NATIONAL
FISH HABITAT
PARTNERSHIP

Meeting Sponsored by:

TROUT UNLIMITED

Meeting Book for The National Fish Habitat Board

March 20-21, 2019

National Fish Habitat Board Meeting
Trout Unlimited Headquarters
1777 N. Kent Street #100
Arlington, VA
March 20-21, 2019

Agenda and Board Book Tabs

Conference line: 800.768.2983, **Passcode:** 8383466
WebEx link Wednesday: https://cc.callinfo.com/r/1k40oxe233mvx&eom
WebEx link Thursday: https://cc.callinfo.com/r/1byfruhjwmhyp&eom

Wednesday, March 20, 2019

9:00 – 9:15	Welcome from Trout Unlimited		**Chris Wood** (*President/Chief Executive Officer, Trout Unlimited*)
9:15 – 9:30	Welcome, Attendance, Introductions, and Housekeeping *Desired outcomes:* • **Board action** to approve the agenda and notes from the October Meeting. • **Board awareness** of future meeting schedule and locations.	Tab 1	**Ed Schriever** (*Board Chair – Director, Idaho Department of Fish and Game*)
9:30 – 10:15	Update on NFHP Budget and Multistate Conservation Grant • **Board awareness** of NFHP budget and status of Multistate conservation grants.	Tab 2	**Ryan Roberts** (*Board Staff/AFWA)*
10:15 – 10:35	Update from USFWS *Desired outcome:* • **Board awareness** of status of FY19 funding and NFHP staff support from FWS.		**David Hoskins** (*US Fish and Wildlife Service)*
10:35 – 10:50	BREAK		
10:50 – 11:00	Update on Letter to US Fish and Wildlife Service *Desired outcome:* • **Board awareness** of the USFWS letter and any response/discussion ongoing with the USFWS.		**Ed Schriever** (*Board Chair – Director, Idaho Department of Fish and Game*)
11:00 – 12:00	Atlantic Coastal Fish Habitat Partnership *Desired outcome:* • **Board awareness** of ACFHP's latest communication, science, and conservation initiatives and 2019 priorities.	Tab 3	**Lisa Havel** (*Atlantic Coastal Fish Habitat Partnership Coordinator)*

12:00 – 1:15	LUNCH on your own (list of restaurants provided)		
1:15 – 2:00	Eastern Brook Trout Joint Venture *Desired outcome:* • **Board awareness** of the EBTJV's recently revised Roadmap to Brook Trout Conservation.	Tab 4	**Steve Perry** (*Eastern Brook Trout Joint Venture Coordinator)*
2:00 – 3:00	FHP Engagement and Discussion		
3:00 – 3:15	BREAK		
3:15 – 3:45	Partnerships Committee Update *Desired outcome:* • **Board awareness** of the overall results from the FHP Evaluation results and committee's 2019 priorities. • **Board review** of draft FHP Evaluation report (to be finalized on June Board call).	Tab 5	**Stan Allen** *(Board Member, Pacific States Marine Fisheries Commission)*
3:45 – 4:00	Beyond the Pond Update *Desired outcome:* • **Board awareness** of the status of Beyond the Pond.	Tab 6	**Ryan Roberts** *(Board Staff/AFWA)*
4:00 – 4:15	Review of the NFHP Action Plan *Desired outcome:* • **Board awareness** of options for reviewing the NFHP Action Plan and next steps to the 5-year update process.	Tab 7	**Gary Whelan** *(SDC Co-Chair - Board Staff/MI DNR)*
4:15 – 4:45	Science & Data Committee Update *Desired outcome:* • **Board awareness** and understanding of committee accomplishments as they relate to 2019 Board priorities.	Tab 8	**Gary Whelan** *(SDC Co-Chair - Board Staff/MI DNR)*
4:45	Adjourn		
5:30	Happy Hour hosted by Trout Unlimited		

Thursday, March 21, 2019

9:00 – 9:15	Welcome & Housekeeping		**Ed Schriever** (*Board Chair – Director, Idaho Department of Fish and Game*)
9:15 – 9:30	Communications Committee Update *Desired outcome:* **Board awareness** of the progress on the committee's 2019 work plan.	Tab 9	**Ryan Roberts** *(Board Staff/AFWA)*
9:30 – 9:45	Congressional Sportsmen's Foundation Hill Briefing *Desired outcome:* • **Board awareness** of topics discussed at the March 13th Congressional Sportsmen's Foundation breakfast briefing.	Tab 10	**Ryan Roberts** *(Board Staff/AFWA)*
9:45 – 10:00	Legislation Committee Update *Desired outcome:* • **Board awareness** of the status of the National Fish Habitat Conservation through Partnership Act.	Tab 11	**Mike Leonard** (*Board Member/Sportfishing)* & **Christy Plummer** (*Board Member/Sportfishing)*
10:00 – 10:15	BREAK		
10:15 – 11:00	Legislative Working Group Update *Desired outcome:* • **Board awareness** of Working Group progress since the October 2018 workshop and meeting as well as future plans.	Tab 12	**Bryan Moore** (*Board Member/Trout Unlimited*)
11:00 – 12:00	2019-2020 Board Visioning		**Ed Schriever** (*Board Chair – Director, Idaho Department of Fish and Game*) & **Chris Moore** (*Vice Chair, Mid-Atlantic Fishery Management Council)*
12:00 – 1:15	LUNCH		
1:15 – 1:45	2019 AFS Film Festival Planning *Desired outcome:* • **Board awareness** of NFHP-led proposal for a habitat focused film festival at the 2019 AFS/TWS meeting in Reno, NV.	Tab 13	**Stephanie Vail-Muse** (*Desert Fish Habitat Partnerships Coordinator*)

1:45 – 2:30	NOAA Recreational Fisheries *Desired outcome:* • **Board awareness** of recent activities at NOAA Fisheries focused on recreational fisheries.	Tab 14	**Tim Sartwell** & **Russ Dunn** *(NOAA Fisheries - Recreational Fisheries)*
2:30 – 3:15	Fisheries Economics Discussion	Tab 15	**Chris Moore** (*Vice Chair, Mid-Atlantic Fishery Management Council)*
3:15 – 3:30	AFS/NFHP Award Update *Desired outcome:* • **Board awareness** of the status of the AFS/NFHP Stan Moberly Award.	Tab 16	**Doug Austen** (proxy for Tom Lang, *Board Member, American Fisheries Society)*
3:30	Adjourn		

Draft National Fish Habitat Board Meeting Summary: October 17-18, 2018

Board Members Present:

Chair Ed Schriever (At-Large State Seat)
Vice Chair Chris Moore (MAFMC)
Peter Aarestad (NEAFWA)
Stan Allen (PSMFC)
Alison Bowden (TNC)
Doug Boyd (At-Large Sportfishing Seat)
Clay Crabtree *for* Mike Leonard (ASA)
David Hoskins *for* Jim Kurth (USFWS)
Tom Lang (AFS)
Bryan Moore *for* Chris Wood (TU)
Doug Nygren (MAFWA)
Christy Plumer (TRCP)
Kevin Pope *for* Doug Beard (USGS)
Sam Rauch (NOAA Fisheries)
Ron Regan (AFWA)
Dan Shively *for* Rob Harper (USFS)
Bobby Wilson (SEAFWA)

Board Members Absent:

Benita Best-Wong (EPA) and Sean Stone (CCA)

Other Meeting Attendees:

Jeff Hastings (Driftless FHP)
Steve Perry (EBTJV)
Tim Troll (Southwest Alaska FHP)
Daniel Wieferich (USGS)
Gordon Smith (Hawaii FHP)
John Netto (FWS Regional Coordinator)
Jessica Speed (Mat-Su Basin FHP)
Tim Birdsong (TX Parks and Wildlife Dept.)
Lisa Havel (ACFHP)
Mike Daigneault (FWS)
Jeff Boxrucker (Reservoir FHP)
Alicia Marrs (CA Fish Passage Forum)
Christina Wang (Pacific Lamprey FHP)
Stephanie Vail-Muse (Desert FHP)
Heidi Keuler (Fishers and Farmers Partnership)
Donovan Henry (Ohio River Basin FHP)
Collin Moratz (Ohio River Basin FHP)
Debbie Hart (Southeast Alaska FHP)
Therese Thompson (Western Native Trout Initiative)
Joe Nohner (Midwest Glacial Lakes Partnership) **on phone*
Susan Wells (NFHP Staff)
Gary Whelan (NFHP Staff, SDC)
Alex Atkinson (NFHP Staff) **on phone*

Future Board Meetings:

- January Board Webinar – tentatively January 16, 2019 from 2-4 PM
- March Board Meeting – tentatively March 20-21, 2019 hosted at Trout Unlimited in Washington, D.C.
- June Board Webinar – tentatively June 19 from 2-4 PM
- October Board Meeting – late October (date TBD), hosted by Science and Date Committee in Traverse City, MI

Approved by Motion:

- June Meeting Summary; motion by Bryan Moore, seconded by Doug Boyd.
- October Board Meeting Agenda; motion by Stan Allen, seconded by Ed Schriever.
- Nomination of Ed Schriever (WAFWA) as the new Board Chair; motion by Chris Moore, seconded by Peter Aarestad.
- FWS to consider increasing the base funding amount for each FHP from $75k to $125k for FY19; motion by Stan Allen, seconded by Chris Moore (abstention: David Hoskins, Sam Rauch).

- NFHP to partner with AFS to offer the Stan Moberly Award for Outstanding Contribution to Habitat Conservation and new FHS student/young professional award ; motion by Sam Rauch, seconded by Doug Nygren.

Other Action:

- Doug Boyd and Christy Plumer elected as NFHP Board Members to join the Beyond the Pond Board (unanimous approval from non-federal Board members).

Day 1 – October 17, 2018 Notes and Discussion

Welcome, Attendance, Introductions, and Housekeeping

Due to heavy rain and flooding in the area, Craig Bonds wasn't able to make it to the meeting. Tim Birdsong, TX Parks and Wildlife's Chief of the Habitat Conservation Branch, welcomed the group to Texas. Tim emphasized that most of the state's work occurs on private lands in collaboration with landowners and introduced Ryan Reitz, Kerr Wildlife Management Area manager. Ryan Reitz of the Kerr Wildlife Management Area provided some background about the area and its history highlighting the Management Area's role in hunting and research. Board members and meeting attendees introduced themselves. The Board approved the October meeting agenda and the June Board call summary. Ed Schriever, WAFWA, was nominated by the nomination committee to be the next NFHP Board Chair. The Board voted to elect Ed as the Board Chair and he chaired the remainder of the Board meeting.

FHP Workshop Summary

Jeff Hastings (Driftless FHP) and Christina Wang (Pacific Lamprey FHP) shared an update with the Board about the two-day 2018 FHP workshop. All FHPs appreciated that many Board members attended, but some FHPs would like future workshops to be more designed for active Board members participation and to encourage this interaction. There is a strong interest in continuing to host FHP workshops every other year for their valuable discussions and opportunities for relationship building among coordinators and Board members. There were presentations and discussions at the workshop about FHP capacity, communications and outreach, fundraising, and data and tools. An open discussion following the summary revealed that there is concern about insufficient Board staff capacity and a need to clarify Board operations and responsibilities as outlined in the Action Plan and Interdependence Document. There was some discussion about National NFHP communications and the use of the brand and how to better spread the message and mission of NFHP in hopes of gaining new funding partners.

NFHP Meeting Schedule

The Board discussed the upcoming meeting schedule. The January Board call will tentatively be held on January 16th, 2019 (to be confirmed in November). The next in-person Board meeting will be hosted at Trout Unlimited headquarters in Washington DC in March 2019 (likely March 20-21). The 2019 October meeting will be hosted in Traverse City, MI likely the week of October 21st (to be confirmed at the January Board call).

Update from the Fish & Wildlife Service

David Hoskins shared with the Board the internal adjustments that were made by the USFWS to provide additional funds to the FHPs in FY18. The USFWS allocated $3,966,000 in funding to FHPs, this is an increase of $794,125 from FY2017. USFWS reduced its overhead from FY18 which contributed to the increase from FY17 in FHP project funding. For the first time, all 20 FHPs received $75k in operational support. Susan Wells, NFHP staff at USFWS, will be moving in November to the Green Bay, WI field office and there are plans to replace her with a GS-13 position who will work on both fish passage and NFHP. There was discussion about the need for USFWS to consider increasing the core FHP funding from $75k to $100k or $125k given that

many FHPs are in need of a stable source of operational funding (with the note that these funds could also be used for projects if operational funds were not needed). With this consideration comes the need to report back on the use of those funds and report out on spending of those funds. FHPs and the Board also asked USFWS about what NFHP should expect in terms of reduction of services if the legislation is enacted.

Legislative Update

Christy Plumer shared an update with the Board about the NFHP legislation that has now been introduced in both the House (HR6660) and Senate (S1436). A Public Lands Bill could serve as a vehicle for the NFHP legislation, it could be incorporate as part of an end of year clearance bill or it could pass early in the next session. An educational toolkit, including a fact sheet, talking points and MOC request letter, has been developed and is being distributed to FHP Coordinators after the FHP Workshop.

Budget and Multistate Grant Update

Ryan Roberts shared an update primarily focused on the Multistate Conservation Grants. The FY19 award resulted in $250,680 to fund a variety of FHP priorities and the NFHP project tracking database. FHPs have previously applied in regional groups and will have to decide how they would like to proceed with the FY20 application as the next National Conservation Need (NCN) is developed at AFWA. There was discussion about FHPs applying as a group to obtain funding for marketing training or to fund an FHP workshop. A more detailed NFHP budget, delayed due to the timing of the FY19 budget, will be distributed and discussed in more detail at the January Board call

Beyond the Pond Update

Ryan Roberts shared an update about the latest happenings with Beyond the Pond. Five of the eight Beyond the Pond Board members in person in July in Denver, CO for a strategy session. The Board is in the process of hiring a part-time development director, Kara Nichols, to assist with coordinated fundraising to secure funding for FHP projects. NFHP representation on the Beyond the Pond Board has been shifting and during this meeting Doug Boyd and Christy Plumer were nominated to represent NFHP on the Beyond the Pond moving forward. There are challenges associated with Beyond the Pond defining fundraising goals or targets due to lack of engagement and knowledge in this area. The Board also discussed a need to better define the interactions between Beyond the Pond, the NFHP Board, and the FHPs. The Beyond the Pond Treasurer position is currently unfilled.

Science & Data Committee Update

Gary Whelan presented on the Science & Data Committee's (SDC) 2018 actions and 2019 priorities. Information from the National Assessment was presented at multiple meetings including AFS and the North American and is also under review for publication. Since the Inland Assessment does not currently have a source of funding, the products will likely be delayed until 2022. The Coastal Assessment is making progress, with support from NOAA and MAFMC, and products should be completed in the near future. The NFHP Project Tracking Database is another success and will allow FHPs and the Board to run reports and view projects on a map. In FY19, the Science & Data Committee will be continuing outreach efforts, planning future assessment work, working with USGS to support data systems, and developing project evaluation standards. Daniel Wieferich (USGS) presented on USGS data systems that support NFHP including the Biogeographic Characterization and Map.

Presentation from Western Native Trout Initiative (Therese Thompson)

Therese Thompson presented high level information about the Western Native Trout Initiative (WNTI). The WNTI Steering Committee is made up on 15 members ranging from state to tribal and federal

representatives. The Committee has engaged in a strategic prioritization process that has helped WNTI begin the process of bringing in significant external funding. From 2006-2017, WNTI has leveraged $5.5M in federal funding to $20M of matching funds for 141 projects reconnecting 1100 river miles. WNTI began a small grant program in 2015 which funds small projects along with matching dollars and has resulted in products like the "Know Your Native" posters. WNTI utilizes several outreach tools to share about their message and grow support including a website, films, Instagram, and Twitter accounts. WNTI has also sponsored unique fundraising events including a "Flyathon" and a Rare Fish Rare Beer project.

2019 Visioning

The Board Chair and Vice Chair led a discussion session with the Board drawing from the March 2016 Executive Session which raised, but did not resolve, many questions. The discussion focused on what types of plans would need to be in place if the NFHP legislation were to pass. The Board discussed USFWS support and staffing, alternate governance plans for other place-based conservation work, and Board committee engagement. The Board moved to create a working group to review more closely the implications of the legislation.

Day 2 – October 18, 2018 Notes and Discussion

Communication Update

Ryan Roberts updated the Board on NFHP communications. More FHP resources have been added to the NFHP website and there is a plan to add a new inforgraphic and FHP coordinator bios. The Board recognized and discussed potential areas for improvement including better connecting Beyond the Pond with NFHP, promoting the Waters to Watch list and gathering high resolution photos. NFHP social media accounts, including Facebook and Twitter, are consistently active and relatively stable in followership. There was some discussion about adding a NFHP Instagram account to continue to reach new audiences and engage on social media. The Board agreed that the branding and logo guidelines should be re-shared with FHPs due to turnover in coordinator positions as well as a need to refresh on NFHP branding. The Board also agreed that due to limitations in staff and capacity, we need to focus our efforts and be strategic with our communications.

Overview of Lake Wichita Project

Tom Lang shared a presentation with the Board about a local project in Texas called Lake Wichita. The lake faces challenges with sedimentation, drought, and overall degradation. There have been opportunities to rebuild the shoreline, install new fishing piers, trails, boat launch, and a boardwalk. There is growing support for this project among the community through the *Our Lake Our Life* campaign including outreach and fundraising events, social media (dedicated icons and logos specific to public interests), and media coverage. Significant public and private funds have been raised to support this work through a variety of approaches and partnerships with local businesses.

Coastal Conservation Association

John Blaha, Assistant Director and Director of Habitat for CCA, presented to the Board about past, current, and future Coastal Conservation Association activities and priorities. John also directs a key habitat initiative, *Habitat Today for Fish Tomorrow.* He highlighted the Building Conservation Trust which was created under CCA to provide funding to grassroots-driven project which achieve one or more of five core objectives; restore habitats, create new habitats, advance science, foster habitat stewardship, and educate coastal communities. Key restoration areas for the Building Conservation Trust include marsh restoration, nearshore reef restoration and creation, natural pass and inlet restoration, and science to support those efforts and John shared example projects under several of these areas.

Partnerships Committee Update

Stan Allen, co-chair of the Partnerships Committee, shared an update with the Board on 2018 accomplishments and 2019 priorities. The Partnerships Committee is working with the FHPs to develop an application approach for the Multistate Conservation Grants for 2019. The Partnerships Committee was responsible for planning the 2018 FHP Workshop. Another major committee accomplishment during 2018 was the FHP Evaluation process. The review team (Gary, Stan , Susan, Bryan, Doug, Tom, and Alex) is in the process of wrapping up the 2018 FHP Evaluation. This process is intended, not as a grading or punitive process, but to identify strengths and weaknesses across the FHPs so new FHPs can benefit and learn from more experienced FHPs. FHPs received their scores in early September and most participated in feedback calls with members of the review team. Once FHP scores are finalized, a FHP Evaluation report will be presented to the Board and finalized at the January Board call.

AFS/NFHP Award Proposal

Tom Lang shared with the Board a brief update about the AFS/NFHP award proposal that was introduced to the Board at the March 2018 meeting. A team (Tom Bigford, NOAA staff, Tom Lang, Ryan, and others) reviewed all fish habitat conservation awards (summarized in Tab 12 of Board Book) and supported NFHP and AFS co-sponsoring the Stan Moberly Award for Outstanding Contribution to Habitat Conservation to be awarded as a life time achievement award at the AFS plenary session. There was also support for a young professional award to be awarded within the AFS Habitat Section. NFHP Board staff time was a concern and the Board encouraged cooperation with AFS staff to get these awards developed and advertised.

Native Fish Conservation Areas of the Southwestern USA

Tim Birdsong presented to the group about several local Texas initiatives, partnerships, and outreach efforts. He highlighted work in the Llano, Blanco, and Pedernales Rivers, work supporting Guadalupe Bass, and several outreach conservation initiatives including the Native Bass Project, Stewards of the Wild, and the Landowner Incentive Program.

Title: Multistate Conservation Grant Update

Desired Outcome:

- **Board awareness** of Multistate Conservation Grant process and timeline

Background:

The Fish Habitat Partnerships can apply for Multistate Grant funding from the Association of Fish and Wildlife Agencies through the NFHP Board. Board endorsed FHP applications have been funded in 2013, 2014, 2015, 2016, 2017, 2018 and 2019. In 2015 the FHPs agreed to apply collectively through the Board for these funds for three years. That same process stands today, however, NFHP staff and the Board Partnerships Committee are evaluating whether or not the NFHP application approach to the Multistate Conservation Grants should change in the upcoming year. We are evaluating feedback from an FHP survey aimed at identifying themes for a future grant application in order to narrow the focus of our application for the 2021 cycle.

2020 Multistate Timeline:

Schedule for the 2020 Cycle of the Multistate Conservation Grant Program (MSCGP)

February	• Each committee or Regional Association may submit <u>one</u> proposed NCN. NCN's are due to the MSCGP Coordinator (January 25, 2019).
March **North American Wildlife & Natural Resources**	• During the North American Wildlife and Natural Resources Conference, the National Grants Committee convenes to review the proposed NCNs and prepare a list of recommended NCNs for the State Directors' approval.
April – May	• LOIs are due to the MSCGP Coordinator April 12, 2019. • Association Committees conduct the technical review for the submitted LOIs
June -July	• The National Grants Committee review the submitted LOIs. • Successful and unsuccessful applicants should direct any questions to the MSCGP Coordinator by June 28, 2019.

August	• MSCGP grant proposals are reviewed by the National Grants Committee. The MSCGP Coordinator reviews the proposals for eligibility and consults with the U.S. Fish and Wildlife Service (USFWS). • A grants specialist at the USFWS reviews the grant proposals to conduct a debarment and suspension and audit records check, ensure NEPA and ESA compliance, and review financial management systems of applicants.
September **Association's Annual Meeting**	• The National Grants Committee convenes, reviews the comments and scores of each proposal, and prepares a recommended "priority list" of projects for the State Director's approval. The National Grants Committee may request changes to a proposal. Grant applicants may attend this meeting. • During the Association's Business Meeting, the State Directors approve the "priority list" of projects to be funded through the Multistate Conservation Grant Program (September 2019).
October-November	• The Association submits its list of priority projects and the final proposals to the USFWS by the mandated October 1, 2019 deadline. • Priority List projects are reviewed and processed by the USFWS.
December	• The USFWS notifies and awards the Multistate Conservation grants to successful applicants.
January through December	• The USFWS manages recipients and their implementation of Multistate Conservation grants. • The Association initiates the process for the next cycle of the MSCGP.

Next Steps:

- Evaluate approach for future 2020 Multistate Grant funding.

Title: Atlantic Coastal Fish Habitat Partnership

Desired outcome(s):

- Board awareness of ACFHP's latest communication, science, and conservation initiatives and 2019 priorities

Links:

ACFHP's new website: www.atlanticfishhabitat.org

ACFHP Conservation Strategic Plan:

http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/ACFHPStrategicPlan_2017-1.pdf

ACFHP Action Plan:

http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/ACFHP-Action-Plan-2017-2.pdf

Conservation Action Plan

2017-2019

For more information please contact:

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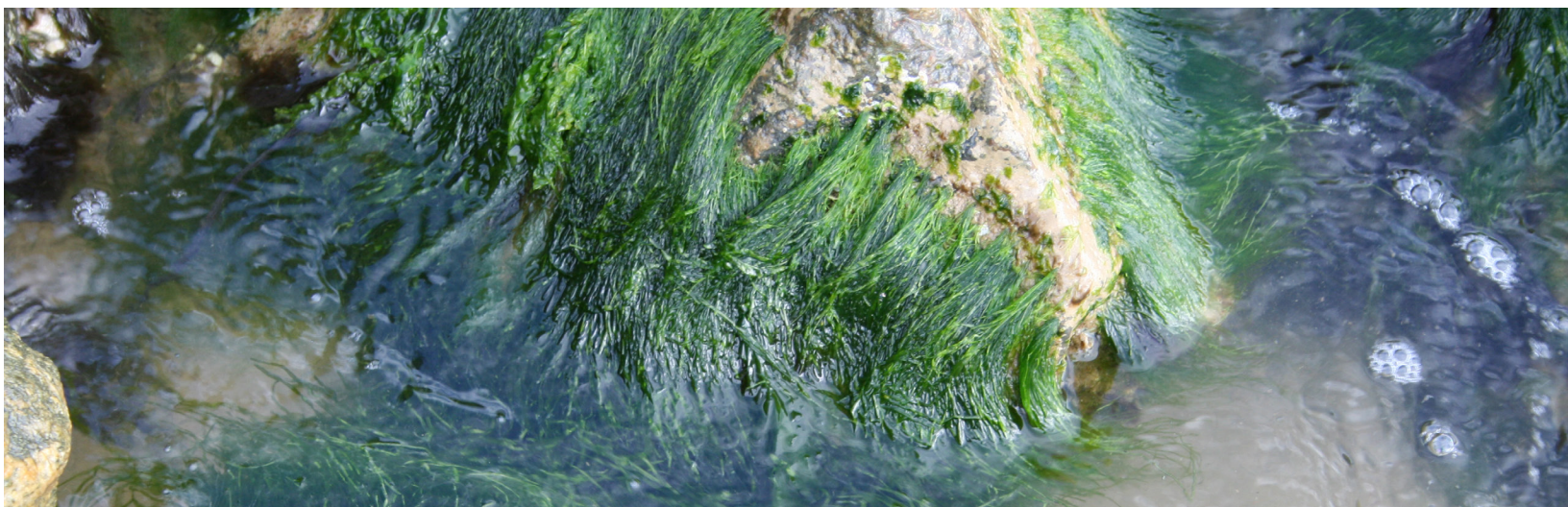
This plan is a product of the Atlantic Coastal Fish Habitat Partnership with funding from the National Fish Habitat Partnership (Award Number F16AC01131) and the Multistate Conservation Grant Program with funds from the Wildlife and Sport Fish Restoration Program of the U.S. Fish and Wildlife Service.

COVER PHOTO: FL Keys Reef Restoration, FL FWCC

2017-2019 Action Plan

The Atlantic Coastal Fish Habitat Partnership (ACFHP) 2017 – 2019 Action Plan is a subset of the 2017 – 2021 ACFHP Conservation Strategic Plan. It contains a set of objectives, strategies, and related actions that can be accomplished over the course of a two year period. These actions will be carried out by the ACFHP Coordinator or Action Lead, with the help of subgroups as necessary.

ASMFC Habitat



A. Conservation Objectives

CONSERVATION OBJECTIVE 1: Work with partners to protect, restore, or maintain resilient Subregional Priority Habitats (using strategies outside of fish passage) to optimize ecosystem functions and services to benefit fish and wildlife.

Strategy A.1.1: Support on-the-ground conservation projects that protect, restore, or maintain Subregional Priority Habitats (outside of fish passage).

Action 1: Allocate U.S. Fish and Wildlife Service (Service) funding to annually support a minimum of one project that promotes/supports restoration, protection, and resiliency of Subregional Priority Habitats.

Action 2: Submit a minimum of one funding proposal annually outside of Service-National Fish Habitat Action Plan (NFHAP) funding (e.g. National Oceanic and Atmospheric Administration [NOAA]) to support projects that increase the resiliency of Subregional Priority Habitats.

Action 3: Support four on-the-ground conservation projects annually through endorsement by ACFHP.

Strategy A.1.4: Work with partners to identify and conserve intact coastal habitats and buffers in need of protection.

Action 1: Promote the use of the Species-Habitat Matrix and Northeast-Southeast Fish Habitat Mapping Projects to protect high quality fish habitats through at least one webinar or presentation at a professional conference.

CONSERVATION OBJECTIVE 3: Coordinate with partners to restore, enhance, and maintain adequate and effective fish passage to ensure connectivity within and among required Subregional Priority Habitats.

Strategy A.3.3: Work with partners to increase habitat connectivity within and among Subregional Priority Habitats by directly addressing physical barriers.

Action 1: Allocate Service funding to annually support a minimum of one on-the-ground project that aims to remove barriers in areas identified as a priority for fish passage restoration by an ACFHP partner.

B. Science & Data Objectives

SCIENCE AND DATA OBJECTIVE 1: Work to achieve ACFHP Science and Data needs and fulfill science and data responsibilities established by NFHAP.

Strategy B.1.1: Develop an online searchable database of the Species-Habitat Matrix.

Action 1: Identify a partner who can develop a searchable database of the Matrix andwork with them to publish it online.

Strategy B.1.2: Produce a fine scale ACFHP region-wide GIS map, using existing data, that shows areas for priority habitat protection and restoration which can be used to better target our actions.

Action 1: Establish a timeline and calculate metrics for the Southeast Fish Habitat Mapping Project initiated by Merrimack River Watershed Council using the data layers provided, and the metrics defined.

Action 2: Determine data gaps in the Southeast Fish Habitat Mapping Project.

Action 3: Initiate the Northeast Fish Habitat Mapping Project by compiling all of the necessary data layers.

Strategy B.1.3: Develop project tracking capabilities for the purpose of capturing and reporting conservation results to stakeholders.

Action 1: Develop coordination with the Service Fish and Aquatic Conservation and Wildlife and Sport Fisheries Restoration divisions (which administers Tracking and Reporting Actions for the Conservation of Species [TRACS]) to get all of the NFHAP-funded reports (progress and final) into an online database and/or provide them to ACFHP.

C. Outreach & Communication Objectives

Outreach and Communication Objective 1: Develop new and update current printed and digital content for communicating information that supports ACFHP's goals to target audiences: scientists, resource managers, state and federal legislatures, non-governmental organizations, stakeholders, media, and others as identified.

Strategy C.1.2: Upgrade and seek improvements to content/organization of the ACFHP website to make better use of available technology and enhance accessibility/usability by target audiences.

Action 1: Hire a contractor and complete the ACFHP website redesign within one year.

Strategy C.1.3: Redesign outreach materials for consistency to optimize our messaging.

Action 1: Develop a PowerPoint presentation that can be used by partners to explain what ACFHP is, what we do, etc.

Action 2: Develop a one-page ACFHP fact sheet specifically for primary target audience(s).

Strategy C.1.4: Disseminate communication materials via social media platforms, the website, and participation at professional conferences/tradeshows to extend our coverage.

Action 1: Update contact information for ACFHP partners and followers outside of the Steering Committee and find out how we can increase their involvement in the Partnership.

Action 2: Attend and present a poster or talk at least once per year at a national conference.

Outreach and Communication Objective 2: Promote and broadly disseminate information about the products, projects, and services of ACFHP.

Strategy C.2.1: Share the successes of the on-the-ground conservation projects that ACFHP supports with target audiences.

Action 3: Submit a newsletter article to Rhode Island Marine Trades Association on the benefits of conservation moorings.

Strategy C.2.3: Facilitate the dissemination of best management practices (BMPs) and other fish habitat conservation information from partners to our targeted audiences.

Action 2: Provide Science and Data-approved links on ACFHP's website on topics of interest to target audiences, such as water quality parameters needed to maintain a healthy ecosystem, fish passage tools, riparian buffer BMPs, etc.

Outreach and Communication Objective 3: Maintain relations with the National Fish Habitat Partnership (NFHP) Board, fellow Fish Habitat Partnerships (FHPs), and Beyond the Pond.

Strategy C.3.1: Promote the mission and accomplishments of ACFHP and exchange lessons learned with the National Fish Habitat Partnership Board.

Action 1: Participate in at least three NFHP Board meetings per year and present as opportunities allow.

Action 2: Participate on the NFHP Partnership Committee and in NFHP workshops as needed, and report highlights to ACFHP Steering Committee annually.

Strategy C.3.2: Enhance fish habitat improvement through cooperation with fellow FHPs.

Action 1: Produce three quarterly Coastal FHP articles for the newsletter in coordination with other FHPs.

Action 2: Work closely with Eastern Brook Trout Joint Venture and Southeast Aquatic Resources Partnership on Whitewater to Bluewater efforts, and report to ACFHP Steering Committee on progress biannually.

D. Finance Objectives

Finance Objective 1: Maintain infrastructure and mechanisms for managing ACFHP finances.

Strategy D.1.1: Work with the Atlantic States Marine Fisheries Commission (ASMFC) to maintain ACFHP operations.

Action 1: Coordinate with the Service and NOAA to establish grant/ cooperative agreements with ASMFC for ACFHP operational funding annually.

Action 2: Work with ASMFC and NFHP to apply for Multistate Conservation Grant funding annually.

Action 3: Work with ASMFC to apply for Wallop Breaux funding annually.

Strategy D.1.2: Coordinate with Beyond the Pond staff and partners to establish financial capacities for managing grant proposals and awards.

Action 1: Provide assistance and input into the development of Beyond the Pond infrastructure by attending at least 75% of FHP calls and quarterly Board meetings.

Finance Objective 2: Utilize NFHAP funding to achieve the greatest overall benefits for on the ground conservation and Partnership productivity.

Strategy D.2.1: Solicit and select high quality conservation projects through an annual request for proposals process.

Action 1: Convene the NFHAP project review subcommittee annually to evaluate proposals.

Action 2: Evaluate the success of the previous request for proposals cycle and provide the Steering Committee with recommended changes.

Strategy D.2.2: Enhance ACFHP's performance score in the annual NFHAP funding determinations.

Action 1: Complete the annual report to the Service and develop recommendations to enhance or maintain ACFHP's performance score for the Steering Committee.

Finance Objective 3: Leverage new funding for restoration projects and ACFHP operations.

Strategy D.3.1: Adopt a working Business Plan.

Action 1: Present a Business Plan to the Steering Committee for adoption within one year.

Action 2: Prioritize actions in the Business Plan in Year 2.

Finance Objective 4: Fund projects for Science and Data and Outreach and Communication.

Strategy D.4.1: Secure funding or in-kind support to develop Science and Data and Outreach and Communication priority materials and products.

Action 1: Secure funding for an online searchable database of the Species-Habitat Matrix if in-kind support is not feasible.

Action 4: Secure funding to maintain and update the content and organization of the ACFHP website.


ATLANTIC COASTAL
FISH HABITAT PARTNERSHIP

Eastern Brook Trout

ROADMAP TO CONSERVATION

Eastern Brook Trout
JOINT VENTURE
A Fish Habitat Partnership

Our Brook Trout HERITAGE

The wild Brook Trout is an American symbol of persistence, adaptability, and the pristine wilderness that covered North America prior to European settlement. It is the only native trout that inhabits the cold, clear streams of the eastern United States, and is prized by anglers. It's truly a heritage species.

Unfortunately, detrimental land and water use practices have taken a toll on our landscape, greatly diminishing the presence of wild Brook Trout throughout its native range. Today it's estimated that only 8% of the subwatersheds (HUC 12) that historically supported wild Brook Trout in the eastern portion of the U.S. are classified as Intact (i.e. at least 50% of the catchments in a subwatershed have wild Brook Trout present). Most wild Brook Trout are relegated to headwater streams, where forest cover is still prevalent. Unable to thrive in poor water quality or degraded habitats, wild Brook Trout are excellent indicators of clean water and healthy aquatic systems. Therefore the decline of wild Brook Trout throughout its historic eastern range should serve as a warning about the state of our waters.

However, this set of circumstances is certainly not hopeless. Through a coordinated and focused effort, we have a unique opportunity to reverse the trend of wild Brook Trout decline by collaboratively restoring habitat and improving water quality that will benefit both wild Brook Trout and our well-being for generations to come.

Working together
TO BRING BACK WILD BROOK TROUT

The historic distribution of wild Brook Trout populations in the East represents approximately 70% of the wild Brook Trout range in the U.S. and about 30% of its native range in North America. In 2004, state and federal agencies, conservation groups and academics concerned about the decline of eastern Brook Trout formed the Eastern Brook Trout Joint Venture (EBTJV), a Fish Habitat Partnership operating in accordance with the guiding principles of the National Fish Habitat Action Plans. The EBTJV provides leadership in Brook Trout conservation that is grounded by science; and, through its network of the region's top scientists and fisheries managers, the EBTJV identifies priority needs, delivers valuable decision-support tools, and promotes proven techniques for conserving wild Brook Trout populations. The EBTJV also directs funding and leverages other resources towards collaborative, mission-focused Brook Trout conservation projects.

The vision of the Eastern Brook Trout Joint Venture is to ensure healthy, fishable wild Brook Trout populations throughout their historic eastern U.S. range.

Scienced-based CONSERVATION

In response to a need for guidance in setting wild Brook Trout conservation priorities, the EBTJV completed a range-wide assessment of wild Brook Trout distribution and status at the subwatershed-level (HUC 12) in 2006. While this initial assessment provided Brook Trout resource managers, decision-makers, and the public with an essential understanding of the current "state" of wild Brook Trout in the eastern portion of its U.S. range, many EBTJV partners felt that an assessment at a finer scale would yield better assistance by establishing a more workable set of wild Brook Trout conservation strategies. Therefore, the EBTJV conducted a second range-wide assessment of wild Brook Trout at the catchment scale (on average a catchment contains 2-3 miles of stream), which was completed in 2015.

2015 CATCHMENT ASSESSMENT FINDINGS

There were 271,949 catchments assessed within the EBTJV geographic boundary, which had a combined area totaling 628,530 km^2. Each catchment was classified based on the presence/absence of wild trout (Brook Trout, Brown Trout, and Rainbow Trout). Twenty-two percent (22%) of the assessed catchments contained wild Brook Trout. Among the 61,148 catchments that had wild Brook Trout present, 67% were classified as allopatric Brook Trout (1.1) (Table 1). The remaining wild Brook Trout catchments were classified as Brook Trout sympatric with Brown Trout (1.2), Brook Trout sympatric with Rainbow Trout (1.3), and Brook Trout sympatric with Brown Trout and Rainbow Trout (1.4).

TABLE 1. BROOK TROUT CATCHMENT METRICS

Catchment Classification Code	Number of Catchments	Area (km^2) of the Catchments
1.1	41,070	128,834
1.2	13,099	37,279
1.3	1,688	5,173
1.4	5,291	14,350
TOTALS	**61,148**	**185,636**

The analysis of catchment data also entailed identifying wild Brook Trout patches and classifying them using the Catchment Classification protocol. A "patch" is defined as a group of contiguous catchments occupied by wild trout. Patches are not connected physically (i.e., they are separated by a dam, unoccupied warm water habitat, downstream invasive species, etc.) and are generally assumed to be genetically isolated. There were 9,860 Brook Trout patches identified range-wide, with a combined area of 190,473 km^2 (Table 2).

TABLE 2. BROOK TROUT PATCH METRICS

Patch Classification Code	Number of Patches	Area (km^2) of the Patches
1.1	6,022	108,528
1.2	2,210	45,575
1.3	370	6,049
1.4	1,258	30,321
TOTALS	**9,860**	**190.473**

EBTJV's APPROACH

Building from its wild Brook Trout assessment work, the EBTJV has developed strategies that provide the blueprint for Brook Trout conservation actions at multiple scales across the range. As we move forward, the EBTJV and our partners are using this roadmap to guide our conservation decisions at all delivery levels.

CONSERVATION GOALS

Conserve, enhance or restore wild Brook Trout populations that have been impacted by habitat modification, non-native species and other population level threats.

Encourage partnerships among management agencies and stakeholders to seek solutions to regional environmental and ecological threats.

Develop and implement outreach and educational programs to raise public awareness about the challenges that wild Brook Trout populations are facing.

Develop support for program implementation to perpetuate and restore wild Brook Trout populations throughout their historical eastern U.S. range.

CONSERVATION SCALES

Brook Trout conservation occurs at three scales, or levels:

RANGE-WIDE: Conservation goals and habitat objectives are established at this scale in an effort to guide activities at the State scale.

STATE: States identify focal watersheds and determine the conservation actions that will contribute best to meeting range-wide habitat objectives.

LOCAL: Local partners implement wild Brook Trout conservation projects that are congruent with the range-wide habitat objectives and input provided by their respective State.

EBTJV's range-wide
HABITAT GOALS + OBJECTIVES

The EBTJV's wild Brook Trout conservation efforts across the eastern U.S. are directed by four range-wide habitat goals, along with their associated objectives. Success in meeting these goals and objectives will require widespread cooperation and collaboration among our many partners. The progress made towards achieving these goals and objectives will be measured using the results of our partnership's 2022 wild Brook Trout assessment.

GOAL:

- Maintain the current number of wild Brook Trout patches (i.e. no net loss).

OBJECTIVES:

- Retain at least 6,022 allopatric wild Brook Trout patches (1.1) across the EBTJV geographic range by 2022.
- Retain at least 3,838 sympatric wild Brook Trout patches (1.2, 1.3, and 1.4) across the EBTJV geographic range by 2022.

GOAL:

- Increase the average size (km^2) of wild Brook Trout patches, which is currently 19 km^2.

OBJECTIVE:

- Increase the size (km^2) of 30 wild Brook Trout patches by 2022.

GOAL:

- Increase connectivity within and among wild Brook Trout catchments.

OBJECTIVE:

- Complete Aquatic Organism Passage projects within 45 wild Brook Trout catchments by 2022.

GOAL:

- Restore wild Brook Trout to catchments where they are extirpated.

OBJECTIVE:

- Establish wild Brook Trout in 15 extirpated catchments by 2022.

EBTJV's key CONSERVATION ACTIONS

The EBTJV has also established a number of key conservation actions. Our partnership believes these actions generate additional focus towards strategic elements needed for achieving success in conserving wild Brook Trout.

CONSERVATION ACTIONS

- Increase recreational fishing opportunities for wild Brook Trout
- Conserve and expand habitats that support robust wild Brook Trout populations
- Restore and reconnect suitable habitats adjacent to robust wild Brook Trout populations
- Conserve genetic diversity of wild Brook Trout populations
- Conserve unique wild Brook Trout life history strategies (e.g., lacustrine populations, large river populations, and coastal populations)
- Minimize threats to wild Brook Trout populations (e.g., degraded water quality, non-native species, altered hydrologic regimes)

Examples of what can be done to achieve these actions include: restoring aquatic connectivity by removing small dams and replacing undersized culverts; mitigating acid mine drainage to improve water quality; executing strategies that eliminate competition from non-native species; and, planting native trees in riparian zones to provide shaded waters and stream bank stabilization.

SOME WORDS ON FUNDING

The EBTJV is constantly seeking to bring new funding support to priority wild Brook Trout conservation projects. We are fortunate that our partnership has already benefited from funds provided by many of our partners, along with contributions from a diversity of local organizations. However, there is a need to generate additional funding if we are to be successful in achieving our vision and so we need your help. You can make a huge difference in the effort to conserve wild Brook Trout by making a tax-deductible donation that will assist the EBTJV and its partners in making strong, steady progress in saving healthy coldwater aquatic resources and sustaining fishable wild Brook Trout populations.

Please donate now;
we need and greatly
appreciate your support!

CLICK TO
DONATE

NATIONAL
FISH
HABITAT
PARTNERSHIP

Eastern Brook Trout
JOINT VENTURE
A Fish Habitat Partnership

www.easternbrooktrout.org

/ EBTJV | / EBTJV

Title: Partnerships Committee March 2019 Update

Desired outcomes:

- **Board awareness** of Partnerships Committee 2019 planned and ongoing activities.

Background

The Partnerships Committee serves as a forum for preliminary discussions, fact-finding, and formulating recommendations for Board actions that affect Fish Habitat Partnerships.

Members:

Jeff Boxrucker (RFHP)
Doug Boyd (SBPC)
Jessica Graham (SARP)
Debbie Hart (SEAK FHP)
Lisa Havel (ACFHP)
Heidi Keuler (F&F FHP)
Joe Nohner (MGLFHP)
Steve Perry (EBTJV)

Tri-Chairs
Stan Allen (PSMFC)
Bryan Moore (TU)
Therese Thompson (WNTI)

Staff
Alex Atkinson (NMFS)

2019 Priorities

- Priority A: Develop an approach for future Multistate Conservation Grant Program submissions (in collaboration with the Budget and Finance Committee).

  Update: These efforts have been ongoing and will hopefully be completed this spring in advance of the MSCG application process for FY2020.

- Priority B: Review the FHP Evaluation process and identify measures that can be further refined for the next FHP Evaluation in 2021.

  Update: The 2018 FHP Evaluation review team will reconvene gather and discuss feedback from the FHPs as to how to improve the process and clarity of the measures.

- Priority C: Review and propose revisions or changes to the NFHP Document of Interdependence.

Update: At the October 2018 NFHP Board meeting, it was recommended that both the NFHP Document of Interdependence and the Action Plan be reviewed during 2019. The Partnerships Committee will review and identify areas within the Document of Interdependence that require updating or revising during 2019.

- Priority D: Work with staff to develop purpose and agenda and implement a 2020 Fish Habitat Partnership workshop.

Update: In October 2018, NFHP hosted an FHP workshop in tandem with the Board meeting. The main focus of the workshop was fundraising. FHPs were asked to provide input on topics for discussion at the workshop via survey. There was great participation from both FHPs and Board members in the 2018 workshop and there is interest in another FHP workshop in 2020. The Partnerships Committee will work to identify a planning team for that future workshop.

Fish Habitat Partnership Performance Evaluation
Draft Report
March 2019

Introduction

The National Fish Habitat Partnership is an unprecedented effort to build and support partnerships that are strategically focused on fish habitat conservation. The National Fish Habitat Action Plan (Action Plan) guides this initiative and establishes processes for bringing partners together, challenging them to collaboratively advance strategic priorities, as well as measure and report on the outcomes of their conservation actions. The geographic scope and focus on fish habitat conservation distinguishes the National Fish Habitat Partnership from other more local fish habitat initiatives.

To uphold the high standards set by the Action Plan, the National Fish Habitat Board (Board) adopted a set of ten measures aimed at evaluating Fish Habitat Partnership performance levels for core operational functions (i.e., coordination, scientific assessment, strategic planning, data management, project administration, communications, and outreach). At its July 2012 meeting, the Board voted to begin the first "formal" performance evaluation of Fish Habitat Partnerships in January 2015, covering a 3-year period (2012-2014), and to repeat this process every 3 years thereafter. Following the 2015 performance evaluation process, the following recommendations were adopted by the Board:

1. The 2015 FHP Evaluation Team recommends that this evaluation process be improved and repeated in 2018.
2. The Partnership Committee should include interested FHP Coordinators and Review Team members to consider and recommend improvements to the performance measure wording and overall evaluation process for Board consideration during 2016.

For the 2018 FHP Evaluation, a new 'pilot' measure was approved by the Board and included in the list of measures. Because this was a 'pilot' measure, it was scored by the Review Team, but the results will be presented both with and without including the scores from measure 5. The Board will consider the results of the 2018 FHP Performance Evaluation and determine whether to include this measure for formal scoring in a future performance evaluation process.

Why a Board Evaluation Process?

The USFWS developed a funding allocation method in 2013 that required each FHP to submit information used by USFWS staff to score various criteria. While the NFHP Board did not want to duplicate this process, our main objective was to conduct reviews of FHP progress from the Boards perspective and encourage Board interaction with the FHPs. Also, in the event the

National Fish Habitat Conservation Act becomes law, the Board may have increased responsibility to review FHP performance and allocate funding provided under the Act. For this reason, the Board tasked the Partnership Committee with developing a set of ten performance measures (attachment 1). Measures 1 – 4 are most similar to USFWS Criterion, however, Measures 5 – 11 differ most from the USFWS criteria.

Objectives of the 2018 Evaluation

The Evaluation Team followed the same objectives from the 2015 process, but with an added objective to improve upon the 2015 evaluation process. The evaluation objectives are as follows:

1. Test the process to achieve improvement.
2. Engage Board members in the process to help them learn more about the FHPs.
3. Establish two-way communication with FHPs and Evaluation Team to improve the process.
4. Identify successful strategies of more established FHPs to aid newly-formed ones.
5. Identify areas of shared successes and challenges among FHPs

Performance Evaluation Process

The Partnership Committee developed the performance evaluation process in 2015. The process was slightly modified for the 2018 review to include a new pilot measure. The Board approved Review Team membership and a timeline (below) in January 2018:

2018 FHP Performance Evaluation Team:
Chaired by: Tom Champeau
Stan Allen –*Pacific States Marine Fisheries Commission*
Bryan Moore –*Trout Unlimited*
Doug Nygren –*Midwest Association of Fish & Wildlife Agencies*
Tom Lang – *Texas Parks & Wildlife Department*
Gary Whelan –*Michigan Department of Natural Resources*
Susan Wells – *US Fish and Wildlife Service*
Alex Atkinson – *NFHP Board Staff (NOAA contractor)*

1. Board staff distributes FHP Performance Evaluation form, spreadsheet, and scoring criteria on behalf of the Board	April 7, 2018
2. Each FHP submits a completed performance evaluation form	COB June 15, 2018
3. Board staff distributes compiled FHP evaluation forms and scoring materials to the Review Team	Rolling between May 31 and July 2, 2018
4. Review Team discusses scoring results via conference call	Week of August 1
5. Review Team provides evaluation outcomes to FHPs for review	September 11, 2018

6. Review Team conducts optional feedback calls with FHPs (scores will be modified in this time period if necessary)	September – October 2018
7. Final scores and a draft summary report are provided to the FHPs and included in the Board briefing book	March 2019
8. Finalized scores presented to the Board via teleconference/webinar	June 2019

Summary of Results of Team Scoring

In the 2018 FHP Evaluation Process the Review Team used small teams to analyze materials and develop scores. The Review Team held an initial call in which the Team walked through a sample FHP Evaluation package with each measure to ensure each team member had a full and consistent view of the objective and scoring criteria for each measure. Pairs of Review Team members evaluated each FHP Evaluation package together to obtain scores. Those 4 team scores were discussed and reconciled on a Review Team call. To calculate the final score, each of the small teams' criteria scores were averaged and those averages were summed to obtain the final overall FHP score. FHP scores were finalized after optional feedback calls with reviewers.

All 20 of the Fish Habitat Partnerships participated in the evaluation. Scores ranged from 28 to 43 (out of a possible 44 including the pilot measure 5) with an average of 37.9, but overall were higher than the average score of 33 from the 2015 evaluation (Figure 1). Excluding the measure 5 scores from the average results in an average overall scores of 34.6 (out of a possible 40). Figure 2 shows the average scores across all FHPs for each measure. One FHP did not participate in the review.

Figure 1. Total score for 20 FHPs that participated in the evaluation (including pilot measure 5 and an average line at 37.9).

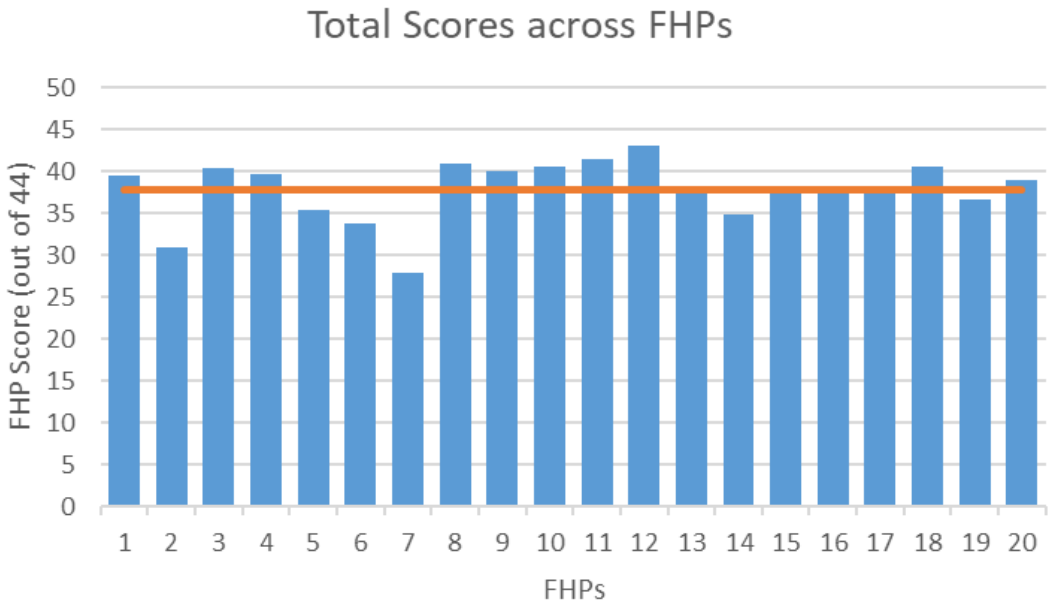
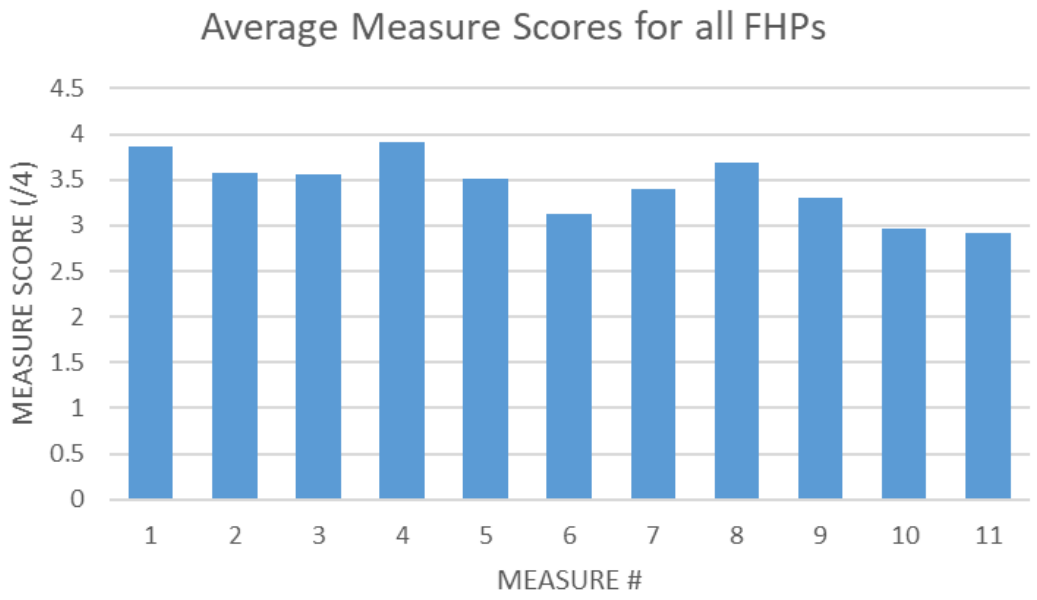


Figure 2. Average score for each of the eleven performance measures across 20 FHPs (including pilot measure 5).



2018 Measures where FHPs demonstrated excellent progress (≥3.5):

1. How well FHP projects focused on addressing FHP and/or national conservation priorities.
2. How well FHPs used effectiveness measures to document project outcomes.
3. How well projects focused on protecting vulnerable fish habitats and causes for declines.
4. How well FHP project funding was matched by non-NFHP and federal dollars.
5. How well FHPs addressed National Conservation Strategies in 4 main categories.*pilot measure
8. How well FHPs utilized resource condition assessment to determine conservation priorities.

2018 Measures where FHPs demonstrated good progress (3.0 – 3.4):

6. How well FHPs utilize the Board's minimum benchmark criteria when prioritizing projects for funding.
7. How well FHPs engaged in with neighboring/overlapping FHPs and other conservation entities.
9. How well FHPs engaged in a variety of outreach activities.

2018 Measures where FHPs demonstrated fair progress (<3.0):

10. How well FHPs coordinated data and regional assessment information with the NFHP Science and Data Committee.
11. How well FHPs demonstrated progress towards addressing priorities.

Results of the Outcomes of Team and FHP Discussions

The results of individual FHP scores were sent to each Coordinator and/or Steering Committee Chair. The small teams hosted optional individual FHP feedback calls to discuss the evaluation objectives, process, and results with Coordinators and/or Steering Committee Chair. The Evaluation Team met after all feedback calls were held to compare and compile the outcomes from all the follow-up conversations.

Thus far, the evaluation process has sparked several questions including:

- Do we continue to include the pilot measure 5 on National Conservation Strategies in future FHP Evaluations?
- FHPs appear to still struggle to answer measures 10 & 11.
    - How can we improve the clarity of the questions or better indicate what is expected (if the questions are unclear)?
    - Based on the results from measure 10, it appears that there still could be better coordination and communication between FHPs and the Science and Data Committee.
    - Based on the results from measure 11, it appears that FHPs could improve how they're tracking progress on their projects over the last 3 years. How can the Partnerships Committee and Board members support this need?

Recommendations to the Board

1. The 2018 FHP Evaluation Team recommends that this evaluation process be improved where possible and repeated in 2021 (or sooner if needed).

2. The Partnership Committee will review the 2018 process and results and make recommendations for improvements to future evaluations.

3. If the National Fish Habitat Conservation Through Partnerships Act (NFHCTPA) legislation were to pass, the Board would need to revise the FHP Evaluation process to ensure it meets the Congress reporting requirements as outlined in the legislation.

Title: Beyond the Pond Update

Desired Outcome:

- Provide background information regarding the dual purpose of Beyond the Pond

Background:

The National Fish Habitat Fund, which was approved by the IRS in June 2015 as a 501(c)(3) non-profit, was established to help partnerships seek additional funding for on-the-ground projects and activities. The National Fish Habitat Fund is marketed under the title and logo, Beyond the Pond. In 2016, a website was launched: http://beyondthepondusa.com/, along with securing a trademark, developing a fact sheet, and creation of an Amazon Smile account. In 2017 an online donation page was developed through Process Donation and several Fish Habitat Partnerships have created their own donation pages through the site.

Update:

As we have new Board members coming on to the National Fish Habitat Board, we wanted to provide some background to them on the dual purposes of establishing Beyond the Pond. Of the two purposes, one was to establish an organization where the National Fish Habitat Partnerships could be established or considered 501c3 organizations, through establishment of chapters. Establishment of a chapter would provide that partnership an opportunity to raise funds independently and provide them with a banking infrastructure, which the partnerships have lacked in the past. The second purpose of the Beyond the Pond, was to provide a fundraising foundation, both nationally and for the individual partnerships (chapters).

The purpose of the Beyond the Pond update, is to provide information to the Board on why Beyond the Pond was established (needs) and if in the opinion of the Board we are still relevant with our establishment and purposes. We anticipate more conversation related to this during the Board visioning session at the March Board meeting.

Title: National Fish Habitat Action Plan Revision

Desired Outcome:

- **Board decision** on the desired amount of and schedule for revising the National Fish Habitat Action Plan

Background:

The National Fish Habitat Partnership Board (Board) has reviewed and revised the National Fish Habitat Action Plan (Plan) on a 6-year cycle with the initial plan completed in 2006 and a revision completed in 2012. Given this cycle, it is time for the Board to consider the extent of revision to the current Plan that is desired and schedule for completing a new Plan.

The initial 2006 Plan had 10 parts leading off with a case for action and concluding with a set of exhibits. The revised 2012 Plan had 12 parts and maintained the Mission and Goals of the 2006 Plan but greatly rewrote the Objectives for the next 6-year period. The 2012 Objectives took into consideration that some of the 2006 Objectives could not be attained at the current level of resources and did move additional emphasis to supporting the Fish Habitat Partnerships (FHPs) and recreational and commercial fisheries interactions with fish habitat.

The specific parts of the 2006 Plan are:

- A case for action
- Partnership approach
- Mission, goals, and objectives
    - 2006 Objectives – Changed in the 2012 Plan
        - Conduct a condition analysis of all fish habitats within the United States by 2010.
        - Identify priority fish habitats and establish FHPs targeting these habitats by 2010.
        - Establish 12 or more FHPs throughout the United States by 2010.
        - Prepare a "Status of Fish Habitats in the United States" report in 2010 and every five years thereafter.
        - Protect all healthy and intact fish habitats by 2015.
        - Improve the condition of 90% of priority habitats and species targeted by FHPs by 2020.
- Science and data strategy
- Implementation strategy
- Partnership definition and role

- Governance
- Case studies of two Fish Habitat Partnerships (SARP and EBKTJV)
- Operational support including staff, Federal Caucus, and Science and Data Committee
- Exhibits
    - Partner Coalition Members
    - National Fish Habitat Action Plan Milestones
    - Science and Data Strategy
    - Strategies and Resources of Federal Agencies
    - Plan Leadership, Support, and Report Authorship

The specific parts of the 2012 Plan, which the Board is currently operating under, are:

- The case for action
    - A partnership based on action
    - Economics of fish habitat
    - Terminology and acronyms
    - Accomplishments
    - Plan highlights
        - Mission and goals maintained
        - New objectives
- Mission and goals
    - Mission – Unchanged from the 2006 Plan
        - The mission of the National Fish Habitat Partnership is to protect, restore, and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people.
    - Goals - Unchanged from the 2006 Plan
        - Protect and maintain intact and healthy aquatic systems
        - Prevent further degradation of fish habitats that have been adversely affected.
        - Reverse declines in the quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms.
        - Increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species.
- Objectives – The 2012 Plan revised the Plan Objectives entirely and are as follows.
    - Objective 1 – Achieve measurable habitat conservation results through strategic actions of Fish Habitat Partnerships that improve ecological condition, restore natural processes, or prevent the decline of intact and healthy systems leading to better fish habitat conditions and increased opportunities.
    - Objective 2 – Establish a consensus set of national conservation strategies as a framework to guide future actions and investment by the Fish Habitat Partnerships by 2013.
    - Objective 3 – Broaden the community of support for fish habitat conservation by increasing fishing opportunities, fostering the participation of local communities –

especially young people – in conservation activities, and raising public awareness of the role healthy fish habitat play in the quality of life and economic well-being of local communities.
    - Objective 4 – Fill gaps in the National Fish Habitat Assessment and its associated database to empower strategic conservation action supported by broadly available scientific information, and integrate socio-economic data in the analysis to improve people's lives in a manner consistent with fish habitat conservation goals.
    - Objective 5 – Communicate the conservation outcomes produced collectively by Fish Habitat Partnerships, as well as new opportunities and voluntary approaches for conserving fish habitat, to the public and conservation partners.
- Partnership in Action vignettes
    - Deadman's Island, FL – SARP
    - Table Rock Lake, MO and AR – RFHP
    - Bear Creek, Wisconsin – DARE
    - Fish Passage in the Little Susitna Watershed, AK – MSBSFHP
- Focus Areas
    - Recreational fishing and fish habitat conservation
    - Commercial fishing and fish habitat conservation
- Our Focus on Strategic Actions – Four Strategies
    - Support FHPs and ensure their effectiveness
    - Mobilize and focus national and local support for achieving fish habitat conservation goals
    - Measure and communicate the status and needs of aquatic habitats
    - Provide national leadership and coordination to conserve fish habitats
- Roles
    - National Fish Habitat Board
    - Staff and Committees
    - FHPs
- NFHP Identity and Benefits
    - Identity
        - Base our actions on science and data
        - Focus our resources on making a measurable difference
        - Measure our outcomes
        - Monitor and disseminate our results
        - Encourage public-private partnerships
        - Build on existing collaborative efforts
        - Don't stop until the job is done
    - Benefits
        - Clean and sufficient amounts of water, a critical measure of landscape health and the well-being of people.
        - Healthy, resilient habitats that are critical to fish and wildlife, water conservation, flood control and people.
        - Improved recreational, commercial and subsistence fishing, boating, fish and wildlife viewing, and other uses of aquatic resources.
        - Strong local economies and increased well-being for all Americans.

        - Effective use of limited funds to produce measurable benefits to fish and people.
        - Improved understanding of habitat connectivity and how aquatic systems function and are maintained.
- Role of Sound Science and Data
- FHP Map 2012, establishment dates, and websites
- Role of Effective Communications
- Appendices
    - Appendix 1 – MOU between DOI, DOA and DOC for implementing the Plan
    - Appendix 2 – FHPs and their development
    - Appendix 3 – Board and Committees
    - Appendix 4 – Strategies and Resources of Federal Agencies
    - Appendix 5 – Science and Data Strategy
    - Appendix 6 – Communication Strategy

Plan Revision Options

To guide the needed planning, facilitation, and development of supporting information to the Board to accomplish the completion of a new Plan, following are three potential options for Board consideration:

1. Keep existing plan with updates to out-of-date statistics
    - No change to mission, goals or objectives
    - Update supporting language and FHP vignettes
2. Revise selected sections and update out-of-date statistics with review and revisions to the following sections:
    - Mission
    - Goals
    - Objectives
    - Roles of the Board, FHPs, Science and Data, and Communications
    - Update supporting language and FHP vignettes
3. Revise all sections of the document
    - Review and revise all 2016 Plan sections
    - Update supporting language and FHP vignettes

Proposed Schedule

Depending on the Board direction, the Board staff will prepare the necessary facilitation plan and initial documents for Board discussion on the June 2019 Board call. The facilitation plan will be implemented immediately after the June 2019 call, and depending on the revision option selected, the new Plan will be completed during the October 2019 (Option 1) to June 2020 (Option 2) timeframe.

Title: Science and Data Committee Report

Desired Outcome:

- **Board understanding** of Science and Data Committee accomplishments as they relate to 2019 Board Priorities

2019 Priorities and Outcomes:

Priority L: Science and Data Committee Operations

- Updating Science and Data Committee (SDC) membership following SDC Terms of Reference.
- The SDC has not met during 2019 due to the Federal Government closure and but will in April via conference call to update SDC membership on NFHP progress and Board actions.
- Outreach
    - Overall Board National Fish Habitat Assessment strategy written up as a peer-reviewed book chapter in *Multispecies and Watershed Approaches to Freshwater Fish Conservation,* an upcoming American Fisheries Society publication with an expected publication date of October 2019. Chapter has been accepted for publication.
    - Updates on Board Science and Data efforts provided at the March 2019 AFS Administration Section Meeting, and at the AFWA Fisheries and Water Resources Policy and Ocean Resources Policy Committees.

Priority N: Planning and Initiation of Future Assessment Work.

- Inland
    - No progress has been made on the Board's new Inland Fish Habitat Assessment as funding is currently not available. New funding sources are being sought at this time. The delay in funding has created the following outcomes at this time:
        - No new work has done on improving and updating the inland component of the National Fish Habitat Assessment.
        - National Fish Habitat Assessment staff are not available to assist FHPs in their assessment work or to facilitate needed coordination between the National and FHP Assessment products. The loss of funding also will mean that new core staff would need to be hired.
        - The Board planned update to the 2015 National Fish Habitat Assessment will not be available until 2023 at the earliest assuming funding is available in the near term.
    - New hydrology information from USGS that will support the approved National Inland Fish Habitat Assessment strategy is now available for the Lower 48 states and was published in:
        - Miller, M.P., D.M. Carlisle, D.W. Wolock, and M. Wieczorek. 2018. A database of natural monthly streamflow estimates from 1950 to 2015 for the

conterminous United States. Journal of the American Water Resources Association 54(6): 1258-1269.

- Coastal
  - Work continues on the Northeast Regional Coastal Habitat Assessment using the Board approved assessment direction, and facilitation by the Mid-Atlantic Fishery Management Council (Jessica Coakley and Chris Moore). The overall assessment guidance document is completed, initial inshore and offshore project teams have been populated and making progress, potential model approaches are under review, and funding continues to be acquired to work on the assessment. Key accomplishments are as follows:
    - On March 29, 2019, the Northeast Regional Marine Fish Habitat Assessment Steering Committee will meet to review the final draft work plan (Appendix A), and to approve the proposed work for this assessment starting in April 2019. The Steering Committee leadership specifically identified staff habitat scientists to participate on workplan development teams, to support the development of the workplan during July 2018 - December 2018. Once the workplan is finalized, project teams will be formed/finalized to conduct work on each of the actions described. There will likely be substantial overlap in membership between those who developed the workplan and those conducting the work, but those teams will not be identical.
    - Five actions were identified as necessary to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast in the draft workplan. These actions will address: 1) abundance and trends in habitat types in the inshore area, 2) habitat vulnerability, 3) spatial descriptions of species habitat use in the offshore area, 4) oceanographic influences on offshore habitat; and 5) habitat data visualization and decision support tool development. The work to support these actions is proposed for April 2019 - April 2022.
    - The assessment covers the Northeast U.S. Shelf, and extends from the North Carolina/South Carolina boundary to the western end of the Scotian Shelf and includes the Mid-Atlantic Bight, Southern New England, Georges Bank, and the Gulf of Maine. The geographic scope of this workplan includes all waters extending from the inshore tidal boundary in state waters to the eastern-most boundary of the EEZ (200 miles offshore), and extends from the Canadian/US Border southwards to the North Carolina/South Carolina border. The Steering Committee identified 61+ focus fish species for this habitat assessment. All species are highly important to fisheries management organizations within the region.
  - Work is also continuing at a very good pace on the West Coast Assessment. Examples of these products are on the Pacific Marine & Estuarine Fish Habitat Partnership (PMEP, www.pacificfishhabitat.org) website with part of the West Coast Assessment work displayed as an estuary viewer and explorer that includes information on current and historical estuary extent, estuary points, biotic habitat, tidal wetland losses, and eelgrass habitat. PMEP hosted a data tools café at the 9th National Summit on Coastal and Estuarine Restoration and Management in

December 2018 to highlight the many functions and uses of PMEP data tools to restoration practitioners, researchers, and resource managers. The session exemplified PMEP's collaborative structure by including speakers from The Nature Conservancy, NOAA Fisheries, Oregon Department of Land Conservation and Development, Estuary Technical Group, and the Pacific States Marine Fisheries Commission.

- The Great Lakes Assessment strategy using the Great Lakes Aquatic Habitat Framework (www.glahf.org/framework) is currently under review with long-term operation and development being discussed at a March 6, 2019 meeting.

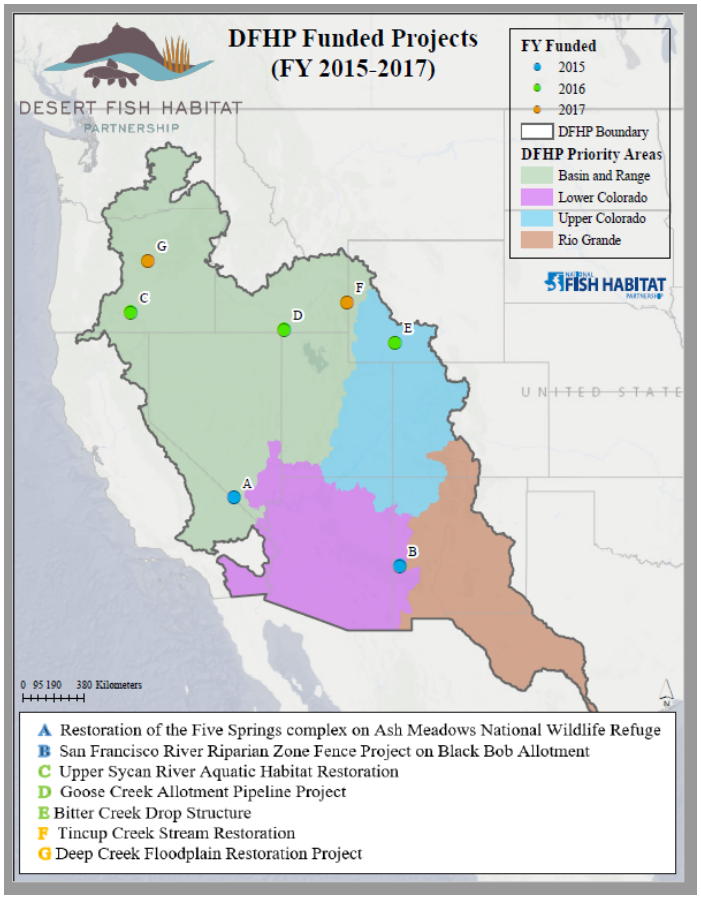
Priority O: Continue work on the NFHP Project Tracking Database

- Kate Sherman (Pacific States Marine Fisheries Commission, PSMFC) continues to improve the NFHP Project Tracking Database using NOAA (FY2018) and MSCG (FY2019) funding. The following progress has been made:
  - Worked directly with Partnership coordinators to assist with USFWS end of year reporting for projects funded FY 2015-2018. Created reports for Questions 2-6 of USFWS Accomplishment reports, and project location maps for FHP's (Figures 1 and 2 show examples). Thirteen FHP's received full reports because their project information was up-to-date for the reporting period.
  - Assisted FHPs with data management plans and maintain a help service for FHPs working with their data on the system
  - Improved reporting capabilities of the data management system with the development of semi-automated reports for the annual USFWS accomplishment reporting.
  - Maintained database on PSMFC servers including server maintenance, server updates, and data backups.
  - Provided background project information for the Congressional event with an example of the type of support that the database can provide in Appendix 2.

Figure 1: Example Q2 standardized table output from NFHP Project Tracking Database. Example from EBTJV.

Project Title	FHP Priority Species	FHP Priority Area	Brief project description (max. 250 characters)
Nash Stream Restoration & Columbia Road Culverts, Odell, Coos County, NH	Brook Trout		This Project restored the habitat for native fish in the Nash Stream watershed using well-established process-based restoration principles.
Upper Shavers Fork Instream and Riparian Habitat Restoration, WV	Brook Trout		Enhancement of aquatic habitat connectivity and genetic exchange within the Upper Shavers Fork fluvial metapopulation of wild Brook Trout.
Sparta Glen Brook Restoration, NJ	Brook Trout		This project restores critical instream habitat within Sparta Glen Brook, including natural pool regimes and spawning areas, restores toe of slope protection, and further stabilizes upland fringe areas, as well as the riparian corridor along a 0.68 mile s
Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, ME	Brook Trout		This project will replace the existing multiple round culvert with an open bottom arch culvert, with span that exceeds 1.2 times the bank full width requirements.
Watershed Connectivity Project, Beebe River Watershed, Campton and Sandwich, NH	Brook Trout		This project removes and replaces five stream crossings in the Beebe River Watershed on a 5,435 acre parcel recently acquired by The Conservation Fund. These crossings are on five separate tributary streams that flow into the Beebe River.
Restoring a Brook Trout Metapopulation within the Little Cataloochee Creek & Anthony Creek Watersheds, Great Smoky Mountains National Park	Brook Trout		The purpose of this Project is to restore Brook Trout into 2.64 km of Little Cataloochee Creek and 2.8 km of Anthony Creek within its native range in Great Smoky Mountains National Park (GRSM) as identified in the GRSM Fishery Management Plan.
East Branch Passumpsic River Dam Removal, VT	Brook Trout		This Project removes a deteriorating dam, which will improve natural flow regimes, free-flowing river conditions, water quality and temperature, sediment release and transport, and connectivity resulting in the restoration of Aquatic Organism Passage.
Enhancing and Connecting Wild Brook Trout populations in the West Mountain Wildlife Management Area, VT	Brook Trout		This Project replaces one impassable culvert with a bridge, removes one culvert, and improves 1.25 miles of Brook Trout spawning and juvenile rearing habitat.

Figure 2: Example of standardized map output of project locations from NFHP Project Tracking Database. Example from DFHP.



Priority P: Maintain and improve the NFHP Data System (Daniel Wieferich, USGS In-kind support)

- As a result of other USGS priorities, limited effort has been made on the NFHP Data System and viewer since the last Board update.
    - USGS continues to develop a viewer to summarize and display NFHP assessment data in the National Biogeographic Map. USGS has been working on open source solutions to summarize habitat condition indices and disturbances (i.e. severe, pervasive and total lists) to ecological and jurisdictional areas. The viewer system will accept and process new areas of interest as they are identified and can be adapted to help drive the next generation of the NFHP data system.

Report written by: Gary E. Whelan (MI DNR Fisheries Division)
Board Science and Data Co-Chair
March 11, 2019

Appendix 1. NORTHEAST REGIONAL MARINE FISH HABITAT ASSESSMENT

DRAFT WORKPLAN

April 2019 - April 2022

DRAFT AS OF 1/31/2019

Draft reviewed on: MM-DD-2019

Final approved on: MM-DD-2019

Assessment Steering Committee:

Atlantic Coast Fish Habitat Partnership: Lisa Havel

Atlantic States Marine Fisheries Commission: Patrick Campfield

Duke University, Marine Spatial Ecology: Patrick Halpin

Mid-Atlantic Fishery Management Council: Christoper Moore

Monmouth University, Urban Coast Institute: Tony McDonald

National Fish Habitat Partnership, Science and Data Committee: Gary Whelan

New England Fishery Management Council: Thomas Nies

NOAA Fisheries Offices of Habitat Conservation: Kara Meckley, Lou Chiarella

NOAA NCCOS Marine Spatial Ecology Division: Mark Monaco

NOAA Fisheries Offices of Science and Technology: Stephen Brown, Tony Marshak

NOAA Northeast Fisheries Science Center: Thomas Noji

The Nature Conservancy: Kate Wilke

1.0 EXECUTIVE SUMMARY

This document was prepared by Northeast Regional Marine Fish Habitat Assessment - Workplan Development Teams for the Assessment Steering Committee. Five actions were identified as necessary to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast. These actions will address: 1) Abundance and trends in habitat types in the inshore area, 2) Habitat vulnerability, 3) Spatial descriptions of species habitat use in the offshore area, 4) Oceanographic influences on offshore habitat, and also provide a Habitat Data Visualization and Decision Support Tool. The work to support these actions is proposed for April 2019 - April 2022. Following approval of the workplan, project teams will need to be finalized. The teams will be responsible for completing the actions as described in the workplan and providing deliverables to the Steering Committee.

2.0 FREQUENTLY USED TERMS

ACFHP	Atlantic Coast Fish Habitat Partnership
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GIS	Geographic Information System
GOM	Gulf of Maine
HAPC	Habitat Area of Particular Concern
HCVA	Habitat Climate Vulnerability Assessment
MAFMC	Mid-Atlantic Fishery Management Council
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NFHP	National Fish Habitat Partnership
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NOAA	National Oceanic and Atmospheric Administration
TNC	The Nature Consevancy

3.0 TABLE OF CONTENTS

4.0 INTRODUCTION

In late 2017, a Steering Committee, comprised of leadership from the major habitat conservation, restoration, and science orgnaizations in the region, met and agreed to identify ways to improve fish habitat science within the region. They concluded that a Northeast Regional Marine Fish Habitat Assessment was needed to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast. The project will align habitat science goals and priorities with human and financial resources to develop habitat science products that support an assessment.

The Steering Committee wanted an assessment that:

- Serves as a decision support tool for multiple audiences – for both inshore and offshore habitats, to assess habitat distribution, abundance, quality, species habitat use, and the combination of all of these.
- Provides foundational information to support the designation of essential fish habitat (EFH) for Councils, and supports federal EFH assessments and EFH consultations (i.e., better data, better synthesis, more specific habitat information, finer scale information).
- Identifies what habitat areas are rare, sensitive, especially vulnerable to degradation, or are uniquely important to ecosystem function, to help prioritize consultations and conservation.
- Compiles information to support a regional National Fish Habitat Partnership (NFHP)[1] assessment, to identify areas that could be considered for habitat conservation or restoration.
- Addresses NOAA's Habitat Assessment Improvement Plan (HAIP)[2] priorities.
- Characterizes habitats, their services, and vulnerabilities to better inform permitting agencies and industries in decision making with respect to multiple ocean uses (e.g. aquaculture, wild-caught fisheries, energy issues, etc.).
- Supports incorporation of ecosystem principles into fisheries management.

To meet these objectives, the Steering Committee supported the development of a detailed workplan to identify specific products and delivery dates, the associated financial commitments, and responsible parties to complete a regional assessment. The Steering Committee leadership specifically identified staff habitat scientists to participate on workplan development teams (see Section 7.0), to support the development of the workplan during July 2018 - December 2018. Once the workplan is finalized, project teams will be formed/finalized to conduct work on each of the actions described. There will likely be substantial overlap in membership between those who developed the workplan and those conducting the work, but those teams will not be identical.

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[1] National Fish Habitat Partnership's (http://www.fishhabitat.org/about/) mission is to protect, restore and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people.

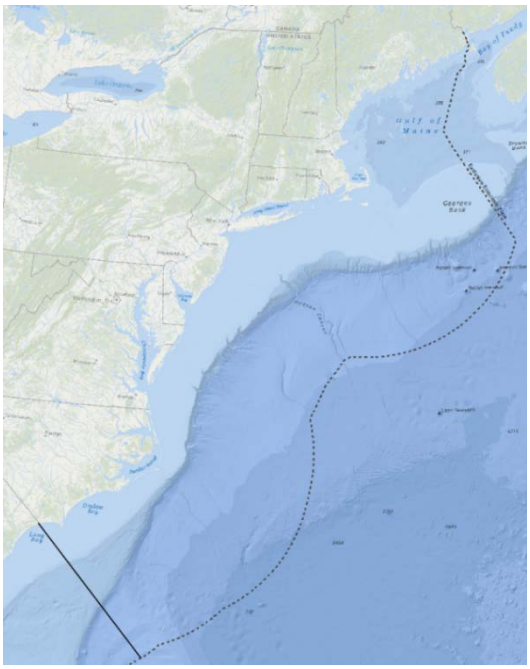
[2] Habitat Assessment Improvement Plan: https://www.st.nmfs.noaa.gov/ecosystems/habitat/publications/haip/index.

5.0 WORKPLAN

Geographic Scope

The workplan covers the Northeast U.S. Shelf, and extends from the North Carolina/South Carolina boundary to the western end of the Scotian Shelf and includes the Mid-Atlantic Bight, Southern New England, Georges Bank, and the Gulf of Maine. The geographic scope of this workplan includes all waters extending from the inshore tidal boundary[3] in state waters to the eastern-most boundary of the EEZ (200 miles offshore), and extends from the Canadian/US Border southwards to the North Carolina/South Carolina border. Inshore assessment actions will generally focus on habitat from the inshore tidal boundary to the eastern state waters boundary (3 miles). The offshore assessment actions will generally focus on habitat from the coastal bays to the eastern boundary of the EEZ, although data available to support work will likely only extend to the offshore canyon areas at its furthest extent. The area between the coastal bays and 3 miles is noted as an area of overlap for the actions. While important habitat for some species may occur outside the geographic scope for the actions, it is not practical to identify and assess this habitat in a transboundary way at this time.

[3] The inshore tidal boundary could be defined several ways. The use of the term is generalized here, but could include mean high water or head of tide, or be inclusive of tidal marsh edge.Workplan development teams recommended that tidal marsh edge be included in the assessment (Supplement 1).



Map 1. Geographic scope for the Northeast Regional Marine Fish Habitat Assessment.

Focus Species

The Steering Committee identified 61+ focus fish species for this habitat assessment (Table 1). All species are highly important to fisheries management organizations within the region.

Table 1. Focus fish species identified by the Steering Committee.

MAFMC	NEFMC	ASMFC (not noted in column 1 or 2)	Highly Migratory (with HAPC designations)
Atlantic mackerel	Acadian redfish	American eel	Sandbar shark
Atlantic surfclam	American plaice	American lobster	Dusky shark
Black sea bass*	Atlantic halibut	Atlantic croaker	
Bluefish*	Atlantic herring*	Atlantic menhaden	
Blueline tilefish	Atlantic salmon	Atlantic striped bass	
Butterfish	Atlantic wolffish	Atlantic sturgeon	
Chub mackeral (potentially added)	Barndoor skate	Black drum	
Golden tilefish	Clearnose skate	Coastal sharks	
Longfin squid	Atlantic cod	Cobia	
Monkfish**	Cusk	Horseshoe crab	
Ocean quahog	Haddock	Jonah crab	
Scup*	Little Skate	Northern shrimp	
Shortfin (Illex) squid	Windowpane flounder	Red drum	
Summer flounder*	Ocean pout	Shad and river herring	
	Offshore hake	Spanish mackerel	

	Pollock	Spot	
	Red crab	Spotted seatrout	
	Red hake	Tautog	
	Rosette skate	Weakfish	
	Sea scallop		
	Silver hake		
	Smooth skate		
	Thorny skate		
	White hake		
	Winter flounder*		
	Winter skate		
	Witch flounder		
	Yellowtail flounder		

* Also managed by ASMFC.

**Jointly managed with NEFMC.

Actions and Timelines

There were five core actions identified to complete the habitat assessment within 3-years (April 2019-April 2022). They are summarized as follows with more detailed action descriptions provided in Tables 2-6:

1) Abundance and trends in habitat types in the inshore area (during months 1-36). This action will map the location and extent of habitat types utilized by the focus species and quantify the areal coverage, status and trends of these habitats. It will also compile metrics that may inform an assessment of habitat quality. Key outcomes from this action include:

A. **Location and extent of habitat types** as maps (Geographic Information System (GIS) framework; to finest scale practical).
B. **Quantity** of habitat types in the entire region, sub or ecoregions, estuaries, mainstems/tributaries, to finest scale (1 km sq polygons or smaller, where possible).
C. **Status and trend** of habitat types with 1) relative proportion of habitat types to one another, 2) a baseline to track each habitat type, 3) trends in habitat quantity relative to baseline if possible, and 4) development of habitat quality metrics, if possible.
D. **Written inventory and database** of habitats and habitat use for inshore focus species.

2) Habitat vulnerability (during months 1-36). This action will involve Council and Commission staff coordination with, and participation in, the NOAA Habitat Climate Vulnerability Assessment (HCVA). That assessment will use habitat experts to examine fish habitat vulnerability to climate and non-climate stressors. Key outcomes from this action include:

A. **Qualitative evaluation** of the vulnerability of specific habitat types to non climate and climate related stressors based on expert judgement.
B. **Recommendations** from HCVA and staff leads if additional areas for future work are identified through this process.

3) Spatial descriptions of species habitat use in the offshore area (during months 1-36). This action will use model-based and empirical approaches to identify, predict, and map habitat use for each of the focus species and track and quantify changes in habitat use over time (e.g. seasonal, annual, and future predicted use). Key outcomes from this action include:

A. **Location and extent of habitat use** (spatially depicted) by individual focus species (and if possible species groups) annually, seasonally, and predicted future use.
B. **Quantify and track changes in habitat use** for focus species throughout the region, and for each Ecological Production Unit (EPU): Mid-Atlantic Bight, Georges Bank, Gulf of Maine.

C. **Identification of most important factors** (covariates) driving focus species distribution.

4) Oceanographic influences on offshore habitat (during months 1-36). This action will identify and map important features in the offshore area for key species (e.g., cold water pool, etc.), and develop metrics and indicators for how that habitat is changing. This group will also develop approaches to describe and map pelagic eggs/larvae for all the focus species. Key outcomes from this action include:

A. **Identification of important oceanographic features** that drive habitat use.
B. **Sensitivities** of focus species to oceanographic features.
C. **Identification of most important factors** (covariates) and how they influence focus species.
D. **Recommendations** for how this oceanographic information can be used to inform habitat definitions through future modeling approaches.

5) Habitat data visualization and decision support tool (during months 24-36). Habitat information will be incorporated into a publicly accessible decision support tool, making this information available to partners to visualize habitat location, extent, and use throughout the region, and provide access to relevant data and habitat metrics developed by the assessment.

Table 2. Inventory of Key Habitat Types in the Inshore Area under Action 1.

Project Phase	Actions Needed	Timeline	Current efforts to be applied	Existing and New Resources Needed
Data identification and prioritization	Identify, inventory, and describe all inshore habitat types across and within the defined subregions with a focus on SAV, tidal river bottom, shellfish beds, tidal vegetation, hard bottom and shorelines that are utilized by the focus species in the inshore environment by life stage. This could include both natural and anthropogenic habitats (see Supplement 1). Additional metrics of habitat quality will be collected while the data is compiled (e.g. oysters per m^2., SAV shoots density, etc.).	Months 1-12	1. Existing EFH Source documents (through about 2003); 2. ELMR living marine resources documents; 3) Updated recent literature review completed by MAFMC/GARFO; 4) ACFHP Species/Habitat Matrix; 5) HAPWG Report; and 6) Deatiled state agency habitat data (e.g. MD, RI, MA all have saltmarsh, SAV, and shellfish location and extent, including some current and historic data; 7) Northeast and Mid-Atlantic data portal artificial reef data, etc; 8) Other resources as appropriate. Some early consideration should be given to SAV, shoreline marsh edge habitat, etc.	Staff members from ACFHP/ASMFC, state agencies (rep from each agency with regional habitat expertise), both Councils, NMFS HCD and NEFSC, and others as needed with inshore habitat expertise;[a] Resources to meet as a group in person (meeting space and travel) and via webinar will be needed. Some in person meetings may be needed to complete the tasks below. This will depend on location, but it is estimated that about $5,600 (4 x 2 x $700) may be needed for federal travel, and an additional $5,600 for non-federal travel (6 x 2 x $8,400) for 2-in person meetings.
Data compilation	Establish classification scheme for all identified and inventoried habitats in action 1. Evaluate and choose a habitat classification scheme to serve as an organizing framework across the subregions (e.g., CMECS - https://iocm.noaa.gov/cmecs/; Cowardian system) and determine how to best include restored or manmade habitat, if appropriate.	Months 13-18	Ensure classification includes those habitat types (class and subclass) that are identified through the NOAA Climate Habitat Vulnerablility Assessment. Work with NOAA CMECS leads to obtain a briefing and more information on how the classification system might be used to support this assessment work.	Funds are needed to support a GIS contractor to develop the geodatabase, synthesize information, and develop final spatial products; up to 2 years funding may be needed estimated at $150,000-200,000. Coordination should occur between this effort and complementary assessments by ACFHP and the Chesapeake Bay Program. The Chesapeake will be hring a contractor in spring 2019 to begin compiling estuarine habitat, biological and stressor data.
Geodatabase development	Develop geodatabase(s) with agreed upon classification scheme for all inshore habitats. In addition, specific decisions on how to organize the data including establishing inshore boundaries, mapping scale, and potential subdivision of the	Months 19-24	See Supplement 1 for more detail on methods that could be used to set inshore boundaries, mapping scale, and possible inshore regional units. It is recommended as a starting point for consideration that: 1) the inshore/inland boundary include the shoreline/tidal marsh edge and be the same	See above (GIS contractor)

	region to smaller inshore "sub regional" units should be made (see Supplement 1).		across the entire region, 2) data be mapped at the finest scale possible by estuary using a gridded system, 3) estuaries be aggregated using the NFHP coastal assessments biogeographic regions (or a variation on that for this assessment), and 4) consideration be given to using 3 salinity zones within estuaries.	
Synthesis and analysis	Utilize geodatabase(s) to determine for which habitat types location and extent can be determined based on available data, and map location and extent of habitats with available data at the finest possible scale.	Months 25-30	NA	See above (GIS contractor)
Development of habitat quantity metrics	Analyze and synthesize quantity, status and trends for all habitats in the geodatabase as available data allows.	Months 25-30	NA	See potantial experts listed above plus any additional expertise needed.
Development of habitat quality metrics	Plan and hold a Workshop, using a predetermined structured decision process (e.g. Analytical Hierarchy Process), to identify and develop habitat quality metrics based on the available data from the quantitative analysis. This group will prioritize characteristics of habitat types (natural and restored) that support fish production, and identify specific metrics to be used based on the data available. These findings will be compiled in a final report, and mapped with the location and extent data for habitat where possible.	Months 31-34	An examination of metrics used by state-agencies and others for their habitat management may be a relevant starting point.	Resources to hold a workshop in person ($20,000; meeting space and travel). This will depend on location, but it is estimated that about $8,400 (12x$700) may be needed for federal travel, $8,400 (12x$700) for non-federal travel, plus $3,200 for other associated meeting costs.
Early review and feedback on maps for location and extent and habitat quantity metrics	1) Review methods and products with a pilot group of regional experts (e.g., NMFS habitat leads, Council and ASMFC staff habitat leads); and 2) Review Products with the Steering Committee.	Months 31-34	NA	This can be done with existing staff resource commitments, if participating entities are willing to provide staff support in the form of work and travel. However, this may not

				require in-person meetings and could use web-based meetings to complete.
Application and final product development	Make necessary adjustments to final products and incorporate into final database and GIS visualization/Support Tool (see Action 5)	Months 35-36	NA	GIS contractor. Information access when products are complete will link to Action 5 to develop a visualization/Support Tool.
Final review	Present information to the assessment steering committee and finalize products	Complete	NA	Convene steering committee in person, once for all actions. Overall costs estimated as $9,800 (14x$700).

[a] Possible participants include: Michelle Bachman (NEFMC), Steve Faulkner (USGS), NOAA NCCOS (AK Leight and Moe Nelson), Mark Rosseau (MA-DMF), Eric Schneider (RI-DFW), Dawn McReynolds (NYDEC), TBD (ME-DMF, CT-DEP, NJ-FWS, DE-DNREC, MD-DNR, VA-VMRC, NC-DMF), Bryan DeAngelis (TNC), Julie Devers (US-FWS), TBD (ACFHP), Bruce Vogt (NFMS-Ches. Bay), Emily Shumchenia (Northeast Data Portal), and other NMFS/NEFSC experts (TBD).

Table 3. Habitat Vulnerability under Action 2.

Project Phase	Actions Needed	Timeline	Current efforts to be applied	Existing and New Resources Needed
Participation in HCVA Process	Habitat staff from ASMFC, MAFMC, and NEFMC will coordinate directly with the NOAA Northeast HCVA. This initially will involve support during "pilot assessment" work to finalize the methods for conducting the assessment including selection of priority climate and non climate stressors. This will later involve participation as subject matter experts to review the information at the in-person HCVA workshop to conduct the full assessment.	Months 1-12. Pilot assessment early 2019, with full assessment to follow later 2019.	NOAA Habitat Climate Vulnerability Assessment that is already underway. NOAA Habitat Climate Vulnerability Assessment that is already underway. The HCVA will develop a method to assess habitat vulnerability to a changing climate that can be applied directly to fisheries management. The trait-based assessment will score the sensitivity of specific habitat attributes to climate change for habitats ranging from riverine to oceanic. The result will be a ranked list of vulnerable habitats. The HCVA will be developed as a regional tool (e.g. northeast large marine ecosystem) that can be applied nationally.	Jessica Coakley (MAFMC), Michelle Bachman (NEFMC), and Lisa Havel (ASMFC/ACFHP) will participate directly in aspects of the HCVA, including pilot work to develop and improve aspects of the process. Committments from NEFMC, MAFMC, and ASMFC to cover their staff travel to participate in any in-person meetings. This will include several coordination calls or remote meetings.
Future Work	Habitat staff from ASMFC, MAFMC, and NEFMC and the NOAA HCVA will discuss lessons learned from the HCVA process and identify any areas for future work on this subject that would be beneficial to the Northeast region and fishery management agencies (Councils and Commission).	6-12 months after HCVA completion	NA	NA

Reports Provided	Provide the final report to the Steering Committee.	After report completed	NA	NA

Table 4. Spatial Descriptions of Species Habitat Use in the Offshore Area under Action 3.

Project Phase	Actions Needed	Timeline	Current efforts to be applied	Existing and New Resources Needed
Identification of Best Modeling Approaches	Assemble scientists from NOS, OAR, and NMFS laboratories, and others, to compare and contrast methods and approaches in the use of species habitat or niche models. Discussion will focus on fitting procedures and model construction, visualization and interpretation of results, and the range of applications with these data that can be used to describe and quantify habitat use. This should include a discussion of the best and most appropriate tests for model validation and performance measurements.	Months 1-12	NART Project: "Progress in habitat modelling to inform fisheries and ecosystem management" (Leads: Kevin Friedland and Scott Large (NOAA/NEFSC/READ/EDAB), Mark Monaco and Beth Turner (NOAA/NOS/NCCOS), Kimberly Hyde (NOAA/NEFSC/READ/EDAB); Existing models and approaches have been developed within NMFS-NEFSC and other institutions that could be applied or inform these approaches. NOAA Chesapeake Bay Office science: NCBO is funding four projects assessing in shore offshore habitat connecivity for black sea bass and summer flounder. Habitat suitability models and climate change impacts will be developed with products expected in 2020 (Bruce Vogt and Sara Coleman are POCs who can coordinate with researchers to contribute appraoches and information to this project).	Travel funds are available for 8-10 federal participants through this 2019 project. An additional $6,500 is needed for up to 8 non-federal travel participants (8 x $700) and misc meeting needs.[b]

Model Diagnostic Criteria Survey	A survey (via Google forms) will be developed and distributed to solicit apriori input from focus species stock assessment scientists on the most important variables driving their species distribution and habitat use, and how those would be ranked based on their expertise. This information can be used to prioritize information for modeling efforts or serve as an additional diagnostic external to the models, to be compared to model-preferred explanatory variables. It is noted that factors driving the productivity of the focus species may be different (or the same) as those driving the distribution of the focus species.	Months 1-12	Can be developed using Google forms.	This will utilize existing focus species stock assessment expertise.
Information Prioritization	Assemble data available to descibe habitat use by the focus species spatially and temporally (juveniles and adults, and if possible other life stages such as eggs/larvae) in the offshore environment. Much of this has already been done by the various modeling groups. Therefore, this should focus on supplementing the work already done by identifying missing data needs or data improvements that are needed. This should include fisheries independent and dependent data.	Months 1-12	A number of data resources are available. Fishery independent data: State/federal fish survey data, MARMAP/EcoMon (egg/lavae), and clam or scallop survey data is accessible. Other information on primary productivity, etc. could be considered. Fishery-dependent data: commercial landings, observer or study fleet data could be used to verify model results. Application of data provided from the NEFSC food habits database. Characterizing habitat types, making special note of any difference found by region. Habitat types differ by species and to climate change.	This can be done with existing staff resource commitments, since these data already exist. However, this may require some web-based meetings to complete.

Model and Data Application	1) Identify the best modeling approaches for each focus species based on the tools and data available, and using the performace diagnostics criteria identified. 2) Based on the the best approaches for each species, describe those factors that are most important in driving changes in distribution based on the covariates used (e.g., temperature, substrate type, rugosity, primary production, etc.). Variable selection should be based upon species ecology and incorporate the input from the stock assessment experts.[a]	Months 12-24	Using the NART project work described above, a core modeling team will be formed to address this step.	Funds are needed to support a contractor working on modeling approaches (GAM/MaxENT/RegTree models at NEFSC; approximately 2 years funding: $180,000); Additional funds may be needed to support travel for modeling team members to meet in-person. This will depend on location, but it is estimated that about $8,400 (6 x 2 x $700) may be needed for federal travel, and an additional $5,600 for non-federal travel (4 x 2 x $700).
Habitat Metrics and Indicators	Based on the modeling products, identify specific metrics to track changes in habitat use for the focus species. The use of smaller organizing units (based on ecology or fisheries distributions) should be used to organize information at a regional scale in a way that would support management entity decision capability. This could include examining trends in use of available (past, present, and future predicted habitats). These outputs should be linked to other regional indicators of ecosystem change of possible. This component will require additional input be provided to the modeling leads from staff at the Councils (NEFMC and MAFMC) and the Atlantic States Marine Fisheries Commission (ASMFC), as well as input from NMFS Habitat Conservation Division staff. As a starting point, the Ecological Production Units (EPUs) developed by the NEFSC based on	Months 18-30	Ongoing work at the NMFS/NEFSC to develop ecological indicators throughout the region and by EPU can be directly linked to this work and enhance decision capability. This can be directly linked to management entity EBM and EAFM approaches.	This can be done with existing staff resource commitments, if participating entities are willing to provide staff support in the form of work and travel. However, this may require some in-person or web-based meetings to complete.

	ecological/oceangraphic breaks in the region should be considered.			
Synthesis and analysis	The ouputs from the modeling work and development of ecological indicators will be compiled in a report, documenting methods and results, as well as GIS files that can be utilized to spatially understand changes in habitat use. Efforts will be made to make this information available via an online visualization/Support Tool (see other action).	Months 18-30	Utilize and build off exisiting online GIS services to make the information accessible to partners and end users.	Information access when products are complete will link to a separate action to develop a visualization/Support Tool.
Early Review and Feedback	1) Review methods and early products with a pilot group of regional experts (e.g., NMFS habitat leads, Council and ASMFC staff habitat leads); and 2) Review Products with the Steering Committee.	Months 31-33	NA	This can be done with existing staff resource commitments, if participating entities are willing to provide staff support in the form of work and travel. However, this may not require in-person meetings and could use web-based meetings to complete.
Application and Final Product Development	Make any necessary adjustments to final products.	Months 34-36	NA	NA
Final Review and Approval	Present information to the Steering Committee and finalize products.	Complete	NA	Convene Steering Committee in person, once for all actions.

[a] A number of themes should be considered as relevant to understanding distribution shifts, such as temperature, assemblages, predator-prey dynamics, and other species interactions. A selection of an ecosystem based approach applied to multiple species may be necessary for an explanation of all-inclusive factors driving habitat use. Species groups based upon similar life history traits and interactions of multiple species could be useful for modeling and understanding of habitat use. Additional methods to explore: pelagic eggs and larvae of the focus species (as a modeling group), and (if time permits) include the probable prey variable, its abundance, distribution and impacts upon the movement of juvenile and adult focus species. Additional variables such as: primary productivity, ichthyoplankton, food habit data, depth, and fishing influence could be of value to the models. In addition, fishery depedent data could be used to validate outputs. This could also involve examining changes in seasonal use where possible.

[b] Possible attendees: Arliss Winship (NOS), Matthew Poti (NOS), Elliott Hazen (NMFS), Vince Guida (NMFS), Christopher Rooper (NMFS), Paul Conn (NMFS), James Thorson (NMFS), Edward Rutherford (OAR); Victoria Kenter (NMFS); Donna Johnson (NMFS), Charles Perretti (NMFS), Rich Bell (TNC), Kathy Mills (GMRI), Vince Saba (GFDL), Heather Welch (NMFS); Jessica Coakley (MAFMC).

Table 5. Oceanographic influences on Offshore Habitat under Action 4.

Project Phase	Actions Needed	Timeline	Current efforts to be applied	Existing and New Resources Needed
Information and focus species prioritization	Assemble scientists to identify important oceanographic features that help define offshore habitat for both pelagic and benthic focus species. Because of the breadth of possibilities, a few, specific key features will be identified that are both data rich and that align with focus species of interest to the Councils and Commission will be prioritized for further work given a 3-year timeline for deliverables. A list of these prioritized species and features will be shared with the Steering Committee to solicit early feedback. These oceanographic features can be relatively persistent, seasonally reccurring or episodic in nature. This may include include current systems, fronts, or important water massess. Influences can include advection, thermal conditions, and associated changes in biogeochemisty or transport of organisms. Some specific examples of oceanographic features include the Georges Bank Gyre, Gulf of Maine Circulation, the Mid-Atlantic Bight Cold Pool, Shelfbreak front, or the influence of different Slope Water sources in the Gulf of Maine.	Months 1-6	There are a wide range of relevant ongoing and past studies, datasets and modelling efforts relavent to oceanographic process and their influence on habitat on the NEUS Shelf. Some notable areas of research include the Mid-Atlantic Bight Cold Pool, Shelfbreak fronts, Georges Bank Circulation, Gulf of Maine Circulation and water masses, and the influences climate change. This has included work by researchers at NEFSC, WHOI, GMRI, U Maine, Stony Brook, URI, SMAST, Rutgers, GFDL, U.S. GLOBEC Program and many others.	Resources to meet as a group in person (meeting space and travel) and via webinar will be needed.[a] This will depend on location, but it is estimated that about $8,400 (6 x 2 x $700) may be needed for federal travel, and an additional $5,600 for non-federal travel (4 x 2 x $700) for 2-in person meetings. Other work can be conducted using web-based meetings.
Data prep and compilation	Information will be compiled on the prioritized oceanographics features and information relevant to understanding impacts of these features on the distribution and habitat use of the prioritized species.	Months 6-18	See above	See above

Identify important trends and variability in key oceanographic features	This group will examine the influence of these important oceanographic features on the distribution and abundance of the prioritized focus species. This strategy should include an examination of the: 1) Sensitivity of focus species to oceanographic drivers through various mechanisms including advective, thermal and biogeochemical drivers; 2) Spatial extent of oceanographic features; 3) Variability, periodicity and long-term trends in oceanographic features. In addition, specific recommendations on how this information could be used to improve fish habitat use models should be developed.	Months 19-31	See above	See above
Synthesis and analysis	The ouputs from the modeling work will be compiled in a report, documenting methods and results, as well as GIS files that can be utilized to spatially understand changes in habitat use relative to these features. Efforts will be made to make this information available via an online visualization/Support Tool (see other action).	Months 32-35	NA	Information access when products are complete will link to a separate action to develop a visualization/Support Tool.
Early review and feedback	1) Review products with a pilot group of regional experts on oceanography and habitat (NMFS, Council, state and academic); and 2) Review Products with the Steering Committee; in particular to obtain input.		NA	This can be done with existing staff resource commitments, if participating entities are willing to provide staff support in the form of work and travel. However, this may not require in-person meetings and could use web-based meetings to complete.
Application and final product development	Make necessary adjustments to final products		NA	NA
Final review and feedback	Present information to the assessment steering committee and finalize products	Complete		Convene Steering Committee in person, once for all actions.

[a] Possible participants could include Glen Garwarkiewicz (WHOI- shelfbreak fronts and slope processes), David Townsend (U Maine- Influence of water masses on primary production in the gulf of Maine), Charles Stock (GFDL- Climate and ecosystem modelling), Vince Saba (NEFSC- Climate and ecosystem modelling), Kevin Friedland (NEFSC- Modelling of habitat based on oceanographic conditions), Jon Hare (NEFSC- Climate Vulnderability Assessment), Steven Lentz (WHOI- MAB Cold Pool), James Manning (NEFSC- Physical Oceanography, GLOBEC, Cooperative Research), Paula Fratantoni (NEFSC- Physcial Oceanography, Oceans and Climate Branch Chief), David Richardson (NEFSC- Ichthyoplankton), Harvey Walsh (NEFSC- ichthyoplankton, zooplankton, EcoMon program lead), Chris Melrose (NEFSC- Hydrographic monitoring program lead), Vince Guida (NEFSC- Habitat Ecology, Habitat modelling), Scott Large (NEFSC- Ecosystems Dynamics and Assessment Branch Chief).

Table 6. Habitat Data Visualization and Decision Support under Action 5.

Project Phase	Actions Needed	Timeline	Current efforts to be applied	Existing and New Resources Needed

Determine type of services needed	Based on the products being developed from Actions 1-4, determine the kind on online mapping application needed to share the products with endusers and the public.	Months 18-24	NA	This can be done with existing staff resource commitments. However, this may require some conference calls or web-based meetings to complete.
Examine existing mapping/visualization services available and integrate data into a visualization/Support Tool	Habitat staff from ASMFC, MAFMC, NEFMC and NOAA HCD, will discuss some of the mapping platforms that are currently available. Consideration will be given to whether this information should be housed on a NOAA site (which requires extensive clearances) or a non-federal site. Recommendations will be taken to the steering committee for input on approach to be taken.	Months 25-36	This could include existing services such as the Northeast or Mid-Atlantic Ocean Data Portals (which could display fish habitat data with other kinds of regional data), NMFS Habitat Data Geodatabase (which has geoprocessing, mapping, and spatial analysis/modeling services that allow data to be queried and accessed, as well as mapped), or other kinds of existing sites and services internal or external to NOAA.	Funds are available to complete this work ($70,000 available through MAFMC).
Finalize products	When final products become available, the information will be integrate into an approrpiate viisualization/Support tool and shared.	Complete	NA	Convene Steering Committee in person, once for all actions.

6.0 FOLLOW ON ACTIONS

Follow On Actions

The assessment will be used in a number of ways. These actions were identified by the workplan development teams as important next steps after the assessment actions have been completed.

1) EFH Review/Redo: High resolutions habitat maps that include both static and dynamic aspects of habitat should be used to improve essential fish habitat designations and descriptions.

2) Integration of habitat science into EAFM and broader IEA approaches: Information from the habitat assessment should be pulled into summary reports for the region and for individual species, including maps and metrics to track how much habitat we have (if known) and how that habitat is changing (in the inshore or offshore, annually, seasonal, and projected to change).

3) Habitat and stock assessments: High resolution habitat maps that include both static and dynamic aspects of habitat combined with geospatial statistical models have the potential to improve the indices of abundance that go into stock assessments as well as improve survey design. Methods to explicitly link habitat information with stock assessments should be explored.

7.0 ACKNOWLEDGEMENTS

We would like to thank all those that contributed as members of workplan development teams.

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Appendix 2. Summary of NFHP Project Funding 2006-2018 by State

STUSPS	NAME	ProjectCount	NFHPFunding	MatchingFunding
WV	West Virginia	13	$368,624	$3,114,622
IL	Illinois	10	$216,873	$557,478
MD	Maryland	1	$75,000	$139,700
ID	Idaho	21	$507,553	$2,017,196
VT	Vermont	3	$84,200	$430,250
CT	Connecticut	1	$50,000	$56,000
NM	New Mexico	19	$769,875	$1,094,826
NJ	New Jersey	2	$7,143	$114,400
NE	Nebraska	2	$53,000	$15,000
PA	Pennsylvania	12	$225,240	$1,049,307
GA	Georgia	12	$705,247	$362,212
CO	Colorado	19	$416,068	$1,950,059
SC	South Carolina	8	$373,682	$189,453
ND	North Dakota	4	$61,350	$1,563,500
KY	Kentucky	17	$520,631	$562,710
NV	Nevada	19	$660,685	$1,012,965
AK	Alaska	178	$5,915,117	$24,180,670
AR	Arkansas	12	$826,573	$732,175
KS	Kansas	15	$308,730	$2,117,429
SD	South Dakota	3	$182,857	$113,000
VA	Virginia	13	$544,633	$1,024,394
IA	Iowa	25	$965,874	$5,423,277
AZ	Arizona	17	$727,639	$1,501,617
RI	Rhode Island	1	$35,277	$1,137,650
NH	New Hampshire	5	$215,999	$1,042,817
NC	North Carolina	9	$298,105	$898,011
CA	California	38	$873,177	$18,056,110
WI	Wisconsin	67	$1,493,038	$4,193,643
OR	Oregon	40	$1,420,330	$6,842,463
WA	Washington	19	$1,203,882	$6,327,900
UT	Utah	13	$503,046	$3,425,058
OH	Ohio	19	$360,348	$1,858,979
TX	Texas	12	$413,142	$742,344
TN	Tennessee	9	$661,970	$915,784
NY	New York	12	$620,913	$1,425,061
ME	Maine	13	$420,729	$2,385,845

MI	Michigan	35	$816,912	$26,236,410
MT	Montana	28	$799,612	$5,096,867
IN	Indiana	13	$274,033	$3,174,441
MA	Massachusetts	5	$219,172	$1,582,992
WY	Wyoming	7	$224,777	$1,378,755
MS	Mississippi	6	$393,062	$492,299
FL	Florida	12	$542,238	$1,619,663
HI	Hawaii	21	$550,746	$1,377,620
MN	Minnesota	26	$616,713	$3,234,883
AL	Alabama	3	$135,714	$155,300
MO	Missouri	13	$359,799	$1,070,970
OK	Oklahoma	0	NA	NA
GU	Guam	0	NA	NA
DE	Delaware	0	NA	NA
LA	Louisiana	0	NA	NA
MP	Commonwealth of the Northern Mariana Islands	0	NA	NA
AS	American Samoa	0	NA	NA
PR	Puerto Rico	0	NA	NA
DC	District of Columbia	0	NA	NA
VI	United States Virgin Islands	0	NA	NA

Appendix 3. Summary of NFHP Project Funding 2006-2018 by Congressional District

StateName	CD115FP	AFFGEOID	GEOID	LSAD	CDSESSN	NFHPFunding	MatchingFunding	ProjectCount
Alabama	1	5001500US0101	101	C2	115	$0	$0	1
Alabama	2	5001500US0102	102	C2	115	NA	NA	0
Alabama	3	5001500US0103	103	C2	115	NA	NA	0
Alabama	4	5001500US0104	104	C2	115	$135,714	$155,300	2
Alabama	5	5001500US0105	105	C2	115	NA	NA	0
Alabama	6	5001500US0106	106	C2	115	NA	NA	0
Alabama	7	5001500US0107	107	C2	115	NA	NA	0
Alaska	0	5001500US0200	200	C1	115	$5,915,117	$24,180,670	178
Arizona	1	5001500US0401	401	C2	115	$611,639	$1,118,962	11
Arizona	2	5001500US0402	402	C2	115	$16,000	$15,280	1
Arizona	3	5001500US0403	403	C2	115	NA	NA	0
Arizona	4	5001500US0404	404	C2	115	$100,000	$350,000	3
Arizona	5	5001500US0405	405	C2	115	NA	NA	0
Arizona	6	5001500US0406	406	C2	115	NA	NA	0
Arizona	7	5001500US0407	407	C2	115	$0	$17,375	2
Arizona	8	5001500US0408	408	C2	115	NA	NA	0
Arizona	9	5001500US0409	409	C2	115	NA	NA	0
Arkansas	1	5001500US0501	501	C2	115	$14,286	$20,750	2
Arkansas	2	5001500US0502	502	C2	115	$0	$0	1
Arkansas	3	5001500US0503	503	C2	115	$107,143	$0	1
Arkansas	4	5001500US0504	504	C2	115	$705,144	$711,425	8
California	1	5001500US0601	601	C2	115	$30,000	$132,889	2
California	2	5001500US0602	602	C2	115	$377,449	$15,384,724	17
California	3	5001500US0603	603	C2	115	NA	NA	0
California	4	5001500US0604	604	C2	115	$0	$9,285	1
California	5	5001500US0605	605	C2	115	$40,000	$705,625	1

California	6	5001500US0606	606	C2	115	NA	NA	0
California	7	5001500US0607	607	C2	115	NA	NA	0
California	8	5001500US0608	608	C2	115	$46,686	$57,070	3
California	9	5001500US0609	609	C2	115	$140,001	$110,000	4
California	10	5001500US0610	610	C2	115	NA	NA	0
California	11	5001500US0611	611	C2	115	NA	NA	0
California	12	5001500US0612	612	C2	115	NA	NA	0
California	13	5001500US0613	613	C2	115	NA	NA	0
California	14	5001500US0614	614	C2	115	NA	NA	0
California	15	5001500US0615	615	C2	115	NA	NA	0
California	16	5001500US0616	616	C2	115	NA	NA	0
California	17	5001500US0617	617	C2	115	NA	NA	0
California	18	5001500US0618	618	C2	115	$67,243	$421,000	2
California	19	5001500US0619	619	C2	115	NA	NA	0
California	20	5001500US0620	620	C2	115	$12,497	$151,102	1
California	21	5001500US0621	621	C2	115	NA	NA	0
California	22	5001500US0622	622	C2	115	NA	NA	0
California	23	5001500US0623	623	C2	115	$47,800	$122,788	2
California	24	5001500US0624	624	C2	115	$61,501	$711,627	4
California	25	5001500US0625	625	C2	115	NA	NA	0
California	26	5001500US0626	626	C2	115	NA	NA	0
California	27	5001500US0627	627	C2	115	NA	NA	0
California	28	5001500US0628	628	C2	115	NA	NA	0
California	29	5001500US0629	629	C2	115	NA	NA	0
California	30	5001500US0630	630	C2	115	NA	NA	0
California	31	5001500US0631	631	C2	115	NA	NA	0
California	32	5001500US0632	632	C2	115	NA	NA	0
California	33	5001500US0633	633	C2	115	NA	NA	0
California	34	5001500US0634	634	C2	115	NA	NA	0

California	35	5001500US0635	635	C2	115	NA	NA	0
California	36	5001500US0636	636	C2	115	NA	NA	0
California	37	5001500US0637	637	C2	115	NA	NA	0
California	38	5001500US0638	638	C2	115	NA	NA	0
California	39	5001500US0639	639	C2	115	NA	NA	0
California	40	5001500US0640	640	C2	115	NA	NA	0
California	41	5001500US0641	641	C2	115	NA	NA	0
California	42	5001500US0642	642	C2	115	NA	NA	0
California	43	5001500US0643	643	C2	115	NA	NA	0
California	44	5001500US0644	644	C2	115	NA	NA	0
California	45	5001500US0645	645	C2	115	NA	NA	0
California	46	5001500US0646	646	C2	115	NA	NA	0
California	47	5001500US0647	647	C2	115	NA	NA	0
California	48	5001500US0648	648	C2	115	$50,000	$250,000	1
California	49	5001500US0649	649	C2	115	NA	NA	0
California	50	5001500US0650	650	C2	115	NA	NA	0
California	51	5001500US0651	651	C2	115	NA	NA	0
California	52	5001500US0652	652	C2	115	NA	NA	0
California	53	5001500US0653	653	C2	115	NA	NA	0
Colorado	1	5001500US0801	801	C2	115	NA	NA	0
Colorado	2	5001500US0802	802	C2	115	NA	NA	0
Colorado	3	5001500US0803	803	C2	115	$285,740	$1,461,485	11
Colorado	4	5001500US0804	804	C2	115	$33,000	$46,000	1
Colorado	5	5001500US0805	805	C2	115	$97,328	$433,845	6
Colorado	6	5001500US0806	806	C2	115	NA	NA	0
Colorado	7	5001500US0807	807	C2	115	$0	$8,729	1
Connecticut	1	5001500US0901	901	C2	115	NA	NA	0
Connecticut	2	5001500US0902	902	C2	115	$50,000	$56,000	1
Connecticut	3	5001500US0903	903	C2	115	NA	NA	0

Connecticut	4	5001500US0904	904	C2	115	NA	NA	0
Connecticut	5	5001500US0905	905	C2	115	NA	NA	0
Delaware	0	5001500US1000	1000	C1	115	NA	NA	0
District of Columbia	98	5001500US1198	1198	C4	115	NA	NA	0
Florida	1	5001500US1201	1201	C2	115	$107,143	$285,800	1
Florida	2	5001500US1202	1202	C2	115	$285,715	$1,126,554	5
Florida	3	5001500US1203	1203	C2	115	NA	NA	0
Florida	4	5001500US1204	1204	C2	115	$31,437	$42,816	1
Florida	5	5001500US1205	1205	C2	115	NA	NA	0
Florida	6	5001500US1206	1206	C2	115	NA	NA	0
Florida	7	5001500US1207	1207	C2	115	NA	NA	0
Florida	8	5001500US1208	1208	C2	115	$50,000	$74,640	2
Florida	9	5001500US1209	1209	C2	115	NA	NA	0
Florida	10	5001500US1210	1210	C2	115	NA	NA	0
Florida	11	5001500US1211	1211	C2	115	NA	NA	0
Florida	12	5001500US1212	1212	C2	115	NA	NA	0
Florida	13	5001500US1213	1213	C2	115	NA	NA	0
Florida	14	5001500US1214	1214	C2	115	$800	$25,000	1
Florida	15	5001500US1215	1215	C2	115	NA	NA	0
Florida	16	5001500US1216	1216	C2	115	$67,143	$64,853	1
Florida	17	5001500US1217	1217	C2	115	NA	NA	0
Florida	18	5001500US1218	1218	C2	115	NA	NA	0
Florida	19	5001500US1219	1219	C2	115	$0	$0	1
Florida	20	5001500US1220	1220	C2	115	NA	NA	0
Florida	21	5001500US1221	1221	C2	115	NA	NA	0
Florida	22	5001500US1222	1222	C2	115	NA	NA	0
Florida	23	5001500US1223	1223	C2	115	NA	NA	0
Florida	24	5001500US1224	1224	C2	115	NA	NA	0
Florida	25	5001500US1225	1225	C2	115	NA	NA	0

Florida	26	5001500US1226	1226	C2	115	NA	NA	0
Florida	27	5001500US1227	1227	C2	115	NA	NA	0
Georgia	1	5001500US1301	1301	C2	115	NA	NA	0
Georgia	2	5001500US1302	1302	C2	115	$46,502	$87,577	2
Georgia	3	5001500US1303	1303	C2	115	$6,000	$9,600	1
Georgia	4	5001500US1304	1304	C2	115	NA	NA	0
Georgia	5	5001500US1305	1305	C2	115	NA	NA	0
Georgia	6	5001500US1306	1306	C2	115	NA	NA	0
Georgia	7	5001500US1307	1307	C2	115	NA	NA	0
Georgia	8	5001500US1308	1308	C2	115	$90,500	$15,000	1
Georgia	9	5001500US1309	1309	C2	115	$91,500	$114,035	3
Georgia	10	5001500US1310	1310	C2	115	$185,786	$55,000	2
Georgia	11	5001500US1311	1311	C2	115	NA	NA	0
Georgia	12	5001500US1312	1312	C2	115	$249,245	$56,000	2
Georgia	13	5001500US1313	1313	C2	115	NA	NA	0
Georgia	14	5001500US1314	1314	C2	115	$35,714	$25,000	1
Hawaii	1	5001500US1501	1501	C2	115	$75,000	$62,674	1
Hawaii	2	5001500US1502	1502	C2	115	$475,746	$1,314,946	20
Idaho	1	5001500US1601	1601	C2	115	$122,042	$350,179	4
Idaho	2	5001500US1602	1602	C2	115	$385,511	$1,667,017	17
Illinois	1	5001500US1701	1701	C2	115	NA	NA	0
Illinois	2	5001500US1702	1702	C2	115	NA	NA	0
Illinois	3	5001500US1703	1703	C2	115	NA	NA	0
Illinois	4	5001500US1704	1704	C2	115	NA	NA	0
Illinois	5	5001500US1705	1705	C2	115	NA	NA	0
Illinois	6	5001500US1706	1706	C2	115	NA	NA	0
Illinois	7	5001500US1707	1707	C2	115	NA	NA	0
Illinois	8	5001500US1708	1708	C2	115	NA	NA	0
Illinois	9	5001500US1709	1709	C2	115	NA	NA	0

Illinois	10	5001500US1710	1710	C2	115	NA	NA	0
Illinois	11	5001500US1711	1711	C2	115	NA	NA	0
Illinois	12	5001500US1712	1712	C2	115	$87,290	$157,594	3
Illinois	13	5001500US1713	1713	C2	115	NA	NA	0
Illinois	14	5001500US1714	1714	C2	115	NA	NA	0
Illinois	15	5001500US1715	1715	C2	115	$73,585	$79,902	2
Illinois	16	5001500US1716	1716	C2	115	$15,498	$0	1
Illinois	17	5001500US1717	1717	C2	115	$500	$93,806	1
Illinois	18	5001500US1718	1718	C2	115	$40,000	$226,176	3
Indiana	1	5001500US1801	1801	C2	115	NA	NA	0
Indiana	2	5001500US1802	1802	C2	115	$144,143	$1,635,900	7
Indiana	3	5001500US1803	1803	C2	115	$60,000	$730,711	3
Indiana	4	5001500US1804	1804	C2	115	NA	NA	0
Indiana	5	5001500US1805	1805	C2	115	NA	NA	0
Indiana	6	5001500US1806	1806	C2	115	$20,550	$498,240	1
Indiana	7	5001500US1807	1807	C2	115	NA	NA	0
Indiana	8	5001500US1808	1808	C2	115	NA	NA	0
Indiana	9	5001500US1809	1809	C2	115	$49,340	$309,590	2
Iowa	1	5001500US1901	1901	C2	115	$582,324	$2,878,608	16
Iowa	2	5001500US1902	1902	C2	115	NA	NA	0
Iowa	3	5001500US1903	1903	C2	115	$194,974	$2,208,924	3
Iowa	4	5001500US1904	1904	C2	115	$188,576	$335,745	6
Kansas	1	5001500US2001	2001	C2	115	$296,730	$690,929	13
Kansas	2	5001500US2002	2002	C2	115	$11,000	$16,500	1
Kansas	3	5001500US2003	2003	C2	115	NA	NA	0
Kansas	4	5001500US2004	2004	C2	115	$1,000	$1,410,000	1
Kentucky	1	5001500US2101	2101	C2	115	$109,263	$72,042	3
Kentucky	2	5001500US2102	2102	C2	115	$114,425	$273,239	2
Kentucky	3	5001500US2103	2103	C2	115	NA	NA	0

Kentucky	4	5001500US2104	2104	C2	115	$182,943	$60,429	10
Kentucky	5	5001500US2105	2105	C2	115	$104,000	$126,000	1
Kentucky	6	5001500US2106	2106	C2	115	$10,000	$31,000	1
Louisiana	1	5001500US2201	2201	C2	115	NA	NA	0
Louisiana	2	5001500US2202	2202	C2	115	NA	NA	0
Louisiana	3	5001500US2203	2203	C2	115	NA	NA	0
Louisiana	4	5001500US2204	2204	C2	115	NA	NA	0
Louisiana	5	5001500US2205	2205	C2	115	NA	NA	0
Louisiana	6	5001500US2206	2206	C2	115	NA	NA	0
Maine	1	5001500US2301	2301	C2	115	$38,587	$1,403,210	2
Maine	2	5001500US2302	2302	C2	115	$382,142	$982,635	11
Maryland	1	5001500US2401	2401	C2	115	NA	NA	0
Maryland	2	5001500US2402	2402	C2	115	NA	NA	0
Maryland	3	5001500US2403	2403	C2	115	NA	NA	0
Maryland	4	5001500US2404	2404	C2	115	NA	NA	0
Maryland	5	5001500US2405	2405	C2	115	NA	NA	0
Maryland	6	5001500US2406	2406	C2	115	$75,000	$139,700	1
Maryland	7	5001500US2407	2407	C2	115	NA	NA	0
Maryland	8	5001500US2408	2408	C2	115	NA	NA	0
Massachusetts	1	5001500US2501	2501	C2	115	$150,000	$1,099,146	3
Massachusetts	2	5001500US2502	2502	C2	115	NA	NA	0
Massachusetts	3	5001500US2503	2503	C2	115	NA	NA	0
Massachusetts	4	5001500US2504	2504	C2	115	NA	NA	0
Massachusetts	5	5001500US2505	2505	C2	115	NA	NA	0
Massachusetts	6	5001500US2506	2506	C2	115	$19,172	$32,538	1
Massachusetts	7	5001500US2507	2507	C2	115	NA	NA	0
Massachusetts	8	5001500US2508	2508	C2	115	$50,000	$451,308	1
Massachusetts	9	5001500US2509	2509	C2	115	NA	NA	0
Michigan	1	5001500US2601	2601	C2	115	$135,960	$16,247,202	12

Michigan	2	5001500US2602	2602	C2	115	NA	NA	0
Michigan	3	5001500US2603	2603	C2	115	$10	$1,184,196	3
Michigan	4	5001500US2604	2604	C2	115	$289,909	$194,444	4
Michigan	5	5001500US2605	2605	C2	115	<Null>	$725,000	1
Michigan	6	5001500US2606	2606	C2	115	$139,300	$7,340,970	4
Michigan	7	5001500US2607	2607	C2	115	<Null>	$208,393	1
Michigan	8	5001500US2608	2608	C2	115	$214,590	$331,205	9
Michigan	9	5001500US2609	2609	C2	115	NA	NA	0
Michigan	10	5001500US2610	2610	C2	115	NA	NA	0
Michigan	11	5001500US2611	2611	C2	115	NA	NA	0
Michigan	12	5001500US2612	2612	C2	115	$37,143	$5,000	1
Michigan	13	5001500US2613	2613	C2	115	NA	NA	0
Michigan	14	5001500US2614	2614	C2	115	NA	NA	0
Minnesota	1	5001500US2701	2701	C2	115	$199,343	$1,324,020	12
Minnesota	2	5001500US2702	2702	C2	115	$96,684	$279,119	4
Minnesota	3	5001500US2703	2703	C2	115	NA	NA	0
Minnesota	4	5001500US2704	2704	C2	115	$161,516	$442,000	4
Minnesota	5	5001500US2705	2705	C2	115	$17,600	$34,500	1
Minnesota	6	5001500US2706	2706	C2	115	NA	NA	0
Minnesota	7	5001500US2707	2707	C2	115	$88,000	$88,000	2
Minnesota	8	5001500US2708	2708	C2	115	$53,571	$1,067,244	3
Mississippi	1	5001500US2801	2801	C2	115	$76,834	$7,000	1
Mississippi	2	5001500US2802	2802	C2	115	$69,225	$394,299	2
Mississippi	3	5001500US2803	2803	C2	115	$221,428	$91,000	2
Mississippi	4	5001500US2804	2804	C2	115	$25,575	$0	1
Missouri	1	5001500US2901	2901	C2	115	NA	NA	0
Missouri	2	5001500US2902	2902	C2	115	NA	NA	0
Missouri	3	5001500US2903	2903	C2	115	$77,878	$278,000	2
Missouri	4	5001500US2904	2904	C2	115	$28,278	$19,350	3

Missouri	5	5001500US2905	2905	C2	115	$16,500	$370,000	1
Missouri	6	5001500US2906	2906	C2	115	$80,000	$223,620	5
Missouri	7	5001500US2907	2907	C2	115	$107,143	$80,000	1
Missouri	8	5001500US2908	2908	C2	115	$50,000	$100,000	1
Montana	0	5001500US3000	3000	C1	115	$799,612	$5,096,867	28
Nebraska	1	5001500US3101	3101	C2	115	$53,000	$15,000	1
Nebraska	2	5001500US3102	3102	C2	115	NA	NA	0
Nebraska	3	5001500US3103	3103	C2	115	$0	$0	1
Nevada	1	5001500US3201	3201	C2	115	NA	NA	0
Nevada	2	5001500US3202	3202	C2	115	$295,000	$218,688	9
Nevada	3	5001500US3203	3203	C2	115	NA	NA	0
Nevada	4	5001500US3204	3204	C2	115	$365,685	$794,277	10
New Hampshire	1	5001500US3301	3301	C2	115	$85,999	$390,537	2
New Hampshire	2	5001500US3302	3302	C2	115	$130,000	$652,280	3
New Jersey	1	5001500US3401	3401	C2	115	NA	NA	0
New Jersey	2	5001500US3402	3402	C2	115	NA	NA	0
New Jersey	3	5001500US3403	3403	C2	115	NA	NA	0
New Jersey	4	5001500US3404	3404	C2	115	NA	NA	0
New Jersey	5	5001500US3405	3405	C2	115	<Null>	<Null>	1
New Jersey	6	5001500US3406	3406	C2	115	NA	NA	0
New Jersey	7	5001500US3407	3407	C2	115	NA	NA	0
New Jersey	8	5001500US3408	3408	C2	115	NA	NA	0
New Jersey	9	5001500US3409	3409	C2	115	NA	NA	0
New Jersey	10	5001500US3410	3410	C2	115	NA	NA	0
New Jersey	11	5001500US3411	3411	C2	115	$7,143	$114,400	1
New Jersey	12	5001500US3412	3412	C2	115	NA	NA	0
New Mexico	1	5001500US3501	3501	C2	115	NA	NA	0
New Mexico	2	5001500US3502	3502	C2	115	$455,775	$911,476	11
New Mexico	3	5001500US3503	3503	C2	115	$314,100	$183,350	8

New York	1	5001500US3601	3601	C2	115	$57,405	$98,587	2
New York	2	5001500US3602	3602	C2	115	NA	NA	0
New York	3	5001500US3603	3603	C2	115	NA	NA	0
New York	4	5001500US3604	3604	C2	115	NA	NA	0
New York	5	5001500US3605	3605	C2	115	NA	NA	0
New York	6	5001500US3606	3606	C2	115	NA	NA	0
New York	7	5001500US3607	3607	C2	115	NA	NA	0
New York	8	5001500US3608	3608	C2	115	NA	NA	0
New York	9	5001500US3609	3609	C2	115	NA	NA	0
New York	10	5001500US3610	3610	C2	115	NA	NA	0
New York	11	5001500US3611	3611	C2	115	NA	NA	0
New York	12	5001500US3612	3612	C2	115	NA	NA	0
New York	13	5001500US3613	3613	C2	115	NA	NA	0
New York	14	5001500US3614	3614	C2	115	NA	NA	0
New York	15	5001500US3615	3615	C2	115	NA	NA	0
New York	16	5001500US3616	3616	C2	115	NA	NA	0
New York	17	5001500US3617	3617	C2	115	NA	NA	0
New York	18	5001500US3618	3618	C2	115	NA	NA	0
New York	19	5001500US3619	3619	C2	115	NA	NA	0
New York	20	5001500US3620	3620	C2	115	NA	NA	0
New York	21	5001500US3621	3621	C2	115	$50,000	$279,067	2
New York	22	5001500US3622	3622	C2	115	NA	NA	0
New York	23	5001500US3623	3623	C2	115	$264,962	$939,714	5
New York	24	5001500US3624	3624	C2	115	$106,509	$66,745	1
New York	25	5001500US3625	3625	C2	115	NA	NA	0
New York	26	5001500US3626	3626	C2	115	NA	NA	0
New York	27	5001500US3627	3627	C2	115	$142,037	$40,948	2
North Carolina	1	5001500US3701	3701	C2	115	NA	NA	0
North Carolina	2	5001500US3702	3702	C2	115	NA	NA	0

North Carolina	3	5001500US3703	3703	C2	115	$83,605	$78,681	3
North Carolina	4	5001500US3704	3704	C2	115	NA	NA	0
North Carolina	5	5001500US3705	3705	C2	115	$0	$0	1
North Carolina	6	5001500US3706	3706	C2	115	NA	NA	0
North Carolina	7	5001500US3707	3707	C2	115	$30,000	$147,500	1
North Carolina	8	5001500US3708	3708	C2	115	NA	NA	0
North Carolina	9	5001500US3709	3709	C2	115	NA	NA	0
North Carolina	10	5001500US3710	3710	C2	115	NA	NA	0
North Carolina	11	5001500US3711	3711	C2	115	$184,500	$671,830	4
North Carolina	12	5001500US3712	3712	C2	115	NA	NA	0
North Carolina	13	5001500US3713	3713	C2	115	NA	NA	0
North Dakota	0	5001500US3800	3800	C1	115	$61,350	$1,563,500	4
Ohio	1	5001500US3901	3901	C2	115	$30,000	$273,685	1
Ohio	2	5001500US3902	3902	C2	115	$28,571	$848,000	5
Ohio	3	5001500US3903	3903	C2	115	NA	NA	0
Ohio	4	5001500US3904	3904	C2	115	NA	NA	0
Ohio	5	5001500US3905	3905	C2	115	NA	NA	0
Ohio	6	5001500US3906	3906	C2	115	$136,271	$624,740	7
Ohio	7	5001500US3907	3907	C2	115	NA	NA	0
Ohio	8	5001500US3908	3908	C2	115	$14,286	$25,000	2
Ohio	9	5001500US3909	3909	C2	115	NA	NA	0
Ohio	10	5001500US3910	3910	C2	115	NA	NA	0
Ohio	11	5001500US3911	3911	C2	115	NA	NA	0
Ohio	12	5001500US3912	3912	C2	115	$85,306	$41,554	2
Ohio	13	5001500US3913	3913	C2	115	NA	NA	0
Ohio	14	5001500US3914	3914	C2	115	$65,714	$46,000	1
Ohio	15	5001500US3915	3915	C2	115	$200	$0	1
Ohio	16	5001500US3916	3916	C2	115	NA	NA	0
Oklahoma	1	5001500US4001	4001	C2	115	NA	NA	0

Oklahoma	2	5001500US4002	4002	C2	115	NA	NA	0
Oklahoma	3	5001500US4003	4003	C2	115	NA	NA	0
Oklahoma	4	5001500US4004	4004	C2	115	NA	NA	0
Oklahoma	5	5001500US4005	4005	C2	115	NA	NA	0
Oregon	1	5001500US4101	4101	C2	115	$27,000	$401,850	1
Oregon	2	5001500US4102	4102	C2	115	$620,898	$3,226,612	16
Oregon	3	5001500US4103	4103	C2	115	$374,950	$562,700	9
Oregon	4	5001500US4104	4104	C2	115	$317,482	$2,101,691	11
Oregon	5	5001500US4105	4105	C2	115	$80,000	$549,610	3
Pennsylvania	1	5001500US4201	4201	C2	115	NA	NA	0
Pennsylvania	2	5001500US4202	4202	C2	115	NA	NA	0
Pennsylvania	3	5001500US4203	4203	C2	115	$62,857	$124,372	2
Pennsylvania	4	5001500US4204	4204	C2	115	NA	NA	0
Pennsylvania	5	5001500US4205	4205	C2	115	$143,324	$904,815	6
Pennsylvania	6	5001500US4206	4206	C2	115	NA	NA	0
Pennsylvania	7	5001500US4207	4207	C2	115	NA	NA	0
Pennsylvania	8	5001500US4208	4208	C2	115	NA	NA	0
Pennsylvania	9	5001500US4209	4209	C2	115	$10,000	$10,000	1
Pennsylvania	10	5001500US4210	4210	C2	115	$0	$0	1
Pennsylvania	11	5001500US4211	4211	C2	115	$9,059	$10,120	1
Pennsylvania	12	5001500US4212	4212	C2	115	NA	NA	0
Pennsylvania	13	5001500US4213	4213	C2	115	NA	NA	0
Pennsylvania	14	5001500US4214	4214	C2	115	NA	NA	0
Pennsylvania	15	5001500US4215	4215	C2	115	$0	$0	1
Pennsylvania	16	5001500US4216	4216	C2	115	NA	NA	0
Pennsylvania	17	5001500US4217	4217	C2	115	NA	NA	0
Pennsylvania	18	5001500US4218	4218	C2	115	NA	NA	0
Rhode Island	1	5001500US4401	4401	C2	115	NA	NA	0
Rhode Island	2	5001500US4402	4402	C2	115	$35,277	$1,137,650	1

South Carolina	1	5001500US4501	4501	C2	115	$183,428	$56,000	4
South Carolina	2	5001500US4502	4502	C2	115	NA	NA	0
South Carolina	3	5001500US4503	4503	C2	115	$17,331	$10,236	1
South Carolina	4	5001500US4504	4504	C2	115	NA	NA	0
South Carolina	5	5001500US4505	4505	C2	115	NA	NA	0
South Carolina	6	5001500US4506	4506	C2	115	$51,494	$26,517	2
South Carolina	7	5001500US4507	4507	C2	115	$121,429	$96,700	1
South Dakota	0	5001500US4600	4600	C1	115	$182,857	$113,000	3
Tennessee	1	5001500US4701	4701	C2	115	$53,625	$20,000	2
Tennessee	2	5001500US4702	4702	C2	115	NA	NA	0
Tennessee	3	5001500US4703	4703	C2	115	$39,000	$2,000	1
Tennessee	4	5001500US4704	4704	C2	115	$52,782	$16,000	1
Tennessee	5	5001500US4705	4705	C2	115	$102,571	$74,840	1
Tennessee	6	5001500US4706	4706	C2	115	NA	NA	0
Tennessee	7	5001500US4707	4707	C2	115	$413,992	$802,944	4
Tennessee	8	5001500US4708	4708	C2	115	NA	NA	0
Tennessee	9	5001500US4709	4709	C2	115	NA	NA	0
Texas	1	5001500US4801	4801	C2	115	NA	NA	0
Texas	2	5001500US4802	4802	C2	115	NA	NA	0
Texas	3	5001500US4803	4803	C2	115	NA	NA	0
Texas	4	5001500US4804	4804	C2	115	$40,000	$0	1
Texas	5	5001500US4805	4805	C2	115	$8,000	$29,913	2
Texas	6	5001500US4806	4806	C2	115	NA	NA	0
Texas	7	5001500US4807	4807	C2	115	NA	NA	0
Texas	8	5001500US4808	4808	C2	115	$0	$0	1
Texas	9	5001500US4809	4809	C2	115	NA	NA	0
Texas	10	5001500US4810	4810	C2	115	$20,000	$124,500	1
Texas	11	5001500US4811	4811	C2	115	$107,142	$75,000	1
Texas	12	5001500US4812	4812	C2	115	NA	NA	0

Texas	13	5001500US4813	4813	C2	115	NA	NA	0
Texas	14	5001500US4814	4814	C2	115	$60,000	$60,081	1
Texas	15	5001500US4815	4815	C2	115	NA	NA	0
Texas	16	5001500US4816	4816	C2	115	NA	NA	0
Texas	17	5001500US4817	4817	C2	115	NA	NA	0
Texas	18	5001500US4818	4818	C2	115	NA	NA	0
Texas	19	5001500US4819	4819	C2	115	NA	NA	0
Texas	20	5001500US4820	4820	C2	115	NA	NA	0
Texas	21	5001500US4821	4821	C2	115	$75,000	$254,350	1
Texas	22	5001500US4822	4822	C2	115	NA	NA	0
Texas	23	5001500US4823	4823	C2	115	$53,000	$57,000	1
Texas	24	5001500US4824	4824	C2	115	NA	NA	0
Texas	25	5001500US4825	4825	C2	115	NA	NA	0
Texas	26	5001500US4826	4826	C2	115	NA	NA	0
Texas	27	5001500US4827	4827	C2	115	NA	NA	0
Texas	28	5001500US4828	4828	C2	115	NA	NA	0
Texas	29	5001500US4829	4829	C2	115	NA	NA	0
Texas	30	5001500US4830	4830	C2	115	NA	NA	0
Texas	31	5001500US4831	4831	C2	115	NA	NA	0
Texas	32	5001500US4832	4832	C2	115	NA	NA	0
Texas	33	5001500US4833	4833	C2	115	NA	NA	0
Texas	34	5001500US4834	4834	C2	115	NA	NA	0
Texas	35	5001500US4835	4835	C2	115	NA	NA	0
Texas	36	5001500US4836	4836	C2	115	$50,000	$141,500	3
Utah	1	5001500US4901	4901	C2	115	$428,046	$848,097	10
Utah	2	5001500US4902	4902	C2	115	$34,000	$1,106,900	2
Utah	3	5001500US4903	4903	C2	115	$41,000	$1,470,061	1
Utah	4	5001500US4904	4904	C2	115	NA	NA	0
Vermont	0	5001500US5000	5000	C1	115	$84,200	$430,250	3

Virginia	1	5001500US5101	5101	C2	115	NA	NA	0
Virginia	2	5001500US5102	5102	C2	115	NA	NA	0
Virginia	3	5001500US5103	5103	C2	115	NA	NA	0
Virginia	4	5001500US5104	5104	C2	115	$30,240	$129,560	1
Virginia	5	5001500US5105	5105	C2	115	$57,857	$51,000	2
Virginia	6	5001500US5106	5106	C2	115	$72,000	$248,070	2
Virginia	7	5001500US5107	5107	C2	115	NA	NA	0
Virginia	8	5001500US5108	5108	C2	115	$185,000	$328,764	4
Virginia	9	5001500US5109	5109	C2	115	$199,536	$267,000	4
Virginia	10	5001500US5110	5110	C2	115	NA	NA	0
Virginia	11	5001500US5111	5111	C2	115	NA	NA	0
Washington	1	5001500US5301	5301	C2	115	$0	$12,250	1
Washington	2	5001500US5302	5302	C2	115	NA	NA	0
Washington	3	5001500US5303	5303	C2	115	$623,784	$1,058,636	3
Washington	4	5001500US5304	5304	C2	115	$165,558	$571,715	4
Washington	5	5001500US5305	5305	C2	115	$92,000	$547,609	2
Washington	6	5001500US5306	5306	C2	115	$142,500	$338,500	5
Washington	7	5001500US5307	5307	C2	115	NA	NA	0
Washington	8	5001500US5308	5308	C2	115	$155,915	$3,627,000	3
Washington	9	5001500US5309	5309	C2	115	NA	NA	0
Washington	10	5001500US5310	5310	C2	115	$24,125	$172,190	1
West Virginia	1	5001500US5401	5401	C2	115	$178,643	$1,576,562	8
West Virginia	2	5001500US5402	5402	C2	115	$148,981	$1,258,060	4
West Virginia	3	5001500US5403	5403	C2	115	$41,000	$280,000	1
Wisconsin	1	5001500US5501	5501	C2	115	NA	NA	0
Wisconsin	2	5001500US5502	5502	C2	115	$519,693	$1,055,529	20
Wisconsin	3	5001500US5503	5503	C2	115	$583,675	$1,915,269	33
Wisconsin	4	5001500US5504	5504	C2	115	NA	NA	0
Wisconsin	5	5001500US5505	5505	C2	115	NA	NA	0

Wisconsin	6	5001500US5506	5506	C2	115	$106,194	$335,943	3
Wisconsin	7	5001500US5507	5507	C2	115	$213,776	$772,402	9
Wisconsin	8	5001500US5508	5508	C2	115	$69,700	$114,500	2
Wyoming	0	5001500US5600	5600	C1	115	$224,777	$1,378,755	7
American Samoa	98	5001500US6098	6098	C4	115	NA	NA	0
Guam	98	5001500US6698	6698	C4	115	NA	NA	0
Commonwealth of the Northern Mariana Islands	98	5001500US6998	6998	C4	115	NA	NA	0
Puerto Rico	98	5001500US7298	7298	C3	115	NA	NA	0
U.S. Virgin Islands	98	5001500US7898	7898	C4	115	NA	NA	0

Waters to Watch Project Guidance
March 2019 (Revised)

Guidance for Selecting National Fish Habitat Partnership Waters to Watch Projects

Intro:
2019 Marks the 13th year the National Fish Habitat Partnership has featured FHP projects as part of the Waters to Watch campaign.

Suggestions for Waters to Watch:
All Board-recognized NFHP Fish Habitat Partnerships (FHPs) will have an opportunity to suggest a project for selection for the 2019 Waters to Watch campaign. Due to the number of Board-recognized FHPs, increased competition is expected for the submission process. Therefore, only one project per FHP (submissions dependent) can be selected for a fair process. Not All FHPs will have a project selected for the Waters to Watch Campaign. Proposed Waters to Watch submissions should be ***reflective of projects completed over the past 24 Months or projects with dedicated funding allocated for the current year with the intention of the project being initiated during the current calendar year.***

Criteria for Selection:
The criteria listed below was approved by the National Fish Habitat Board in March 2012 and revised in 2018 for consideration for a project to be a Water to Watch. Project selection will be based on these criteria although not all categories may apply to any specific project. Please be cognizant of these criteria when submitting a project.

- Size and scope of project. Larger scale projects in scope are preferred for selection; Projects that offer greatest impact to habitat improvement are preferred.
- Media Friendly
- Project involves charismatic leaders and dedicated partners
- Strong community support/involvement
- Volunteer involvement

- Youth participation/education involved in project

- Potential for Success— Project needs to show data of habitat loss or need for conservation (numbers, inventory, scientific recommendations, community benefit and increased angler participation) *Projects concerning protection of intact systems will receive strong consideration.*

- Funding opportunities—areas of the country where the probability of strong partnerships and multiple funding opportunities may be more likely.

- Project economic benefit needs to be calculated through FHP economic tool (created in 2012 – Gentner) http://gentnergroup.com/NFHAP/ (Username: NFHAP Password: economic)

- Projects done within the spirit and principles of NFHP.

Project Reporting and Updates:
Regular reporting and updates are important for future success of the Waters to Watch Campaign. Projects for the Waters to Watch will be selected with the understanding that brief reports will be submitted in bi-annually of the given project year upon request by the Program Manager, Ryan Roberts rroberts@fishwildlife.org. A modifiable one-sheet form report will be distributed to each of the Fish Habitat Partnerships that have projects selected for 2019.

Fish Habitat Partnerships that have projects selected will be required to submit annual updates every year following the project being named to the list, with the purpose of updating progress and improvement over time and showing that the selected project has made an impact on improving fish habitat. Please place an emphasis on gathering quality photos for reporting purposes, which will help to tell a good story.

These reports will be critical for accountability for the selected projects and will be used for the following:

- Potential generation of Media Attention (articles, news stories).

- Project Site Visits for partners, members of state and federal agencies, members of state and local governments and members of Congress and staff.

- Crafting of one-sheet (PDF) documents for each of the projects to document progress.

- General updates – keeping track of project accomplishments and of partner involvement, volunteer opportunities, or educational initiatives.

There will be coordination with the Partnerships Committee to make this process as transparent as possible and for the need of any future changes to these criteria.

Since 2007, the Waters to Watch campaign has featured over 100 model aquatic conservation projects that have received media recognition across the country, raising public awareness of the activities of the Fish Habitat Partnerships. Through implementation of the National Fish Habitat Action Plan these projects show over time, that science-based conservation actions and monitoring truly do make a difference nationally to benefit fish habitats.

The 2019 Waters to Watch marketing plan and timeline is as follows:

- **Deadline for Submissions from FHPs (May 31)**
- **Conference call of Partnerships Committee/Communications Committee (Week of June 3rd)**
- **Project list sent to Board for Approval (June 10)**
- **2019 Waters to Watch Announcement (week of June 17)**

Marketing Plan outline:
The marketing of the 2019 Waters to Watch, will be coordinated with the FHPs of selected projects and will include:

- National Press Release, National distribution plan
- Targeted Social Media promotions (Facebook, Twitter)
- Email Newsletter
- Coordination with PR contacts within state/federal agencies and conservation organizations

The Congressional Sportsmen's Foundation invites you to a Breakfast Briefing: National Fish Habitat Conservation Through Partnerships

WHEN	Wednesday, March 13, 2019 8:00 a.m. – 9:00 a.m.
WHERE	2168 Rayburn House Office Building (Gold Room) Washington, DC 20003
WHY	In 2001, the Sport Fishing and Boating Partnership Council (Council) explored the notion of developing a public-private partnership effort for fish and aquatic resources that would be similar to the North American Waterfowl Management Plan which helped direct the formation of joint ventures to advance the conservation of waterfowl and their habitats, most recently moving to an all-bird conservation approach. This served as a successful model for grassroots-based, public-private fish habitat conservation partnerships. The National Fish Habitat Partnership (NFHP) has grown to 20 strategic partnerships between federal, state, and local agencies, conservation and sportsmen's organizations, private landowners, and the business sector. The Partnership is guided by the National Fish Habitat Action Plan, which seeks to "protect, restore, and enhance the nation's fish and aquatic communities through partnerships and foster fish habitat conservation and improve the quality of life for the American people." Although the program has been administered through the U.S. Fish and Wildlife Service (Service) for more than a decade under broad Service authorities, it has never been specifically authorized by Congress. Congressional authorization of NFHP is critically important to clarify the roles of the partnerships, the NFHP Board, and the U.S. Fish and Wildlife Service, and to secure an avenue of consistent funding for on-the-ground fish and aquatic habitat conservation in the states. This voluntary, on-the-ground, state-driven and locally based successful program provides a platform for fish and aquatic managers to restore and enhance fish habitat and populations in concert with local communities across the entire country. Providing Congressional oversight over the financial resources will also help ensure long term, dedicated funding is provided to the Partnership.
SPONSORS	AFS · American Sportfishing Association · Association of Fish & Wildlife Agencies · Theodore Roosevelt Conservation Partnership · Trout Unlimited
RSVP	With questions or to RSVP, please contact Sarah Rusenko srusenko@congressionalsportsmen.org or call (202) 543-6850 x27. THIS IS A WIDELY-ATTENDED EVENT. THIS INVITATION IS NON-TRANSFERABLE.
	All proceeds to benefit the Congressional Sportsmen's Foundation, 110 North Carolina Avenue, SE, Washington, DC 20003 www.congressionalsportsmens.org (202) 543-6850. The Congressional Sportsmen's Foundation is a non-profit 501(c)(3) organization. Federal ID # 52-1686163.

Title: Legislation Working Group Update

Desired outcomes:

- Board awareness of Working Group progress since the October 2018 workshop and meeting as well as future plans.

Background:

At the October 2018 NFHP Board meeting and FHP workshop, the Legislation Working Group was formed to gain a more in-depth understanding of the drafted legislation and to assist with NFHP planning and preparation if the legislation were to pass. The members of the working group are:

- Bryan Moore
- Alison Bowden
- Bobby Wilson
- Ed Schriever
- Christy Plumer
- Mike Leonard
- Peter Aarrestad
- Gary Whelan
- Ryan Roberts

The working group met on November 29, January 10, and most recently on February 20. The working group agreed to develop a survey for FHPs to identify specifically the level and type of support offered by the US Fish and Wildlife Service. The results of this survey will be used to understand the potential impacts of the changes proposed by the legislation and to better position the NFHP Board and FHPs to adapt to those changes if the legislation were enacted.

The group has discussed specific sections of the legislation pertaining to NFHP Board membership, funding allocation, and reporting requirements outlined in the legislation and identified areas that may require further Board discussion.

Finally, with input from the Legislation Committee, the Working Group aims to stay up-to-date on potential paths forward for the legislation in the 116th Congress.

Staff Recommendation:

At the March Board meeting, the Working Group would like to discuss the following with the Board:

- **Scientific and technical assistance funding** – including the US Forest Service in the list of agencies provided funds to support FHPs. What do those agencies (NOAA, EPA, USGS, USFS) see as the types of FHP activities they would support if provided with $400k?
- Enhance Board's understanding of the legislation's **proposed process of funding** FHP projects
- **Reporting** requirements

Film Submission Guidance

The **National Fish Habitat Partnership** and the **Fish Habitat Section** of the American Fisheries Society invite you to submit a *film* to be showcased as part of the ***2019 NFHP/AFS/TWS Reno Film Festival: Reno-vating Habitat for Fish and Wildlife: A Film Festival Highlighting Collaborative Habitat Conservation and Its Benefits.*** This film festival is being proposed to organizers of the **American Fisheries Society and The Wildlife Society Joint Annual Conference** being held in Reno, Nevada September 29-October 3rd.

To accommodate organizational needs for the conference film submission information forms are needed by April 1, 2019 to secure a tentative spot in the festival.

To be considered, film submissions must:

- Focus in on an aspect of fish or wildlife habitat conservation; priority will be given to projects that highlight collaborative efforts to protect, restore and enhance freshwater, coastal and terrestrial habitats that support the needs of fish and wildlife. Of great interest are films that showcase how landowners, anglers, hunters, volunteers, local communities, tribes, federal and state agencies, scientists and others are working together across the continent to solve habitat conservation challenges and successfully conserve America's treasured species. Film categories will include fish and wildlife conservation projects, target on-the-ground habitat restoration examples, and include other films that capture the dynamic landscapes and unique habitats that are home to our fish and wildlife.
- Be less than 30 minutes in length - preference will be given to shorter films (ideally 10 minutes or less) to allow for more films to be included in the festival.
- Be downloadable to conference organizers via vimeo.com.
- Participants are limited to making one film submission to provide an opportunity for more individuals to present their work.

Deadlines:

- Completed submission form (below) is due on **April 1, 2019**
- Final cut film submissions with Vimeo weblinks are due to festival organizers no later than **June 1, 2019**

If you have any questions please contact Deborah Hart, Southeast Alaska Fish Habitat Partnership Coordinator, at coordinator@sealakafishhabitat.org /907-723-0258. (And a big thanks to Tom Lang from the Fish Habitat Section of the American Fisheries Society and other NFHP partners for their help as festival organizers, specifically Therese Thompson from the Western Native Trout Initiative, Stephanie Vail-Muse from Desert Fish Habitat Partnership, and Alicia Marrs from the California Fish Passage Forum who will lead festival efforts during the conference!)

It is anticipated that the film festival will take place during the 2019 AFS/TWS Joint Conference over a two-day period. Films will be shown multiple times during the festival time to allow meeting attendees to drop in to see films at their convenience. Film submitters are encouraged to attend the conference and film festival but are not required to be present. Details on the conference can be found at https://afstws2019.org/.

Film Submission Form: (send no later than April 1, 2019 to: Deborah Hart at coordinator@sealaskafishhabitat.org)

Film Contact First and Last Name:

Film Contact Organization:

Film Contact Email:

Film Contact Web address (if applicable):

Film Name:

Film Description (200 words or less):

Film length:

Permanent URL for film to be shared in the festival program (if applicable):

Upload film to Vimeo –If your film is ready you can upload it to Vimeo right away (this is preferred!); a final cut needs to be submitted to festival organizers no later than **June 1, 2019**. If you don't already have an account on www.vimeo.com, begin by signing up (it's free!). Using this platform's uploading service, upload your finished film and share the link in your submission form (above). The link should look something like this: www.vimeo.com/82813271 . You must change the privacy settings so that we are able to download your submission so we can prepare a looping DVD to be used at the festival without depending on internet. To do this, scroll below your downloaded video and description and click the 'settings' button. Select the 'privacy' tab and scroll to where it says 'What Can People Do With This Video' and select 'Download The Video'. By following these steps, Vimeo will compress your video and allow us to easily watch and download your film for the festival. Once your film has been downloaded we will let you know so you can change the privacy setting on Vimeo or delete it upon your preference. Please send an email to Deborah Hart at coordinator@sealaskafishhabitat.org with your Vimeo link details.

Title: Update on NOAA Fisheries Recreational Fisheries Initiative

Desired outcome(s):

- Update the Board on recent activities at NOAA Fisheries focused on recreational fisheries and explore any potential areas for collaboration with NFHP.
- Discuss relationships with recreational fishing community and identify potential opportunities to conserve habitat that benefit fish species important to marine recreational fishermen.
- Get feedback from the Board on how to best use NOAA Fisheries and other partners to collaborate with the recreational community to enhance fish habitat.

Background: In March of 2018, NOAA Fisheries and the Atlantic States Marine Fisheries Commission hosted the third National Saltwater Recreational Fisheries Summit, in Arlington, VA. The 2018 Summit focused on improving opportunity and stability in recreational fisheries by exploring four main 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. Summit participants, including agency staff, fishery management councils, interstate marine fisheries commissions, recreational anglers and other stakeholders, identified additional cross-cutting themes including building trust, improving data, enhancing collaboration, testing innovative approaches with pilot projects, and a variety of conservation actions including habitat restoration and conservation. NOAA Fisheries continues to move forward on Summit outcomes and solutions with our partners.

This presentation will highlight outcomes of the 2018 Recreational Fisheries Summit, recreational fishing engagement plans, 2019 Memorandum of Agreement, and our habitat focus moving forward.

We recommend continued dialogue and cooperation with NFHP to advance the National Recreational Fisheries Policy and complete habitat-focused projects benefiting the resource and recreational anglers.

JANUARY 2019

Economic Contributions of Recreational Fishing

Within U.S. States and Congressional Districts

Produced for the:

American Sportfishing Association

SOUTHWICK ASSOCIATES

PO Box 6435 ■ Fernandina Beach, FL 32035 ■ Office (904) 277-9765

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Introduction

Recreational angling constitutes one of the largest components of outdoor recreation in the U.S., having generated over $49 billion in retail sales in 2016 (USFWS, 2016), and contributed $125 billion to the national economy (ASA, 2018). At the state level, anglers spent $41.8 billion within the states where they live and $7.9 billion beyond the borders of their home state. The spending by residents supported 802 thousand jobs worth $38 billion in wages and income. These economic effects are also important at smaller scales. In this study we estimate the contributions that anglers make to their respective state economies based on their residence in each of the 435 U.S. congressional districts. Results are presented at the state level (Table 1) as well as the congressional district level (Table 2).

Interpretation

These results report the economic contributions to the respective state economies from anglers who live within each congressional district. They do not represent the economic contributions that occur within any given district as a result of angler spending. For example, the presence or absence of a large manufacturing firm within a district is not reflected in the equipment spending by a district's residents. Such firms serve a market area well beyond the boundaries of any single district. Likewise, the presence or absence of a fishing destination within a congressional district does not determine the trip-related spending reported for a district. The trip expenditures made by anglers who live in one congressional district and fish in a different district within the state are counted as statewide spending. The results, therefore, show the total statewide spending by residents of each district as determined by the number of anglers who live in each district.

Data & Methods

Economic contributions of recreational angling in 2011 for all 50 states were estimated as part of a previous study (ASA, 2013), based on data collected as part of the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation – FHWAR (USFWS, 2011). This report utilizes that information, the more recent economic estimates across nine U.S. Census Divisions (USFWS, 2016; ASA 2018) and historical numbers of license anglers in each state (USFWS, 2018) to produce new state-level estimates.

We also present a further breakdown of the state-level data to estimate the statewide contributions made by anglers who are residents of each congressional district[1].

State-level Estimates

The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) provides no participation or spending estimates for the fifty states, but it does provide numbers of anglers and estimates of spending in each of the nine U.S. Census Divisions in 2016. The U.S. Fish and Wildlife Service also publishes annually the number of licensed anglers in each of the fifty states as certified by the respective state fish and game agencies. The state-level numbers of anglers in this report are the result of extrapolating the 2011 state-level estimates to 2016 based on state-specific growth rates from 2011 to 2016 and controlling for the 2016 Census Division estimates. The specific step-wise approach is outlined below.

- The growth rate in USFWS certified numbers of anglers in each state from 2011 to 2016 was used to extrapolate the 2011 FHWAR numbers to 2016. The same growth rate was applied to the 2011 FHWAR estimates of total spending in each state. This step allows for variable growth rates across the individual states.
- The 2016 extrapolated numbers were summed across the states in each of the nine Census Divisions. The extrapolated totals for each Census Division were compared to the 2016 FHWAR Census Division estimates. Proportional adjustments were then made to the extrapolated state estimates to ensure that the sum of 2016 state-level extrapolated estimates in each Census Division match the Census Division estimates in the 2016 FHWAR. The same procedure was used to estimate total spending by anglers in each state.
- Neither the USFWS certified numbers of licensed anglers nor the FHWAR estimates include anglers below the age of sixteen. An additional adjustment was then made to the extrapolated numbers to include youth anglers below the age of sixteen. The adjustment assumes the ratio of youth anglers to anglers age sixteen and older has not changed since 2011.
- The numbers of resident anglers in each state was estimated by applying the ratio of resident to non-resident anglers in each state in the 2011 FHWAR to the extrapolated and adjusted 2016 state-level numbers of anglers. This step provides state-level variation in participation of non-resident anglers but assumes that the ratio of resident to non-resident anglers has not changed since 2011.
- The spending profile for residents in each state in the 2011 FHWAR was applied to the 2016 estimated total spending by residents to apportion total spending to individual spending categories (e.g., food, lodging, rods/reels, boats). The 2016 FHWAR provides detailed spending breakouts for each Census Division, however the use of regional profiles would likely result in

[1] Seven states have only one congressional district. For these states, an additional set of results that includes both resident and non-resident activity are presented separately in Appendix A.

improper spending allocations for some individual states (e.g., ice fishing equipment in temperate states).

- Economic contributions from spending by resident anglers were estimated with state-specific IMPLAN economic models.

Congressional District-Level Estimates

The estimates of anglers by congressional district are based, in part, on a dataset obtained from ESRI. This company uses detailed geographic, socioeconomic and lifestyle information in combination with third party sources of data to estimate numbers of adult freshwater and saltwater anglers in each congressional district. ESRI estimates of anglers by zip-code in 2018 were used in conjunction with a Zip-to-District crosswalk retrieved from the U.S. Department of Housing and Urban Development to estimate the share of state-level anglers living in each current congressional district. These percentages were then used to apportion the state-level estimates to corresponding districts[2].

Note that this approach assumes the relative distribution of anglers across the districts has not changed appreciably between 2016 (the year estimated in this report) and 2018 (the year of ESRI data). This apportionment also relies on a simplifying assumption about geographic variability: the average spending per angler is the same for all districts in a given state.

[2] USFWS reports separately the number of sportspersons aged 6 to 15 for each state. Those figures were used to include children in the estimates of total anglers residing in each congressional district.

Results

Table 1 presents state-level results. For each state, the table shows the number of total anglers, including children, that reside in the state. The economic contributions shown for each state are based on the total fishing-related spending within the state by both the anglers who live there and the out-of-state anglers who visit.

Table 2 presents the results for each congressional district. For each district, the table shows the number of anglers, including children, that reside in the district. The economic contributions shown for each district are based on total fishing-related spending that occurs anywhere within the state by the anglers that live in the district.

Table 1. Economic Contributions of Recreational Fishing by State Residents & Non-residents, 2016

State	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Alabama	1,025,658	$ 317,164,178	$ 477,110,038	$ 128,324,676	3,435	$ 29,554,348	$ 23,983,276
Alaska	462,024	$ 942,977,816	$1,462,626,460	$ 470,961,645	12,689	$126,134,066	$ 67,872,991
Arizona	949,285	$1,240,420,927	$2,010,255,512	$ 579,497,516	14,155	$138,150,517	$122,550,472
Arkansas	721,751	$ 818,329,076	$1,237,732,249	$ 338,424,536	9,900	$ 82,406,891	$ 75,342,260
California	2,005,067	$2,887,609,366	$5,235,114,121	$1,830,191,641	37,000	$443,218,641	$332,177,040
Colorado	1,125,337	$1,241,550,015	$2,127,553,419	$ 648,093,872	13,526	$156,894,891	$111,355,865
Connecticut	352,689	$ 383,140,616	$ 608,516,455	$ 207,731,346	4,725	$ 56,025,273	$ 53,973,763
Delaware	248,060	$ 90,127,996	$ 134,444,627	$ 38,702,404	987	$ 9,773,309	$ 6,158,215
Florida	4,143,120	$4,180,074,014	$6,849,123,246	$2,124,453,878	54,784	$533,357,885	$350,316,082
Georgia	1,698,179	$1,436,455,662	$2,342,128,676	$ 635,388,629	14,257	$150,518,364	$108,341,580
Hawaii	219,096	$ 471,180,263	$ 734,471,952	$ 198,487,617	5,064	$ 46,180,352	$ 50,130,482
Idaho	647,251	$ 756,984,476	$1,124,589,895	$ 318,901,766	8,403	$ 66,940,054	$ 54,095,719
Illinois	2,305,174	$ 957,705,470	$1,335,378,791	$ 439,243,471	9,209	$108,124,922	$ 82,230,343
Indiana	1,676,382	$ 706,886,629	$1,015,631,242	$ 294,835,234	8,049	$ 71,060,368	$ 56,742,324
Iowa	781,530	$ 364,000,567	$ 529,883,768	$ 159,847,131	3,716	$ 31,902,411	$ 27,230,752
Kansas	647,880	$ 253,363,672	$ 340,635,741	$ 103,321,853	2,562	$ 24,483,498	$ 21,362,599
Kentucky	985,972	$ 402,626,193	$ 571,627,130	$ 154,351,305	4,003	$ 35,297,158	$ 27,456,858
Louisiana	1,244,959	$1,991,633,883	$3,037,177,543	$ 919,230,383	23,161	$207,136,980	$172,422,387
Maine	264,324	$ 327,114,351	$ 512,214,463	$ 154,327,403	4,423	$ 34,895,794	$ 35,355,530
Maryland	744,236	$ 490,659,928	$ 767,388,039	$ 238,130,705	5,085	$ 57,862,163	$ 46,274,584
Massachusetts	583,619	$ 454,057,788	$ 789,095,663	$ 304,033,034	6,072	$ 69,900,274	$ 40,083,388
Michigan	2,716,156	$2,354,719,958	$3,680,469,527	$1,175,076,819	27,979	$279,578,597	$251,873,947
Minnesota	1,853,983	$2,562,484,302	$4,154,106,603	$1,250,710,589	26,794	$313,185,238	$271,206,272
Mississippi	959,765	$ 389,581,109	$ 559,380,576	$ 139,476,883	3,878	$ 32,077,620	$ 34,549,447
Missouri	1,423,530	$ 717,536,675	$1,214,129,157	$ 401,605,176	9,509	$ 87,167,556	$ 60,303,558

Table 1 (continued). Economic Contributions of Recreational Fishing by State Residents & Non-residents, 2016

State	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Montana	374,770	$ 493,757,291	$ 706,850,057	$ 206,976,357	6,414	$ 48,889,177	$ 29,482,571
Nebraska	368,964	$ 270,597,480	$ 425,434,486	$ 138,674,852	3,000	$ 30,485,795	$ 19,909,521
Nevada	192,173	$ 187,187,124	$ 282,709,256	$ 79,085,200	1,756	$ 20,268,774	$ 18,790,956
New Hampshire	220,565	$ 204,777,418	$ 327,299,438	$ 108,624,584	2,963	$ 24,953,893	$ 15,204,059
New Jersey	984,052	$ 833,489,787	$1,040,217,513	$ 360,710,355	7,456	$ 93,489,569	$ 76,298,790
New Mexico	399,462	$ 615,777,190	$ 923,709,184	$ 251,329,281	6,632	$ 60,179,740	$ 57,586,514
New York	2,204,951	$1,916,590,633	$3,005,291,066	$1,081,170,562	20,029	$249,057,491	$217,112,370
North Carolina	2,231,783	$1,358,873,793	$2,313,820,086	$ 715,239,100	19,540	$165,199,470	$110,757,569
North Dakota	138,216	$ 98,717,510	$ 151,969,275	$ 49,497,972	1,374	$ 11,469,313	$ 8,598,673
Ohio	2,550,065	$1,918,507,286	$2,092,075,498	$ 599,795,632	15,662	$145,757,274	$122,719,664
Oklahoma	1,377,763	$1,778,533,721	$2,212,312,917	$ 610,662,196	15,432	$148,216,301	$ 99,623,056
Oregon	574,739	$ 840,775,331	$1,427,439,653	$ 472,803,199	12,655	$107,194,858	$ 63,771,487
Pennsylvania	1,601,451	$ 416,896,359	$ 710,365,091	$ 253,168,663	6,358	$ 57,795,017	$ 37,051,761
Rhode Island	399,491	$ 326,207,529	$ 517,819,352	$ 180,329,801	5,087	$ 42,205,382	$ 37,148,323
South Carolina	963,440	$ 690,433,499	$1,059,146,734	$ 308,639,932	8,824	$ 74,147,126	$ 65,556,673
South Dakota	403,254	$ 410,676,536	$ 533,644,214	$ 136,901,865	3,685	$ 32,575,381	$ 22,890,132
Tennessee	1,861,889	$ 742,490,050	$1,187,704,342	$ 373,425,914	7,669	$ 85,360,244	$ 61,284,984
Texas	4,092,996	$4,134,919,635	$6,881,147,182	$2,165,209,942	46,593	$539,208,347	$416,980,551
Utah	578,264	$ 625,143,398	$1,086,531,997	$ 341,539,543	7,562	$ 77,093,405	$ 50,309,908
Vermont	158,628	$ 122,710,609	$ 172,174,778	$ 52,264,202	1,483	$ 12,108,476	$ 13,275,302
Virginia	990,904	$ 998,488,398	$1,296,074,740	$ 419,780,143	9,785	$ 99,811,691	$ 71,842,644
Washington	944,635	$1,504,031,794	$2,392,004,531	$ 699,853,648	15,207	$189,179,042	$171,619,916
West Virginia	468,630	$ 344,182,563	$ 500,047,369	$ 145,919,579	4,840	$ 33,276,137	$ 34,773,527
Wisconsin	2,068,469	$1,472,127,261	$1,867,284,677	$ 539,521,969	13,645	$128,450,559	$103,880,991
Wyoming	322,031	$ 594,446,353	$ 853,247,922	$ 221,966,430	7,689	$ 71,265,008	$117,197,468

Table 2. Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Alabama							
1 Bradley Byrne	113,078	$38,129,440	$56,770,961	$14,729,916	385	$3,414,728	$2,810,536
2 Martha Roby	111,822	$37,706,044	$56,140,567	$14,566,353	381	$3,376,810	$2,779,327
3 Mike Rogers	119,363	$40,248,577	$59,926,146	$15,548,567	406	$3,604,510	$2,966,738
4 Robert Aderholt	122,850	$41,424,372	$61,676,789	$16,002,793	418	$3,709,810	$3,053,406
5 Mo Brooks	112,843	$38,050,015	$56,652,706	$14,699,233	384	$3,407,615	$2,804,681
6 Gary Palmer	108,494	$36,583,644	$54,469,424	$14,132,754	369	$3,276,292	$2,696,594
7 Terri A. Sewell	88,132	$29,717,887	$44,246,992	$11,480,420	300	$2,661,421	$2,190,517
Alaska							
0 Don Young	202,022	$473,571,321	$708,749,376	$210,119,364	5,356	$60,966,758	$40,060,563
Arizona							
1 Tom O'Halleran	90,684	$127,370,078	$208,922,488	$60,027,646	1,466	$14,381,235	$12,842,999
2 Ann Kirkpatrick	96,130	$135,018,923	$221,468,729	$63,632,434	1,554	$15,244,859	$13,614,249
3 Raul Grijalva	76,537	$107,499,131	$176,328,588	$50,662,761	1,237	$12,137,625	$10,839,369
4 Paul A. Gosar	119,235	$167,470,143	$274,697,790	$78,926,218	1,927	$18,908,895	$16,886,375
5 Andy Biggs	104,131	$146,255,714	$239,900,204	$68,928,169	1,683	$16,513,594	$14,747,278
6 David Schweikert	90,451	$127,042,217	$208,384,704	$59,873,130	1,462	$14,344,216	$12,809,940
7 Ruben Gallego	59,695	$ 83,843,772	$137,527,193	$39,514,338	965	$ 9,466,721	$ 8,454,148
8 Debbie Lesko	96,642	$135,737,676	$222,647,685	$63,971,172	1,562	$15,326,013	$13,686,722
9 Greg Stanton	91,583	$128,632,616	$210,993,404	$60,622,662	1,480	$14,523,787	$12,970,304
Arkansas							
1 Rick Crawford	154,436	$178,120,338	$269,758,078	$74,170,905	2,188	$18,083,550	$16,594,242
2 French Hill	144,559	$166,729,429	$252,506,877	$69,427,628	2,048	$16,927,095	$15,533,029
3 Steve Womack	155,414	$179,248,458	$271,466,583	$74,640,664	2,202	$18,198,082	$16,699,341

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Arkansas							
4 Bruce Westerman	158,899	$183,268,249	$277,554,439	$76,314,541	2,252	$18,606,188	$17,073,837
California							
1 Doug LaMalfa	57,766	$85,065,618	$154,108,606	$53,856,947	1,088	$13,048,958	$9,793,506
2 Jared Huffman	45,257	$66,644,462	$120,736,032	$42,194,101	852	$10,223,176	$7,672,700
3 John Garamendi	49,532	$72,941,003	$132,143,123	$46,180,582	932	$11,189,057	$8,397,614
4 Tom McClintock	57,225	$84,269,119	$152,665,633	$53,352,666	1,077	$12,926,776	$9,701,806
5 Mike Thompson	44,383	$65,358,059	$118,405,527	$41,379,650	835	$10,025,843	$7,524,598
6 Doris O. Matsui	38,242	$56,314,669	$102,022,126	$35,654,078	720	$ 8,638,599	$6,483,443
7 Ami Bera	48,084	$70,807,729	$128,278,390	$44,829,959	905	$10,861,816	$8,152,012
8 Paul Cook	50,964	$75,048,739	$135,961,589	$47,515,037	959	$11,512,381	$8,640,275
9 Jerry McNerney	46,494	$68,465,989	$124,035,990	$43,347,350	875	$10,502,596	$7,882,410
10 Josh Harder	40,522	$59,672,760	$108,105,791	$37,780,160	763	$ 9,153,726	$6,870,056
11 Mark DeSaulnier	34,091	$50,202,735	$ 90,949,478	$31,784,475	642	$ 7,701,036	$5,779,783
12 Nancy Pelosi	31,812	$46,846,398	$ 84,868,991	$29,659,503	599	$ 7,186,178	$5,393,372
13 Barbara Lee	32,360	$47,652,666	$ 86,329,661	$30,169,970	609	$ 7,309,859	$5,486,196
14 Jackie Speier	30,273	$44,579,666	$ 80,762,480	$28,224,385	570	$ 6,838,464	$5,132,406
15 Eric Swalwell	37,645	$55,435,308	$100,429,036	$35,097,334	709	$ 8,503,706	$6,382,203
16 Jim Costa	38,519	$56,723,083	$102,762,026	$35,912,654	725	$ 8,701,249	$6,530,463
17 Ro Khanna	29,665	$43,684,226	$ 79,140,260	$27,657,461	558	$ 6,701,105	$5,029,315
18 Anna G. Eshoo	39,009	$57,443,771	$104,067,657	$36,368,938	734	$ 8,811,802	$6,613,435
19 Zoe Lofgren	30,230	$44,517,158	$ 80,649,238	$28,184,810	569	$ 6,828,876	$5,125,209

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
California							
20 Jimmy Panetta	33,990	$50,054,029	$ 90,680,075	$31,690,326	640	$ 7,678,225	$5,762,663
21 TJ Cox	40,526	$59,678,813	$108,116,757	$37,783,993	763	$ 9,154,654	$6,870,753
22 Devin Nunes	35,117	$51,713,750	$ 93,686,899	$32,741,133	661	$ 7,932,824	$5,953,744
23 Kevin McCarthy	39,196	$57,719,975	$104,568,039	$36,543,808	738	$ 8,854,171	$6,645,234
24 Salud Carbajal	46,849	$68,988,792	$124,983,124	$43,678,349	882	$10,582,793	$7,942,600
25 Katie Hill	35,266	$51,932,774	$ 94,083,692	$32,879,802	664	$ 7,966,422	$5,978,960
26 Julia Brownley	34,818	$51,273,131	$ 92,888,654	$32,462,167	655	$ 7,865,233	$5,903,016
27 Judy Chu	35,736	$52,624,644	$ 95,337,115	$33,317,840	673	$ 8,072,554	$6,058,615
28 Adam Schiff	35,586	$52,403,560	$ 94,936,588	$33,177,867	670	$ 8,038,640	$6,033,161
29 Tony Cárdenas	18,920	$27,862,262	$ 50,476,497	$17,640,222	356	$ 4,274,036	$3,207,750
30 Brad Sherman	31,604	$46,540,058	$ 84,314,011	$29,465,553	595	$ 7,139,186	$5,358,103
31 Pete Aguilar	28,087	$41,361,668	$ 74,932,613	$26,186,998	529	$ 6,344,827	$4,761,921
32 Grace Napolitano	21,885	$32,228,452	$ 58,386,478	$20,404,554	412	$ 4,943,804	$3,710,424
33 Ted Lieu	34,136	$50,268,387	$ 91,068,415	$31,826,041	642	$ 7,711,107	$5,787,341
34 Jimmy Gomez	23,647	$34,823,340	$ 63,087,491	$22,047,436	445	$ 5,341,856	$4,009,171
35 Norma Torres	27,124	$39,942,939	$ 72,362,381	$25,288,769	510	$ 6,127,196	$4,598,584
36 Raul Ruiz	44,863	$66,065,414	$119,687,003	$41,827,493	844	$10,134,351	$7,606,035
37 Karen Bass	27,477	$40,463,220	$ 73,304,944	$25,618,170	517	$ 6,207,007	$4,658,484
38 Linda Sánchez	23,711	$34,916,940	$ 63,257,061	$22,106,696	446	$ 5,356,214	$4,019,947
39 Gilbert Ray Cisneros Jr.	31,775	$46,792,541	$ 84,771,420	$29,625,405	598	$ 7,177,916	$5,387,171

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
California							
40 Lucille Roybal-Allard	16,691	$24,578,991	$ 44,528,379	$15,561,509	314	$ 3,770,386	$2,829,751
41 Mark Takano	30,323	$44,653,871	$ 80,896,912	$28,271,365	571	$ 6,849,847	$5,140,949
42 Ken Calvert	56,270	$82,862,128	$150,116,667	$52,461,868	1,059	$12,710,945	$9,539,821
43 Maxine Waters	23,817	$35,073,592	$ 63,540,858	$22,205,876	448	$ 5,380,245	$4,037,982
44 Nanette Barragán	20,495	$30,181,301	$ 54,677,770	$19,108,458	386	$ 4,629,773	$3,474,738
45 Katie Porter	44,961	$66,209,489	$119,948,016	$41,918,710	846	$10,156,452	$7,622,622
46 J. Luis Correa	22,488	$33,115,985	$ 59,994,372	$20,966,472	423	$ 5,079,950	$3,812,605
47 Alan Lowenthal	27,850	$41,011,488	$ 74,298,212	$25,965,291	524	$ 6,291,110	$4,721,605
48 Harley Rouda	32,466	$47,809,357	$ 86,613,529	$30,269,174	611	$ 7,333,895	$5,504,236
49 Mike Levin	36,849	$54,263,766	$ 98,306,620	$34,355,605	694	$ 8,323,993	$6,247,325
50 Duncan D. Hunter	37,263	$54,872,706	$ 99,409,802	$34,741,139	701	$ 8,417,404	$6,317,431
51 Juan Vargas	29,104	$42,857,940	$ 77,643,325	$27,134,321	548	$ 6,574,354	$4,934,185
52 Scott Peters	46,573	$68,582,402	$124,246,888	$43,421,054	877	$10,520,453	$7,895,813
53 Susan Davis	35,599	$52,423,461	$ 94,972,643	$33,190,467	670	$ 8,041,692	$6,035,453
Colorado							
1 Diana DeGette	115,774	$129,853,177	$219,331,587	$65,178,713	1,349	$15,828,175	$11,347,496
2 Joe Neguse	144,891	$162,511,912	$274,494,598	$81,571,491	1,688	$19,809,041	$14,201,449
3 Scott Tipton	142,762	$160,122,999	$270,459,548	$80,372,396	1,663	$19,517,850	$13,992,689
4 Ken Buck	137,481	$154,200,009	$260,455,180	$77,399,401	1,602	$18,795,879	$13,475,095
5 Doug Lamborn	139,663	$156,647,532	$264,589,227	$78,627,915	1,627	$19,094,215	$13,688,977
6 Jason Crow	118,952	$133,418,608	$225,353,864	$66,968,351	1,386	$16,262,775	$11,659,069

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Colorado							
7 Ed Perlmutter	120,351	$134,987,006	$228,003,002	$67,755,595	1,402	$16,453,952	$11,796,126
Connecticut							
1 John B. Larson	60,705	$71,833,186	$113,900,960	$38,640,883	877	$10,437,289	$10,226,248
2 Joe Courtney	70,755	$83,724,666	$132,756,464	$45,037,610	1,022	$12,165,108	$11,919,131
3 Rosa L. DeLauro	62,911	$74,443,142	$118,039,389	$40,044,845	909	$10,816,513	$10,597,804
4 Jim Himes	48,384	$57,252,753	$ 90,781,766	$30,797,700	699	$ 8,318,766	$ 8,150,562
5 Jahana Hayes	60,458	$71,540,929	$113,437,549	$38,483,671	873	$10,394,824	$10,184,642
Delaware							
0 Lisa Blunt Rochester	134,951	$30,959,004	$47,348,837	$15,617,246	351	$3,378,357	$1,799,046
Florida							
1 Matt Gaetz	118,301	$143,845,195	$228,642,218	$70,375,612	1,817	$17,676,143	$11,436,792
2 Neal Dunn	124,698	$151,623,760	$241,006,261	$74,181,240	1,915	$18,631,997	$12,055,247
3 Ted Yoho	118,829	$144,487,459	$229,663,098	$70,689,837	1,825	$17,755,067	$11,487,856
4 John Rutherford	116,722	$141,924,833	$225,589,798	$69,436,083	1,792	$17,440,163	$11,284,108
5 Al Lawson	99,818	$121,371,657	$192,920,485	$59,380,535	1,533	$14,914,525	$ 9,649,974
6 Michael Waltz	125,810	$152,975,595	$243,155,006	$74,842,619	1,932	$18,798,115	$12,162,728
7 Stephanie Murphy	103,017	$125,261,523	$199,103,436	$61,283,635	1,582	$15,392,524	$ 9,959,248
8 Bill Posey	117,147	$142,442,560	$226,412,727	$69,689,379	1,799	$17,503,783	$11,325,271
9 Darren Soto	109,227	$132,811,644	$211,104,368	$64,977,497	1,677	$16,320,306	$10,559,540
10 Val Demings	95,429	$116,034,601	$184,437,225	$56,769,405	1,465	$14,258,691	$ 9,225,637
11 Daniel Webster	127,131	$154,582,350	$245,708,946	$75,628,716	1,952	$18,995,558	$12,290,477
12 Gus M. Bilirakis	121,010	$147,139,722	$233,878,875	$71,987,444	1,858	$18,080,985	$11,698,732
13 Charlie Crist	104,740	$127,355,746	$202,432,206	$62,308,223	1,608	$15,649,868	$10,125,754

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Florida							
14 Kathy Castor	96,529	$117,372,494	$186,563,809	$57,423,963	1,482	$14,423,096	$ 9,332,010
15 Ross Spano	113,121	$137,547,193	$218,631,531	$67,294,343	1,737	$16,902,225	$10,936,052
16 Vern Buchanan	118,042	$143,529,981	$228,141,184	$70,221,395	1,813	$17,637,409	$11,411,730
17 W. Gregory Steube	124,289	$151,126,133	$240,215,283	$73,937,778	1,909	$18,570,847	$12,015,682
18 Brian Mast	106,884	$129,963,580	$206,577,363	$63,584,094	1,641	$15,970,327	$10,333,097
19 Francis Rooney	117,284	$142,609,108	$226,677,454	$69,770,862	1,801	$17,524,249	$11,338,513
20 Alcee L. Hastings	76,386	$ 92,880,174	$147,633,218	$45,441,206	1,173	$11,413,403	$ 7,384,683
21 Lois Frankel	93,066	$113,160,915	$179,869,495	$55,363,467	1,429	$13,905,564	$ 8,997,157
22 Ted Deutch	96,442	$117,267,037	$186,396,184	$57,372,368	1,481	$14,410,137	$ 9,323,625
23 Debbie Wasserman Schultz	100,615	$122,340,847	$194,461,014	$59,854,707	1,545	$15,033,622	$ 9,727,032
24 Frederica Wilson	66,289	$ 80,602,868	$128,118,415	$39,434,589	1,018	$ 9,904,730	$ 6,408,544
25 Mario Diaz-Balart	72,314	$ 87,928,617	$139,762,708	$43,018,679	1,110	$10,804,941	$ 6,990,997
26 Debbie Mucarsel-Powell	84,417	$102,645,499	$163,155,221	$50,218,847	1,296	$12,613,397	$ 8,161,101
27 Donna E. Shalala	71,583	$ 87,039,405	$138,349,303	$42,583,636	1,099	$10,695,672	$ 6,920,297
Georgia							
1 Buddy Carter	117,616	$88,146,138	$141,938,228	$37,972,576	862	$9,052,823	$6,520,312
2 Sanford D. Bishop Jr.	98,939	$74,149,492	$119,399,984	$31,942,945	725	$7,615,334	$5,484,957
3 A. Drew Ferguson	124,017	$92,943,897	$149,663,869	$40,039,408	909	$9,545,565	$6,875,210
4 Henry C. "Hank" Johnson Jr.	94,191	$70,591,101	$113,670,048	$30,410,021	690	$7,249,878	$5,221,737
5 John Lewis	87,791	$65,794,536	$105,946,331	$28,343,704	644	$6,757,259	$4,866,928
6 Lucy McBath	95,089	$71,264,076	$114,753,713	$30,699,933	697	$7,318,994	$5,271,518

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Georgia							
7 Robert Woodall	115,912	$ 86,869,400	$139,882,347	$37,422,568	850	$ 8,921,699	$6,425,869
8 Austin Scott	119,307	$ 89,413,628	$143,979,216	$38,518,599	875	$ 9,182,998	$6,614,070
9 Doug Collins	136,767	$102,499,154	$165,050,320	$44,155,728	1,003	$10,526,913	$7,582,027
10 Jody Hice	129,695	$ 97,198,717	$156,515,237	$41,872,347	951	$ 9,982,545	$7,189,946
11 Barry Loudermilk	113,962	$ 85,407,964	$137,529,055	$36,792,995	835	$ 8,771,606	$6,317,765
12 Rick Allen	121,300	$ 90,907,455	$146,384,667	$39,162,127	889	$ 9,336,417	$6,724,571
13 David Scott	102,860	$ 77,087,740	$124,131,329	$33,208,716	754	$ 7,917,099	$5,702,304
14 Tom Graves	117,023	$ 87,702,120	$141,223,244	$37,781,297	858	$ 9,007,222	$6,487,467
Hawaii							
1 Ed Case	71,614	$197,260,269	$306,910,874	$81,420,376	2,072	$18,966,467	$21,207,257
2 Tulsi Gabbard	82,031	$225,954,082	$351,554,650	$93,263,923	2,373	$21,725,361	$24,292,101
Idaho							
1 Russ Fulcher	232,139	$214,721,231	$326,060,957	$87,165,154	2,232	$18,570,117	$14,973,213
2 Mike Simpson	195,199	$180,552,569	$274,174,766	$73,294,533	1,877	$15,615,048	$12,590,521
Illinois							
1 Bobby L. Rush	108,469	$37,900,971	$49,906,247	$16,705,171	366	$4,140,347	$3,229,661
2 Robin Kelly	105,342	$36,808,305	$48,467,475	$16,223,569	355	$4,020,983	$3,136,552
3 Daniel Lipinski	106,640	$37,261,824	$49,064,648	$16,423,462	359	$4,070,526	$3,175,197
4 Jesús "Chuy" García	66,717	$23,312,223	$30,696,458	$10,275,058	225	$2,546,655	$1,986,508
5 Mike Quigley	100,320	$35,053,492	$46,156,818	$15,450,121	338	$3,829,285	$2,987,018
6 Sean Casten	129,773	$45,344,676	$59,707,773	$19,986,046	438	$4,953,507	$3,863,963
7 Danny K. Davis	89,288	$31,198,707	$41,081,015	$13,751,092	301	$3,408,184	$2,658,540
8 Raja Krishnamoorthi	96,961	$33,879,835	$44,611,401	$14,932,821	327	$3,701,074	$2,887,007

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Illinois							
9 Jan Schakowsky	100,389	$35,077,640	$46,188,615	$15,460,764	338	$3,831,923	$2,989,076
10 Bradley Schneider	100,576	$35,143,072	$46,274,773	$15,489,604	339	$3,839,071	$2,994,652
11 Bill Foster	102,697	$35,883,917	$47,250,284	$15,816,138	346	$3,920,002	$3,057,782
12 Mike Bost	141,186	$49,332,899	$64,959,281	$21,743,889	476	$5,389,185	$4,203,812
13 Rodney Davis	142,306	$49,723,995	$65,474,259	$21,916,268	480	$5,431,909	$4,237,138
14 Lauren Underwood	147,293	$51,466,595	$67,768,833	$22,684,333	497	$5,622,272	$4,385,631
15 John Shimkus	168,570	$58,901,251	$77,558,445	$25,961,220	568	$6,434,443	$5,019,161
16 Adam Kinzinger	154,777	$54,081,621	$71,212,179	$23,836,928	522	$5,907,941	$4,608,465
17 Cheri Bustos	133,265	$46,565,113	$61,314,789	$20,523,964	449	$5,086,829	$3,967,960
18 Darin LaHood	161,015	$56,261,122	$74,082,046	$24,797,562	543	$6,146,032	$4,794,187
Indiana							
1 Peter Visclosky	152,832	$59,230,342	$ 83,721,342	$23,975,497	637	$5,755,310	$4,554,717
2 Jackie Walorski	167,061	$64,744,885	$ 91,516,079	$26,207,696	696	$6,291,149	$4,978,777
3 Jim Banks	172,509	$66,856,155	$ 94,500,333	$27,062,305	719	$6,496,297	$5,141,130
4 James Baird	186,436	$72,253,497	$102,129,408	$29,247,063	777	$7,020,748	$5,556,177
5 Susan W. Brooks	170,258	$65,983,582	$ 93,266,962	$26,709,101	710	$6,411,511	$5,074,031
6 Greg Pence	181,898	$70,494,707	$ 99,643,380	$28,535,132	758	$6,849,849	$5,420,929
7 André Carson	145,412	$56,354,766	$ 79,656,752	$22,811,510	606	$5,475,895	$4,333,590
8 Larry Bucshon	179,589	$69,600,103	$ 98,378,869	$28,173,011	748	$6,762,922	$5,352,135
9 Trey Hollingsworth	185,329	$71,824,415	$101,522,906	$29,073,377	772	$6,979,055	$5,523,181
Iowa							
1 Abby Finkenauer	175,738	$85,154,978	$127,956,849	$38,400,834	893	$7,700,076	$6,566,307

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Iowa							
2 David Loebsack	175,958	$85,261,615	$128,117,086	$38,448,923	895	$7,709,718	$6,574,530
3 Cynthia Axne	170,870	$82,796,390	$124,412,752	$37,337,223	869	$7,486,802	$6,384,436
4 Steve King	186,489	$90,364,430	$135,784,754	$40,750,049	948	$8,171,137	$6,968,008
Kansas							
1 Roger Marshall	163,056	$65,633,715	$87,625,890	$26,637,025	659	$6,315,058	$5,528,209
2 Steven Watkins	162,466	$65,396,099	$87,308,656	$26,540,590	657	$6,292,196	$5,508,195
3 Sharice Davids	134,693	$54,216,918	$72,383,617	$22,003,590	545	$5,216,572	$4,566,593
4 Ron Estes	145,933	$58,741,473	$78,424,235	$23,839,852	590	$5,651,909	$4,947,688
Kentucky							
1 James Comer	150,310	$63,491,162	$89,584,316	$24,516,972	624	$5,487,055	$4,261,175
2 S. Brett Guthrie	146,885	$62,044,440	$87,543,031	$23,958,323	610	$5,362,026	$4,164,079
3 John A. Yarmuth	112,055	$47,332,057	$66,784,256	$18,277,169	465	$4,090,548	$3,176,666
4 Thomas Massie	143,258	$60,512,200	$85,381,082	$23,366,652	595	$5,229,607	$4,061,244
5 Harold Rogers	154,297	$65,175,219	$91,960,476	$25,167,267	641	$5,632,596	$4,374,200
6 Andy Barr	137,328	$58,007,630	$81,847,201	$22,399,518	570	$5,013,156	$3,893,151
Louisiana							
1 Steve Scalise	182,723	$255,152,300	$383,420,031	$114,888,558	2,741	$25,817,343	$21,736,076
2 Cedric Richmond	144,246	$201,422,896	$302,680,294	$ 90,695,581	2,163	$20,380,784	$17,158,941
3 Clay Higgins	190,873	$266,532,911	$400,521,794	$120,012,956	2,863	$26,968,879	$22,705,574
4 Mike Johnson	178,134	$248,743,398	$373,789,307	$112,002,793	2,672	$25,168,864	$21,190,110
5 Ralph Abraham	181,459	$253,386,883	$380,767,122	$114,093,636	2,722	$25,638,711	$21,585,682
6 Garret Graves	182,915	$255,419,860	$383,822,097	$115,009,033	2,743	$25,844,416	$21,758,869
Maine							
1 Chellie Pingree	80,601	$76,833,018	$117,591,855	$34,520,138	979	$7,805,669	$7,852,639

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Maine							
2 Jared Golden	86,330	$82,293,945	$125,949,727	$36,973,665	1,048	$8,360,460	$8,410,768
Maryland							
1 Andy Harris	98,156	$69,204,633	$107,818,745	$33,132,603	695	$8,062,686	$6,413,231
2 C. A. Dutch Ruppersberger	83,418	$58,813,652	$ 91,629,908	$28,157,788	590	$6,852,085	$5,450,293
3 John P. Sarbanes	78,796	$55,554,956	$ 86,552,957	$26,597,645	558	$6,472,430	$5,148,308
4 Anthony Brown	71,089	$50,121,315	$ 78,087,508	$23,996,221	503	$5,839,384	$4,644,769
5 Steny H. Hoyer	81,586	$57,521,923	$ 89,617,433	$27,539,356	577	$6,701,592	$5,330,588
6 David Trone	87,533	$61,715,069	$ 96,150,229	$29,546,879	619	$7,190,115	$5,719,169
7 Elijah Cummings	68,863	$48,551,683	$ 75,642,067	$23,244,739	487	$5,656,514	$4,499,311
8 Jamie Raskin	71,998	$50,761,893	$ 79,085,509	$24,302,905	509	$5,914,015	$4,704,132
Massachusetts							
1 Richard E. Neal	56,629	$46,713,010	$81,328,025	$31,395,288	632	$7,215,950	$4,123,325
2 James McGovern	58,375	$48,153,385	$83,835,739	$32,363,348	652	$7,438,450	$4,250,466
3 Lori Trahan	49,315	$40,679,880	$70,824,258	$27,340,489	551	$6,283,987	$3,590,785
4 Joseph P. Kennedy III	50,936	$42,016,434	$73,151,218	$28,238,772	569	$6,490,450	$3,708,762
5 Katherine Clark	44,538	$36,738,874	$63,962,910	$24,691,783	497	$5,675,204	$3,242,915
6 Seth Moulton	49,125	$40,523,203	$70,551,481	$27,235,188	548	$6,259,785	$3,576,955
7 Ayanna Pressley	44,792	$36,949,013	$64,328,765	$24,833,016	500	$5,707,665	$3,261,464
8 Stephen F. Lynch	46,555	$38,402,604	$66,859,488	$25,809,958	520	$5,932,207	$3,389,772
9 William Keating	60,621	$50,005,794	$87,060,810	$33,608,331	677	$7,724,599	$4,413,977
Michigan							
1 Jack Bergman	212,787	$192,549,553	$299,276,628	$95,914,341	2,207	$22,669,687	$19,841,370
2 Bill Huizenga	173,063	$156,603,026	$243,405,527	$78,008,366	1,795	$18,437,548	$16,137,241

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Michigan							
3 Justin Amash	160,306	$145,059,743	$225,463,991	$72,258,333	1,663	$17,078,508	$14,947,758
4 John Moolenaar	194,712	$176,193,576	$273,854,800	$87,766,969	2,020	$20,744,028	$18,155,960
5 Daniel Kildee	151,309	$136,918,687	$212,810,480	$68,203,044	1,569	$16,120,026	$14,108,858
6 Fred Upton	174,162	$157,598,323	$244,952,502	$78,504,152	1,806	$18,554,729	$16,239,802
7 Tim Walberg	171,277	$154,987,549	$240,894,618	$77,203,652	1,776	$18,247,351	$15,970,774
8 Elissa Slotkin	163,746	$148,172,599	$230,302,253	$73,808,934	1,698	$17,444,998	$15,268,523
9 Andy Levin	157,904	$142,886,438	$222,086,059	$71,175,748	1,638	$16,822,635	$14,723,808
10 Paul Mitchell	174,183	$157,616,583	$244,980,883	$78,513,248	1,807	$18,556,879	$16,241,684
11 Haley Stevens	153,785	$139,159,349	$216,293,106	$69,319,181	1,595	$16,383,829	$14,339,748
12 Debbie Dingell	155,991	$141,155,478	$219,395,656	$70,313,509	1,618	$16,618,842	$14,545,441
13 Rashida Tlaib	108,847	$ 98,495,223	$153,089,517	$49,063,237	1,129	$11,596,266	$10,149,492
14 Brenda Lawrence	106,100	$ 96,009,190	$149,225,517	$47,824,874	1,100	$11,303,575	$ 9,893,317
Minnesota							
1 Jim Hagedorn	207,259	$287,297,163	$460,700,925	$136,674,047	2,902	$34,381,498	$29,512,184
2 Angie Craig	185,310	$256,871,064	$411,910,566	$122,199,633	2,595	$30,740,338	$26,386,707
3 Dean Phillips	180,593	$250,333,602	$401,427,292	$119,089,608	2,529	$29,957,985	$25,715,156
4 Betty McCollum	173,230	$240,127,266	$385,060,725	$114,234,213	2,426	$28,736,570	$24,666,725
5 Ilhan Omar	167,983	$232,853,408	$373,396,588	$110,773,867	2,352	$27,866,091	$23,919,528
6 Tom Emmer	195,070	$270,399,864	$433,604,934	$128,635,603	2,732	$32,359,360	$27,776,433
7 Collin C. Peterson	231,278	$320,590,675	$514,089,381	$152,512,557	3,239	$38,365,807	$32,932,211
8 Pete Stauber	234,438	$324,970,645	$521,112,967	$154,596,212	3,283	$38,889,968	$33,382,137

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Mississippi							
1 Trent Kelly	240,378	$99,632,328	$142,469,101	$35,118,111	969	$8,102,141	$8,760,506
2 Bennie G. Thompson	179,038	$74,208,143	$106,113,826	$26,156,669	721	$6,034,636	$6,525,000
3 Michael Guest	227,120	$94,137,494	$134,611,772	$33,181,308	915	$7,655,299	$8,277,355
4 Steven Palazzo	237,238	$98,330,955	$140,608,205	$34,659,407	956	$7,996,313	$8,646,079
Missouri							
1 William "Lacy" Clay Jr.	108,634	$47,003,432	$ 79,485,539	$26,276,197	622	$5,713,590	$4,000,661
2 Ann Wagner	130,930	$56,650,383	$ 95,799,094	$31,669,105	749	$6,886,243	$4,821,754
3 Blaine Luetkemeyer	157,693	$68,229,869	$115,380,679	$38,142,353	903	$8,293,809	$5,807,332
4 Vicky Hartzler	161,572	$69,908,143	$118,218,737	$39,080,554	925	$8,497,814	$5,950,177
5 Emanuel Cleaver	130,208	$56,337,865	$ 95,270,608	$31,494,399	745	$6,848,254	$4,795,154
6 Sam Graves	153,579	$66,449,963	$112,370,754	$37,147,337	879	$8,077,449	$5,655,837
7 Billy Long	160,347	$69,378,367	$117,322,855	$38,784,394	918	$8,433,416	$5,905,086
8 Jason Smith	165,354	$71,544,678	$120,986,213	$39,995,421	946	$8,696,746	$6,089,470
Montana							
0 Greg Gianforte	283,729	$432,244,441	$611,121,481	$179,433,666	5,628	$42,244,315	$25,116,609
Nebraska							
1 Jeff Fortenberry	110,455	$73,395,646	$114,137,974	$38,133,542	787	$8,166,769	$5,383,203
2 Don Bacon	96,266	$63,967,099	$ 99,475,589	$33,234,834	686	$7,117,650	$4,691,666
3 Adrian Smith	121,349	$80,633,984	$125,394,353	$41,894,303	865	$8,972,183	$5,914,098
Nevada							
1 Dina Titus	28,432	$23,897,299	$36,348,446	$10,267,785	236	$2,672,942	$2,533,797
2 Mark Amodei	43,770	$36,789,206	$55,957,389	$15,806,960	363	$4,114,917	$3,900,708
3 Susie Lee	52,061	$43,757,767	$66,556,761	$18,801,092	432	$4,894,359	$4,639,575
4 Steven Horsford	41,067	$34,517,026	$52,501,341	$14,830,688	341	$3,860,771	$3,659,792

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
New Hampshire							
1 Chris Pappas	81,451	$91,173,134	$145,238,086	$48,054,167	1,306	$11,027,541	$6,569,141
2 Ann Kuster	79,510	$89,000,539	$141,777,159	$46,909,067	1,275	$10,764,761	$6,412,602
New Jersey							
1 Donald Norcross	70,328	$70,727,862	$85,277,954	$29,494,853	604	$7,641,379	$6,311,385
2 Jefferson Van Drew	77,936	$78,379,707	$94,503,932	$32,685,817	669	$8,468,078	$6,994,196
3 Andy Kim	74,254	$74,676,863	$90,039,341	$31,141,661	637	$8,068,026	$6,663,774
4 Chris Smith	67,254	$67,636,255	$81,550,343	$28,205,594	577	$7,307,365	$6,035,507
5 Josh Gottheimer	63,642	$64,004,023	$77,170,891	$26,690,885	546	$6,914,941	$5,711,385
6 Frank Pallone Jr.	59,976	$60,317,649	$72,726,158	$25,153,598	515	$6,516,669	$5,382,432
7 Tom Malinowski	63,554	$63,915,920	$77,064,663	$26,654,144	546	$6,905,423	$5,703,523
8 Albio Sires	45,689	$45,949,305	$55,401,967	$19,161,727	392	$4,964,325	$4,100,276
9 Bill Pascrell Jr.	50,211	$50,496,662	$60,884,804	$21,058,061	431	$5,455,617	$4,506,059
10 Donald Payne Jr.	53,853	$54,159,924	$65,301,669	$22,585,710	462	$5,851,393	$4,832,949
11 Mikie Sherrill	61,439	$61,788,655	$74,499,779	$25,767,035	527	$6,675,595	$5,513,697
12 Bonnie Watson Coleman	63,451	$63,812,051	$76,939,426	$26,610,829	545	$6,894,201	$5,694,255
New Mexico							
1 Debra Haaland	101,745	$167,299,957	$248,567,918	$66,906,688	1,717	$16,047,931	$15,161,628
2 Xochitl Torres Small	112,939	$185,705,582	$275,914,296	$74,267,475	1,906	$17,813,456	$16,829,646
3 Ben R. Luján	109,772	$180,498,246	$268,177,434	$72,184,954	1,853	$17,313,952	$16,357,729
New York							
1 Lee Zeldin	73,379	$65,588,331	$102,208,133	$36,361,946	679	$8,410,447	$7,267,226
2 Pete King	57,581	$51,467,974	$ 80,203,985	$28,533,668	533	$6,599,782	$5,702,682
3 Thomas Suozzi	61,540	$55,006,345	$ 85,717,928	$30,495,329	569	$7,053,510	$6,094,736

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
New York							
4 Kathleen Rice	59,882	$53,524,589	$ 83,408,866	$29,673,849	554	$ 6,863,503	$ 5,930,557
5 Gregory W. Meeks	58,528	$52,313,934	$ 81,522,267	$29,002,666	541	$ 6,708,260	$ 5,796,415
6 Grace Meng	54,208	$48,452,691	$ 75,505,185	$26,862,006	501	$ 6,213,130	$ 5,368,587
7 Nydia M. Velázquez	46,225	$41,316,950	$ 64,385,360	$22,905,975	427	$ 5,298,107	$ 4,577,943
8 Hakeem Jeffries	61,075	$54,590,521	$ 85,069,938	$30,264,798	565	$ 7,000,189	$ 6,048,662
9 Yvette D. Clarke	56,146	$50,184,593	$ 78,204,057	$27,822,167	519	$ 6,435,213	$ 5,560,483
10 Jerrold Nadler	54,395	$48,619,662	$ 75,765,381	$26,954,574	503	$ 6,234,541	$ 5,387,088
11 Max Rose	53,974	$48,243,463	$ 75,179,140	$26,746,011	499	$ 6,186,300	$ 5,345,405
12 Carolyn Maloney	60,900	$54,434,479	$ 84,826,773	$30,178,289	563	$ 6,980,179	$ 6,031,373
13 Adriano Espaillat	45,165	$40,370,009	$ 62,909,716	$22,380,995	418	$ 5,176,681	$ 4,473,021
14 Alexandria Ocasio-Cortez	48,496	$43,346,896	$ 67,548,681	$24,031,370	449	$ 5,558,409	$ 4,802,862
15 José E. Serrano	36,888	$32,971,491	$ 51,380,397	$18,279,282	341	$ 4,227,962	$ 3,653,261
16 Eliot Engel	59,237	$52,947,424	$ 82,509,453	$29,353,870	548	$ 6,789,493	$ 5,866,606
17 Nita Lowey	61,803	$55,241,528	$ 86,084,419	$30,625,714	572	$ 7,083,668	$ 6,120,794
18 Sean Patrick Maloney	71,921	$64,285,127	$100,177,313	$35,639,454	665	$ 8,243,336	$ 7,122,831
19 Antonio Delgado	105,952	$94,703,002	$147,578,340	$52,503,020	980	$12,143,846	$10,493,149
20 Paul D. Tonko	95,438	$85,304,919	$132,933,044	$47,292,755	883	$10,938,722	$ 9,451,836
21 Elise Stefanik	110,720	$98,964,685	$154,219,440	$54,865,682	1,025	$12,690,325	$10,965,346
22 Anthony Brindisi	103,671	$92,663,526	$144,400,167	$51,372,341	959	$11,882,322	$10,267,174
23 Tom Reed	107,381	$95,979,623	$149,567,734	$53,210,774	994	$12,307,548	$10,634,600

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
New York							
24 John Katko	96,250	$86,031,142	$134,064,737	$47,695,370	891	$11,031,846	$ 9,532,302
25 Joseph Morelle	89,453	$79,955,439	$124,596,800	$44,327,022	828	$10,252,754	$ 8,859,111
26 Brian Higgins	87,218	$77,957,532	$121,483,405	$43,219,389	807	$ 9,996,560	$ 8,637,741
27 Chris Collins	101,237	$90,488,524	$141,010,800	$50,166,528	937	$11,603,420	$10,026,183
North Carolina							
1 G.K. Butterfield	128,257	$ 79,256,119	$134,026,915	$40,884,520	1,098	$ 9,465,015	$6,370,095
2 George Holding	140,223	$ 86,650,000	$146,530,416	$44,698,676	1,200	$10,348,015	$6,964,367
3 Walter B. Jones	145,633	$ 89,993,262	$152,184,075	$46,423,309	1,246	$10,747,278	$7,233,077
4 David Price	138,037	$ 85,299,678	$144,246,940	$44,002,109	1,181	$10,186,755	$6,855,837
5 Virginia Foxx	146,451	$ 90,499,124	$153,039,519	$46,684,259	1,253	$10,807,689	$7,273,735
6 Mark Walker	146,616	$ 90,600,729	$153,211,340	$46,736,673	1,255	$10,819,823	$7,281,901
7 David Rouzer	155,158	$ 95,879,570	$162,138,179	$49,459,779	1,328	$11,450,239	$7,706,181
8 Richard Hudson	137,095	$ 84,717,220	$143,261,968	$43,701,646	1,173	$10,117,196	$6,809,023
9	131,622	$ 81,335,411	$137,543,123	$41,957,129	1,126	$ 9,713,330	$6,537,215
10 Patrick T. McHenry	149,761	$ 92,544,243	$156,497,940	$47,739,240	1,282	$11,051,924	$7,438,109
11 Mark Meadows	171,869	$106,205,459	$179,599,886	$54,786,422	1,471	$12,683,389	$8,536,109
12 Alma Adams	125,833	$ 77,758,018	$131,493,535	$40,111,720	1,077	$ 9,286,107	$6,249,687
13 Ted Budd	137,347	$ 84,872,990	$143,525,384	$43,782,000	1,175	$10,135,799	$6,821,543
North Dakota							
0 Kelly Armstrong	134,392	$79,853,305	$120,994,878	$39,850,425	1,116	$9,292,259	$7,498,870
Ohio							
1 Steve Chabot	142,375	$112,300,089	$121,291,793	$34,726,069	903	$8,438,527	$7,125,091
2 Brad Wenstrup	151,383	$119,405,022	$128,965,608	$36,923,097	960	$8,972,410	$7,575,876

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Ohio							
3 Joyce Beatty	140,578	$110,882,687	$119,760,902	$34,287,772	891	$ 8,332,019	$7,035,161
4 Jim Jordan	154,797	$122,097,975	$131,874,183	$37,755,827	981	$ 9,174,766	$7,746,736
5 Robert E. Latta	157,787	$124,456,280	$134,421,313	$38,485,075	1,000	$ 9,351,975	$7,896,363
6 Bill Johnson	172,310	$135,911,074	$146,793,276	$42,027,192	1,093	$10,212,719	$8,623,134
7 Bob Gibbs	160,790	$126,824,613	$136,979,275	$39,217,425	1,019	$ 9,529,938	$8,046,626
8 Warren Davidson	152,411	$120,215,746	$129,841,246	$37,173,793	966	$ 9,033,330	$7,627,314
9 Marcy Kaptur	139,224	$109,814,826	$118,607,540	$33,957,562	883	$ 8,251,777	$6,967,408
10 Michael Turner	140,009	$110,433,405	$119,275,647	$34,148,842	888	$ 8,298,259	$7,006,655
11 Marcia L. Fudge	115,599	$ 91,180,000	$ 98,480,650	$28,195,196	733	$ 6,851,507	$5,785,087
12 Troy Balderson	155,419	$122,588,327	$132,403,796	$37,907,456	985	$ 9,211,612	$7,777,847
13 Tim Ryan	150,033	$118,340,533	$127,815,888	$36,593,929	951	$ 8,892,422	$7,508,338
14 David Joyce	146,807	$115,795,980	$125,067,595	$35,807,088	931	$ 8,701,217	$7,346,894
15 Steve Stivers	161,708	$127,548,719	$137,761,360	$39,441,337	1,025	$ 9,584,349	$8,092,569
16 Anthony Gonzalez	150,690	$118,858,334	$128,375,148	$36,754,047	955	$ 8,931,331	$7,541,191
Oklahoma							
1 Kevin Hern	234,219	$308,135,472	$375,501,020	$102,173,113	2,573	$24,996,782	$16,586,563
2 Markwayne Mullin	283,863	$373,445,684	$455,089,556	$123,829,002	3,118	$30,294,923	$20,102,134
3 Frank Lucas	273,656	$360,017,382	$438,725,516	$119,376,378	3,006	$29,205,582	$19,379,304
4 Tom Cole	260,096	$342,177,564	$416,985,501	$113,460,961	2,857	$27,758,368	$18,419,008
5 Kendra Horn	231,650	$304,755,283	$371,381,843	$101,052,293	2,545	$24,722,572	$16,404,612
Oregon							
1 Suzanne Bonamici	69,158	$101,176,854	$169,070,505	$55,490,660	1,296	$12,385,515	$6,883,921

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Oregon							
2 Greg Walden	82,651	$120,917,663	$202,058,172	$66,317,547	1,548	$14,802,076	$8,227,056
3 Earl Blumenauer	66,001	$ 96,559,024	$161,353,929	$52,958,001	1,236	$11,820,226	$6,569,731
4 Peter DeFazio	82,629	$120,884,527	$202,002,801	$66,299,374	1,548	$14,798,020	$8,224,801
5 Kurt Schrader	71,865	$105,137,297	$175,688,560	$57,662,772	1,346	$12,870,331	$7,153,383
Pennsylvania							
1 Brian Fitzpatrick	54,540	$10,156,912	$18,348,699	$ 6,466,083	150	$1,465,264	$ 961,757
2 Brendan Boyle	56,251	$10,475,646	$18,924,500	$ 6,668,995	155	$1,511,246	$ 991,938
3 Dwight Evans	83,764	$15,599,339	$28,180,571	$ 9,930,836	231	$2,250,404	$1,477,100
4 Madeleine Dean	80,109	$14,918,685	$26,950,954	$ 9,497,519	221	$2,152,211	$1,412,649
5 Mary Gay Scanlon	93,019	$17,322,825	$31,294,088	$11,028,040	257	$2,499,039	$1,640,297
6 Chrissy Houlahan	73,357	$13,661,187	$24,679,254	$ 8,696,971	202	$1,970,801	$1,293,577
7 Susan Wild	67,205	$12,515,660	$22,609,833	$ 7,967,707	185	$1,805,544	$1,185,107
8 Matt Cartwright	68,288	$12,717,317	$22,974,130	$ 8,096,086	188	$1,834,636	$1,204,202
9 Daniel Meuser	88,721	$16,522,434	$29,848,164	$10,518,496	245	$2,383,572	$1,564,508
10 Scott Perry	91,456	$17,031,862	$30,768,458	$10,842,807	252	$2,457,064	$1,612,746
11 Lloyd Smucker	86,349	$16,080,749	$29,050,250	$10,237,311	238	$2,319,854	$1,522,685
12 Tom Marino	81,882	$15,248,890	$27,547,476	$ 9,707,733	226	$2,199,847	$1,443,916
13 John Joyce	56,918	$10,599,776	$19,148,744	$ 6,748,019	157	$1,529,153	$1,003,692
14 Guy Reschenthaler	75,022	$13,971,391	$25,239,645	$ 8,894,453	207	$2,015,552	$1,322,950
15 Glenn Thompson	75,791	$14,114,480	$25,498,138	$ 8,985,546	209	$2,036,194	$1,336,499
16 Mike Kelly	72,955	$13,586,403	$24,544,154	$ 8,649,362	201	$1,960,012	$1,286,495

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Pennsylvania							
17 Conor Lamb	84,157	$15,672,580	$28,312,882	$9,977,462	232	$2,260,970	$1,484,035
18 Michael Doyle	80,301	$14,954,363	$27,015,408	$9,520,232	221	$2,157,358	$1,416,028
Rhode Island							
1 David Cicilline	105,456	$110,755,728	$172,811,225	$59,948,125	1,628	$14,118,349	$12,162,114
2 Jim Langevin	112,752	$118,418,024	$184,766,642	$64,095,453	1,741	$15,095,084	$13,003,513
South Carolina							
1 Joe Cunningham	109,491	$90,514,124	$138,712,968	$40,071,654	1,146	$ 9,652,178	$8,466,363
2 Joe Wilson	107,167	$88,593,060	$135,768,935	$39,221,176	1,121	$ 9,447,321	$8,286,674
3 Jeff Duncan	117,552	$97,177,919	$148,925,239	$43,021,793	1,230	$10,362,787	$9,089,670
4 William Timmons	107,080	$88,520,443	$135,657,650	$39,189,028	1,120	$ 9,439,578	$8,279,881
5 Ralph Norman	111,764	$92,393,194	$141,592,645	$40,903,540	1,169	$ 9,852,557	$8,642,124
6 James E. Clyburn	96,153	$79,487,372	$121,814,461	$35,189,982	1,006	$ 8,476,316	$7,434,960
7 Tom Rice	115,674	$95,624,921	$146,545,269	$42,334,263	1,210	$10,197,180	$8,944,408
South Dakota							
0 Dusty Johnson	266,369	$370,076,561	$469,672,970	$117,757,267	3,066	$28,206,997	$19,863,789
Tennessee							
1 Phil Roe	206,131	$89,301,022	$142,719,559	$44,858,692	910	$10,241,941	$7,305,990
2 Tim Burchett	192,798	$83,524,933	$133,488,300	$41,957,183	851	$ 9,579,481	$6,833,430
3 Chuck Fleischmann	190,076	$82,345,446	$131,603,261	$41,364,689	839	$ 9,444,205	$6,736,933
4 Scott DesJarlais	206,626	$89,515,203	$143,061,860	$44,966,282	912	$10,266,505	$7,323,513
5 Jim Cooper	163,669	$70,905,232	$113,319,683	$35,617,913	722	$ 8,132,126	$5,800,974
6 John W. Rose	204,168	$88,450,472	$141,360,224	$44,431,435	901	$10,144,391	$7,236,404
7 Mark Green	191,361	$82,902,038	$132,492,799	$41,644,283	845	$ 9,508,041	$6,782,469
8 David Kustoff	175,166	$75,885,962	$121,279,810	$38,119,889	773	$ 8,703,366	$6,208,463

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Tennessee							
9 Steve Cohen	121,340	$52,567,690	$84,012,896	$26,406,392	535	$6,028,992	$4,300,723
Texas							
1 Louie Gohmert	123,910	$124,455,707	$205,800,935	$64,574,148	1,385	$16,084,894	$12,392,085
2 Dan Crenshaw	106,148	$106,615,392	$176,300,050	$55,317,657	1,186	$13,779,178	$10,615,720
3 Van Taylor	123,756	$124,300,644	$205,544,522	$64,493,693	1,383	$16,064,854	$12,376,645
4 John Ratcliffe	132,685	$133,269,152	$220,374,918	$69,147,026	1,483	$17,223,961	$13,269,641
5 Lance Gooden	113,131	$113,629,286	$187,898,280	$58,956,833	1,264	$14,685,667	$11,314,095
6 Ron Wright	113,495	$113,994,626	$188,502,410	$59,146,391	1,268	$14,732,884	$11,350,472
7 Lizzie Fletcher	97,958	$ 98,388,884	$162,696,631	$51,049,313	1,094	$12,715,968	$ 9,796,605
8 Kevin Brady	139,232	$139,844,967	$231,248,736	$72,558,903	1,556	$18,073,832	$13,924,397
9 Al Green	78,690	$ 79,036,795	$130,695,865	$41,008,434	879	$10,214,867	$ 7,869,713
10 Michael T. McCaul	136,463	$137,063,347	$226,649,028	$71,115,653	1,525	$17,714,330	$13,647,430
11 K. Michael Conaway	127,222	$127,782,142	$211,301,554	$66,300,077	1,422	$16,514,809	$12,723,298
12 Kay Granger	120,728	$121,258,967	$200,514,780	$62,915,511	1,349	$15,671,742	$12,073,784
13 Mac Thornberry	117,321	$117,836,967	$194,856,135	$61,139,998	1,311	$15,229,476	$11,733,055
14 Randy Weber	115,367	$115,874,798	$191,611,477	$60,121,922	1,289	$14,975,881	$11,537,681
15 Vicente Gonzalez	83,723	$ 84,091,991	$139,055,177	$43,631,335	935	$10,868,210	$ 8,373,060
16 Veronica Escobar	80,559	$ 80,913,423	$133,799,072	$41,982,127	900	$10,457,406	$ 8,056,569
17 Bill Flores	125,031	$125,581,571	$207,662,674	$65,158,305	1,397	$16,230,403	$12,504,187
18 Sheila Jackson Lee	78,192	$ 78,536,737	$129,868,966	$40,748,978	874	$10,150,239	$ 7,819,922
19 Jodey Arrington	118,735	$119,257,328	$197,204,856	$61,876,957	1,327	$15,413,046	$11,874,481

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Texas							
20 Joaquin Castro	88,037	$ 88,424,497	$146,219,443	$45,879,266	984	$11,428,152	$ 8,804,448
21 Chip Roy	135,512	$136,108,506	$225,070,095	$70,620,231	1,514	$17,590,925	$13,552,357
22 Pete Olson	128,948	$129,515,943	$214,168,581	$67,199,664	1,441	$16,738,889	$12,895,933
23 Will Hurd	103,860	$104,317,157	$172,499,671	$54,125,212	1,160	$13,482,150	$10,386,884
24 Kenny Marchant	102,411	$102,861,492	$170,092,572	$53,369,937	1,144	$13,294,017	$10,241,943
25 Roger Williams	128,494	$129,059,839	$213,414,365	$66,963,013	1,436	$16,679,941	$12,850,519
26 Michael Burgess	126,327	$126,882,779	$209,814,361	$65,833,440	1,412	$16,398,574	$12,633,749
27 Michael Cloud	112,194	$112,688,184	$186,342,067	$58,468,540	1,254	$14,564,037	$11,220,389
28 Henry Cuellar	88,854	$ 89,245,508	$147,577,074	$46,305,250	993	$11,534,261	$ 8,886,197
29 Sylvia Garcia	59,447	$ 59,709,367	$ 98,735,879	$30,980,351	664	$ 7,716,953	$ 5,945,276
30 Eddie Bernice Johnson	82,071	$ 82,432,459	$136,310,963	$42,770,283	917	$10,653,729	$ 8,207,820
31 John Carter	126,016	$126,570,630	$209,298,189	$65,671,481	1,408	$16,358,231	$12,602,668
32 Colin Allred	94,396	$ 94,812,002	$156,781,872	$49,193,439	1,055	$12,253,685	$ 9,440,454
33 Marc Veasey	60,078	$ 60,342,469	$ 99,782,781	$31,308,838	671	$ 7,798,777	$ 6,008,314
34 Filemon Vela	75,081	$ 75,411,981	$124,701,845	$39,127,691	839	$ 9,746,389	$ 7,508,789
35 Lloyd Doggett	94,873	$ 95,290,675	$157,573,409	$49,441,800	1,060	$12,315,550	$ 9,488,115
36 Brian Babin	124,083	$124,629,058	$206,087,589	$64,664,091	1,387	$16,107,299	$12,409,345
Utah							
1 Rob Bishop	124,856	$133,349,281	$232,260,715	$72,489,574	1,582	$16,335,075	$10,530,927
2 Chris Stewart	129,757	$138,584,094	$241,378,437	$75,335,254	1,644	$16,976,331	$10,944,333
3 John R. Curtis	124,313	$132,768,983	$231,249,983	$72,174,120	1,575	$16,263,989	$10,485,099

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Utah							
4 Ben McAdams	122,803	$131,156,134	$228,440,808	$71,297,365	1,556	$16,066,418	$10,357,729
Vermont							
0 Peter Welch	85,244	$61,060,342	$85,851,774	$24,811,851	654	$5,682,109	$5,710,469
Virginia							
1 Robert J. Wittman	76,077	$67,834,048	$80,517,109	$26,197,981	538	$6,154,814	$4,560,993
2 Elaine Luria	72,775	$64,890,444	$77,023,133	$25,061,140	515	$5,887,731	$4,363,072
3 Robert C. Scott	66,704	$59,477,033	$70,597,567	$22,970,444	472	$5,396,554	$3,999,088
4 A. Donald McEachin	73,773	$65,779,587	$78,078,522	$25,404,534	522	$5,968,406	$4,422,856
5 Denver Riggleman	86,417	$77,054,301	$91,461,290	$29,758,907	611	$6,991,399	$5,180,940
6 Ben Cline	81,351	$72,536,480	$86,098,764	$28,014,093	575	$6,581,482	$4,877,173
7 Abigail Spanberger	84,245	$75,116,789	$89,161,517	$29,010,626	596	$6,815,602	$5,050,666
8 Don Beyer	51,315	$45,755,396	$54,310,369	$17,671,052	363	$4,151,543	$3,076,479
9 Morgan Griffith	90,919	$81,068,484	$96,226,013	$31,309,212	643	$7,355,619	$5,450,843
10 Jennifer Wexton	69,670	$62,121,437	$73,736,400	$23,991,731	493	$5,636,489	$4,176,891
11 Gerald E. "Gerry" Connolly	56,667	$50,527,056	$59,974,196	$19,513,900	401	$4,584,492	$3,397,314
Washington							
1 Suzan DelBene	86,765	$147,545,727	$233,999,536	$68,303,731	1,482	$18,456,708	$16,659,668
2 Rick Larsen	90,155	$153,309,674	$243,140,844	$70,972,050	1,540	$19,177,729	$17,310,486
3 Jaime Herrera Beutler	92,615	$157,492,020	$249,773,817	$72,908,195	1,582	$19,700,904	$17,782,723
4 Dan Newhouse	80,601	$137,063,286	$217,374,952	$63,451,067	1,377	$17,145,445	$15,476,076
5 Cathy McMorris Rodgers	92,824	$157,847,791	$250,338,052	$73,072,893	1,585	$19,745,408	$17,822,894
6 Derek Kilmer	93,119	$158,350,645	$251,135,550	$73,305,680	1,590	$19,808,311	$17,879,672
7 Pramila Jayapal	73,199	$124,476,714	$197,413,330	$57,624,332	1,250	$15,570,972	$14,054,902

Table 2 (continued). Statewide Economic Contributions of Recreational Fishing by Residents of Each Congressional District, 2016

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Washington							
8 Kim Schrier	83,793	$142,490,654	$225,982,463	$65,963,573	1,431	$17,824,362	$16,088,890
9 Adam Smith	69,538	$118,250,907	$187,539,537	$54,742,203	1,188	$14,792,177	$13,351,934
10 Denny Heck	86,029	$146,293,246	$232,013,168	$67,723,917	1,469	$18,300,034	$16,518,248
West Virginia							
1 David McKinley	126,459	$106,747,123	$154,741,505	$45,084,533	1,498	$10,288,440	$10,757,586
2 Alex Mooney	124,519	$105,110,022	$152,368,349	$44,393,105	1,475	$10,130,654	$10,592,604
3 Carol Miller	129,181	$109,044,781	$158,072,208	$46,054,946	1,531	$10,509,891	$10,989,135
Wisconsin							
1 Bryan Steil	190,477	$120,846,463	$174,986,145	$51,278,352	1,260	$12,130,758	$ 9,698,064
2 Mark Pocan	204,214	$129,561,796	$187,605,981	$54,976,498	1,351	$13,005,617	$10,397,479
3 Ron Kind	226,093	$143,443,078	$207,706,131	$60,866,694	1,496	$14,399,042	$11,511,468
4 Gwen Moore	147,604	$ 93,646,200	$135,600,059	$39,736,560	977	$ 9,400,353	$ 7,515,212
5 F. James Sensenbrenner	185,952	$117,975,861	$170,829,502	$50,060,279	1,231	$11,842,603	$ 9,467,695
6 Glenn Grothman	209,674	$133,025,610	$192,621,597	$56,446,286	1,388	$13,353,320	$10,675,454
7 Sean P. Duffy	239,134	$151,716,701	$219,686,370	$64,377,411	1,583	$15,229,561	$12,175,435
8 Mike Gallagher	211,459	$134,158,257	$194,261,674	$56,926,898	1,399	$13,467,017	$10,766,350
Wyoming							
0 Liz Cheney	142,740	$148,711,345	$197,898,155	$51,443,608	1,510	$15,842,885	$24,093,073

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Appendix A. Economic Contributions for Single-District States

Table 3 shows the total number of anglers, including children, who fished in each state in 2016. These figures include both resident and non-resident anglers. The economic contributions shown in Table 3 are based on spending within the state by all anglers, regardless of their place of residence.

Table 3. Economic Contributions of Recreational Fishing by Residents and Non-residents in States with a Single Congressional District, 2016**.**

District	*Anglers*	*Retail Sales*	*Total Multiplier Effect*	*Salaries and Wages*	*Jobs*	*Federal Tax Revenues*	*State and Local Tax Revenues*
Alaska							
Don Young	462,024	$942,977,816	$1,462,626,460	$470,961,645	12,689	$126,134,066	$67,872,991
Delaware							
Lisa Blunt Rochester	248,060	$90,127,996	$134,444,627	$38,702,404	987	$9,773,309	$6,158,215
Montana							
Greg Gianforte	374,770	$493,757,291	$706,850,057	$206,976,357	6,414	$48,889,177	$29,482,571
North Dakota							
Kelly Armstrong	138,216	$98,717,510	$151,969,275	$49,497,972	1,374	$11,469,313	$8,598,673
South Dakota							
Dusty Johnson	403,255	$410,676,536	$533,644,214	$136,901,865	3,685	$32,575,381	$22,890,132
Vermont							
Peter Welch	158,628	$122,710,609	$172,174,778	$52,264,202	1,483	$12,108,476	$13,275,302
Wyoming							
Liz Cheney	322,032	$594,446,353	$853,247,922	$221,966,430	7,689	$71,265,008	$117,197,468

Appendix B. Definitions of Economic Contribution

Economic benefits can be estimated by two types of economic measures: economic contributions and economic values. An **economic contribution** addresses the business and financial activity resulting from the use of a resource. **Economic value**, on the other hand, is a non-business measure that estimates the value people receive from an activity after subtracting for their costs and expenditures. This concept is also known as consumer surplus.

There are three types of economic contribution: direct, indirect and induced. A **direct contribution** is defined as the economic contribution of the initial purchase made by the consumer (the original retail sale). **Indirect contributions** are the secondary effects generated from a direct contribution, such as the retailer buying additional inventory, and the wholesaler and manufacturers buying additional materials. Indirect contributions affect not only the industry being studied, but also the industries that supply the first industry. An **induced contribution** results from the salaries and wages paid by the directly and indirectly effected industries. The employees of these industries spend their income on various goods and services. These expenditures are induced contributions, which, in turn, create a continual cycle of indirect and induced effects.

The direct, indirect and induced contribution effects sum together to provide the overall economic contribution of the activity under study. As the original retail purchase (direct contribution) goes through round after round of indirect and induced effects, the economic contribution of the original purchase is multiplied, benefiting many industries and individuals. Likewise, the reverse is true. If a particular item or industry is removed from the economy, the economic loss is greater than the original lost retail sale. Once the original retail purchase is made, each successive round of spending is smaller than the previous round. When the economic benefits are no longer measurable, the economic examination ends.

This study presents several important measures:

Expenditures – these **i**nclude expenditures made by anglers for equipment, travel expenses and services related to their outdoor activities over the course of the year. These combined initial retail sales represent the "direct output".

Total Economic Effect – also known as "total output" or "total multiplier effect," this measure reports the sum of the direct, indirect and induced contributions resulting from the original retail sale. This figure explains the total activity in the economy generated by a retail sale. Another way to look at this figure is, if the activity in question were to disappear and participants did not spend their money elsewhere, the economy would contract by this amount.

Salaries & Wages – this figure reports the total salaries and wages paid in all sectors of the economy as a result of the activity under study. These are not just the paychecks of those employees directly serving recreationists or manufacturing their goods, it also includes portions of the paychecks of, for example, the truck driver who delivers food to the restaurants serving recreationists and the accountants who manage the books for companies down the supply chain, etc. This figure is based on the direct, indirect and induced effects, and is essentially a portion of the total economic effect figure reported in this study.

Jobs – much like Salaries and Wages, this figure reports the total jobs in all sectors of the economy as a result of the activity under study. These are not just the employees directly serving recreationists or manufacturing their goods, they also include, for example, the truck driver who delivers food to the restaurants serving recreationists and the accountants who manage the books for companies down the supply chain, etc. This figure is based on direct, indirect and induced effects.

Appendix C. Methodology for Estimating Economic Contribution

The extent of the economic contributions associated with spending for angling can be estimated in two ways:

- **Direct effects**: These include the jobs, income and tax revenues that are tied directly to the spending by anglers without including multiplier effects.
- **Total effects**: These include the jobs, income and tax revenues that are tied directly to the spending by anglers plus the jobs, income and tax revenues that result from the multiplier effects of angling spending. The multiplier effect occurs when a direct purchase from a business leads to increased demand for goods and services from other businesses along their supply chain. Also included is economic activity associated with household spending of incomes earned in the affected businesses.

The economic contributions, both direct effects and total effects, were estimated with an IMPLAN input-output model for the U.S. economy. The IMPLAN model was developed by MIG, Inc. originally for use by the U.S. Forest Service. Inherent in each IMPLAN model is the relationship between the economic output of each industry (i.e. sales) and the jobs, income and taxes associated with a given level of output. Through those models, it is possible to determine the jobs, income and taxes supported directly by wildlife-based recreationists with and without the multiplier effects.

Input-output models describe how sales in one industry affect other industries. For example, once a consumer makes a purchase, the retailer buys more merchandise from wholesalers, who buy more from manufacturers, who, in turn, purchase new inputs and supplies. In addition, the salaries and wages paid by these businesses stimulate more benefits. Simply, the first purchase creates numerous rounds of purchasing. Input-output analysis tracks the flow of dollars from the consumer through all of the businesses that are affected, either directly or indirectly.

To apply the IMPLAN model, each specific expenditure for producer activities was matched to the appropriate industry sector affected by the initial purchase. The spending was estimated with models of the U.S. economy, therefore all of the resulting contributions represent salaries and wages, total economic effects, jobs and tax revenues that occur within the U.S.

Estimating Tax Revenues

The IMPLAN model estimates detailed tax revenues at the state and local level and at the federal level. The summary estimates provided in this report represent the total taxes estimated by the IMPLAN model including all income, sales, property and other taxes and fees that accrue to the various local, state and federal taxing authorities.

Title – NFHP/AFS/NOAA Fisheries Partnership to Implement New Fish Habitat Conservation Awards

Desired outcomes/key messages – The NFHP Board will be updated on two new awards. First, at the Society level, AFS has approved the new "Stan Moberly Award for Outstanding Contributions in Fish Habitat Conservation." The award partnership proposes to give the first award to Stan. A second award, to be presented by the AFS Fish Habitat Section, will recognize young professionals and students for an outstanding early career. Both awards were developed and now will be implemented in association with AFS and NOAA Fisheries.

Background – National Fish Habitat Partnership (NFHP) representative Ryan Roberts, American Fisheries Society Fish Habitat Section (AFS-FHS) officers (President Tom Lang, President-elect Kimberly Dibble, Past-President Tom Bigford), and NOAA Fisheries staff collaborated throughout 2018 to review their existing suite of awards for outstanding achievement related to fish habitat conservation. The new awards fill needs to recognize successful fish habitat efforts from freshwater to the oceans for a lengthy career (the more prestigious Society-level award) and early achievements (the young professional or student award to be presented by the AFS FHS).

The awards were approved by the AFS Governing Board on January 30, 2019, reflecting the support of NFHP and NOAA Fisheries. The first Moberly Award will be presented at the joint meeting of AFS and The Wildlife Society in Reno, Nevada on September 29 to October 3, 2019 (see https://fisheries.org/events/149th-annual-meeting-in-reno-nevada-with-the-wildlife-society/). The award honors individuals and groups who achieved significant success in a fish habitat career related to research, policy, management, education, project implementation, communications and outreach, or some other endeavor. The international award covers freshwater, coastal, and marine habitats. The award replaces and expands upon the NFHP Jim Range Award and will be added to the existing AFS honors (see https://fisheries.org/about/awards-recognition/). NFHP and AFS will coordinate with NOAA Fisheries and its biennial Nancy Foster Habitat Conservation Award for coastal and marine achievements (see https://www.fisheries.noaa.gov/dr-nancy-foster-habitat-conservation-award).

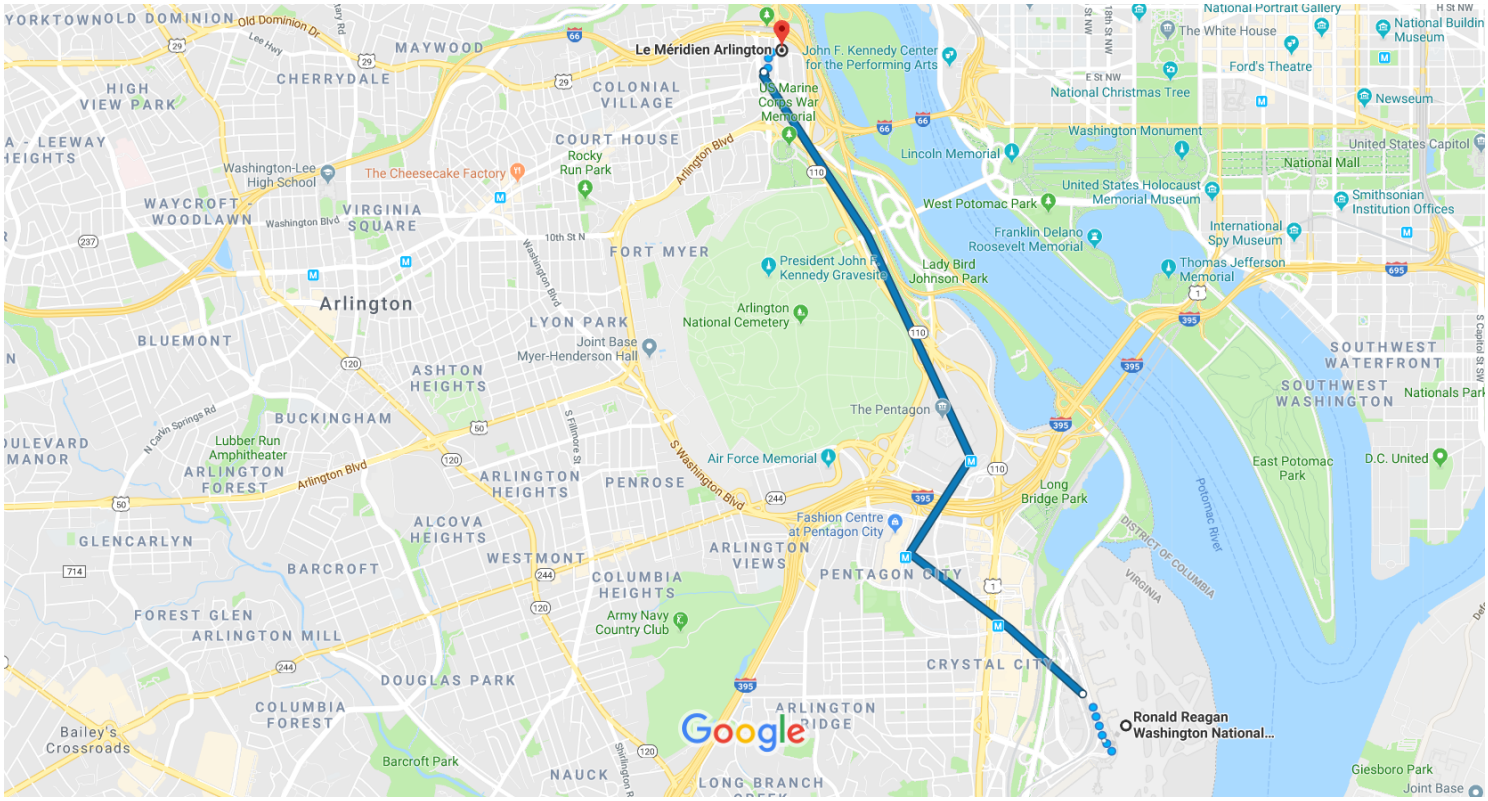
In addition to the Moberly Award for career achievement, NFHP will join the AFS Fish Habitat Section and NOAA Fisheries on a second new award for outstanding achievements by students and young professionals. The latter award will also be presented at the Reno meeting but will be a Section award, not a Society-level award like the Moberly.

The administrative procedures being developed for both awards will be designed to streamline the application process, share non-winning nominations, and increase awareness of the awards, award winners, their achievements, and fish habitat conservation. The first Moberly Award will be presented to Stan in Reno so the nomination process for 2019 will be limited to the early career award; nominations will be solicited in April 2019.

Google Maps

Ronald Reagan Washington National Airport to Le Méridien Arlington

5:16 PM - 5:33 PM (17 min)



5:16 PM — Ronald Reagan Washington National Airport

Arlington, VA 22202

Walk

About 5 min , 0.2 mi

⚠ Use caution - may involve errors or sections not suited for walking

Head north toward Aviation Cir

⚠ Restricted usage road

354 ft

Continue onto Aviation Cir

ℹ Destination will be on the left

0.2 mi

5:21 PM — Ronald Reagan Washington National Ai...

M Blue Largo Town Center

10 min (5 stops) · Stop ID: 1383
Service run by WMATA

5:31 PM — Rosslyn Station

Walk

About 2 min , 0.1 mi

Use caution - may involve errors or sections not suited for walking

Head north on N Moore St toward 19th St N

397 ft

Turn right onto 19th St N

302 ft

Turn left

Destination will be on the left

59 ft

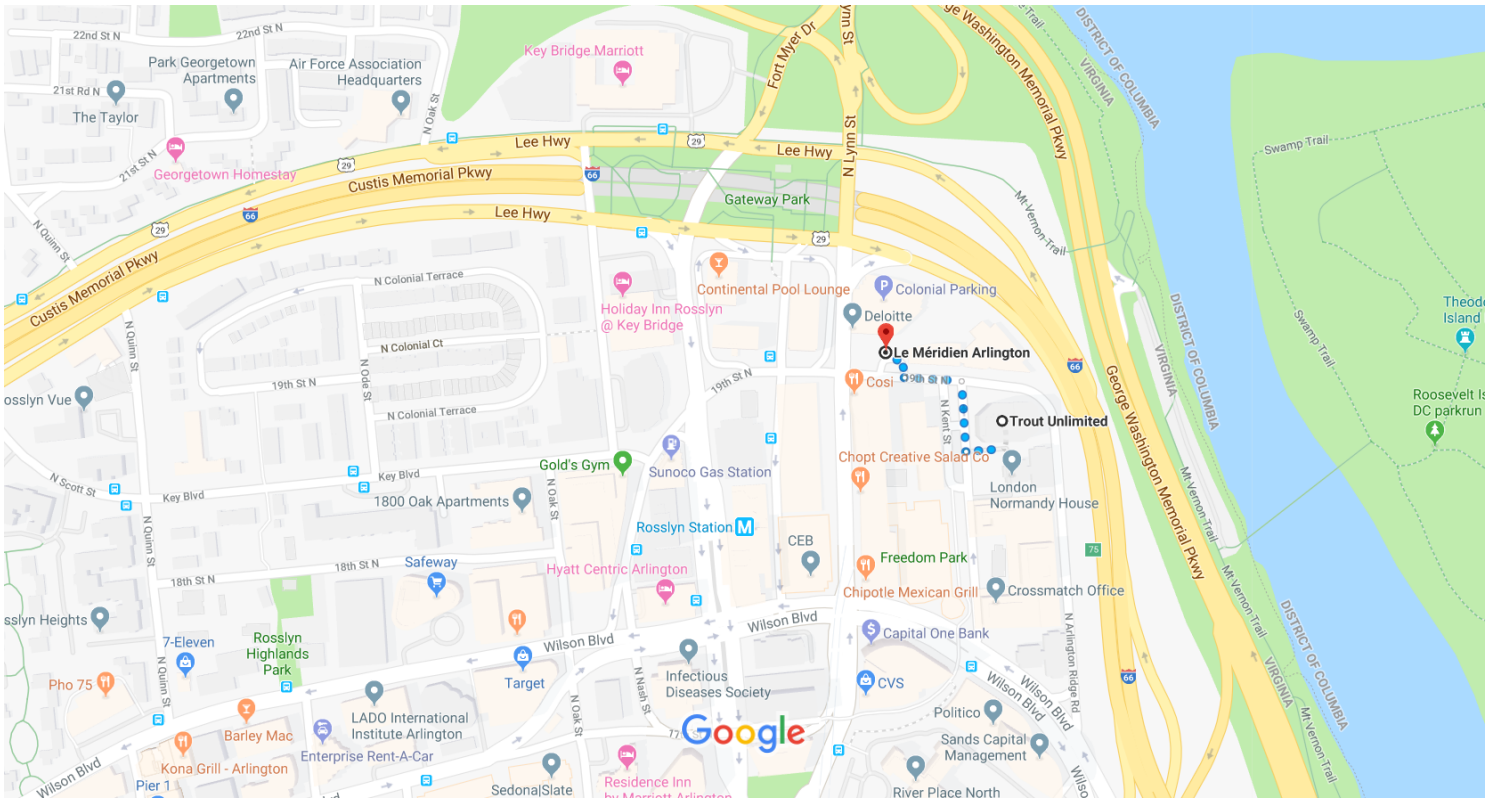
5:33 PM **Le Méridien Arlington**

1121 19th St N, Arlington, VA 22209

Tickets and information

WMATA - 1 (202) 637-7000

Google Maps Trout Unlimited to Le Méridien Arlington Walk 0.1 mile, 2 min



Map data ©2019 Google 200 ft

⚠ Use caution–walking directions may not always reflect real-world conditions

Trout Unlimited

1777 N Kent St #100, Arlington, VA 22209

1. Head west toward N Kent St
   118 ft
2. Turn right onto N Kent St
   220 ft
3. Turn left onto 19th St N
   177 ft
4. Turn right
   ℹ Destination will be on the right
   98 ft

Le Méridien Arlington

1121 19th St N, Arlington, VA 22209

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Restaurant Options

All within 0.5 mile from Trout Unlimited

Cosi

Wiseguy Pizza

Chopt

Potbelly's

Chipotle

Brown Bag

The Little Beet

Nando's Peri Peri

Panera Bread

Sweetgreen