionary measures, such as uncertainty buffers, can be obstacles to innovation. In particular, the cumulative effect of uncertainty buffers, which are additive, present challenges by reducing available quota which may stifle fishing opportunity and creativity.

Pace of the Regulatory Process: The length of time required to develop innovative management approaches and then gain support and approval for use can be an obstacle. Council agendas are often full months in advance preventing timely consideration of emerging issues or resolving existing challenges. Once under consideration by a Council, development of a new fishery management plan or plan amendment is a slow, complex process that is protracted further by a lengthy public rulemaking process.

Compliance and administration of harvest tags: While potentially viable in certain fisheries, harvest tags were identified as difficult to implement, particularly in larger fisheries, due to challenges in fairly and equitably distributing tags, ensuring compliance, and the heavy administrative burden that tagging programs can create.

Needs that must be addressed to adopt and successfully implement innovative management approaches

Better data: Many innovative management approaches under consideration require more timely and accurate catch data to be collected and applied. For example, harvest rate management requires annual indices of recruitment and/or abundance, which are not currently available for most species.

Better accounting of anglers: Innovative management approaches require managers to better understand the universe of private anglers in each region. It can be difficult to use innovative methods when managers do not know how many anglers are fishing, how many trips they are taking how many fish of which species they are catching, how many fish they are discarding, and if those fish are surviving. This is particularly challenging in the Caribbean and Pacific Island fisheries due to the lack of a registry, list, or license for recreational anglers in both regions.

Stock stabilization: Recreational fisheries managers, scientists, and anglers should work together to find ways to mitigate the impacts of fluctuations in fish population and stabilize stock abundance.

Better recruitment indices: Availability of indices of recruitment should be better aligned with management cycles and management needs to enable them to be more effectively used.

Angler buy-in and understanding: Greater angler buy-in is needed for innovative management approaches to be adopted and successfully implemented. It is also important for anglers to understand the lengthy timelines associated with development, implementation, and evaluation of innovative approaches and the possibility that new approaches may not provide all anticipated benefits.

Discard mortality and bycatch: Managers should work to better understand the impacts of bycatch, discards, and discard mortality on specific and recreationally important stocks. Once understood, conservation gains through reduction in discard mortality could be factored into management through innovative approaches.

Potential solutions and next steps identified by participants

***Pilot programs*:** Pilot programs were highlighted numerous times as a way to test the effectiveness of innovative management approaches. Some participants suggested that collaboratively identifying and implementing pilot innovative management programs could help build trust between fishermen, scientists, and managers.

Encouragement from NOAA Fisheries: On several occasions participants urged NOAA Fisheries to take a more active role in encouraging and providing guidance to the Councils regarding consideration and use of innovative management approaches.

Specific approaches to explore at the Council level: Participants identified a number of specific management approaches they believe warrant further consideration by the Councils, including:

- *Mixed bag limit and/or full retention of catch;*
- *Temporal or spatial fisheries management* that can address concerns about populations depleted due to disproportionally high recreational or commercial fishing pressure in one location;
- *Ecosystem-based management* and managing fisheries by considering all aspects of a fish's lifecycle;
- *Manage by number of fish caught* instead of pounds caught in some fisheries, with New England haddock and cod referenced as specific examples;
- *A tag lottery* to manage tilefish in the Greater Atlantic Region; and
- *Community-based subsistence fishing areas* in the Pacific Islands.

Cooperative research partnerships: Many innovative management approaches require more detailed and accurate data on recreational fisheries catch and effort, discards, stock structure, abundance, and habitat preferences and conditions. The recreational fishing community, scientists, and managers can address this need by working together to advance cooperative research partnerships to improve the quality of recreational fisheries management data and increase angler confidence in the data.

Data transparency: By making more fisheries management data publicly available, managers can help increase angler trust in management.

More outreach to fishermen: Enhanced outreach by managers and scientists to recreational fishing communities would help improve engagement in data collection, increase compliance, enhance awareness of fisheries management processes, and increase momentum and community buy in for innovative management approaches. Outreach could be increased by working more closely with fisheries media outlets to disseminate information and using social media more effectively to reach anglers.

Cross-regional information sharing: Often, the approaches applied in one region have the potential to be applicable in another region. Ideas to increase information sharing across regions include:

- *Creation of a central repository* of fishery management information and approaches from around the country. The repository would be a clearinghouse where issues, ideas, and research could be shared among regions.
- *Establishment of nationwide advisory panels* that would allow for in-person exchange of information and lessons learned across regions.

Socioeconomics in Recreational Fisheries Management

Presentation Summaries

This section summarizes presentations by Doug Lipton, Scott Steinback, Leif Anderson, Steve Kasperski, Judy Amesbury, John Hadley, and Tom Allen on socioeconomics in recreational fisheries management. The panel was moderated by Ingrid Irigoyen of Meridian Institute. Each panelist presented for approximately 10 minutes, followed by a question and answer session and plenary discussion, which is summarized in the next section of this report, titled *Key Points from Participant Discussion: Socioeconomics of Recreational Fisheries Management*.

Doug Lipton, NOAA Fisheries | Socioeconomics in Recreational Fisheries Management

Mr. Lipton's presentation provided an overview of NOAA Fisheries' socioeconomics program and plans for its future. Currently, NOAA Fisheries socioeconomic information is generated from large quantities of primary data collected from various sources. This primary data are then analyzed to understand four key areas of socioeconomic information: fishermen response/behavior, benefits and costs of recreational fishing, economic impacts of recreational fishing, and community and social impacts of recreational fishing. Mr. Lipton's presentation focused on explaining the process for calculating benefit-cost estimates of recreational fishing, which is a measurement of the change in net economic value and equal to the maximum willingness to pay minus the amount paid. Mr. Lipton culminated his presentation by providing a summary of the *NOAA Fisheries 2017 Economics and Social Sciences Program Review* in which NOAA carefully examined its economic and social sciences program via peer review to identify best practices and share successes and challenges.

Scott Steinback, Northeast Fisheries Science Center | Incorporating Angler Behavior and Benefits into Recreational Fisheries Management, Groundfish in the Northeast U.S.

In his presentation, Mr. Steinback discussed the Bioeconomic Length Structured Angler Simulation Tool (BLAST model) used to provide policy relevant advice to managers of the groundfish fishery in the Gulf of Maine. The model predicts how proposed management actions (size, possession limits, and closed seasons) will affect angler effort, catch, and welfare. Broadly, the model is intended to provide information about angler response and welfare in regulatory changes. However, he noted that uncertain biological projections and incomplete Marine Recreational Information Program (MRIP) data can present challenges to using this modeling approach effectively. Despite these shortcomings, he believed that integration of this decision support tool into the fishery management process represents a substantial step forward in the science of fisheries management.

Leif Anderson, Northwest Fisheries Science Center | Economic Contribution of Charter Vessels in Washington and Oregon

Mr. Anderson's presentation provided a case study of how the concepts of economic contribution and economic impact are used at NOAA Fisheries. In 2014, NOAA Fisheries conducted a survey of the Washington and Oregon charter vessel fleet to inform development

of a tailored economic contributions model. NOAA Fisheries then compared the tailored model based on a detailed charter operator survey with the default model developed using readily-available (IMPLAN) data. The tailored model was similar to the default model in all areas, except in their estimates of employment contributions. The tailored model estimated the employment contribution of the charter fleet to be 35% higher than the default model. After substantial analysis, Mr. Anderson's team determined that the default model relied on data that did not match the conditions of the charter industry; in particular, the output per employee was unreasonably high. Mr. Anderson noted that while a detailed stakeholder survey was necessary to generate accurate models in this instance, the default model may provide reasonable estimates in other regions, depending on how closely the characteristics of the charter industry line up with the employment and output assumptions of the default model.

Steve Kasperski, Alaska Fisheries Science Center | Social Indicators for Recreational Fisheries

In his presentation, Dr. Kasperski provided an overview of social indicators used in the understanding of the importance of recreational fisheries to fishing communities. Broadly, social indicators describe the relative social vulnerability and involvement in different fishing sectors among coastal communities. The four basic types of social indicators are: social vulnerability, gentrification pressure, vulnerability to sea level rise, and fishing engagement and reliance. These four groupings of indicators are generated from over 75 variables. With this information, social scientists can analyze trends and patterns among the indicators to understand the changing social conditions of U.S. fishing communities. Ultimately, social indicators are useful in meeting several NOAA Fisheries mandates and can help Councils better understand and anticipate the potential social and economic impacts across alternative choices.

Judy Amesbury, Micronesian Archeological Research Services | Cultural Considerations in Management of Non-Commercial Fisheries

Ms. Amesbury discussed the basis for cultural considerations in the management of non-commercial fisheries and gave examples from the U.S. Pacific Islands. Non-commercial fishing includes recreational fishing as well as subsistence, sustenance and traditional indigenous fishing. Non-commercial fishermen in the Pacific Islands are primarily focused on fishing for human consumption. Cultural considerations in management are based on who the people are, what fishery resources and what occasions are important to them, what fishing methods they use, and how they distribute the fish. A large part of the Western Pacific Region is now within the Marine National Monuments. Some form of non-commercial fishing is permitted in all of the monuments. In the Rose Atoll MNM and Marianas Trench MNM (Islands Unit) customary exchange and cost recovery are included under the non-commercial permit. These traditional practices knit communities together. There are numerous collaborative opportunities for non-commercial fishers and managers in the Western Pacific, including advisory group processes and community-based management methods.

John Hadley, South Atlantic Fishery Management Council | Council and Regional Perspective on Socioeconomic Information in Recreational Fisheries Management

Mr. Hadley discussed his experience using socioeconomic tools as an economist at the South Atlantic Fishery Management Council. Mr. Hadley listed two key challenges facing managers in using socioeconomic information in management decisions:

- Councils' decisions must be made on tight timelines that are shorter than the time needed to complete traditional economic studies; and
- Councils must make decisions on specific species, and socioeconomic information is often not provided available at the species-specific level.

Solutions to these challenges include increasing collaboration with anglers and the recreational fishing community and considering use of mobile and electronic data collection methods. Mr. Hadley ended his presentation by emphasizing that use of socioeconomic information in recreational fisheries management can increase stakeholder buy-in and improve collaboration, particularly if such information is provided directly by the angling community.

Tom Allen, Southwick Associates | Recreational Fisheries: Industry Perspective

Mr. Allen provided an industry perspective on the use of socioeconomics in recreational fisheries management. He noted that often the economic research conducted by NOAA Fisheries does not match the higher priority needs of the Councils. He observed that, when available, economic information is too easily ignored in decision making. This may be due to the shortage of species-specific economic data, limited understanding among the Councils for how economic information should be factored into management decisions, and the lack of strict procedural requirements to incorporate economic information in the development or modification of Fishery Management Plans. Mr. Allen highlighted the need to address this gap in part by developing species-specific recreational fisheries economic data versus data covering multiple fisheries as has been the common practice. Finally, Mr. Allen emphasized there must be true stakeholder involvement in generating economic information for recreational fisheries, versus an emphasis on input from academic circles. Mr. Allen recommended that an essential first step is to convene a true cooperative effort to determine the priority research needs for economic research from a variety of perspectives including anglers, industry, researchers and the Councils.

Key Points from Participant Discussions: Socioeconomics in Recreational Fisheries Management

This section summarizes participant input shared during plenary discussion and question and answer following the panel. Though the Summit organizers originally planned to hold small group discussion during the 3:45 pm session on Day One, they decided instead to continue a larger plenary discussion that began at the conclusion of the socioeconomics panel, because participants expressed enthusiasm for doing so. The following summary is organized by obstacles to better using socioeconomics in recreational fisheries management, needs that must be addressed to improve socioeconomics in recreational fisheries management, and potential solutions and next steps identified by participants.

Obstacles to using socioeconomic data and information in recreational fisheries management

Socioeconomic indicators are variable, which makes it difficult to compare across sector and region: Socioeconomic indicators can vary significantly based on the way in which they are defined. Consequently, it can be difficult to compare benefits, costs, and other elements of recreational fishing across regions, or compare recreational and commercial fishing because the indicators may be defined differently for various situations.

Quality of the data: Data used in socioeconomic analyses comes either from large national surveys similar to MRIP or very detailed and tailored surveys of a particular fishery. The large-scale data sets do not provide enough data resolution to effectively predict the socioeconomic implications of management decisions. And yet, the data collection required to generate tailored surveys is too time intensive, complex, and costly to replicate on a recurring basis for all fisheries. Consequently, data being used to generate socioeconomic indicators is frequently outdated and representative of scales too large or too small.

Ensuring information is considered: Participants stated that, in the past, Councils and/or federal fisheries managers have made decisions that overlooked or marginalized socioeconomic information, giving greater weight to biological information even when socioeconomic information was effectively presented. Some participants expressed concern that there did not seem to be a requirement for Councils to use socioeconomic information, though this is not the case. There was further concern that quantities of human and monetary resources can be spent generating information that is of limited impact. Several participants from the Pacific Islands offered the example of socioeconomic considerations in the Pacific Islands being overlooked in recent expansions of marine national monuments in the region.

Needs that must be addressed to improve the use of socioeconomic data and information in recreational fisheries management

Greater collaboration on research priorities: Councils, NOAA Fisheries, and social scientists should work together to set research priorities that will generate useful data.

Procedures for decision making: If socioeconomic information is to be impactful, Councils and NOAA Fisheries should work together to develop clearer procedures and guidance for incorporating socioeconomic information into the management process.

Timely and tailored data: Data should be more tailored to specific management needs and collected in a more timely and frequent manner.

Deeper understanding of angler behavior: Socioeconomics studies should help develop a better understanding of why recreational anglers continue to fish and why they will or will not provide socioeconomic data or participate in electronic data reporting programs.

Potential solutions and next steps identified by participants

Use electronic reporting: Several participants stated support for collecting socioeconomic information through electronic reporting as a way to address socioeconomic data collection challenges.

Convening on research priorities: Participants recommended convening recreational anglers, Council members, NOAA Fisheries staff, and social scientists to identify and set specific socioeconomic research priorities.

Engage anglers effectively: It was stated that socioeconomics research should engage anglers in identifying the questions that need to be asked, not only in providing personal data.

Angler Engagement in Data Collection and Reporting

Presentation Summaries

This section summarizes presentations delivered by Luiz Barbieri, Ken Franke, Carly Somerset, Kelsey Dick, Cisco Werner, and Laura Oremland on angler engagement in electronic reporting of catch, effort, and other data. Greg Stunz moderated the panel. In his opening remarks, Dr. Stunz noted that the panel would explore the use of electronic reporting in catch and recreational fisheries data and explore collection of data that informs management in other ways. He acknowledged that there are numerous challenges, many of which are region-specific, but that the community can overcome these challenges through collaboration.

Each panelist presented for approximately 10 minutes, after which participants were given an opportunity to ask questions of the panel. The key points of participant input are covered in the next section of this report titled *Key Points from Participant Discussion regarding Angler Engagement in Data Collection and Reporting*.

Luiz Barbieri, Florida Fish and Wildlife Conservation Commission: Angler Engagement in Collaborative Data Collection and Reporting | Overview Presentation

Dr. Barbieri offered an introduction to the topic of angler engagement in collaborative data collection and reporting. He noted that data is one of the most contentious issues in recreational fisheries management and that most of this contention stems from a lack of trust between anglers and managers. He highlighted a need to increase angler engagement and to integrate new and emerging technologies like electronic reporting.

Dr. Barbieri's presentation described the outcomes of the 2016 National Academies Review of MRIP. He explained that, based on this report, the MRIP estimates appear to be sound given the constraints around collecting recreational fisheries data. The study also found that MRIP has made progress in evaluating and testing electronic reporting, but that the public does not believe progress is being made quickly enough. Moreover, the study found that MRIP should develop and communicate a strategy to better articulate the complexities, costs, and timelines associated with implementing electronic reporting. It should also continue to test electronic reporting pilot programs.

At the close of his presentation, Dr. Barbieri encouraged participants to consider how they can coordinate with Councils and states and work together to increase data accuracy, maintain scientific robustness, increase timeliness, and ensure cost-effectiveness. He urged participants to engage with him and other fisheries scientists in developing data collection programs.

Ken Franke, Sportfishing Association of California | Electronic Log Books

Mr. Franke discussed the use of electronic log books in the commercial passenger vessel fleet in southern California. The push to standardize the use of electronic log books emerged from a desire to operationalize conservation credits gained from using descending devices that reduce barotrauma. Electronic reporting enabled the fleet to quickly and accurately report their catches

and use of the devices, and provide data to inform conservation credits that led to increased opportunity for the fleet. The fleet also used electronic reporting log books to report their tuna catches. By providing more timely data on tuna catches, the fleet was able to demonstrate that various closures were unnecessary because annual catch limits had not yet been reached. Ultimately, the use of electronic logbooks enabled the southern California commercial passenger fleet to increase opportunity for bottom fish and tuna.

Carly Somerset, Mississippi Department of Marine Resources | Tails n' Scales: An Innovative Reporting System for Recreational Red Snapper Management in Mississippi

Ms. Somerset discussed her work with Mississippi's Tails n' Scales mandatory electronic reporting system, a mobile and web-based system designed to track all recreationally harvested red snapper in Mississippi. The success of the program is partially due to the unique fisheries circumstances of the Mississippi red snapper fishery, including the size of the for-hire fleet, the size of the recreational angling community, the length of the coastline, geography that is favorable for on-the-water enforcement, and the localization of red snapper fishing activity to a few sites. Tails n' Scales is an effective way to monitor red snapper fishing effort and catches, as Mississippi red snapper is a fishery that fluctuates every year.

To develop Tails n' Scales, the Mississippi Department of Marine Resources contracted an IT consulting firm to develop an app that would be short, simple, and easy to use. The app is the key tool in a mandatory reporting system that is validated by dockside intercept surveys and enforced by Mississippi Marine Patrol. The data collected allows the Mississippi Department of Marine Resources to estimate harvest in near real-time and quickly calculate harvest estimates. It has also been cost effective, saving the agency resources. She noted that although the Tails n' Scales program has been very successful, it still faces challenges and the Mississippi Department of Marine Resources will continue to update and enhance the system to improve its accuracy, efficiency and success.

Ms. Somerset attributed the success of the program to its mandatory nature, its design, and the outreach that the Mississippi Department of Marine Resources conducted and continues to conduct with anglers. As Ms. Somerset put it, "outreach is imperative."

Kelsey Dick, South Atlantic Fishery Management Council | Fisheries in Focus: An Enhanced Picture of Recreational Fisheries Through Electronic Self Reporting

Ms. Dick discussed the South Atlantic Fishery Management Council's use of MyFishCount, an electronic reporting platform. The platform was first used in the 2017 red snapper mini season. Through the program, the Council collected data on length distribution of discards and use of descending devices. In the November 2017 season, the data collected on the percent of completed and abandoned trips demonstrated that a majority of trips were abandoned due to foul weather. This information was considered by the National Marine Fisheries Service to extend the 2017 mini-season season into December.

The MyFishCount platform was also able to create a helpful space for dialogue outside of Council meetings, as the platform was used to contact managers with questions and concerns

from fishermen. It also demonstrated that to create a successful platform, developers must manage expectations of fisheries scientists, managers, and fishermen to ensure that everyone is on the same page about the information collected and the goal of the platform. Ms. Dick concluded that electronic reporting systems can be instrumental in increasing the resolution of data that managers use.

Cisco Werner, NOAA Fisheries | Survey Designs for Angler Electronic Reporting of Catch Data

Dr. Werner described the pros and cons of three primary methods of surveying recreational fishermen, which could be used in electronic reporting as well. They are the census survey, the panel survey, and the volunteer panel survey. In census reporting, all anglers must comply with mandatory reporting before offloading fish, but the effectiveness of these surveys can be hindered by compliance difficulties and the need for extensive shoreside sampling. In panel surveys, participants are chosen at random and agree to participate in a panel. However, over time participation can decline and it can become difficult to collect enough data to ensure statistical robustness. Volunteer panel surveys ask anyone and everyone to report, but this method requires the highest level of shoreside sampling. While imperfect, these are the main methods currently available for statistically robust electronic reporting. Dr. Werner explained that the key to successful electronic reporting platforms is to ensure that the data can be validated, that anglers participate, and that catches from all participating trips are reported.

Laura Oremland, NOAA Citizen Science |Anglers as Citizen Scientists: Possibilities in Fisheries Science and Management

Ms. Oremland's presentation described citizen programs with electronic reporting components that generate meaningful information beyond catch and effort data. She defined citizen science as groups or individuals voluntarily contributing to one or more aspects of the scientific process. She then provided examples of current citizen science programs.

Redmap (the Range Extension Database and Mapping Project), an Australian program, uses electronic reporting to track range shifts in marine species. Anglers take pictures of their catch, photos are georeferenced, and then scientists examine the photos and use them to understand geographic extents of species. In many locations, the iNaturalist app allows users to record observations in nature, generating massive amounts of first hand observations of biodiversity and in some cases environmental change over time. Another example Ms. Oremland shared was from the Northwest United States, where volunteer anglers worked with scientists to collect 100 rare rockfish in Puget sound and help determine if these rockfish were genetically distinct from rockfish in coastal waters. Importantly, through this work, canary rockfish in Puget Sound were not found to not be genetically distinct and were subsequently removed from the endangered species list. Another species, yelloweye rockfish, was found to be genetically distinct and its protected boundaries were expanded.

Ms. Oremland concluded her presentation by stating that citizen science can build relationships and has the potential to provide a faster, lighter, and cheaper way of gathering information that can supplement existing data sources.

Key Points from Participant Discussions: Angler Engagement in Data Collection and Reporting

This section summarizes participant discussions that took place during a number of Summit sessions on the topic of Angler Engagement in Data Collection and Reporting including: question and answer following the Angler Engagement in Electronic Reporting of Catch, Effort, and Other Data Panel (8:30am on Day Two), the Angler Engagement in Data Collection and Reporting Breakout Groups (10:15am on Day Two), and the Angler Engagement in Data Collection and Reporting Steering Committee Reflection Panel (11:30am on Day Two). It captures the key obstacles to implementing data collection and reporting, the needs that must be addressed to improve data collection and reporting, and the potential solutions and next steps identified by Summit participants. Many of these points emerged in multiple regional discussions—where a point was deemed important to specific regions in particular, that distinction has been noted.

Overall, participants across the Summit noted the importance of communication, transparency, outreach, and community engagement; the importance of data validation and the challenges associated with conducting rigorous data validation for electronic reporting systems; the need for anglers to remain engaged and report data over extended periods of time, and the need to communicate the potential benefits that anglers could receive for engaging in data collection. Collaborative data collection and reporting must simultaneously be scientifically viable and not unduly detract from enjoyment of the recreational fishing experience. If it can do both, it was generally agreed that it provides a tremendous opportunity to increase both opportunity and stability in recreational fisheries.

While session discussions were open to consideration of any type of collaborative data collection and reporting, participants focused much of their conversation on electronic reporting. Consequently, this report contains a section detailing obstacles to collaborative data collection and reporting broadly, and then focuses on participants' discussions about electronic reporting.

Obstacles for collaborative data collection generally

Challenges with MRIP: MRIP emerged as a key topic of discussion in the Angler Engagement in Data Collection and Reporting sessions and throughout the Summit more broadly. Participants frequently highlighted that it can be challenging for managers to make timely decisions with the data available through MRIP. Some participants also shared their belief that MRIP estimates have been inaccurate in the past. Some participants shared their perspective that the outreach conducted in the 2016 National Academies Review was not thorough enough, and that the findings of the study were consequently not as accurate as they could have been. Additionally, some participants expressed a belief that delayed fishery management decisions and conservative fishery management decisions stem from the inability of MRIP to provide timely or accurate data. They also believe that many delayed/and or conservative decisions in rare event fisheries and pulse fisheries may be due to the challenge of applying ACLs to a fishery that are difficult to effectively sample.

Pacific Islands-specific challenges: It was noted that in the Pacific Islands, it is particularly difficult to implement any mandatory reporting programs because the federal registry has limited participation and there is no permit or licensing system in place to catalog anglers.

Benefits of electronic reporting platforms

Though participants observed many obstacles to the implementation and development of electronic reporting platforms, they also highlighted numerous benefits.

Speed of Data Collection/Analysis: Electronic reporting can increase the speed at which data is collected and analyzed, which has the potential to lead to more timely and informed decision making, including potentially preventing premature closures. However, this benefit may be buffered by the need to conduct validation sampling and apply that to the reported data to generate estimates.

Depth, Breadth, and Accuracy of Data: Participants also noted numerous potential benefits of electronic reporting which may generate more accurate data and higher resolution information by increasing the percentage of anglers who report on their catch, effort, and overall experience. Electronic reporting platforms could also be a vehicle for expanding the types of information collected, as platforms can collect non-catch and effort data including geographic information, socioeconomic information, demographic information, information on the use of descending devices, information on the use of various gear types, bait type used, species distribution, and much more.

Help address challenges around discard: Electronic reporting programs can help managers understand and predict causes, size, and magnitude of discards.

Build trust: The process of developing an electronic reporting program in collaboration with the fishing community can build trust between anglers and managers. It can also engage members of the community who are already interested in conservation and management, giving them more access to citizen science initiatives and enhancing the personal contributions they can make to fishery health and stability.

Improves angling experience: An additional benefit of electronic reporting is that it can be designed to collect and store data on angler fishing experiences that anglers themselves can use to improve their fishing experiences in the future.

Obstacles for electronic reporting

Inaccessibility: While electronic reporting platforms have many advantages, they may be inaccessible for anglers who use cell phones and laptops less frequently or for anglers who fish or live in areas with poor internet connectivity.

Safety concerns: There may be safety concerns for smaller crew vessels. Logging information in an electronic reporting platform could distract from safely engaging in fishing/boating activities.

Inaccurate: Participants were concerned that electronic reporting may be susceptible to collection of false or biased data.

Complex: The challenges surrounding statistical validity and reporting bias are fundamental to successful design of electronic reporting and are likely underappreciated. However, these highly technical aspects of developing models and predictions may be difficult to effectively communicate to fishermen and non-experts whose participation is essential.

Cost of Validation: Electronic reporting depends on effective data validation through dockside sampling. Dockside sampling is often not possible for private marinas. The inability to validate catch that is landed at private docks could bias the data collected through electronic reporting programs. Additionally, data validation is essential but can also be very expensive to conduct at large scales.

Needs that must be addressed to adopt and successfully implement electronic reporting approaches

Integration and Standardization: Participants stated that there should be more established ways to integrate MRIP data and data collected from electronic reporting platforms. Moreover, platforms should be as standardized as possible, while also accounting for the needs and concerns of specific regions or localities.

Privacy: A key concern raised was that electronic reporting platforms must protect the privacy of recreational fishermen who use those platforms.

Transparency: Several commenters called for transparency and communication between anglers and managers so that everyone knows what data is being collected and how the data is being used.

Ease of Use: Electronic reporting platforms must be easy and simple enough to use so they do not detract from the enjoyment of recreational fishing. This includes ensuring that language used in platforms is simple and accessible to all.

Buy-in and Participation: Either through outreach, education, incentives, or communication of benefits, anglers must buy into electronic reporting platforms and participate in a predictable manner.

Potential solutions and next steps identified by participants regarding electronic reporting

Angler Engagement: Several commenters expressed that NOAA Fisheries and the Councils should ensure that there is significant angler engagement in development of electronic reporting platforms. Moreover, once platforms are developed, NOAA Fisheries and the Councils should conduct targeted and meaningful outreach and training, for example, to explain the science behind reporting platforms and help address the perception that fishermen will be penalized for providing data.

To increase angler engagement in electronic reporting platforms, participants suggested developing and more clearly communicating the benefits that anglers receive from participating and creating some incentives to boost participation. Suggestions included:

- Features in the platform that create a personal logbook that can then analyze data from anglers' trip history to create information they can use to improve their experience.
- Access to navigation charts and oceanographic data including tide, moon, and sea surface temperature.
- Features in the program that alert the angler to state, federal, and closed areas and explain the permits necessary for each area.
- Participants could receive small monetary incentives (like a gas card) or receive some gear (like free hooks).
- Participants could be entered into a lottery for prizes or other incentives.

Additionally, to ensure angler participation, electronic reporting programs should engage fishing clubs, tackle companies, and other recreational fishing interest groups when developing and implementing the programs. At the same time, leaders of the organized recreational community can be a bridge between private anglers and management to improve communication and help ensure the expected benefits of electronic reporting are achieved for the community. For example, states, Councils, or NOAA Fisheries could reach out to organizations like the Recreational Boating and Fishing Foundation to discuss outreach regarding electronic reporting. Social media and fishing news outlets could also be leveraged to increase the effectiveness of outreach.

Regional Case Studies: Other regions could consider the electronic reporting program currently in place in the commercial passenger fishing vessel fleet on the West Coast, the developing Alaska halibut charter boat e-logbook program, and in the Gulf Coast for red snapper when designing their own electronic reporting platforms.

Expanding Recreational Fishing Opportunity through Conservation

Presentation Summaries

This section summarizes presentations delivered by Chris Moore, David Sikorski, Dan Wolford, and Kurt Kawamoto on Expanding Recreational Fishing Opportunity through Conservation. The panel was moderated by John Armor, Director of the Office of National Marine Sanctuaries at NOAA. At the Summit, each panelist presented for approximately 10 minutes, after which participants engaged in a question and answer session. The key points of participant input are covered in the next section of this report entitled, *Key Points from Participant Discussion regarding Expanding Recreational Fishing Opportunity through Conservation*.

Chris Moore, National Fish Habitat Partnership | Supporting Recreational Fishing Opportunities Through Habitat Conservation

In his presentation, Dr. Moore shared how the National Fish Habitat Partnership's (NFHP) work to protect and restore habitat can increase recreational fishing opportunities, improve angler satisfaction, and generate economic benefits. The NFHP is comprised of state associations, federal agencies, members of the environmental community, and professional associations. There are 20 NFHP locations around the country, whose projects range from restoring stream habitat and oyster reefs to supporting research and better understanding of benthic habitats. Dr. Moore concluded his presentation by asking anglers to get involved in the NFHP's work, and to support habitat protection and restoration.

David Sikorski, Coastal Conservation Association, Maryland | Expanding Recreational Fishing Opportunity through Conservation: Habitat & Forage Fish

In his presentation, Mr. Sikorski emphasized the importance of habitat conservation to the health of recreational fisheries. He pointed out that many recreational fishing experiences overlap with a particular habitat and therefore a key part of protecting the fishing experience is to protect habitat. Moreover, habitat restoration is a great way to engage new communities and grow the angling community. Mr. Sikorski also emphasized the importance of protecting forage fish as a key source of food for species of recreational interest. Overall, Mr. Sikorski challenged participants to get engaged in habitat conservation to sustain the longevity of recreational fishing.

Dan Wolford, Coastside Fishing Club | Implementing Barotrauma & Avoidance Credits in West Coast Fisheries

Mr. Wolford described the multi-step process that was required to implement barotrauma credits in West Coast fisheries. The first step was to demonstrate the scientific validity of barotrauma recompression devices. To accomplish this, Mr. Wolford and his colleagues worked with several academic institutions who conducted extensive research on the effects of barotrauma recompression practices in the lab and on the water. Next, Mr. Wolford and his team built relationships among the full spectrum of fishery sectors that make up the Pacific Fishery Management Council and worked with the Groundfish Management Team to identify

how its catch accounting models could be modified to demonstrate how a barotrauma credit system would look in practice. At the same time, Mr. Wolford worked extensively with recreational fishermen to raise their awareness of the barotrauma treatment concepts, and to make sure that the system would meet their needs; such as ensuring the recompression devices were easy and timely to use, and that the reporting needs of the system would work well with the State's intercept survey methodologies. Ultimately, the barotrauma reduction credit system led to longer seasons and to opening deeper waters to recreational fishing. It also allowed recreational fishermen to avoid some in season closures, helped to generate higher OFLs and ACLs, and led to larger bag limits. The process was lengthy, taking around 8 years, but very impactful.

Kurt Kawamoto, Pacific Islands Fisheries Group | The Barbless Circle Hook Project

In his presentation, Mr. Kawamoto discussed the barbless circle hook project, a 15-year effort to increase the use of barbless circle hooks in Hawaii's non-commercial fisheries. The goal has been to make the use of barbless hooks a new local tradition. Mr. Kawamoto initially started the project because of the harm that barbed hooks were causing to monk seals, but the project soon expanded its aim to help all aquatic organisms and improve the safety of fishermen and their families. Barbless hooks are a great conservation initiative because they are as effective at catching fish as barbed hooks, but have less of an impact on marine life, which can easily be removed from the hook and released without harm. Numerous anglers have won major derbies using barbless hooks. In the end, Mr. Kawamoto's outreach resulted in endorsement of the project by the local recreational community, which now has a sense of broader community ownership over the initiative.

Key Points from Participant Discussions: Expanding Recreational Fishing Opportunity through Conservation

This section summarizes participant discussions that took place during a number of Summit sessions on the topic of Expanding Recreational Fishing Opportunity through Conservation, including: question and answer following the Expanding Recreational Fishing Opportunity through Conservation Panel (1:15pm on Day Two) and the Expanding Recreational Fishing Opportunity through Conservation Breakout Groups (2:30pm on Day Two). It captures the key obstacles to implementing conservation initiatives, the needs that must be addressed to adopt and successfully implement conservation initiatives, and the potential solutions and next steps identified by Summit participants. Many of these points emerged in multiple regional discussions—where a point was deemed important to specific regions in particular, that distinction has been noted. Across numerous participant comments and breakout groups, significant interest and passion was expressed on the subject of conservation. Participants demonstrated particular interest in habitat conservation and reducing post-release mortality of the fish they target.

Obstacles to expanding recreational fishing opportunity through conservation

Disparate goals and perspectives: Among a diverse range of stakeholders, including a variety of fishing sectors and others with interests in ocean conservation, there are often divergent perspectives and preferences regarding various conservation methods. Perspectives vary on the utility or priority of approaches including use of modified gear types, the impacts on habitat and forage species of various practices, marine protected areas, and artificial reefs. This diversity of opinion can lead to a difficulty and delay in implementing conservation actions of interest to the recreational fishing community.

Federal agency coordination: Conservation measures for recreational fisheries can fall into the jurisdiction of numerous federal agencies. This can make it difficult to receive funding for conservation projects and/or get conservation projects approved.

Barotrauma reduction devices: A key obstacle in increasing the use of barotrauma reduction devices is the amount of time it takes to descend/release fish instead of continuing to fish. It is also challenging to descend multiple fish landed simultaneously on for-hire vessels. Another barrier can be the cost of the devices themselves.

Lionfish in the Gulf of Mexico: Participants highlighted that lionfish pose a serious threat to the conservation of recreationally important species in the Gulf of Mexico region.

Needs that must be addressed to adopt and successfully implement expanded opportunity through conservation

Forage fish: Participants strongly emphasized the need to protect forage fish and improve forage fish management. They also expressed that the academic community needs to better understand forage fish habitat in offshore environments.

Juvenile habitat: It was stated that anglers, managers, and scientists should work together to better understand and prioritize juvenile fish habitat needs.

***Discards*:** Issues with discard mortality vary by species and season, and there is an identified need for more localized and seasonal information to inform management actions, which anglers can help provide. Better information on the number and disposition of recreational discards is also needed.

Potential solutions and next steps identified by participants

Education and outreach: In every regional breakout, it was emphasized that outreach and education about conservation techniques and benefits are key to ensuring successful conservation outcomes.

Artificial reefs: Many participants reflected that habitat can be enhanced through creation of new artificial reefs. However, other participants noted that the ecological and geological features of a site should be strongly considered and studied before artificial reefs are installed.

Participants noted that an impactful next step would be for NOAA and states to work on coming to agreement about the appropriate role of artificial reefs as habitat.

Water quality: Participants reflected that anglers, scientists, and managers should collaborate on water quality issues.

Plastics: Participants highlighted that the recreational fishing community should support and advance the use of biodegradable nets to help reduce plastic pollution.

Reducing release mortality: Numerous methods to reduce release mortality were discussed, including using fish de-hooking and descending devices, which are mandatory in some parts of the country; using barbless hooks; using knotless landing nets; fishing in shallower depths (e.g. the Long Leader project); developing techniques to measure fish without removing them from the water; and using barotrauma release devices. In particular, descending devices are used on the Pacific Coast; whereas dropshot and venting are commonly used in the Pacific Islands to enhance the survival after release and could be explored in other regions.

Participants identified that a key step in reducing release mortality is for anglers, managers, and scientists to collaborate to conduct further biological and social science research on the best descending devices for specific species. Participants also suggested that to increase the use of descending devices, anglers, industry, and managers should collaborate to increase device availability and community outreach. Additionally, participants expressed that Deepwater Horizon restoration funds can support education and outreach and distribution of devices to anglers.

Participants further noted that the community could develop collaborative programs to improve the scope of knowledge on best practices for release and handling of fish.

Invasive species: Anglers could help provide real-time information to managers regarding invasive species and range expansions.

Climate change: Conservation can be supported by more research, especially with respect to ecosystem-based management of fisheries and the effects of climate change on fisheries. This was a particular topic of focus in the Alaska region discussions.

Presentation on Recalibration of Effort Estimates

During the lunch on Day Two, Dave Van Voorhees from NOAA Fisheries' Fisheries Statistics Division and Kelly Denit from NOAA Fisheries' Office of Sustainable Fisheries provided an overview of the transition to the Fishing Effort Survey. Dr. Van Voorhees explained that MRIP generates estimates of total recreational catch by combining the results of two different surveys: the effort survey, which estimates the number of angler trips, and the catch rate survey, which is collected via dockside intercepts.

Historically, NOAA Fisheries used the Coastal Household Telephone Survey (CHTS) to collect data on private boat and shore fishing effort. This year, they are completing the transition away from the CHTS and are using the Fishing Effort Survey (FES). Instead of random-digit-dialing coastal households, the FES reaches anglers via mail through a combination of the U.S. Postal Service address database with state-based license and registration information. Dr. Van Voorhees noted that NOAA Fisheries research has shown that the FES provides more accurate estimates of fishing effort than the CHTS.

Dr. Van Voorhees also discussed the three-year transition plan, developed by NOAA, the states, Councils, and the Interstate Commissions, that has guided the transition process. Over the three years, a side-by-side benchmarking has been conducted to compare results from the FES and the CHTS and found that estimates of private boat and shore effort from FES were significantly higher than those from the CHTS. They subsequently developed a calibration model to allow the conversion between CHTS and FES data and vice versa.

NOAA Fisheries' has also implemented an improved design for the angler intercept survey, which provides information on catch data, and will be implementing a calibration approach to account for any effects of that change. Around July 1, 2018, NOAA Fisheries will have utilized calibrated intercept survey data and the calibrated effort data to re-estimate historic values of total catch. These new estimates will be incorporated into stock assessments and management decisions over the coming years. Dr. Van Voorhees stressed that the increased effort observed through the FES calibrations does not necessarily mean that overfishing has happened, and that any determination of overfishing will depend on the respective stock assessment including numerous factors such as the size of fish that anglers were catching and the productivity of the stock. He also stressed that it will not be appropriate to compare catch estimates based on the new surveys with current ACLs. Only after calibrated catch statistics are incorporated into an assessment and a new ACL is determined, will it be appropriate to use new survey estimates for monitoring recreational catch relative to the ACL.

Ms. Denit shared that for 2018, all ACLs for recreational fisheries have been set using the CHTS estimates, and 2018 FES estimates will be converted to CHTS "currency" for comparison to ACLs. Starting in fall 2018, stock assessments will be conducted to incorporate the calibrated historical catch statistics from 1981 to the present. Some stock assessment revisions will be conducted in the latter half of 2018, some in 2019, and others in 2020. Additionally, starting in

2019, some management changes could be implemented for those stocks that have been re-assessed.

Ms. Denit concluded the presentation by emphasizing that NOAA is engaged in outreach with partners, data users, and other stakeholders, and will continue to meet with stakeholders to discuss the new survey transition. A question and answer period was held, during which participants asked some clarifying questions and expressed concerns regarding the impacts of the calibration on particular regions and fisheries. Ms. Denit and Dr. Van Voorhees emphasized that numerous additional opportunities for learning and posing questions about the calibration would be made available to the recreational fishing community and offered to be accessible to answer further questions of Summit participants.

Closing Remarks

The Summit concluded with a Reflection Panel including Russell Dunn, John McMurray, and Ken Haddad. Mr. Dunn observed that the Summit highlighted that trust is still an issue and that the lack of trust stems largely from historic dynamics around data collection and reporting. He suggested that improving data collection and reporting is a key next step and that electronic reporting, although a complicated, offers a promising solution. He also expressed interest in the idea of piloting innovative management approaches and emphasized that dialogue and collaboration will be critical for moving forward successfully.

Mr. McMurray articulated that the current Magnuson-Stevens Act currently provides the flexibility necessary to implement innovative management approaches. He suggested that overfishing must be avoided and that he did not believe that liberalizing regulations would improve recreational fishing as it could jeopardize future abundance. Mr. McMurray added that recreational fisheries may require different management approaches, but that angler must still be ultimately held accountable. Additionally, he suggested that money spent on socioeconomic programs should be spent on improving stock assessments. Mr. McMurry closed by noting that conservation activities are essential, that there is no one voice for recreational fishing, and that it would be most effective to focus on topics like data, ecosystem-based management, and forage fish management that have diverse buy-in during future conversations.

Mr. Haddad articulated that the recreational fishing community should grow the pie through aquaculture and installation of artificial reefs. He expressed that he was surprised that participants focused more on data challenges during the Innovative Management Session rather than innovative management approaches. He highlighted John Carmichael's presentation on the ACL-Stock Abundance Quandary, Tom Allen's Presentation on Socioeconomics of Recreational Fisheries, and Kurt Kawamoto's presentation on the Barbless Circle Hook Project as particularly impactful presentations. Mr. Haddad noted that conservation poses real opportunities and that the recreational fishing industry has a critical role to play. He closed by expressing hope based on the leadership in RDML Gallaudet and Secretary Ross' comments, and urging the community to create real, innovative, and targeted solutions.

Chris Oliver closed the summit with final remarks, first thanking the Summit participants and organizers. He identified data collection as the key theme of the Summit and committed that developing better socioeconomic data and implementing electronic reporting will be priorities for NOAA Fisheries moving forward. Mr. Oliver also reflected on the theme of trust that emerged at the Summit. He noted that his experiences in the Pacific Fishery Management Council were filled with tremendous collaboration and trust between scientists, managers, and industry, and that he has not observed the same level of trust in other areas of the country, which is a situation he would work to rectify. Good data, he highlighted, is critical to generating buy-in and trust. Mr. Oliver also shared that he is interested in piloting innovative management approaches, and that aquaculture deserves further exploration. He concluded his remarks by re-emphasizing NOAA and the Department of Commerce's commitment to recreational fisheries and thanking all of those involved with the Summit.

Appendices

Appendix A: Steering Committee Members

Dave Sikorski, Executive Director, Coastal Conservation Association Maryland

Ken Franke, President, Sportfishing Association of California

Rip Cunningham, Author, Saltwater Sportsman Magazine

Mike Leonard, Conservation Director, American Sportfishing Assoc.

Richard Yamada, President, Alaska Reel Adventures

April DePaola, State Chairman, Coastal Conservation Association Alabama

Ed Watamura, President, Waialua Boat Club

David Webb, Board Member, West Palm Beach Fishing Club

Scott McBain, President, Humboldt Area Saltwater Anglers

Greg Stuntz, Professor of Marine Biology, Harte Research Institute for Gulf of Mexico Studies and Director for the Center for Sportfish Science and Conservation

Appendix B: Pre-Summit Survey

Pre-Summit Survey Summary

Approximately three months before the Summit, the Summit Planning Team distributed a Pre-Summit Survey to gather input from registered participants to inform agenda design. The Pre-Summit Survey was distributed as part of Summit online registration, and all responses were recorded anonymously. 41 participants from diverse regions and sectors participated in the Pre-Summit Survey (see Question 19, 20, and 21).

The goal of the survey was to assist the Summit Planning Team in understanding the "what, why and relative importance" of various topics to the recreational fishing community. More specifically, the survey was designed to investigate the four major topic areas that the Summit would address: Innovative Management Alternatives and Approaches, Socioeconomics in Recreational Fisheries Management, Angler Engagement in Data Collection and Reporting, and Enhancing Recreational Fishing Opportunity through Conservation. Participants reflected that the four major topics areas identified by the Planning Team and Steering Committee were priority topics (Question 1) and that it was likely that the community could generate progress on those topics at the Summit (Question 2).

For the Innovative Management Alternatives and Approaches topic area, the Survey found that:

- There was strong support for the use of alternative management approaches, and a willingness to try new approaches. There was more broadly a desire to incorporate flexibility in management.
- Survey respondents highlighted a number of approaches including use of a mandatory data collection system for capturing data from recreational fishermen to inform management; use of tag systems; increasing state authority; and use of depth-based management.
- Respondents also articulated a desire for continued use of ACLs; and use of strong baseline science to inform management.
- Respondents commented that there is a need to recognize and value recreational fisheries as much as commercial fisheries.

For the Socioeconomics in Recreational Fisheries Management topic area, the Survey found that:

- Respondents expressed support for increased application and weighting of socioeconomic information in management decisions.
- Respondents suggested that it would be helpful if the Summit created a shared understanding of what is currently measured and known, what we still need to measure, how we can collaborate to gather that information, and how it would be used.
- Respondents articulated numerous challenges facing the use of socioeconomic information, including: anglers' hesitance to share information, the lack of shared understanding regarding what information would be collected and how it would be used, the difficultly in capturing the cultural values of recreational fishing, and limited funding.

For the Angler Engagement in Data Collection and Reporting topic area, the Survey found that:

- Participants highlighted that there is a need to improve quality and timeliness of data and a need to increase funding available for data collection and reporting.
- Participants also commonly reflected that a common concern in the recreational fishing community is that the data the recreational fishermen provide will be used to increasingly limit fishing opportunity.
- Respondents commented verbosely on electronic reporting, articulating that it has the potential to fill current data gaps but that it may be difficult to ensure consistent participation. They also reflected that there is a clear need for training and outreach on electronic reporting, and that programs should ensure accessibility for all anglers. To accomplish these objectives, respondents suggested a sustained dialogue and engagement with anglers on electronic reporting.
- Respondents noted the value of increasing dock-side data collection.

For the Expanding Recreational Fishing Opportunity through Conservation topic area, the Survey found that:

- Participants expressed support for conservation programs that increase opportunity including credits for decreased discard mortality; use of circle hooks; careful catch and release practices; and use of artificial reefs to enhance habitat.
- Respondents expressed concerns regarding future marine protected areas limited access.
- Respondents highlighted the need for education and community outreach regarding barotrauma reduction practices, and the need to design solutions that reduce the cost of barotrauma reduction devices, the time it takes to use them, and the size and cumbersome nature of the devices.

Finally, several overarching themes emerged throughout the survey, including:

- 33% of survey respondents noted that one of the biggest obstacles facing improved opportunity and stability is the lack of trust between the recreational fishing community and anglers. This theme permeated the survey results from all four topic areas.
- 25% of respondents noted the importance of increased community outreach and greater communication between the recreational fishing community and managers.
- Respondents noted that there are more recreational fishermen representing a greater economic contribution than ever before, and that the management systems in place were not designed to address this scale of recreational fishing. This scale of recreational fishing is a relatively new phenomenon that consequently does have the "historical data [necessary] to predict or model how alternative approaches will affect fisheries."
- 35% of survey respondents commented on the potential upcoming Magnuson-Stevens Act reauthorization. Participants reflected diverse perspectives on how the Act should be reauthorized, however it was clear that this reauthorization was on the minds of many survey respondents.

Pre-Summit Survey Quantitative Results

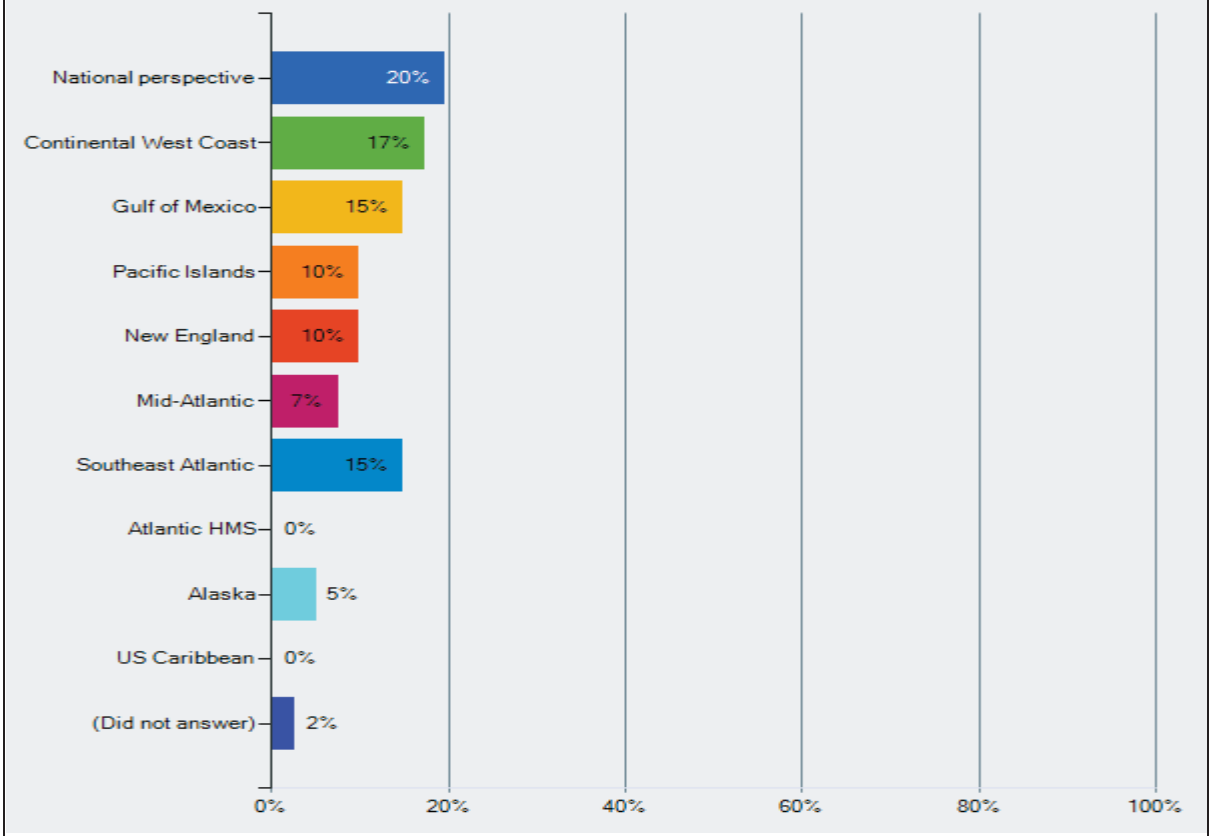
Question 1. Please prioritize the following Summit discussion topics:						
		Least priority	Low priority	Average priority	High priority	Highest priority
(a)	Innovative Management Alternatives and Approaches	0%	3%	10%	43%	45%
(b)	Supplementing Recreational Fisheries Data Collection through Collaboration	3%	8%	10%	55%	25%
(c)	Socio-Economics in Recreational Fisheries Management	0%	10%	30%	40%	20%
(d)	Expanding Recreational Fishing Opportunity through Conservation	0%	0%	25%	50%	25%

Question 2. Please evaluate the likelihood of generating progress on the following topics in the next four years following the Summit.						
		Highly Unlikely	Unlikely	Possibly	Probably	Definitely
(a)	Innovative Management Alternatives and Approaches	0%	3%	35%	40%	23%
(b)	Supplementing Recreational Fisheries Data Collection through Collaboration	0%	5%	20%	40%	35%
(c)	Socio-Economics in Recreational Fisheries Management	0%	13%	30%	35%	23%
(d)	Expanding Recreational Fishing Opportunity through Conservation	3%	3%	40%	35%	20%

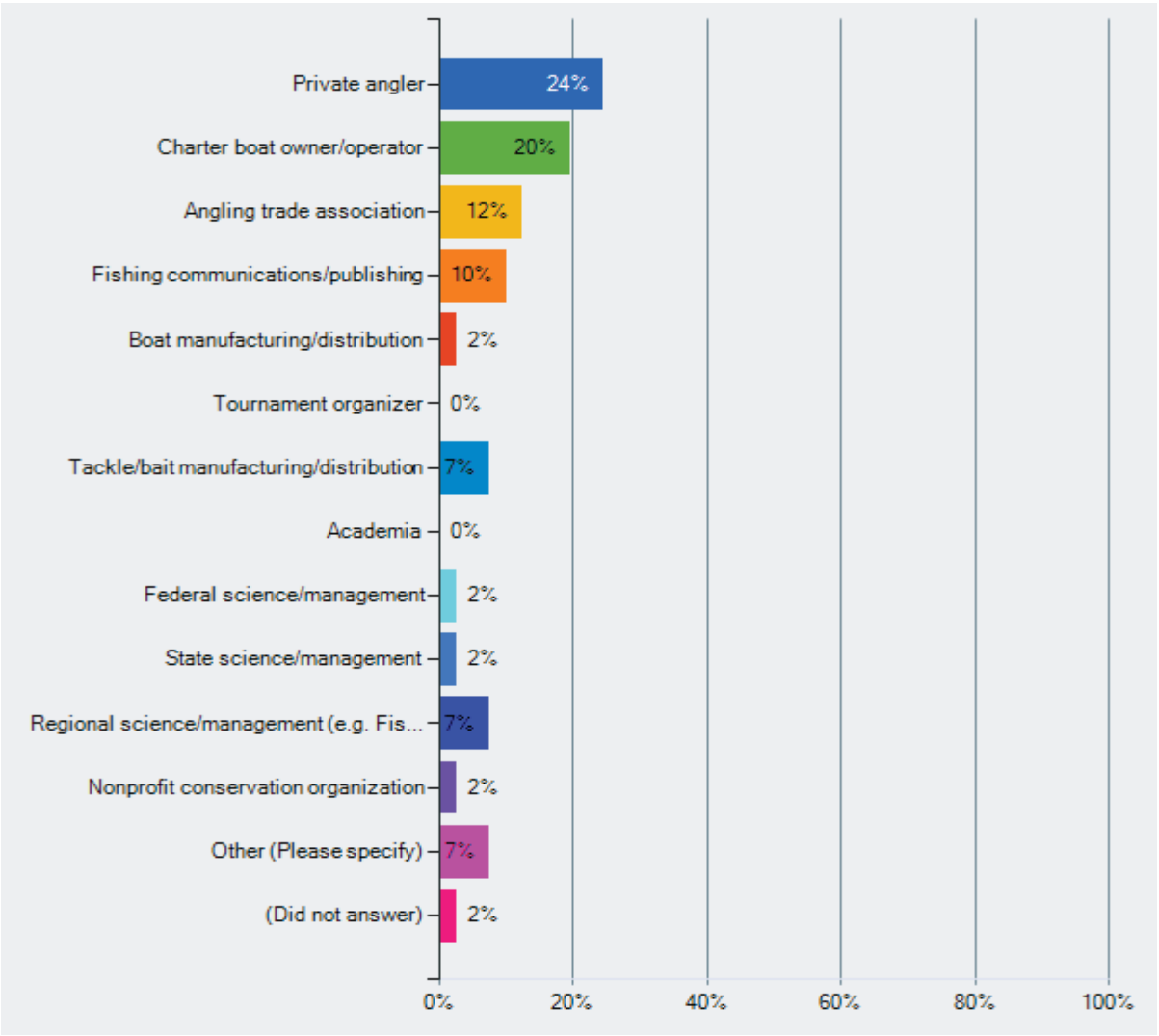
Q14. Please prioritize the following possible sub-topics to be discussed at the Summit.						
		Least priority	Low priority	Average priority	High priority	Highest priority
(a)	Barotrauma reduction	3%	18%	26%	42%	11%
(b)	Forage fish management	3%	13%	21%	41%	23%
(c)	Range shifts of target species	3%	14%	42%	31%	11%
(d)	Citizen science/ Cooperative Research	3%	10%	28%	45%	15%
(e)	Habitat protection, restoration, and enhancement	0%	3%	28%	31%	38%
(f)	Relationship between the recreational fishing community and the commercial fishing community	0%	13%	30%	28%	30%
(g)	Aquaculture	18%	36%	38%	13%	5%
(h)	Depredation	8%	28%	36%	23%	5%
(i)	Federal-state regulatory consistency	0%	3%	28%	46%	23%
(j)	Marine mammal interactions	21%	21%	26%	15%	18%

Q15. Please evaluate the likelihood of generating progress on these sub-topics in the next four years following the Summit.						
		Highly Unlikely	Unlikely	Possibly	Probably	Definitely
(a)	Barotrauma reduction	3%	8%	18%	37%	34%
(b)	Forage fish management	0%	8%	44%	38%	10%
(c)	Range shifts of target species	5%	11%	53%	26%	5%
(d)	Citizen science/ Cooperative Research	0%	10%	33%	41%	15%
(e)	Habitat protection, restoration, and enhancement	0%	16%	39%	32%	13%
(f)	Relationship between the recreational fishing community and the commercial fishing community	8%	33%	44%	13%	3%
(g)	Aquaculture	5%	22%	54%	14%	5%
(h)	Depredation	11%	29%	53%	8%	0%
(i)	Federal-state regulatory consistency	8%	10%	41%	33%	8%
(j)	Marine mammal interactions	5%	32%	39%	24%	0%

Q19. What region are you representing?



Q21. What perspective do you primarily represent?



Pre-Summit Survey Questions

Question 1: Please prioritize the following Summit discussion topics *(on a scale of least priority, low priority, average priority, high priority, and highest priority)*

- Innovative Management Alternatives and Approaches
- Supplementing Recreational Fisheries Data Collection through Collaboration
- Socioeconomics in Recreational Fisheries Management
- Expanding Recreational Fishing Opportunity through Conservation

Question 2: Please evaluate the likelihood of generating progress on the following topics in the next four years following the Summit *(on a scale of highly unlikely, unlikely, possibly, probably, and definitely)*

- Innovative Management Alternatives and Approaches
- Supplementing Recreational Fisheries Data Collection through Collaboration
- Socioeconomics in Recreational Fisheries Management
- Expanding Recreational Fishing Opportunity through Conservation

Question 3 and 4: Please identify challenges or obstacles that impede the use of innovative management approaches. Where applicable, please identify associated actions that managers and the saltwater recreational fishing community can take to address these issues. *(free response format)*

Question 5: Are there innovative or alternative management approaches that you would like to see explored for a particular fishery? *(free response format)*

Question 6 and 7: Please identify challenges or obstacles that impede the following approaches to data collection. Where applicable, please identify associated actions that managers and the saltwater recreational fishing community can take to address these issues.

Question 8: Are you aware of electronic reporting programs (fisheries focused or not) that have been successful or unsuccessful? If so, what factors contributed to this success or lack of success?

Question 9: What challenges or obstacles impede the incorporation of social and economic analysis in recreational fisheries management decisions? Please list approximately 1-3. (*free response format)*

Question 10: What opportunities are there to improve social and economic data collection, analysis, and application in decision making?

Question 11: If applicable, please share a specific example of when conservation activities led to increased recreational fishing opportunity.

Question 12 and 13: Please identify challenges or obstacles to implementing the following conservation activities. Where applicable, please identify associated actions that managers and the saltwater recreational fishing community can take to address these obstacles.

Question 14: Please prioritize the following Summit discussion topics *(on a scale of least priority, low priority, average priority, high priority, and highest priority)*

- Barotrauma reduction
- Forage fish management
- Range shifts of target species
- Citizen science/ Cooperative Research
- Habitat protection, restoration, and enhancement
- Relationship between the recreational fishing community and the commercial fishing community
- Aquaculture
- Depredation
- Federal-state regulatory consistency
- Marine mammal interactions

Question 15: Please evaluate the likelihood of generating progress on the following topics in the next four years following the Summit *(on a scale of highly unlikely, unlikely, possibly, probably, and definitely)*

- Barotrauma reduction
- Forage fish management
- Range shifts of target species
- Citizen science/ Cooperative Research
- Habitat protection, restoration, and enhancement
- Relationship between the recreational fishing community and the commercial fishing community
- Aquaculture
- Depredation
- Federal-state regulatory consistency
- Marine mammal interactions

Question 16: Are there any key topics or issues that were not covered in the survey that should be addressed at the Summit? *(free response format)*

Question 17: Please list 1-3 outcomes of a successful summit. *(free response format)*

Question 18: Is there anything else you would like to share to inform the Summit Planning Team? *(free response format)*

Question 19: What region are you representing?

- National perspective
- Continental west Coast
- Gulf of Mexico
- Pacific Islands
- New England
- Mid-Atlantic
- Southeast Atlantic
- Atlantic HMS
- Alaska
- US Caribbean

Question 20: What state do you represent? *(select from list of states)*

Question 21: What perspective do you primarily represent?

- Private angler
- Charter boat owner/operator
- Angling trade association
- Fishing communications/publishing
- Boat manufacturing/distribution
- Tournament organizer
- Tackle/bait manufacturing/distribution
- Academia
- Federal science/management
- State science/management
- Regional science/management
- Nonprofit conservation organization
- Other (please specify)

Appendix C: Summit Agenda

National Saltwater Recreational Fisheries Summit

Date: March 28 - March 29, 2018

Location: Westin Crystal City,
1800 Jefferson Davis Highway
Arlington, VA 22202

Meeting Objectives

The 2018 Summit will focus on improving opportunity and stability in recreational fisheries. Summit participants will identify actions where progress can be made in the near term, tailored to specific regions and fisheries. A chief aim will be to identify complementary and collaborative actions that the angling and management communities can work on together. Participants represent a diversity of regions and perspectives, including anglers, charter boat operators, tackle companies, managers, and research institutions, among others. During the Summit, participants will:

- Share information and perspectives within and across regions about innovative management alternatives and approaches, uses of electronic data collection and reporting, socioeconomics, and conservation actions to improve opportunity and stability in saltwater recreational fisheries.
- Identify opportunities for collaborative actions that improve opportunity and stability in recreational fisheries.
- Discuss implementation strategies and solutions to overcome challenges and seize opportunities.

Wednesday, March 28, 2018

7:30 am **Breakfast**
For registered participants only

8:00 am **Welcome, Introduction, and Agenda Review**
Speakers include:

- *Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Russell Dunn, National Policy Advisor for Recreational Fisheries, National Oceanic and Atmospheric Association (NOAA) Fisheries*
- *Chris Oliver, Assistant Administrator, NOAA Fisheries*

8:20 am **Keynote Addresses**

Speakers include:

- *Bill Shedd, President and Chairman, American Fishing Tackle Company*
- *RDML Timothy Gallaudet, Assistant Secretary of Commerce for Oceans and Atmosphere & Acting Undersecretary of Commerce for Oceans and Atmosphere*
- *Secretary Wilbur Ross, Department of Commerce (Invited)*

9:00 am **Insights from the 2018 Saltwater Recreational Fisheries Pre-Summit Survey**

During this session, Meghan Massaua of Meridian Institute will provide an overview of key themes and highlights from the Pre-Summit Survey.

9:15 am **Innovative Management Alternatives and Approaches | Panel**

This session will include a series of presentations on alternative management approaches and will showcase examples from different regions and fisheries. Participants will have the opportunity to ask brief clarifying questions at the end of the panel and engage in deeper discussions on this topic in subsequent breakout groups. Presenters include:

- *Moderator: Tim Sartwell, Fishery Management Specialist, NOAA Fisheries*
- *Ken Haddad, Marine Fisheries Advisor, American Sportfishing Association*
- *Alan Risenhoover, Director, Office of Sustainable Fisheries, NOAA Fisheries*
- *John Carmichael, Deputy Executive Director for Science & Statistics, South Atlantic Fishery Management Council (SAFMC)*
- *Richard Yamada, President, Alaska Charter Association*

10:45 am **Break – Transition to breakout groups**

11:00 am **Innovative Management Alternatives and Approaches | Breakout Groups**

In this session, participants will divide into five breakout groups by region and work together to identify a) specific challenges in their regions that innovative management approaches may address better than traditional management approaches; b) specific fisheries or fisheries characteristics for which these approaches may be appropriately applied; c) collaborative actions among anglers and managers that may advance such approaches; and d) challenges and solutions to implementing these approaches. Breakouts will be as follows:

- *Alaska and West Coast – Crystal II Room*
- *Pacific Islands- Davis I Room*
- *Greater Atlantic Region – Jefferson Room*
- *South-Atlantic and Caribbean – Crystal III Room*
- *Gulf Coast – Crystal IV Room*

12:15 pm **Lunch**

Provided for registered participants only. Walk-ins are invited to find information about nearby restaurants at registration.

1:15 pm **Innovative Management Alternatives and Approaches | Reflection Panel**

In this session, leaders from each region will briefly share perspectives from their regional breakout discussions to enhance cross-regional understanding of alternative management approaches. Panelists include:

- *Moderator: Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Alaska – Richard Yamada, President, Alaska Reel Adventures*
- *West Coast – Scott McBain, President, Humboldt Area Saltwater Anglers*
- *Pacific Islands – Ed Watamura, President, Waialua Boat Club*
- *Northeast – Rip Cunningham, Author, Saltwater Sportsman Magazine*
- *Mid-Atlantic – David Sikorski, Executive Director, Maryland Coastal Conservation Association*
- *South-Atlantic and Caribbean – David Webb, Board Member, West Palm Beach Fishing Club*
- *Gulf Coast – April DePaola, State Chairman, Coastal Conservation Association Alabama*

2:00 pm **Socioeconomics in Recreational Fisheries Management | Overview Presentation and Panel Discussion**

In the first part of the session, participants will hear about NOAA Fisheries' social sciences and economics programs to create a shared understanding of socioeconomic methods currently being used around the country and the results and response to NOAA Fisheries' socioeconomic program review and potential next steps.

- *Dr. Doug Lipton, Senior Research Economist, NOAA Fisheries*

In the second part of the session, socioeconomics experts will provide information on economic benefits, economic impacts, and social indicators and their application in fisheries management. Panelists will then engage in a facilitated discussion followed by an audience question and answer session. The discussion will generate insights from the recreational fishing community about various approaches to measuring, analyzing, and incorporating socioeconomic information. Panelists include:

- *Moderator: Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Doug Lipton, Senior Research Economist, NOAA Fisheries*
- *Scott Steinback, Economist, Northeast Fisheries Science Center*

- *Leif Anderson, Natural Resource Economist, Northwest Fisheries Science Center*
- *Dr. Steve Kasperski, Economist and Program Manager, Economic and Social Sciences Research, Alaska Fisheries Science Center*
- *Judy Amesbury, Archeologist, Micronesian Archaeological Research Services*
- *John Hadley, Fishery Economist, South Atlantic Fishery Management Council*
- *Tom Allen, Vice President of Research, Southwick Associates*

3:30 pm **Break**

3:45 pm **Socioeconomics in Recreational Fisheries Management | Small Group Discussions**

After the break, informal small group discussion will occur at roundtables in plenary (*Jefferson Room)* where participants will react to the panel and brainstorm further ideas on socioeconomics data needs, collection methods, and use in decision making. After small group discussion, each table will report out on major highlights from their small group.

4:45 pm **Wrap-up Day One**

Ingrid Irigoyen

5:00 pm **Networking Reception**

Cash bar available

Thursday, March 29, 2018

7:30 am **Breakfast**

For registered participants only

8:00 am **Welcome Day 2 and Reflections from Day 1**

This session will welcome participants back to the second day of the Summit and provide an opportunity to reflect on the first day.

- *Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Russell Dunn, National Policy Advisor for Recreational Fisheries, NOAA Fisheries*

8:10 am **Angler Engagement in Collaborative Data Collection and Reporting | Overview Presentation**

During this session, participants will hear an overview of the types of data that can be collected through electronic platforms, and how these platforms and their

associated data could improve recreational fishing opportunity and stability. Dr. Barbieri will tee up areas for improvement and implementation challenges for discussion later in the day. Participants will have an opportunity to pose clarifying questions.

- *Dr. Luiz Barbieri, Marine Fisheries Research Program Leader, Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute*

8:30 am **Angler Engagement in Electronic Reporting of Catch, Effort, and Other Data | Panel**

This session will feature panel presentations from a variety of fisheries and electronic reporting programs. Dr. Greg Stunz of Texas A&M University will moderate a panel that will explore a) the specific circumstances/requirements for an ER system to produce useable catch data; b) the circumstances/ requirements for an ER system to produce other kinds of data that can inform science and management; c) characteristics that make an ER program usable and successful for the angling community and managers; d) potential challenges impeding ER implementation; and e) potential strategies for overcoming challenges, such as encouraging consistent angler use. The audience will have the opportunity to ask the panel questions in plenary. Participants will engage in deeper discussion on this topic in subsequent breakout groups. Presenters include:

- *Moderator: Dr. Greg Stunz, Professor of Marine Biology, Harte Research Institute for Gulf of Mexico Studies and Director for the Center for Sportfish Science and Conservation*
- *Ken Franke, President, Sportfishing Association of California*
- *Carly Somerset, Biological Program Coordinator for the Finfish Bureau, Mississippi Department of Marine Resources*
- *Kelsey Dick, Fishery Outreach Specialist, Private Recreational Reporting, South Atlantic Fishery Management Council*
- *Dr. Cisco Werner, Chief Science Advisor, NOAA Fisheries*
- *Laura Oremland, Acting Citizen Science Coordinator, NOAA*

10:00 am **Break and transition to breakout groups**

10:15 am **Angler Engagement in Data Collection and Reporting | Breakout Groups**

During this session, participants will divide into five breakout groups by region (as on day one) where they will discuss opportunities and challenges for electronic reporting of catch and effort data, as well as other types of data, taking each topic in turn. Breakouts will be as follows:

- *Alaska and West Coast – Crystal II Room*

- *Pacific Islands- Davis I Room*
- *Greater Atlantic Region – Jefferson Room*
- *South-Atlantic and Caribbean – Crystal III Room*
- *Gulf Coast – Crystal IV Room*

11:15 am **Transition back to plenary**

11:30 am **Angler Engagement in Data Collection and Reporting | Reflection Panel**

In this session, leaders from each region will briefly share perspectives from their regional breakout discussions to enhance cross-regional understanding of data collection and reporting. Panelists include:

- *Moderator: Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Alaska – Richard Yamada, President, Alaska Reel Adventures*
- *West Coast – Scott McBain, President, Humboldt Area Saltwater Anglers*
- *Pacific Islands – Ed Watamura, President, Waialua Boat Club*
- *Northeast – Rip Cunningham, Author, Saltwater Sportsman Magazine*
- *Mid-Atlantic – David Sikorski, Executive Director, Maryland Coastal Conservation Association*
- *South-Atlantic and Caribbean – David Webb, Board Member, West Palm Beach Fishing Club*
- *Gulf Coast – April DePaola, State Chairman, Alabama Coastal Conservation Association*

12:15 pm **Lunch | Optional Presentation on Transition to Fishing Effort Survey and Calibration**

During lunch (*which is provided for registered participants only*), participants have the option to attend a session on the transition to the mail-based fishing effort survey and work to calibrate NOAA Fisheries estimates for private angler catch and effort in the Atlantic and Gulf of Mexico. This will be followed by a brief opportunity for clarifying questions.

- *Dave Van Voorhees, Division Chief, Fisheries Statistics, NOAA Fisheries*
- *Kelly Denit, Chief of the Domestic Fisheries Division, Office of Sustainable Fisheries, NOAA Fisheries*

1:15 pm **Expanding Recreational Fishing Opportunity through Conservation | Panel**

John Armor, Director of the Office of National Marine Sanctuaries, will moderate this session, with a series of speakers discussing habitat protection and restoration, forage fish, and reducing release mortality. These overview presentations will prepare participants for subsequent discussion in breakouts.

Panelists include:

- *Moderator: John Armor, Director, Office of National Marine Sanctuaries, NOAA*
- *Dr. Chris Moore, Vice Chair, National Fish Habitat Partnership and Executive Director, Mid-Atlantic Fishery Management Council*
- *David Sikorski, Executive Director, Maryland Coastal Conservation Association*
- *Dan Wolford, Board of Directors, Coastside Fishing Club*
- *Kurt Kawamoto, Ret., Pacific Islands Fisheries Group*

2:15 pm **Break and Transition to Breakout Groups**

2:30 pm **Expanding Recreational Fishing Opportunity through Conservation | Breakout Groups**

Participants will break out by region to reflect on the presentations and consider approaches for expanding recreational fishing opportunity through conservation**.** Breakouts will be as follows:

- *Alaska and West Coast – Crystal II Room*
- *Pacific Islands- Davis I Room*
- *Greater Atlantic Region – Jefferson Room*
- *South-Atlantic and Caribbean – Crystal III Room*
- *Gulf Coast – Crystal IV Room*

3:15 pm **Transition back to plenary**

3:25 pm **Reflections on the Summit and Next Steps for the Community**

In this panel, recreational fishing community leaders and managers will reflect on the Summit and discuss potential next steps. Speakers include:

- *Moderator: Ingrid Irigoyen, Senior Mediator, Meridian Institute*
- *Ken Franke, President, Sportfishing Association of California*
- *John McMurray, Captain and Owner, One More Cast Charters*
- *Ken Haddad, Marine Fisheries Advisor, American Sportfishing Association*
- *Russell Dunn, National Policy Advisor for Recreational Fisheries, NOAA Fisheries*

3:50 pm **Closing Remarks**

Chris Oliver, Assistant Administrator, NOAA Fisheries

4:00 pm **Adjourn**

Appendix D: Background papers

National Saltwater Recreational Fisheries Summit

Innovative Management Alternatives and Approaches

Description

Maximizing fishing opportunities while ensuring the sustainability of fisheries and fishing communities is a common goal of recreational fishermen and fishery managers. Traditional management approaches such as fishing seasons, size, and bag limits, in combination with more recent statutorily driven mechanisms including Annual Catch Limits and Accountability Measures, helped recover a significant number of fish stocks from "overfished" or "overfishing" conditions. However, many recreational fishermen remain frustrated with fisheries management and seek expanded fishing opportunities and more stable fisheries.

The recreational fishing community and fishery managers are exploring ideas to sustainably expand fishing opportunities and/or increase stability in recreational fisheries. Some ideas include shifting from a pounds harvested management approach to harvest rate management, depth-distance management approaches, expanding the use of conservation equivalency programs, adjusting quota allocations, and utilizing fish tags in certain circumstances. In 2016, revised guidelines for the Magnuson-Stevens Fishery Conservation and Management Act's National Standard One were published, providing the federal fishery management councils with additional management flexibility. The revised guidelines included clarifications on carrying forward unharvested quota from one fishing year to the next, use of multi-year periods for making overfishing determinations, and additional guidance on managing data limited stocks, among others.

This session on Wednesday, March 28 at 9:15am will feature panel presentations followed by a brief question and answer session and in-depth regional breakout group discussions. Breakout groups at 11:00am will work to identify specific challenges in their regions that innovative management approaches may address better than traditional management approaches, specific fisheries or fishery characteristics which may be particularly suited to application of innovative approaches, collaborative actions between fishermen, fishery managers, and scientists that may advance such approaches, and challenges and solutions to implementing innovative management approaches. A reflection panel at 1:15pm will then provide cross-regional sharing of ideas from the breakouts.

Breakout Group Discussion Questions

- What specific management needs or issues could be better addressed in your region by applying an innovative management approach?
    - In which fisheries do they arise? Are there key characteristics of these fisheries which make them particularly suitable for innovative management?
- How can progress toward implementation of appropriate innovative management be made in your region?
    - What steps need to be taken and by whom; what are some identifiable obstacles and how can they be overcome? What specific role can the recreational fishing community play?
- What are the key opportunities for collaboration between the angler and managers/scientists?

National Saltwater Recreational Fisheries Summit

Socioeconomics in Recreational Fisheries Management

Description

NOAA Fisheries has made significant investments in improving the social and economic information available to fisheries managers, resulting in an increase in the amount of socioeconomic information on recreational fisheries. However, the highly specialized models and tools can be somewhat overwhelming, with questions arising about what models should be used to analyze a regulatory action and how best to interpret that information. While the FY17 Review of NOAA Fisheries Economics & Human Dimensions Program endorsed recent progress in its activities and outputs related to recreational fisheries, it also encouraged the Program to work more closely with managers and stakeholders to enhance their understanding of the models and information available for their use. Equally important, the reviewers also recommended a more systematic approach for getting input from managers and stakeholders on their needs.

This panel on Wednesday, March 28 at 2:00pm will feature an introductory presentation by NOAA Fisheries Chief Economist, Dr. Doug Lipton, who will provide a national overview of NOAA's socioeconomic programs, including a thumbnail sketch of key models and research, as well as highlighting both their applications and common misconceptions. A panel of regional economists and social scientists will then provide a more in-depth look at these models and emerging research, presentations on cultural considerations and application of socioeconomic information and analyses at the Regional Fishery Management Council level, and an industry perspective on social and economic information needs in the fishery management process. The panelists will engage in a facilitated discussion, including an open question and answer session with the Summit participants. Summit participants will then engage in small group discussion at roundtables in the main plenary room (Jefferson) at 3:45pm to brainstorm socioeconomic data and analysis needs, challenges, and application in decision making.

Breakout Group Discussion Questions

- What are the strengths and deficiencies of the economic and social information and analyses associated with recreational fisheries management?
    - Are their key issues/questions not being addressed by the current suite of socioeconomic data collection and analyses?
    - What changes/improvements would be beneficial and are there ways that fishermen and fishery managers/social scientists can work together to achieve them?
- Are there opportunities to better incorporate socioeconomic information into the management decision making process?
    - If so, where and how? What obstacles are there to doing so and how can fishermen and fishery managers/social scientists work together to overcome them?
- Are there examples in your region of when cultural considerations have been taken into account or ignored in the fishery management process?
    - What were those cultural considerations based on (e.g., people groups, fishing methods, etc.) and how can fishermen and fishery managers/social scientists work together to improve their consideration?

National Saltwater Recreational Fisheries Summit

Angler Engagement in Collaborative Data Collection and Reporting

Description

Information used to assess and monitor recreational fisheries catch and effort is traditionally collected using familiar methods: paper reporting, mail and phone surveys, and dockside intercepts of fishermen. Recreational for-hire data collection programs across the country are moving towards electronic trip reporting (ER), including the use of smart phones, computers, VMS, and tablets to collect, transmit, and store fishery-dependent data. In addition, there is strong interest within the angling community for participation in direct trip reporting via cell phone and tablet by private anglers. Managers are developing and testing such private angler ER survey designs for specialized purposes such as state-level red snapper data collection in the Gulf of Mexico. Harnessing technology to expand angler contributions to recreational reporting in a way that complements traditional fishery-dependent data collection holds enormous opportunity. Electronic reporting may also facilitate collection of important non-catch related data as well, such as data that enable tracking of changes in geographic or seasonal distribution of fish populations. However, this shift poses many new challenges such as achieving and sustaining angler participation in ER programs, assuring angler reports meet survey design performance requirements, comparability of data across States and Regions, verification of angler reported data, and the costs of implementing ER-based data collection programs.

Sessions on this topic on Thursday, March 29 at 8:15am and 8:30am feature presentations from a variety of fisheries and electronic reporting programs. Dr. Luiz Barbieri of the Florida Fish and Wildlife Research Institute will kick off the discussion by presenting an overview of the potential opportunities and challenges of recreational ER for both catch and non-catch reporting, and will review the findings of the National Academies of Sciences on this topic. A moderated panel discussion will then explore a) the specific circumstances/requirements for an ER system to produce useable catch data; b) the circumstances/requirements for an ER system to produce other kinds of data that can inform science and management; c) characteristics that make an ER program usable and successful for the angling community and managers; d) potential challenges impeding ER implementation; and e) potential strategies for overcoming challenges, such as encouraging consistent angler use. The panel discussion will be followed by a brief audience question and answer session. Participants will engage in deeper discussion during regional breakout groups at 10:15am. A reflection panel at 11:30am will provide cross-regional sharing of ideas from the breakouts.

Breakout Group Discussion Questions

- What do you perceive as the benefits of electronic reporting?
- What concerns you about electronic reporting?
- How can we recruit and sustain consistent participation by fishermen in electronic reporting programs?
    - What specific role can the recreational fishing community play?
- In addition to catch and effort data, what other data do you feel would be useful to collect and think fishermen would be willing to share via ER?

National Saltwater Recreational Fisheries Summit

Expanding Recreational Fishing Opportunity through Conservation

Description

Proper conservation of habitats, forage fish and sport fish populations are important in maintaining diversity and enhancing recreational fishing opportunities. While anglers practice and recognize the importance of conservation, there is potential to expand conservation actions to more anglers and increase or enhance fishing opportunities. The use of descending devices, circle hooks, and barbless hooks to reduce post-release mortality has demonstrated potential to increase recreational fishing opportunities. Through the efforts of for-hire and private anglers, the use of descending devices on the West Coast led directly to reopened and expanded recreational fishing opportunities. The West Coast "conservation credit" approach reduced the frustrations associated with limited fishing opportunities stemming from high release mortality rates and could be a model for other regions to examine.

Anglers and angling organizations are key partners in a variety of habitat protection, restoration, and enhancement activities such as dam removal, river restoration, oyster bed restoration, and sea grass restoration. These habitat enhancements directly benefit a variety of life stages for recreational species and their prey. Forage fish issues are becoming increasingly visible as ecosystem management approaches are considered by fishery managers.

During a panel on this topic on Thursday, March 29 at 1:15pm, a series of speakers will discuss habitat protection and restoration, forage fish, and reducing release mortality. Mr. John Armor, Director of the Office of National Marine Sanctuaries, will moderate the panel to help answer participant questions about successful conservation actions. Regional breakouts on this topic at 2:30pm will allow participants to brainstorm and develop collaborative strategies that may lead to expanded fishing opportunities by improving conservation in their local waters.

Breakout Group Discussion Questions

- What opportunities exist in your region to collaborate on protecting/improving habitat or forage fish that are important to recreational species? What hurdles would need to be overcome?
- Are there conservation issues (barotrauma or otherwise) in your region for which the Pacific Council's successful rockfish conservation credit approach could serve as a model?
    - What specific role can the recreational fishing community play to advance this approach?
- What additional steps can be taken in your region to further improve survival of fish released by recreational fishermen? How can fishermen, managers, and scientists collaborate on this?

Appendix E: Summit Participant List

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Appendix F: Post-Summit Survey

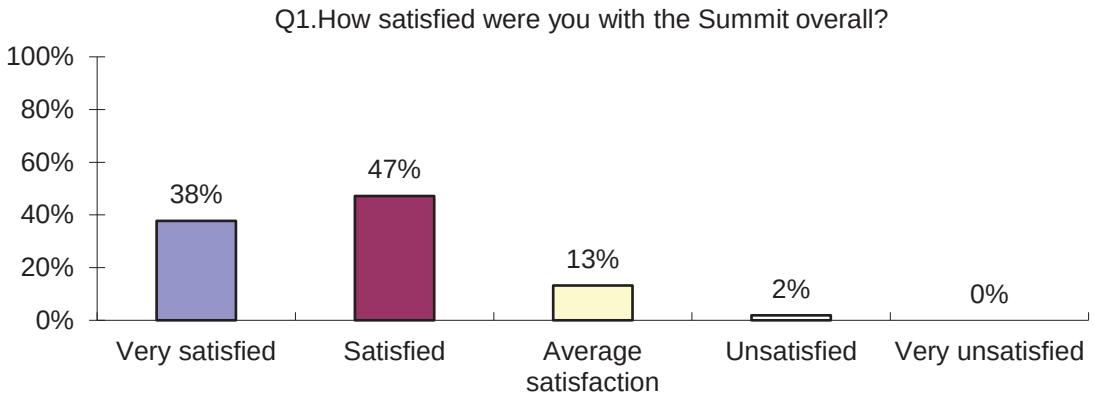
Post-Summit Survey Summary

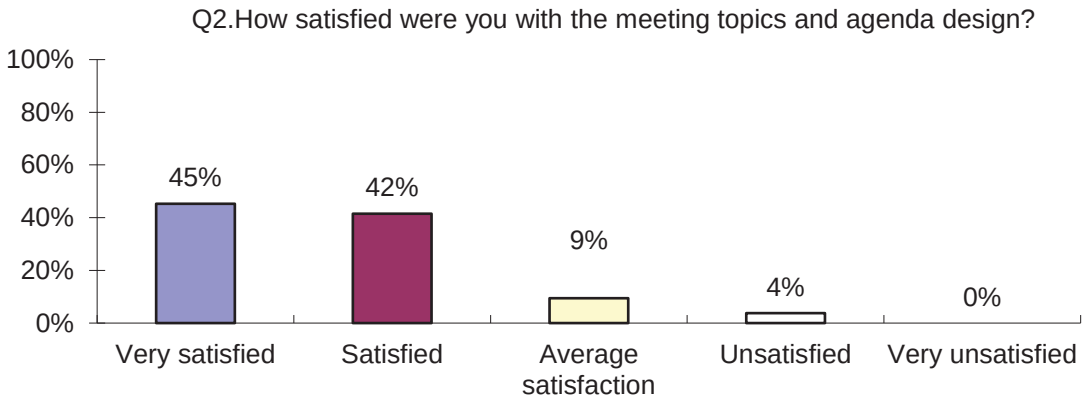
To evaluate the success and impact of the Summit, the Summit Planning Team distributed a Post-Summit Survey. A total of 53 Summit participants responded to the Post-Summit Survey, a 40.8% response rate. Overwhelmingly, participants expressed satisfaction with the Summit, with 85% or more of respondents indicating that they were satisfied or very satisfied with Summit overall, with the meeting topics and agenda design, with breakout group facilitation, and with the plenary facilitation. Over 50% of participants indicated that they learned new information, over 50% indicated that they strengthen or expanded their network, and over 40% of participants found that the community made progress in identifying/developing solutions. Additionally, 21% of respondents found that participants at the Summit increased trust between anglers and managers and 15% identified programs or initiatives that could be replicated in their regions. Of the all the sessions, respondents found the Angler Engagement in Data Collection and Reporting Presentation Panel, the Innovative Management Alternatives and Approaches Panel, and the Angler Engagement in Collaborative Data Collection and Reporting Breakout Groups to be the most useful for advancing the needs of the recreational fishing community.

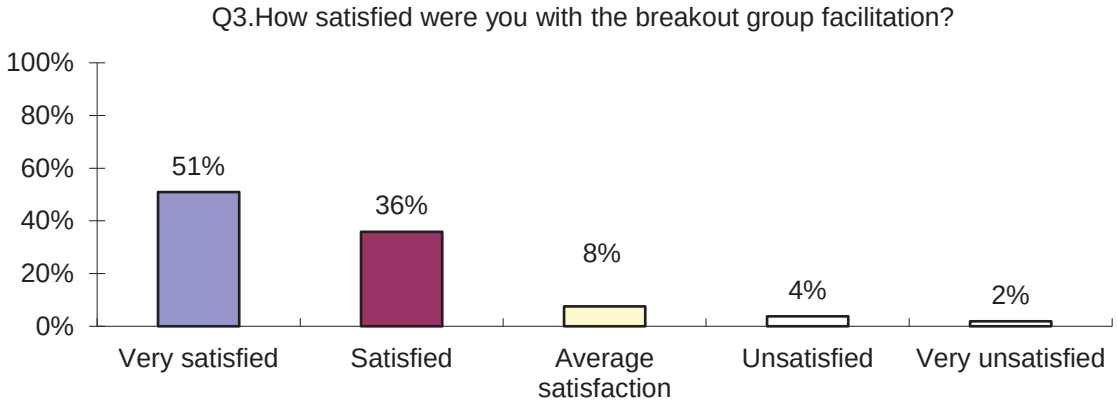
When asked about the best ideas to come out of the Summit, many respondents identified the idea to pilot innovative management approaches, the idea of modeling future electronic reporting programs off existing programs, engaging in habitat restoration and enhancement to "grow the pie", increasing conservation through gear adaptation, and the idea that recreational fisheries community leaders can play key roles in outreach and education to the broader angling community.

When asked about challenges that remain, many respondents noted that the complexity of recreational fisheries data collection and management, limited funding, and lack of trust are major challenges. Regarding the Summit organization, respondents generally reflected that they appreciated the Summit design and facilitation. In terms of constructive feedback, some respondents noted that it would been helpful to have greater time for discussions and fewer panel presentations. Additional detail on the Post-Summit Survey can be found in the sections below.

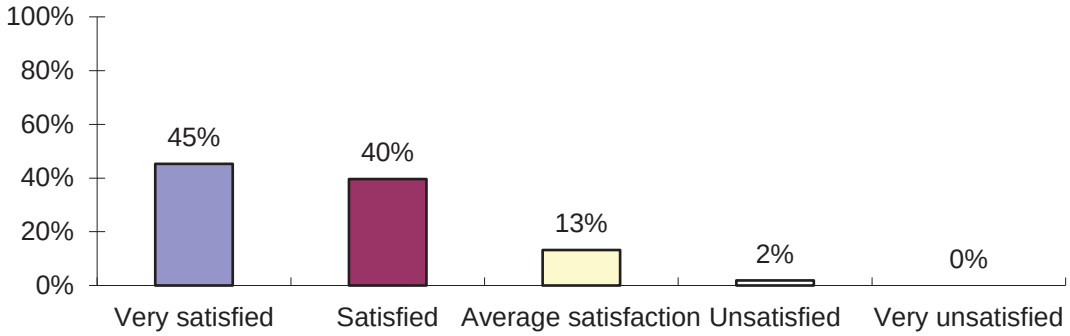
Post-Summit Survey Quantitative Results



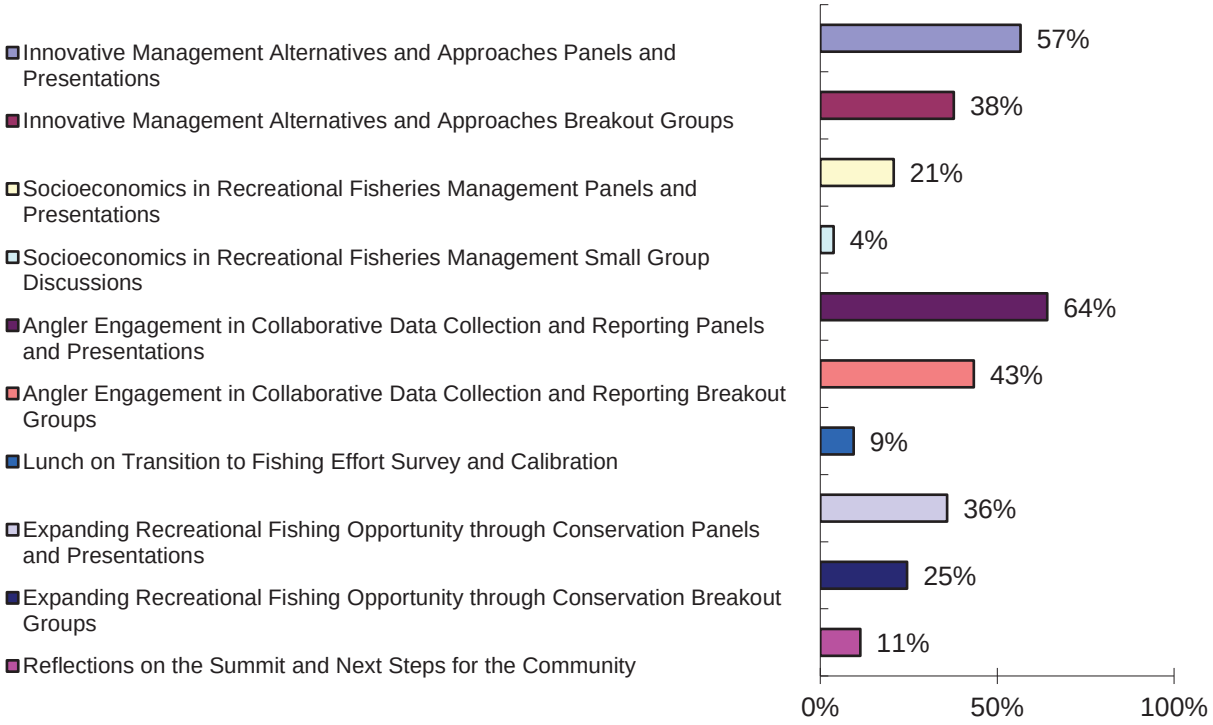




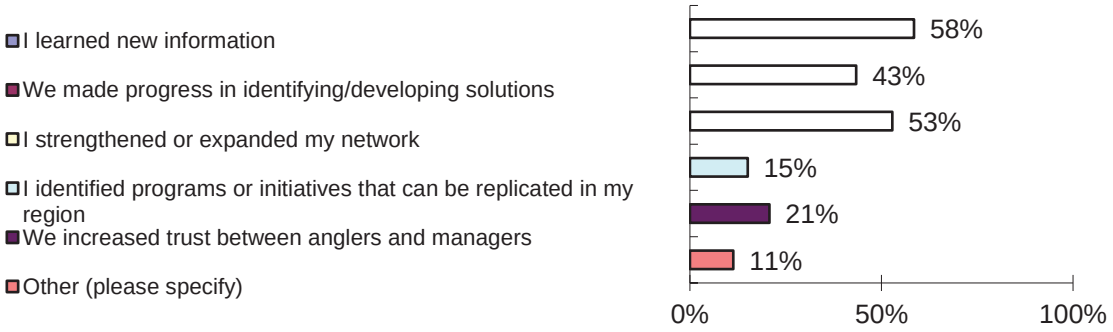
Q4.How satisfied were you with the plenary facilitation?



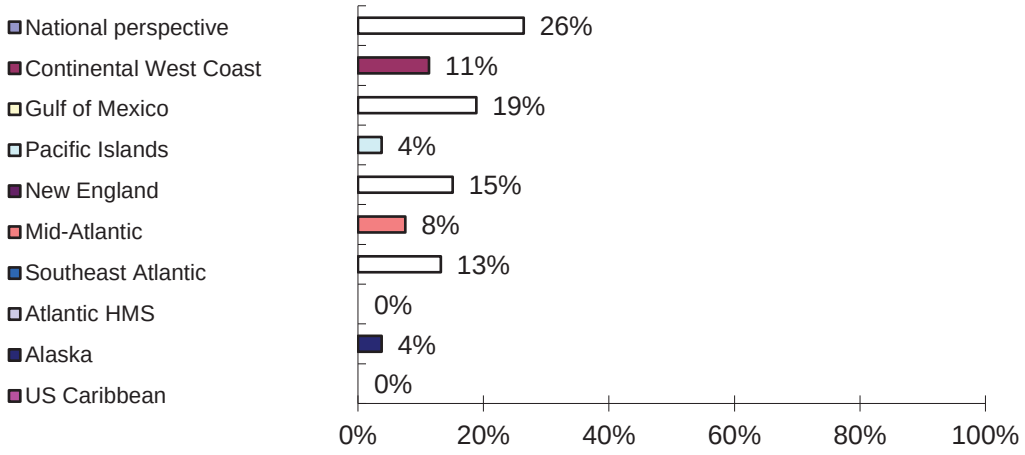
Q5.Which sessions did you find the most useful for advancing the needs of the recreational fishing community? Please select your top 3 sessions.



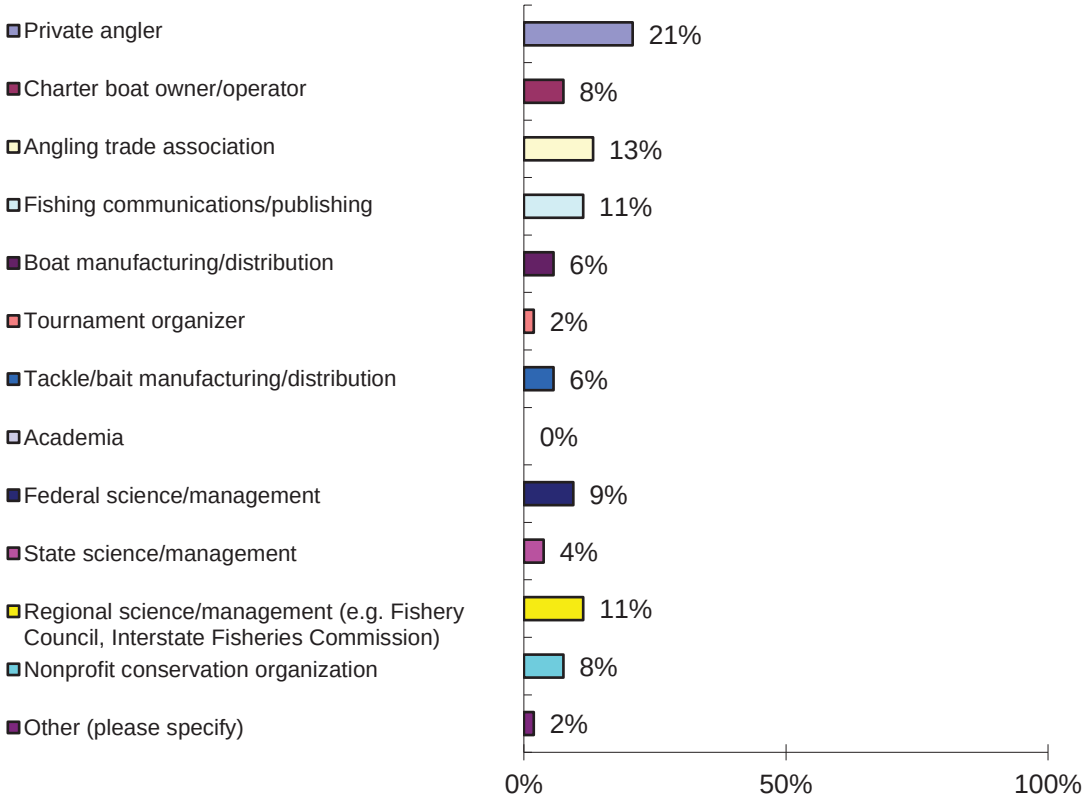
Q6.What did you get out of the summit? Please select your top two answers.



Q12.What region are you representing?



Q13.What perspective do you primarily represent?



Post-Summit Survey Questions

Question 1: How satisfied were you with the Summit overall? *(on a scale of very satisfied, satisfied, average satisfaction, unsatisfied, and very unsatisfied)*

Question 2: How satisfied were you with the meeting topics and agenda design? *(on a scale of very satisfied, satisfied, average satisfaction, unsatisfied, and very unsatisfied)*

Question 3: How satisfied were you with the breakout group facilitation? *(on a scale of very satisfied, satisfied, average satisfaction, unsatisfied, and very unsatisfied)*

Question 4: How satisfied were you with the plenary facilitation? *(on a scale of very satisfied, satisfied, average satisfaction, unsatisfied, and very unsatisfied)*

Question 5: Which sessions did you find the most useful for advancing the needs of the recreational fishing community? *(respondents selected their top three session)*

Question 6: What did you get out of the Summit (*respondents selected their top two options)*

- I learned new information
- We made progress in identifying/developing solutions
- I strengthened or expanded my networks
- I identified programs or initiatives that can be replicated in my region
- We increased trust between anglers and managers
- Other (please specify)

Question 7: What were the best ideas to come out of the Summit? (*free response format)*

Question 8: What are one or two collaborative actions that you plan to take as a result of the Summit? *(free response format)*

Question 9: What challenges still remain? *(free response format)*

Question 10: Overall, what could the Summit have done better? *(free response format)*

Question 11: Do you have any other feedback to provide to the Summit organizers? (*free response format)*

Question 12: What region are you representing?

- National perspective
- Continental west Coast
- Gulf of Mexico
- Pacific Islands
- New England

- Mid-Atlantic
- Southeast Atlantic
- Atlantic HMS
- Alaska
- US Caribbean
- Summit Exit Survey Questions

Question 13: What perspective do you primarily represent?

- Private angler
- Charter boat owner/operator
- Angling trade association
- Fishing communications/publishing
- Boat manufacturing/distribution
- Tournament organizer
- Tackle/bait manufacturing/distribution
- Academia
- Federal science/management
- State science/management
- Regional science/management
- Nonprofit conservation organization
- Other (please specify)