

AQUATIC NUISANCE SPECIES TASK FORCE: MINUTES OF THE JUNE 2018 MEETING

JUNE 12 - 14, 2018; SILVER SPRING, MARYLAND

On June 12 – 14, 2018, the Aquatic Nuisance Species (ANS) Task Force held a three-day meeting at the National Oceanic and Atmospheric Administration (NOAA) Headquarters in Silver Spring, Maryland. Action items are listed below, followed by a summary of the meeting.

Decisional Items

The ANS Task Force made the following decisions:

- ANS Task Force approved the Nevada State ANS Management Plan.

New Action Items

The ANS Task Force assigned the following action items:

- ANS Task Force Executive Secretary will work with Regional Panels to streamline grant reporting requirements

Strategic Planning Action Items:

- ANS Task Force Executive Secretary will distribute draft Goal Team priority objectives and strategies to the members and regional panels
- USFWS / NOAA to refine draft goals, objectives, and strategies
- Draft to be reviewed during mid-term conference call
- Incorporate draft goals, objectives, and strategies into a draft Strategic Plan by November 15.
- Fall 2018 ANS Task Force meeting tentatively scheduled for week of December 10.

Tuesday –June 12, 2018

1. Welcome

David Hoskins (U.S. Fish and Wildlife Service) and Jennifer Lukens (National Oceanic and Atmospheric Administration) welcomed attendees and thanked them for attending.

Lukens reviewed the agenda which included presentations and updates on Asian carp and ballast water management as well as the progress on the Habiattitude campaign, pending approval of the Nevada State ANS Management Plan, and discussions on strategic planning.

Hoskins thanked the NOAA for hosting the meeting. He also thanked the ANS Task Force Members and Regional Panel representatives who have dedicated hours of personal time and expertise to ensure that the meeting action items remain progressing or completed.

Self-Introductions

ANS Task Force members and audience members introduced themselves. The list below includes both in-person and call-in attendees.

Name	Affiliation
James Ballard	Gulf States Marine Fisheries Commission Gulf and South Atlantic Regional Panel
Mike Bober	Pet Industry Joint Advisory Council
Kim Bogenschutz	Association of Fish and Wildlife Agencies Iowa Department of Natural Resources
Bill Bolen	U.S. Environmental Protection Agency

Joyce Bolton	USDA, Agricultural Research Service
Lauren Bregman	NOAA
Elizabeth Brown	Western Regional Panel Colorado Parks and Wildlife
Shawn Buckner	Department of Interior
Stas Burgiel	NISC Secretariat
Earl Campbell	U.S. Geological Survey
Tim Campbell	Mississippi River Basin Panel University of Wisconsin
Al Cofrancesco	U.S. Army Corps of Engineers
Kevin Cute	Northeast Regional Panel Coastal Resources Management Council
Wesley Daniel	U.S. Geological Survey
Jeanette Davis	NOAA
P. Gary Egrie	USDA - APHIS
Ray Fernald	Mid-Atlantic Regional Panel Virginia Department of Game and Inland Fisheries
Pam Fuller	U.S. Geological Survey
Brian Goodwin	American Boat and Yacht Council
Lisa Gonzalez	Gulf and South Atlantic Regional Panel Houston Advanced Research Center
David Hoskins	U.S. Fish and Wildlife Service
Dave Hu	Bureau of Land Management
Mike Ielmini	USDA Forest Service
* Doug Jensen	Minnesota Sea Grant
Erika Jensen	Great Lakes Commission Great Lakes Panel
Su Jewell	U.S. Fish and Wildlife Service
Alanna Keating	BoatUS Foundation
Cindy Kolar	U.S. Geological Survey
Ellen Kujawa	Lake Champlain Basin Program
Justin Lampert	The American Waterways Operators
Mark Lewandowski	Chesapeake Bay Program Maryland Department of Natural Resources
Jennifer Lukens	NOAA
Don Maclean	U.S. Fish and Wildlife Service
Louanne McMartin	U.S. Fish and Wildlife Service
Laura Megill	Nevada Department of Wildlife
John Morris	U.S. Coast Guard
Marshall Myers	Lawyer
Linda Nelson	U.S. Army Corps of Engineers
Arthur Parola	University Student
Patrick Parsons	American Waterways Operator

Susan Pasko	U.S. Fish and Wildlife Service
Melissa Perera	U.S. Coast Guard
Ian Pflingsten	U.S. Geological Survey
Elizabeth Phelps	Department of State
Christian Rosnell	NOAA
Ron Salz	NOAA
Greg Sheehan	U.S. Fish and Wildlife Service
Samantha Simon	U.S. Department of Agriculture
Hilary Smith	Department of the Interior
Michele Tremblay	Northeast Regional Panel
Sarah Veatch	NISC Secretariat
Lisa Vehmas	Bureau of Reclamation
Bob Wakeman	Great Lakes Regional Panel Wisconsin Department of Natural Resources
Cindy Williams	U.S. Fish and Wildlife Service
John Wullschleger	National Park Service
Libby Yranski	National Marine Manufacturers Association
Dennis Zabaglo	Tahoe Regional Planning Agency
Paul Zajicek	National Aquaculture Association

* *On the phone*

2. Adoption of Agenda/Approval of Minutes/Review of Past Action Items

Following introductions, David Hoskins called for approval of the current meeting agenda. The agenda was approved unanimously without discussion.

Hoskins called for approval of the meeting minutes from the November 2016 ANSTF meeting in Falls Church, Virginia. The minutes were approved unanimously without discussion.

Susan Pasko (ANS Task Force Executive Secretary) provided an overview on the status on the action items from the May 2016 meeting:

- ANSTF Executive Secretary will inquire about the ability of the Mississippi River Basin Panel (MRBP) to review and provide comments on the ACRCC 2017 Action Plan.

STATUS: Complete. EPA, MICRA, and MRBP coordinated to give the Panel an opportunity to review the Action Plan.

- ANSTF Executive Secretary will provide a summary of the outcomes from the USFWS 2017 Triploid Grass Carp stakeholder meeting as it relates to the May 2015 recommendations from the GLP and MRBP.

STATUS: Ongoing. Meeting has not yet been scheduled and is currently pending to determine direction from the new administration.

- ANSTF Executive Secretary will distribute information from NAA on their Aquaculture America 2017 Conference to the ANSTF and USFWS Office of Law Enforcement

STATUS: Complete. Information was distributed soon after the Fall 2016 meeting.

- ANSTF will inquire with NISC about actions to better understand the pathway associated with Live Release for religious/cultural purposes.
STATUS: Complete. NISC will not be pursuing this topic in the near future; encourages ANSTF to consider formation of an ad hoc committee to explore this topic. MRBP is currently pursuing work on this topic.
- Economics group will distribute their draft interview questions and script to ANSTF members and Regional Panels. Comments on the documents along with suggestions for sectors and potential contacts to include in their economic assessment are due by December 1.
STATUS: Complete. Materials were distributed soon after the meeting. This work has been on hold during the DOI FACA review.
- ANSTF Co-chairs will consider criteria for members, and report back at the May 2017 meeting.
STATUS: Complete. ANSTF Co-chairs have reached out to appropriate staff to review the structure and membership obligation in accordance with legislation and charter.
 - There is no limit on membership numbers or specific obligations written into legislation
 - Obligations should be determined by the current members and written into bylaws
- ANSTF members and Regional Panels will submit (or resubmit, if needed) completed ANSTF Reporting Forms to the Executive Secretary by December 15.
STATUS: Complete. Data call sent out in February 2016; another for FY 17 data in March 2018
- CEO sub-committee will distribute request to ANSTF members and Regional Panels for input on needs for development, implementation, and evaluation of outreach programs.
STATUS: Complete. Materials were distributed soon after the meeting. Topic to be addressed in Outreach breakout sessions.
- John Darling (EPA) and Stephanie Carman (BLM) will lead efforts to discuss future work and ANSTF structure for (1) Research and (2) Prevention, EDRR, Control / Management, and Restoration and provide recommendations at the May 2017 meeting.
STATUS: Complete. Call was held in February 2017. Recommendations from the discussion:
 - Table the re-structuring of committees until the Strategic Plan is updated
 - Use the Strategic Plan to define committees and define time-specific tasks for each committee
 - Standing committees should respond to emerging issues from regional panels, as well as defined tasks from the Strategic Plan
 - Standing committees need a leader with available time and resources and clearly defined tasks
 - Ad hoc committees should have at least 50% ANSTF members.
- Elizabeth Brown will distribute the CEO charter to the ANSTF members and Regional Panels
STATUS: Complete. Materials were distributed soon after the meeting.
- ANSTF Exec Sec will facilitate communication with USGS and other applicable Federal agencies regarding recommended MRBP research priorities.
STATUS: Complete. Request was sent to appropriate agencies.

3. FWS / NOAA Introductory Remarks

Hoskins introduced Greg Sheehan, U.S. Fish and Wildlife, Principal Deputy Director. Sheehan provided an overview of the impacts of ANS and commended the ANS Task Force for their efforts to combat this threat. He also provided an overview of invasive species work conducted throughout the Department of Interior (DOI) and the U.S. Fish and Wildlife Service (USFWS). Examples included work to prevent, contain, and control invasive mussels in the West; implementing a framework for early detection and rapid response; conducting risk assessments; and working with partners to identify new and innovative ways to design and construct boats to decrease the risk of spreading ANS. Sheehan commented on the upcoming strategic planning sessions of the ANS Task Force and stated he was eager to see the results of this work, knowing that it will serve as a solid strategic foundation for the ANS Task Force's operations over the next five years.

Lukens followed with a perspective from NOAA on the outlook of invasive species and role of the ANS Task Force. She stated that NOAA has several mandates and work efforts that relate to ANS including the Blue Economy framework that promotes conservation of oceans and waterways along with initiatives to promote aquaculture, maritime commerce, and tourism in coastal areas. Lukens stressed the importance of working with partners and making connections with political leaders to emphasize the importance of the issues.

4. Informational: New Species Occurrences and USGS NAS Database Tools

Pam Fuller, USGS, provided an overview of the NAS system alerts from the past year. Alerts are generated when a species report is new to one or more geographic levels. Since October 2016, USGS NAS had 370 alerts; 14 new to the United States, 67 new to states, 264 new to drainages, and 301 new to counties. Of these alerts, 114 were fish, 93 were mollusks, and 103 were plants. Thirty-two of the alerts were from Asian carp, 21 from zebra mussels, 30 from the Chinese mystery snail, and 16 from magnificent bryozoan. Other new species occurrences included the tropical nutrush, Cuban treefrog, African jewelfish, and tworank sedge.

The USGS is working to improve the ability to develop new maps and spatial queries. New features have been added to the NAS database including the ability to conduct spatial and multi-species queries. In addition, the USGS has developed an Alert Risk Mapper tool. This tool supplements the NAS alert system by creating a map showing waterbodies at short-term risk of invasion from a species sighting. Another tool, the Flood and Storm Tracker was created to help assess transportation of nonindigenous aquatic species between drainages due to storm surge and inland flooding.

Q: What information would you like agencies and other groups to report?

A: The USGS will collect any information and take steps to verify it before it is added to the database.

Q: For the Alert Risk Mapper, how do you define large dams?

A: 6 meters and larger

Q: How do you verify data?

A: Most often from identification from photos or data from other systems.

Q: How do you indicate if a control or eradication effort was conducted?

A: Maps will indicate these efforts.

Q: What would you like to see from the ANS Task Force?

A: More reporting from the Federal agencies.

5. Informational: Ballast Water Management Dashboard

Melissa Perera, Environmental Protection Specialist for the U.S. Coast Guard (USCG), provided an overview of the National Ballast Information Clearinghouse (NBIC), operated for the U.S. Coast Guard by the Smithsonian Environmental Research Center in Edgewater, MD. These groups have been collecting ballast water reports and associated vessel information for almost 20 years. Up until now, these data have had little visibility outside of the USCG, except for access to an online database with limited querying capability. As of February 2018, the USCG and NBIC have developed a “data dashboard” consisting of lightly analyzed real-time data with much larger functionality. Current access is limited to the USCG, with the intention to eventually make the data dashboard accessible to the public.

Q: Is there a reason freshwater species are not mention?

A: Focus is currently on coastal habitats, freshwater will be added in later versions.

Q: What information will not be included in the database?

A: The USCG uses the information to identify bad actors; some information is hidden to protect the identity of the operators. Approximately 98% of the information on the dashboard you can get online and analyze the data yourself.

Q: Where is the data compliance form? How far back can you look at the data?

A: The USCG is responsible to collecting the data from the National Database (NBEC). Data goes back to 2006.

Q: Do other nations keep track of their ballast water operations in a similar manner?

A: Most other nations do not monitor ballast water to this extent.

6. Informational: Asian Carp Update

Bill Bolen, Senior Advisor with the U.S. Environmental Protection Agency (EPA) and Co-Chair of the Asian Carp Regional Coordinating Committee (SCRCC) provided an overview of the ACRCC’s Action Plan. This document details 60 high-priority strategic measures designed to prevent the spread of four species of invasive Asian carp in the Great Lakes. The Plan serves as a foundation for the work of the ACRCC partnership — a collaboration of 27 U.S. and Canadian federal, state, provincial, and local agencies and organizations. The 2017 Plan builds on prior strategies by applying lessons learned through research and additions of new technologies and control measures. The Plan also carries forward a new interagency contingency response plan developed for potential rapid-response to detections of Asian carp at all life stages in unexpected areas of the upper Illinois River and Chicago Area Waterway System.

Q: Does Congress understand how we can spend GLRI money?

A: Yes. They understand the importance of the Great Lakes Basin and dedicating work outside basin.

Q: Is the 49 million budget being spent other places outside the Great Lakes?

A: They are starting to dedicate those funds.

Q: Are you looking to use chlorine for control?

A: Not at this time.

6b. Informational: Habitattitude™ Update

Mike Bober, President & CEO of PIJAC, and Scott Hardin (on the phone), Science Advisor to PIJAC, provided an overview of the recent work on the Habitattitude™ campaign. The USFWS and PIJAC have

been working to revitalize Habitattitude™, a nationally branded social marketing campaign targeting aquarium owners and water gardeners to promote environmentally responsible behavior and prevent the establishment of invasive species. The core of this public-private partnership is Habitattitude.net, a website that seeks to inform pet owners and water gardeners about the importance of not releasing potentially harmful fish and aquatic plants. Although the objectives and message of Habitattitude™ remain, the revitalized website will address a different and broader audience, reaching out to prospective aquarium owners, reptile and amphibian keepers, water gardeners, and teachers considering classroom pets to enhance the educational experience. By providing guidelines on choosing appropriate species and advice for proper care and housing, Habitattitude™ seeks to increase the chances for success in the pet experience, thus reducing the likelihood of releasing potentially invasive animals and plants. Following current trends in social media, the Habitattitude™ website will rely on a visual presentation with minimal text. As the new website is rolled out, PIJAC, USFWS, and others will develop plans to re-establish a partner network to promote the message through both retail and governmental channels.

Q: Have you given thought to a campaign evaluation component?

A: We want to work with partners to evaluate the campaign over time.

Q: What is the clear call to action for this campaign?

A: Educating the target audience to choose the best pets that for their lifestyle and ensure that unwanted pets are not released into the wild.

6c. Decisional: Nevada State Management Plan

Laura Megill, Nevada aquatic invasive species coordinator, provided a brief overview of the Nevada State ANS Management Plan and its development. Nevada has been affected by a number of significant invasive species in recent decades, but none more devastating than the quagga mussel. The 2007 discovery of quagga mussels in Lake Mead catapulted the west and Nevada into action. Watercraft inspection programs have been the primary focus in containing regional mussel populations on the lower Colorado River system. Nevada's watercraft decal program has been used as a tool to engage people in Aquatic Invasive Species (AIS), and provide support to Nevada Department of Wildlife AIS program. Expanding AIS management to address additional vectors and specific species of concern are now on the horizon. The implementation of a 5 year AIS Management Plan will help guide Nevada in future actions to address AIS. Laura then gave a brief overview of the process implemented to develop the Nevada ANS Management plan as well as the goals and objectives, strategy framework, and priorities for action. The key aspect of the management plan is the Implementation Table which identifies the trajectory of the plan over a five-year period.

Q: Why is this a 5 year plan?

A: It is a reasonable timeframe to implement the highest priority needs.

Q: How will the plan complement the Lake Tahoe ANS management plan?

A: Nevada Department of Wildlife has a great partnership with Lake Tahoe and will work together to achieve common goals.

Decision: The ANS Task Force unanimously approved the Nevada State Aquatic Nuisance Species Management Plan.

6d. Discussion: ANSTF Update

ANSTF Business Items:

- ANS Task Force Charter
 - The ANS Task Force Charter was signed by the Secretary on January 10, 2018. No significant changes were made.
 - The charter is valid until January 10, 2020.

FY18 Budget:

Current Budget Status

- The President's FY 2018 budget for the Service continues the focus on key invasions - Asian carp and Quagga/zebra mussels.

Asian Carp Management:

- The Service received \$8.4 to support Asian Carp management, with \$5,280,000 allocated to the Great Lakes and \$3,120,000 allocated to areas outside the Great Lakes.
- An additional \$2 million for contract fishing, deterrents, and grass carp management has also been allocated

Quagga/Zebra Containment Program:

- In FY18, the Service will allocate approximately \$940 thousand to partners through grants for projects to control the spread of invasive mussels in the western U.S., with emphasis on preventing the spread via trailered watercraft from areas already contaminated.
- \$3 million was also allocated in the Lake Tahoe watershed in order to manage AIS.

Prevention Funding Request

- The Branch of Aquatic Invasive Species received \$700 K to focus on prevention efforts.

State/Interstate Aquatic Nuisance Species Management Plan Grant Program

- In FY18, funding appropriated by Congress for the State/Interstate ANS Management Plan Grant Program remained at \$2 million. 42 of the 43 eligible plans applied for funding this year and each plan received approximately \$48,000. New York did not apply.
- There are currently 43 ANSTF-approved plans (40 state and 3 interstate). The state of Nevada has drafted a plan and will be seeking approval at this meeting.

Regional Panel Support:

- The FY18 Regional Panel funding remains at \$40K/Panel.

7a. Discussion: DOI Update

Hilary Smith, Senior Advisor for Invasive Species, provided an update from the U.S. Department of the Interior, giving an overview of the DOI mission areas and the current DOI Strategic Plan. ANS impacts vary across DOI, and many bureaus are involved in management. To help coordinate efforts, DOI has an Invasive Species Task Force and an Invasive Species Action Plan. Examples of what the DOI Task Force is working on include leadership initiatives, data management and mobilization, performance metrics for control and prevention, early detection and rapid response, and science and research priorities. Leadership initiatives include leading implementation of action items in the report, *Safeguarding the West from Invasive Species: Actions to Strengthen Federal, State, and Tribal Coordination to Address Invasive Mussels*, exploring options for DOI-wide Categorical Exclusions for addressing invasive species, evaluating opportunities to support state, tribes, and other entities to

strengthen integrated EDRR capacity, and updating DOI-wide policy direction on invasive species management, including prevention, eradication, and control.

7b. Discussion: ANSTF Report to Congress

Progress on the ANS Task Force 2016 Report to Congress was postponed during the Department of Interior's advisory board review. We have a near-final draft that will soon be circulated to the ANS Task Force members and regional panels for review.

7c. Informational: Member Updates

U.S. Army Corps of Engineers

Asian Carp

Chicago Sanitary and Ship Canal - All existing barriers [Barrier I (aka the Demonstration Barrier), Barrier IIA, and Barrier IIB] are currently fully operational. They are all operated simultaneously unless a barrier needs to be off line for maintenance.

A more permanent, upgraded Barrier I (often referred to as Permanent Barrier I or PB1) is currently under construction. PB1 will include the current Demonstration Barrier refreshed with new electrodes and an additional new system of higher-powered electrode arrays in a new control building. The underwater structures for the new arrays of PB1 have been completed and construction of the main control building and backup power systems will be complete this summer.

The last major contract for PB1 is to supply and install the specialized electrical pulse-generating equipment for the new arrays within the main building. This contract will be competitively advertised in mid-June with the intent of awarding this fiscal year. Installation will be completed in FY 2020. PB1 will likely be activated in 2021 after completion of safety testing.

Engineer Research and Development Center (ERDC) developed electrical operating protocols to stop Asian Carp from passing through the existing barriers (IIA and IIB) under different environmental conditions. Chicago is using these recommendations on DC parameters.

ERDC is still in the process of evaluating very small Bighead and Silver Carp during summer conditions. Research results will be used to parameterize the new Permanent Barrier 1 still under construction.

Study: Brandon Road Lock and Dam: The Corps is working aggressively on the Brandon Road Study and is seeking opportunities to complete the Chief's Report sooner than August of 2019. A regional partnership is crucial to achieving an implementable and sustainable project. In essence the Corps wants to establish multiple defensive barriers at Brandon Road to prevent the movement of Asian Carp into the Des Plaines River and eventually the Chicago Sanitary and Ship Canal. Numerous management and control technologies are being examined for employment at this facility.

Great Lakes Restoration Initiative. Evaluating AC electricity in our lab (this summer) as a new type of barrier that may be easier and more economical to deploy compared to DC pulse.

Conducting salinity tolerance testing to evaluate movement of the Asian Carp invasive front into Gulf Coastal Tributaries. Tagged Asian Carp entrained through the Bonnet Carre Spillway to monitor potential movement from the Spillway, through Lake Pontchartrain, into the Pearl/Pascagoula Rivers.

Sea Lamprey

Sea Lamprey - Harpersfield Dam, Grand River, OH: The project is currently in the design phase and construction award is anticipated in July 2018. The project consists of constructing a modern sea lamprey barrier at a location where a failing dam currently provides limited benefits for sea lamprey

control. The existing dam does not serve any other purposes. The project will protect 1,266 miles of river and tributaries from sea lamprey and reduce the use of lampricide. Trap and sort features will be incorporated into the project to pass native fish species during spawning season.

Sea Lamprey - Approximately 6 other sea lamprey barrier/trap projects are in feasibility or design phase, primarily in MI and WI.

Sea Lamprey – ANSRP – Evaluating the efficacy of using different metals to either attract or repel migrating adult lampreys ascending into streams for spawning. Currently working with the Great Lakes Commission and associates to field test the technology

Aquatic Plant Control 2018

Was not in Presidential Budget, but Congress provided funding!

Aquatic Plant Control Program: Of the funding provided for the Aquatic Plant Control Program, \$1,000,000 shall be for activities for the control of the flowering rush. Of the funding provided for the Aquatic Plant Control Program, \$5,000,000 shall be for nationwide research and development to address invasive aquatic plants; within this funding, the Corps is encouraged to support cost shared aquatic plant management programs. Of the funding provided for the Aquatic Plant Control Program, \$5,000,000 shall be for watercraft inspection stations, as authorized by section 1039 of the Water Resources Reform and Development Act of 2014, and related monitoring.

Aquatic Plant Control 2019

Not in the Presidential Budget

House proposes a \$6M budget. (\$5M watercraft inspection stations, \$1M related monitoring)

Senate proposes a \$12M budget (\$5M Research, \$6M watercraft inspection stations \$1M Flowering Rush)

Hydrilla

Hydrilla - Erie Canal/Tonawanda Creek, NY Demonstration Project: The project is entering its 5th year of field-scale activities to eliminate monoecious hydrilla from the system. Following 3 years of treatment with endothall and limited use of burlap benthic barriers, hydrilla was reduced by approximately 99%. In an effort to continue to minimize the herbicide footprint within the project area, in 2018 we'll evaluate limited use of chelated copper to control small isolated patches of hydrilla.

Hydrilla - Cayuga Lake, Aurora, NY Demonstration Project: This project was initiated in 2017 to expand upon research and innovative methods to control monoecious hydrilla within the Great Lakes basin. After the first year of treatment hydrilla frequency was reduced from approximately 60% in 2016 to less than 3% at the end of the 2017. A combination of fluridone and chelated copper were used in the treatment.

Harmful Algal Blooms

Harmful Algal Blooms are becoming a much more significant problem for Corps of Engineers Districts. We are facing problems in Florida, the Great Lakes, New England, Texas, the Pacific Northwest and many other areas. ERDC has begun three research projects to examine various mechanisms to identify, manage or control these blooms. Additionally, ERDC researchers are supporting various Districts that are attempting to minimize the negative impacts from harmful algal blooms.

Phragmites

The Corps continues to collaborate with Louisiana State University and USGS National Wetlands Research Center to monitor and evaluate the declining populations of Phragmites in southern Louisiana. The Corps has assisted with the:

- Inventory and pre-process moderate and high resolution satellite imagery
- Landsat-5 TM and Landsat-8 (2008-2017); 6 multispectral bands/30meter spatial resolution
- WorldView-2 and -3 (2012-2017); 8 multispectral bands/<2meter spatial resolution
- Radiometric and atmospheric processing of WV imagery

U.S. Bureau of Reclamation

The U.S. Bureau of Reclamation (Reclamation) was an active participant in the DOI's Safeguarding the West Mussels Initiative. In Fiscal Year 2017 (enacted), Reclamation's budget included an increase of \$1 million for on-the-ground work for mussel's activities. With these additional funds, Reclamation created a spend plan that worked to tie together current Reclamation on the ground activities and the proposed commitments listed in the Mussels Initiative. The plan was then reviewed by Reclamation Leadership, the U.S. Fish and Wildlife Service, and DOI and was quickly implemented because of the late finalization (July) of the appropriations bills in Congress. Activities that these funds supported were: watercraft inspection and decontamination at the Lake Mead NRA and Lake Havasu in the Lower Colorado as well as WID efforts in the states of UT and NM. Funds went to increasing early detection/monitoring capacity in the Pacific Northwest and our Great Plains Region (staff and materials and equipment) as well as funds for research and eradication efforts.

In Fiscal Year 2018 Reclamation allocated \$3.5M in the proposed FY18 budget for mussels activities. In FY18 the Agency has gone through a similar process with a new spend plan priorities were selected- that worked to tie together current Reclamation on the ground activities and the proposed commitments listed in the Mussels Initiative. Some activities that these funds supported were: Purchasing inspection and decontamination stations to inspect and decontaminate boats leaving the lower Colorado River in California and Nevada, including supporting the National Park Service at Lake Mead National Recreation Area; supporting the Salish Kootenai Tribe at Flathead Lake Aquatic Invasive Species program; developing vulnerability assessments for facilities and infrastructure at risk of mussel infestation in the Columbia River Basin; assisting the State of Arizona in providing law enforcement support at inspection stations; research for the State of Montana and Reclamation on viability of veligers in residual water in boats; supporting watercraft inspection stations at Reclamation reservoirs in Nebraska and Kansas; implementing the state Aquatic Invasive Species Management Plan at water bodies owned by Reclamation in Utah; analyzing water quality to determine which water bodies should be prioritized for invasive mussel monitoring and prevention in California; continuing and enhancing water quality and quagga mussel monitoring program at high-priority programs in the Pacific Northwest and various reservoirs in the upper Colorado River Basin; and conducting watercraft inspections at Navajo and Elephant Butte reservoirs in New Mexico.

As part of DOI's Safeguarding the West Initiative, Reclamation launched a prize competition to identify innovative concepts to eradicate or prevent mussel infestations in open waters, including large reservoirs and lakes. The launch was announced the week of Dec 11th. The submissions period closed in February 2018. Judging of submissions was completed with awards recommendations approved by Reclamation's Science Advisor in April 2018. Three solutions were selected to receive prizes. One solution will be awarded a full prize of \$80,000 and two other solutions will receive partial prizes of \$10,000 each. All solutions will require further development before effectiveness can be tested. Currently waiting on press release for the prize challenge; this is taking a longer than expected due to needing to pay the solvers in advance of releasing press; Reclamation will provide an update about the winning solutions as soon as they are approved to do so.

U.S. Forest Service

The USDA Forest Service continues to conduct a wide range of research and management activities against aquatic invasive species (ANS/AIS) across the agency, with particular emphasis on work in

major watersheds to restore areas impacted and prevent invasions from establishing. Significant issues at the national level include work on national AIS prevention policy advancements through the Forest Service Handbook, leading the development and issuance of a new “Guide to Preventing Aquatic Invasive Species Transport by Wildland Fire Operations - PMS 444” through the National Wildfire Coordinating Group, increasing cooperation with State, Tribal, and local partners to prevent the spread of AIS within and between watersheds, and the recently released “Rise to the Future: National Fish and Aquatic Strategy” which includes significant components associated with management.

The new Rise to the Future: National Fish and Aquatic Strategy calls for limiting and reducing the impacts of invasive species on the Nation’s fish and aquatic resources, and guides the agency to carry out best management practices, including decontamination, and support of public outreach and education to prevent the spread of invasive species. To accomplish this, we work closely with States and participate in multi-partner monitoring and surveillance programs to detect new invasions and to rapidly respond. In addition, with the significant threat from invasive mussels in western Montana and at the doorstep of the Columbia River basin, the USDA Forest Service’s role in addressing the threat has been accelerated due to the large amount of vulnerable aquatic resources (lakes, streams, rivers, etc.) located on National Forest System lands.

Our strong relationships with the Montana Invasive Species Council and other invasive species management organizations across Montana (and across the entire West), has helped to highlight the risk and impact of ANS species and the need for increased action. We are coordinating closely with other Federal, State, and local entities to address the problem and meet our obligations to prevent and control the spread of these invaders on National Forest System lands and waters. USDA Forest Service representatives serve on coordinating bodies, special incident command groups, and are members of the Montana Invasive Species Council. Regional and National invasive species offices in the USDA Forest Service are directly engaged in this issue and coordinating/collaborating with Congress, State governors, and others to address the invasive mussel problem. More broadly, especially at the regional and local levels, the USDA Forest Service continues to support and participate in the work of the ANS Regional Panels, and plan to continue our support for invasive species prevention and control, as well as education and outreach, within our limited financial and staffing capacity.

The U.S. Forest Service has representatives on every ANSTF Regional Panel in the nation, and works closely with State personnel and tribes on a variety of AIS issues impacting watershed conditions. The USDA Forest Service continues to provide endorsement and cooperation on AIS educational campaigns such as Stop Aquatic Hitchhikers, Clean Drain Dry, Play Clean Go, Wild Spotter, and other similar efforts. Other activities underway include the following: USDA Forest Service resource managers and scientists have developed an AIS surveillance and monitoring program for National Forests in the Pacific Northwest. The monitoring plan builds on and augments existing aquatic monitoring activities and aims to fill gaps in coverage with environmental DNA (eDNA) sampling in high risk locations. National Forests piloted the AIS survey program in the summer of 2017 and will continue in 2018. Scientists from the USDA Forest Service’s National Genomics Center collaborated with colleagues at the University of Washington to develop an eDNA assay for invasive smallmouth bass and used it to assess the invasion front of smallmouth bass across western Montana, northern Idaho, eastern Washington, and eastern Oregon. Through this survey they demonstrated the greater efficiency and cost-effectiveness of eDNA sampling compared to traditional gear for detecting aquatic invasion fronts. To better understand the spread of Northern pike throughout the Columbia River basin, Forest Service scientists are working with tribal and state biologists throughout the upper and middle Columbia River basin to use genetic assignment techniques to identify source populations for newly invading Northern pike in eastern Washington State. This work will be used to more effectively target management efforts to thwart the spread of invasive Northern pike in the Columbia River basin where they may impact the native salmon fisheries which hold significant cultural and economic value in this basin.

Bureau of Land Management

Environmental Compliance

The Bureau of Land Management (BLM) has developed a proposed new administrative categorical exclusion for authorizing aquatic and riparian habitat restoration treatments and projects to protect, enhance, and restore streams, lakes, wetlands, and riparian habitat titled Aquatic and Riparian Habitat Restoration. As part of this, we have added language for non-native aquatic plants.

The following is the current draft language in our Verification Report that was reviewed by the Office of Environmental Policy & Compliance and the Solicitor's Office: “(5) Removing non-native invasive plants by physical removal, containment, decontamination and other actions that control and limit the spread and establishment of aquatic invasive plant species to the extent possible to restore native species habitat conditions, and rehabilitate ecosystems and ecological processes impacted by aquatic invasive species (up to 1 mile (cumulative treatment/project length) or 5 acres (cumulative treatment/project area). Includes replacing non-native invasive plants with native vegetation through pole planting or seedling. Does not include instream chemical treatments or biological control. Examples include but are not limited to pulling, raking, cutting, and mowing of established stream bank invasive plant species.”

Policy

The Washington Office has completed draft updated policy for BLM Manual Policy 6720-Aquatic Resources. As part of this update, MS 6720 provides proposed national BLM policy and guidance that addresses aquatic invasive species in sections. This language will be finalized to tier into and augment forthcoming Department of Interior invasive species policy.

Community Engagement and Involvement

Lower Colorado River Invasive Mussel Containment Strategy. The BLM hosted an interagency, multi-partner meeting to develop an interjurisdictional containment strategy for quagga mussels in the lower Colorado River, including Lake Havasu and downstream. The meeting was conducted December 6-7, 2017, with participation from the Arizona Game and Fish Department, California Department of Fish and Wildlife, BLM, Arizona State Parks, U.S. Fish and Wildlife Service, Bureau of Reclamation, Chemehuevi Reservation, Colorado River Indian Tribes, and U.S. Coast Guard, as well as numerous private marinas through the Lake Havasu Marine Association. A final draft strategy has been developed and is currently under final review.

Research

Investigating Eradication Treatments for *Didemnum vexillum* in Sitka, Alaska. In 2010, *Didemnum vexillum* (*D. vex*) was found in Whiting Harbor in Sitka, Alaska. Given its detrimental effects in other areas, there is concern about how it might affect the Sitka Sound ecosystem and steps were taken to limit its spread. The BLM is collaborating with the Alaska Department of Fish and Game and the Smithsonian Environmental Research Center to investigate potential techniques for eradication of *D. vex* on the seafloor while *D. vex* remains in an early stage of invasion in Alaska, we have an opportunity to manage it due to relatively small scale of current distribution. Thanks to funding from the North Pacific Research Board, previous work looked at the feasibility of different treatments and current work will scale-up those experiments to cover larger areas of the seafloor. Our data shows that chlorine treatment can be used to remove it from small patches of the seafloor and we will be able to test its efficacy over larger sections of seafloor through scaled-up experiments using turbidity curtains to sequentially treat large areas of Whiting Harbor in 2018.

BLM and the USGS eDNA Bullfrogs Assistance Agreement.

The BLM Montana office has renewed an assistance agreement with the US Geological Survey to investigate bullfrog eradication methods and using eDNA to help identify bullfrog sources populations that contribute disproportionately to un-invaded sites in Montana.

Outreach and Education

The BLM has renewed and expanded our agreement with Wildlife Forever to conduct outreach, education and providing resources to support behavior change and best practices for recreationists in the prevention of the spread of invasive species. In particular, design and place advertisements using Clean Drain Dry logo messaging in numerous game and fish publications and State and Federal regulation booklets and guides. By targeting key BLM states, project selects media partners for ad placements targeting key recreational user demographics. with estimates that the images reach over 5 million sportsmen annually. All media placements are evaluated by circulation and impressions of reach. Also developed and deploying other on-the-ground Clean Drain Dry Initiative educational resources to support and complement media and stakeholder outreach efforts, including boating towels, keychains, brochures, signs, and posters.

State Cooperation and Assistance

The BLM and Nevada Department of Wildlife Assistance Agreement. The BLM renewed interagency assistance agreement to deploy eDNA sampling for AIS presence at multiple locations across the state of Nevada including Truckee and Humbolt Rivers and also place facility signage and billboards on AIS especially around Lake Mojave and known AIS infested waters.

BLM and Colorado Parks and Wildlife Assistance Agreement. The BLM renewed an assistance agreement with Colorado Parks and Wildlife (CPW) to hire and oversee boat inspectors to interdict pre-launch boats, inspect for the presence of invasive mussels or other AIS; educate boaters and others about the AIS issues; and when deemed necessary decontaminate boats or other wetted equipment used on AIS affected waters. In 2018 BLM is planning to provide a dedicated representative to serve on the statewide Colorado AIS Task Force who will track and report BLM AIS accomplishments and activities on an annual basis. The BLM will assist CPW and other agencies with AIS surveys and inventories (i.e. rusty crayfish, New Zealand mud snail, zebra mussel) and submit the required reporting documentation when AIS are found. The BLM will assist in the development of AIS educational materials and these educational materials will be distributed at all BLM Field Offices. CPW and BLM will work to educate users and will coordinate on public information and signage placement of AIS warning signs where appropriate on public lands.

BLM and Utah Division of Wildlife Resources Assistance Agreement. The BLM has renewed an assistance agreement in place for AIS work with Utah Division of Wildlife Resources. The purpose of this agreement is to provide staffing the highest priority BLM Utah waterbodies with seasonal technicians that will be responsible for inspecting incoming watercraft, decontamination (if needed), educating the public and private stakeholders on the impacts of AIS, how they can help; identifying the threats of AIS introduction, and monitoring the occurrence and spread of AIS.

BLM and Arizona Game and Fish Department Assistance Agreement. The BLM has renewed an assistance agreement with Arizona Game and Fish Department for AIS activities. Funding is used for education outreach programs and activities, including staffing boat inspectors/outreach specialists at public access areas. In addition, this assistance agreement supports mobile decontamination efforts on Lake Havasu. The BLM also provide funds to BLM Lake Havasu Field Office to help cover cost of park ranger to do outreach to boaters using BLM boat in campsite and ramps.

Great Lakes Commission

Great Lakes Detector of Invasive Aquatics in Trade

The GLC is continuing operation of the web-crawling software system – the Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR). In addition, the GLC is working under a GLRI grant to make improvements to the system and target reductions in the availability of specific species. The GLC also convened a stakeholder advisory committee to provide input on system updates and coordinate outreach and management activities. In 2018, GLC staff will be conducting training workshops with management agencies to facilitate their use of the system. Current funding will support work into 2019.

Invasive Mussel Collaborative

Working in partnership with USGS, the Great Lakes Fishery Commission, and NOAA, the GLC is supporting the Invasive Mussel Collaborative, which is providing a framework for communication and coordination among scientists, managers, and others to share information and lessons learned, guide supporting research, and inform management actions related to the promise of future means for controlling zebra and quagga mussels. This year the collaborative is working on a strategy for dreissenid research and management in the Great Lakes. The collaborative met in-person on March 13-14, 2018 in Ann Arbor, Michigan to discuss the strategy and other matters relevant to collaborative operations. At the meeting a short-term GLRI funding opportunity to support priority activities identified by the IMC and potential projects were discussed. The collaborative continues to host regular webinars to facilitate learning and information sharing on topics related to management and control of dreissenid mussels; webinar announcements and recordings are available online. The website and an email listserv have been established to share information, webinar announcements and recent news, and to connect researchers, managers and other interested parties.

Asian Carp and the Chicago Area Waterway System (CAWS)

The GLC participates as a member of the Asian Carp Regional Coordinating Committee (ACRCC) and the Executive Steering Committee of the Great Lakes and Mississippi River Interbasin Study (GLMRIS), and serves as convener of the CAWS Advisory Committee. The GLC continues to convene the 30-member advisory committee that is the primary regional stakeholder forum seeking solutions to the threat of Asian carp and other AIS passing through the Chicago Area Waterways System (CAWS) while maintaining current uses of the system. The committee last met March 12, 2018 in Chicago. The meeting provided updates on monitoring and response activities in the Illinois waterway system and an overview of the USACE Brandon Road Feasibility Study and Tentatively Selected Plan.

Binational Great Lakes Aquatic Invasive Species Forum

The GLC convened a second Binational Great Lakes Aquatic Invasive Species Forum on November 9, 2017 in Ann Arbor, Michigan. The Forum brought together approximately 50 representatives of federal, state and provincial agencies, research facilities, environmental groups, private industry, and other key stakeholders from the United States and Canada to share information and lessons learned on AIS issues. It featured sessions on regional coordination and collaboration, grass carp, ballast water, and non-native crayfish. Materials from both the June and November forums, including an agenda, proceedings summaries, and presentations, are available on the [GLC website](#).

Great Lakes Aquatic Invasions Publication

The GLC continues to work with members of the Great Lakes Panel on Aquatic Nuisance Species (GLP) to revise, update, and reprint the Great Lakes Aquatic Invasions booklet, last published in 2007. Draft content for the updated booklet is currently under review by GLC staff and GLP members. This effort is anticipated to be completed in 2018.

Great Lakes Phragmites Collaborative (GLPC)

The GLC continues to expand a partnership with the USGS-Great Lakes Science Center to lead communications and regional coordination efforts to address the invasion of non-native *Phragmites*.

Phragmites is an aggressive invasive plant that outcompetes native wetland vegetation, resulting in management challenges for a diversity of stakeholders. More than 60,000 acres of Great Lakes coastal areas are now dominated by *Phragmites* and millions of dollars are spent annually on management. To address this regional challenge, the GLPC engages the resource management community by facilitating regional collaboration, supporting technology transfer, linking science and management, and identifying and developing desired information products and tools. The GLPC is guided by Advisory and Steering committees using a Collective Impact approach to align partners around a shared vision and a common agenda to achieve the vision. By mobilizing partners through a communications-focused working group, the GLPC continues to advance the development of a common agenda by determining needed tools and products and advancing strategic actions. The GLPC was described in the GLRI Action Plan II as a model for invasive species collaboratives and continues to provide guidance and leadership to others in the invasive species community. Staff continue to coordinate with researchers in both Canada and the U.S. to pursue biological control agents and other novel research to advance management and control of *Phragmites*. In response to requests from *Phragmites* managers, the GLPC hosted a six-part webinar series this fall and winter focused on emerging research, including the effects of herbicide and the ecological and economic impacts of *Phragmites* management. The GLPC website continues to be the source for comprehensive information on *Phragmites* in the Great Lakes region and beyond. Content is continually developed and adapted as new information and approaches are identified.

Phragmites Adaptive Management Framework (PAMF)

The GLC continues to work with the USGS, the University of Georgia and a team of *Phragmites* experts to develop and promote the *Phragmites* Adaptive Management Framework (PAMF). PAMF is a basin-wide collaborative learning effort that will improve the management of *Phragmites* at both the local and regional scales and result in ecologically resilient and diverse ecosystems by increasing management efficiency and reducing uncertainty associated with treatment options. PAMF will use a predictive model, a monitoring protocol, and an online database to analyze the effectiveness of treatment alternatives and provide site-specific treatment guidance. PAMF puts the power of a regional data set and robust mathematical models into the hands of land managers to improve the effectiveness of a significant management issue. This approach may be emulated to advance and refine the management of other priority species and habitats.

Last fall, PAMF built on the summer's soft launch of the PAMF program by soliciting feedback from 35 organizations that participated in the initial season of data collection. Staff conducted a participant feedback survey to begin incorporating lessons learned and user feedback to improve the program. The first round of *Phragmites* treatment reports were collected and the PAMF participant guide was refined. The project team is preparing for a basin-wide launch in June 2018. The GLC will coordinate this effort and provide training and information sessions around the basin to enroll new *Phragmites* management sites into the program. The GLC also continues to present PAMF at professional conferences and regional meetings to grow awareness and participation in the program.

Great Lakes Blue Accounting – AIS Pilot

GLC AIS program staff are working with staff at The Nature Conservancy to develop and implement the AIS pilot of the Great Lakes Blue Accounting initiative. The pilot is focused on enhancing AIS collaborations and developing tools and metrics to advance progress on regional goals for AIS prevention and control. AIS pilot meetings were held in September 2017 and May 2018 to develop specific focus areas for the pilot, including early detection and rapid response, and organisms in trade. Next steps are to develop specific metrics and supporting data to track progress on these issues.

Aquatic Plant Pathway Risk Assessment

The GLC is conducting a pathway risk assessment for the movement of aquatic invasive plants into and around the Great Lakes region. The results of this effort will help the states, provinces, and regional

partners understand pathway activity for invasive aquatic plants; characterize potential risks associated with different pathways; and identify gaps in management, compliance and law enforcement, and education for each pathway. This work is being conducted under a subaward to support continued work on an Interstate Aquatic Invasive Species Prevention, Early Detection, and Response planning initiative. The risk assessment will be completed by the end of 2018.

Ballast Water Discharge Regulations in the Great Lakes Region

GLC staff are updating a briefing paper summarizing the status of ballast water discharge regulations in the Great Lakes region. This paper was previously distributed in November 2016 as part of a regional workshop on ballast water. The paper is being updated to reflect developments since that time and will include identification of differences in standards. In addition, new information will be added to the paper summarizing additional requirements and conditions in ballast water rules and permits, including limits on the concentration of residual biocides (e.g., chlorine), as well as discharge monitoring requirements.

Advocacy Activities

In March 2018, the GLC held its 2018 Great Lakes Day in Washington and released a statement of priorities for federal legislation and appropriation. Two key priorities focused on funding for the Great Lakes Restoration Initiative and support for critical invasive species programs. Detailed information is available on the GLC website.

Association of Fish and Wildlife Agencies

Major Accomplishments (bullets):

Fall Meeting – September 11, 2017, during the Association of Fish and Wildlife Agencies Annual Meeting, Sandy, Utah, September 10-13, 2017

Spring Meeting – March 28, 2018, during the North American Wildlife and Natural Resources Conference, Norfolk, Virginia, March 27-30, 2018

Strengthening Federal/State Coordination

ISAC recommended that NISC establish a Federal-State Invasive Species Coordinating Committee to conduct high-level policy and planning functions to advance federal-state coordination of invasive species management and secure and maintain a full-time staff member to focus on federal-state invasive species issues. The AFWA Invasive Species Committee and the AFWA Executive Committee endorsed these recommendations in 2017.

Model Regulations for State Watercraft Inspection and Decontamination Programs

The AFWA Invasive Species Committee and the AFWA Executive Committee endorsed the Model Regulation for Statewide Watercraft Inspection and Decontamination Programs prepared by the National Sea Grant Law Center and AFWA to provide states with a guidance document to help coordinate regulations addressing the spread of ANS via the recreational boat pathway.

MOU Among AFWA-FWS-PIJAC

A Memorandum of Understanding (MOU) was signed by the Pet Industry Joint Advisory Council (PIJAC), Department of the Interior, U.S. Fish and Wildlife Service, (USFWS) and AFWA in 2013 establishing a general framework for collaborating on nonregulatory approaches to reduce the risks of potentially invasive, nonnative species currently not in trade from being introduced into the United States through trade. AFWA is continuing to work with the USFWS, PIJAC, and other invited organizations to update and improve the existing MOU to better address the risk of species not in trade.

Lacey Act

AFWA has been tracking the April 2017 DC District Court decision that upheld that the Lacey Act injurious wildlife provision, Title 18, does not prohibit interstate movements of injurious species within the 49 continental United States. AFWA committees are forming work groups to explore both short- and long-term approaches, such as model state language to help improve state authority for invasive species management, to address concerns of interstate movement of injurious wildlife species.

Coordination with Departments of Agriculture

The AFWA Invasive Species Committee has been discussing ways that AFWA could engage in implementation of the Western Invasive Weed Action Plan and is forming a work group to enhance coordination between State Departments of Agriculture and State Fish and Wildlife Agencies using the sagebrush biome as a pilot effort.

Legislation

AFWA continually tracks and solicits state agency input on proposed and relevant invasive species legislation (e.g., Recovering America's Wildlife Act, Vessel Incident Discharge Act), develops AFWA positions on legislation, and prepares Congressional testimony or briefings on legislation as needed.

Recovering America's Wildlife Act (H.R.4647) was introduced again on December 14, 2017. This bill amends the Pittman-Robertson Wildlife Restoration Act to direct the Department of the Treasury to transfer revenues from energy and mineral development on federal lands totaling \$1.3 billion to the Wildlife Conservation and Restoration Subaccount of the Federal Aid to Wildlife Restoration Fund. The purpose of the subaccount is to fund state wildlife conservation and restoration programs for managing fish and wildlife species of the greatest conservation which are frequently impacted by invasive species. Subcommittee hearings were held on February 15, 2018. There are currently 57 members co-sponsoring H.R.4647.

On January 17, 2017, The Vessel Incident Discharge Act (VIDA) (S. 168) was reintroduced as the Commercial VIDA. Unlike VIDA from previous sessions, S. 168 limits its provisions only to commercial vessels and exempts them from Clean Water Act provisions that states currently have the ability to promulgate and enforce. The new language is improved with regards to various sections; however, concerns remain about the continued threat of increased aquatic invasive species introductions to coastal and Great Lakes regions. No action has been taken on S. 168 since it was reported from the Senate Committee on Commerce, Science, and Transportation on March 30, 2017.

Fall Meeting

September 10, 2018, during the Association of Fish and Wildlife Agencies Annual Meeting in Tampa, Florida, September 9-12, 2018

Chesapeake Bay Program

Hydrilla Control

The Maryland Department of Natural Resources (DNR) completed its 5th year of the Hydrilla Management Plan in Deep Creek Lake. The plan consists of population monitoring, chemical control, education and outreach. DNR first observed Hydrilla in fall 2013 during routine SAV monitoring. Fluoridone treatments began in 2014 after the first emergence of Hydrilla with contractors doing an application every three weeks until the end of August. One new infestation was found in the northeast section of the lake in 2017 and added to the overall treatment plan. In the areas that have shown positive control, the herbicide has been scaled back, but follow-up monitoring will continue in these areas for several years.

Zebra Mussels

Zebra mussels were first discovered in the Chesapeake Bay in 2009 and have expanded their range as far south as Middle River. No active management is done, but periodic surveys take place each year to track their distribution. In May 2018, Maryland DNR confirmed the presence of zebra mussels in Hydes Quarry, a scuba diving training reservoir in Carroll County. Divers conducted vertical transects and observed substantial populations from more than one year class. The quarry is slated for use as a drinking water reservoir in the future, so the Carroll County Board of Commissioners decided to cease the dive operations and is reviewing options to determine the most cost-effective means of control.

Water chestnut

Maryland DNR worked with Sassafras Riverkeeper to remove water chestnut from Lloyds, Turners, Woodland, Island and Dyer creeks on the Sassafras. Biologists and volunteers also went out on the Bird River to remove it from Days Cove, and smaller coves near Railroad creek. In Virginia, a much larger infestation of a related *Trapa* species was found in Pohick Bay, on the Virginia side of the Potomac River. Virginia biologists and volunteers continue to remove the vegetation and USGS is conducting genetic analysis to determine the species and origin of the infestation.

Snakeheads

Relative abundance has increased in the upper Chesapeake Bay (Susquehanna River, Northeast River, and Susquehanna flats) since the species was first reported. The species was collected at proportionately more sites in Potomac River in 2016 than recent years. The proportion of sites occupied by the species in Wicomico River and upper Chesapeake Bay remain dwarfed relative to Potomac River, but have increased since found.

In the Chesapeake Bay watershed, the species is continuing to expand its distribution among subwatersheds. The species has expanded its range at a rate of approximately 2.7 new subwatersheds per year since 2004 when it was first discovered in Potomac River until 2016. The number of newly occupied subwatersheds increased quickly following some rain storm events and because of human introductions to Delaware. Many factors will influence the expansion of snakeheads in the Chesapeake Bay watershed, but we estimated that assuming current levels of expansion and suitable habitat within the watershed, most of the subwatersheds could be colonized within the century.

Thanks to harvest pressure from commercial waterman, at least 6,714 pounds of northern snakeheads were removed from 5 tidal rivers of Chesapeake Bay watershed, with most (5,157 pounds) reported from Potomac River. The current invasive species state record for northern snakehead is 18.42 pounds. Both bowfishing and angling remain the most popular methods of harvesting northern snakehead. The majority of the biomass removed from Chesapeake Bay has been removed by commercial waterman. However, the biomass removed by recreational fishers is not likely trivial, but is not monitored because there is no reporting requirement for them.

The Fishing and Boating Services worked with Natural Resources Police to encourage increased attention to the species. The rules for possessing the fish without penalties are written in the Maryland Fishing Guide and promoted on a widely disseminated YouTube video (<http://dnr.maryland.gov/fisheries/Pages/snakehead.aspx>). These videos are being revised and updated for 2018/19.

Creative ways to encourage harvest of snakeheads continued and included promoting commercial harvest and providing incentives for fishers to harvest the species. A monitoring strategy for the species has been adopted and will continue. This strategy includes measuring and weighing all snakeheads surveyed during fall. All caught northern snakehead are euthanized. Individuals collected in drainages outside of tidal Potomac River are reported to the department, U.S. Fish and Wildlife Service and United States Geological Survey. In 2018 we received funding from ANS Task Force to establish a molecular, eDNA early detection system and continue outreach encouraging harvest, especially in areas where the

species has been newly discovered. Additional incentives for 2018/19 include a snakehead derby at Harriet Tubman Underground Railroad State Park.

State Lakes Protection and Restoration Fund

In 2017, DNR biologists conducted the first ever, comprehensive survey of all state lakes that have boating access in Maryland. This survey characterized the macrophyte communities at each lake and identified where invasive species are occurring. The final report for this project was presented to the park managers to assist them in making management decisions. In 2018, the Maryland General Assembly created the State Lakes Protection and Restoration Fund, which set aside three million dollars for the purpose of removing and treating sediment, preventing the spread of invasive species and improving the ecological and recreational value of Maryland lakes. The funding will be used to characterize fish populations, water quality, bathymetry, sediments, algae and invasive species. Lakes that have invasive species and could benefit from herbicide control will be treated as well.

Maryland ANS Plan Funding

Maryland has received its share of the annual ANSTF funding that is apportioned to states that have an ANS plan. The funding will be used for a number of smaller pilot projects, such as Flathead Catfish population assessment, Hydrilla control, species risk assessment, as well as outreach and education.

National Aquaculture Association

The National Aquaculture Association (NAA) serves its members and non-members as a central point of contact for non-native species information and federal regulatory information. Since the last ANSTF meeting the NAA presented at six different state aquaculture associations, North Central Region and U.S. Trout Farmers Association, Florida Tropical Fish Farmers Association and Society of Lake Management Professionals meetings, organized farmer and owner comments to inform FWS about the farm-raised species (blue catfish, koi, grass carp, tilapia and several aquarium fish) included in a Injurious Wildlife listing petition, and organized presentations during the House Committee on Agriculture's Farm Bill listening sessions held in California, Florida, Minnesota and Texas. The NAA is also a major sponsor and organizer of the only annual aquaculture conference in the United States in partnership with the U.S. Aquaculture Society. NAA extended an invitation to the regional panels or interested agencies to host an invasive species session during Aquaculture 2019 that will be held in New Orleans, March 7-11, 2019. Aquaculture 2019 is a triennial meeting that includes the National Shellfisheries Association, American Fisheries Society-Fish Culture Section and other state and species associations. NAA is expecting 4,000 attendees. If there is an interest in speaking to the aquaculture community (farmers, researchers, extension agents and state and federal agencies), this is the opportunity to do so.

National Atmospheric and Oceanic Administration

International Update

The Arctic Invasive Alien Species (ARIAS) Strategy and Action Plan

- NOAA helped compose the ARIAS in response to findings and recommendations from previous Arctic Council documents and assessments, noting the expected increase in invasive species due to human activity and climate change, and calling for increased action.
- The Plan was approved by the Arctic Council Ministers in May 2017.
- NOAA along with the Alaska Department of Fish and Game and the US Fish and Wildlife Service are creating a US Strategy for Alaska including an Alaska-wide outreach and communication strategy on invasive species.

- In FY18, a successful educational marine invasive species outreach and monitoring program was conducted on St. Paul Island in partnership with the Smithsonian Environmental Research Center.
- Staff are seeking to leverage a Sea Grant fellow and Alaska Native Science and Engineering Program fellow to work on the US strategy in FY18.

National Update

Regional Biosecurity Plan (RBP) for Micronesia and Hawaii

- NOAA recently submitted a congressional report to the Committee on Appropriations: Commerce, Justice, Science and Related Agencies Subcommittee to provide a list of FY17 and FY18 efforts to support the RBP recommendations on the prevention, detection, and response to marine invasive species in Micronesia and Hawaii.

Selected Regional Updates

Northeast Region

- The Invasive Catfish Task Force
 - NOAA Chesapeake Bay experts in collaboration with the Chesapeake Bay Program's Sustainable Fisheries Goal Implementation Team played key roles in organizing a symposium on "Invasive Catfish: State of the Science and Status of the Fishery," held November 6-7, 2017.
 - The symposium brought together scientists, resource managers, and commercial and recreational fishermen to hear updates on the latest invasive catfish science in the Chesapeake Bay and discuss related policy. Topics discussed included research needs such as examining population size at tributary level, and the development of a fishery plan with specific goals, targets, and guidelines.

Great Lakes Region

- NOAA Great Lakes Environmental Research Laboratory's (GLERL) Ecosystem Dynamics Branch has a long-term benthic monitoring program that annually records quagga/zebra mussel population growth, along with other biological and chemical data.
 - Lab and field experiments were conducted to measure quagga mussel consumption, growth, excretion and egestion rates, diet preferences, and effects on the bacterial community.
 - In Lake Erie, NOAA conducted laboratory feeding and nutrient excretion experiments to determine the role of mussels in promoting harmful algal blooms that are affecting ecosystem and human health, including drinking water.
- Risk Assessment of Asian Carp
 - Data collected by NOAA GLERLs Long Term Research program were used as inputs to computer simulation models to predict where Asian Carp would establish if they are introduced to the Great Lakes, and project effects of Carp on Great Lakes food webs.
- Great Lakes Aquatic Nonindigenous Species Information System (GLANSIS)
 - GLANSIS is a searchable database that has recently grown to track distributions and synthesize science-based information for more than 187 established aquatic nonindigenous species and 68 "watchlist species".
 - This database is important because it provides 'one-stop' public access on invasive species information and is used as a baseline of information guiding management decisions for federal, state and tribal agencies throughout the Great Lakes region as well as for determining research priorities.
 - The next step for GLANSIS is to expand the database to include important risk assessment information.

Gulf and South Atlantic Region

- Removing of Lionfish
 - The Flower Garden Banks National Marine Sanctuary along with other collaborators are conducting research to better understand lionfish distribution and predator/prey relationships in coral communities; reduce the impact of lionfish by removal; and increase public awareness of invasive lionfish.
 - The 2017 annual public lionfish removal cruise with volunteer divers was canceled due to Hurricane Harvey, but two cruises are scheduled for 2018.
 - Several publications with partners are currently in journal review, including a regional lionfish diet study, and a lionfish parasite article.
 - There were several successful education and outreach events for the 2017 National Invasive Species Week including a Facebook Live lionfish dissections and a “REDDIT Ask the Experts about Lionfish”.
- Lionfish Trap Development
 - The Office of National Marine Sanctuaries released a guide to lionfish traps that use unbaited fish attraction devices (FADs) centered in open frames to attract and concentrate lionfish from nearby habitats in March 2017.
 - In trials, traps have produced no bycatch, and the open design precludes ghost fishing.
 - A “Fish Trap Extension Kit” that can be added to commercial traps (initially planned for lobster traps) is currently being developed to make the traps selective for lionfish.
 - The “smart trap” has cameras and software that recognize lionfish, which triggers the opening of an entry to the trap.
 - All Lionfish research efforts are outlined in the NOAA National Marine Sanctuaries Lionfish Response Plan (2015-2018)

Western Region

- Detecting and Managing Walleye
 - The Northwest Fisheries Science Center is testing the efficacy of using eDNA to test for Walleye presence/absence in Lake Washington and using stable isotope analysis to evaluate Walleye diet that will ultimately provide insight on the structure of reservoir food webs.
- Removal of Invasive Alga
 - In FY17, staff at the Monterey Bay National Marine Sanctuary focused on surveys of the invasive Asian kelp *Undaria pinnatifida* in Monterey Harbor, using volunteer divers from the Sierra Club to remove the kelp.
 - An entire survey of invasive alga in the Monterey Harbor was completed and 50 kilograms of invasive alga were removed.
 - NOAA collaborated with Stanford University science divers to survey the harbor for the invasive bryozoan *Watersipora subtorquata*.
 - NOAA staff co-authored a publication on the invasive bryozoan *Watersipora*:
- Cape Flattery Restoration Project
 - Restoration funds (Damage Assessment, Remediation, and Restoration Program) are allocated to the State of Hawaii to conduct urchin rearing at the Anuenue Fisheries Research Center and then to out-plant urchins to reef sites within Kaneohe Bay, Ohau for invasive algae bio-controls.
 - Approximately 40,000 juvenile sea urchins that are used as bio-controls against invasive alga that smother coral within Kaneohe Bay were released.
- Guam Invasive Activities

- The NOAA Fisheries Guam office is continuing to support the Eyes of the Reef Marianas and Guam Reef Response Team through outreach and coordination.
- The Guam office is also working through the Manell-Geus Habitat Focus Area project to monitor and address the Chaetomorpha bloom. There are tentative plans to conduct a pilot removal project in coordination with a seasonal herbivorous fish run and monitoring in April 2017

U.S. Fish and Wildlife Service

AIS Program Regional Coordinators Meeting

- The Service held an in-person meeting its Regional Aquatic Invasive Species Coordinators at the Arthur R. Marshall Loxahatchee National Wildlife Refuge, Florida, on March 13-15.
- With over 50% of the Coordinators being relatively new or recently returned to the program, the agenda focused on: 1) orientation for new AIS Coordinators; 2) clarification of the roles and responsibilities of the AIS Coordinators; and 3) identification of priority work elements in implementing the FAC strategic plan.

DOI Invasive Species Manual Chapter

- The Service's Branch of Aquatic Invasive Species worked with the DOI Invasive Species Task Force to develop a Departmental invasive species policy to be incorporated as a chapter in the Departmental Manual.
- The policy will provide guidance to more effectively and efficiently align resources in support of invasive species management and consistently measure performance information to guide future efforts across the bureaus.
- The policy was finalized in December 2016 and incorporated into the Departmental Manual under Part 524 "Invasive Species Policy". However, the incoming Administration made some non-substantive changes, so the policy is technically still a draft. Bureau representatives have been working with Scott Cameron (Principal Deputy Assistant Secretary for Policy, Management, and Budget) to ensure our interests are met under this administration.
- The draft policy will be submitted along with other DOI policies for approval. Upon Departmental approval, each Bureau will be expected to develop its own agency-specific invasive species policy.

Working with Boat Manufacturers through the American Boat and Yacht Council

- The Service and our state partners continue to work with the manufacturers of boats and associated equipment to develop guidelines and best practices to reduce the likelihood of spreading AIS through boating activities.
- The American Boat and Yacht Council will be providing the Service with an industry marketing outreach plan for the soon-to-be-finalized Technical Information Report. We've been advised by our industry partners that additional marketing and outreach will be needed before industry will be willing to move towards AIS risk reducing boat design standards.

Quagga Zebra Mussel Action Plan (QZAP)

- Management of the QZAP grant program will continue to be led out of Region 2.
- FAC is expecting to have approximately \$940,000 again this year to allocate to partners through grants for projects with an emphasis on preventing the spread of invasive mussels in the western U.S. via trailered watercraft from already contaminated areas.

- The Notice of Funding Opportunity closed on June 3rd. Proposals are currently under review.

Department of Interior Interest in Quagga/Zebra Mussels

- The Department of the Interior has identified additional actions that the Federal government could take to assist states and tribes in their efforts to combat the spread of quagga and zebra mussels in western waters, focusing on the Columbia River Basin.
- Over 40 actions are described in the 2017 report, *Safeguarding the West from Invasive Species, Actions to Strengthen Federal, State, and Tribal Coordination to Address Invasive Mussels*. A progress report of these actions was finalized and distributed during National Invasive Species Awareness Week (February 26- March 2).
- The Service is leading actions to better coordinate watercraft inspection and decontamination efforts, increase support for mussel detection laboratories and dive teams, and expand the Stop Aquatic Hitchhikers website.
- The ANS Task Force has been asked to lead efforts to evaluate the effectiveness of existing outreach campaigns. Actions to support this request will be discussed during the Outreach Goal Team breakout session on Thursday.

Ecological Risk Screening Summaries (ERSS)

- In FY2017, FAC allocated \$515K to enhance AIS risk assessment efforts to evaluate potentially invasive species using the ERSS process developed in Regions 3 and 5.
- Funds were targeted to facilitate the final review of 1,862 reports so that information could be made publicly available on the FWS FAC web page. Other deliverables include updates to user guides for climate and risk modeling protocols applied in the ERSS process, and inclusion of additional geographies for these models (AK, HI, Puerto Rico, other territories and commonwealths).
- Approximately 240 new or revised ERSSs have been posted online in the first half of FY 18. We expect to post approximately 250 more in the 3rd quarter.

Injurious Wildlife Listing under the Lacey Act

- On April 7, 2017, the D.C. Circuit reached a definitive judgment on the lawsuit against the Department of the Interior challenging us on Lacey Act's injurious listing provision regarding the shipment clause's meaning. It held that 18 U.S.C. § 42(a)(1) does not prohibit transport of injurious wildlife between States within the continental United States.
- Because of this decision, existing and future injurious wildlife listings, including those listed by Congress through statutes (fruit bats (genus *Pteropus*), mongoose, zebra mussel, bighead carp), no longer result in a statutory prohibition on interstate transport of injurious wildlife between States within the continental United States.
- This means that transportation of injurious wildlife between the 49 States within the continental United States (the contiguous 48 States and Alaska) is not prohibited by the statute, unless such movement of the wildlife is restricted due to conditions associated with previously issued permits.
- These prohibitions remain intact: 1) Import of injurious wildlife into the United States; and 2) transport of injurious wildlife between the listed jurisdictions in the shipment clause (the continental United States, the District of Columbia, Hawaii, the Commonwealth of Puerto Rico, and any possession of the United States).

- The other challenges in the 2013 suit and amendments were dropped.
- No existing rules will be revised because the language is correct in the Code of Federal Regulations.

Categorical Exclusion for Rapid Response

- A Secretarial Order last August opened the door for seeking new categorical exclusions (Cat Ex's) that could facilitate the NEPA process. Scott Cameron (Principal Deputy Assistant Secretary for Policy, Management, and Budget) requested that the DOI Invasive Species Task Force coordinate an effort among the bureaus for new or revised Cat Ex's specifically on invasive species.
- Cat Ex's could be prepared jointly with other bureaus and cover multiple bureaus. FAC sees this timing as an excellent opportunity for getting a much-needed Cat Ex approved by CEQ in a streamlined process and for collaborating with other programs and bureaus to make a stronger Cat Ex while sharing the work of preparing the application documents.
- Therefore, FAC is coordinating a proposed Cat Ex for early detection and rapid response for invasive species through the Task Force. Region 4 is providing their AIS Coordinator to lead in preparing the Cat Ex documents.
- Other bureaus support this as a bureau-wide Cat Ex and will help at least by reviewing drafts. The Cat Ex will include terrestrial species as well as aquatic to accommodate the need to make a broad Cat Ex that will serve other Service programs and bureaus.

8a. Informational: Regional Panel Updates

Great Lakes Regional Panel

Semiannual Meetings

During this period, the Great Lakes Panel on ANS did not meet in-person due to the "strategic pause" initiated by the U.S. Department of the Interior. The next meeting of the Great Lakes Panel on ANS is scheduled for June 26-27, 2018 in Chicago, Illinois. The meeting will include ad-hoc committee meetings on grass carp and risk assessment, and the following plenary sessions:

- Pathway Update: Chicago Area Waterway System
- Program Updates
- Climate Change and Forecasting AIS Spread
- Enforcement Activities

Grass Carp Ad Hoc Committee

The Grass Carp Committee convened via conference call in May 2018. The committee is providing a forum for ongoing communication and coordination specific to Grass Carp and to track and advance progress on priorities identified in the GLP's Grass Carp Priorities for the Great Lakes document. The committee is working on a draft letter to states that allow stocking of diploid Grass Carp encouraging changes to their policies that would reduce the risk of introduction and spread. At the next meeting in June, the committee will revisit their initial charge and determine what further work needs to be completed in order to meet the charge.

Risk Assessment Committee

The Risk Assessment Committee convened three times via conference call during this period: April 2017, January 2018, and May 2018. The committee is continuing to guide work and facilitate progress in developing a regional risk assessment clearinghouse to provide information about different risk assessment methodologies and serve as a repository for risk assessment documents. Through these three conference calls, the committee has:

- Developed a set of deliverables for development of the clearinghouse
- Identified partners to implement committee recommendations and meet deliverables (NOAA Great Lakes Aquatic Nonindigenous Species Information System and the Invasive Species Centre)
- Developed a table summarizing the components of eight different risk assessment methodologies
- At the next meeting in June, the committee will revisit their initial charge and determine what further work needs to be completed in order to meet the charge.

Research Coordination Committee

The committee is providing input on a gap analysis of AIS funding in the Great Lakes region.* The analysis is quantifying investments by priority species, pathway, and other metrics relevant to GLP members. These investments have been cross-referenced with priorities identified by the GLP, and analysis is underway to measure progress on AIS prevention and control. Preliminary results of this analysis will be presented to the GLP in June to be developed into a set of factsheets, while a full analysis will be developed into a white paper. Committee members organized a session for the International Association of Great Lakes Research (IAGLR) 60th annual Conference on Great Lakes Research on May 15-19, 2017 in Detroit, Michigan.

Information/Education (I/E) Committee

The committee is providing input on an update of the Great Lakes Aquatic Invasions (GLAI) booklet, last published in 2007. The majority of the content has been reviewed and updated, editing has begun, and progress toward the design overhaul has been made.

Miscellaneous

GLP members are involved with other AIS groups and related tasks outside of official GLP business. Organizers of related efforts see the GLP as an important group of stakeholders that can be tapped into for the development of products beneficial to the Great Lakes. Examples include:

- Development of a Great Lakes Early Detection and Rapid Response Plan (GLRI funded)
- Chicago Area Waterway System Advisory Committee (Private foundation funded)
- Great Lakes Water Quality Agreement Annex 6 Subcommittee (No funding)
- Invasive Crayfish Collaborative (GLRI funded) and other species collaboratives

Western Regional Panel

Annual Meeting

- The 2018 meeting is scheduled for October 24-26 in Tacoma, WA. This meeting will be hosted by the Washington Department of Fish and Wildlife. The two-and-a-half-day meeting will feature a variety of topics on emerging and relevant AIS management. A field trip will include a site visits to local freshwater control projects on African clawed frogs and New Zealand mudsnails, and a facility visit of USFWS wildlife inspection station at Sea-Tac International Airport.

Coastal Committee

- **Regional model framework for regulating in-water cleaning of commercial and passenger vessels** The Coastal Committee is developing the framework to improve consistency across the region when regulating in-water cleaning.
- **Regional Best Management Practices for currently un-regulated (for biofouling) vessels:** The Coastal Committee is developing BMPs that would provide guidance for un-regulated recreational vessels, commercial fishing vessels, and mobile marine infrastructure (e.g., dredges, construction barges, mobile drilling rigs). A workshop is planned later in the year to gather stakeholder input. The goal is to share final product with vessel owners and vector-based management.

Inland Committee

The WRP has been actively engaged in various aspects of dreissenids management including the following:

- Collaborating with Department of Interior and Western Governors Association on a proposed 2019 Western Leadership Forum on Zebra and Quagga Mussel Management.
- Building Consensus in the West: Current sub-committee tasks include;
 - Finalizing standard protocols for early detection field monitoring including plankton tows, natural substrates, settler traps and shoreline surveys.
 - Creating laboratory procedures for quality control AIS labs.
 - Developing a communication plan and strategy.
 - Providing a forum to continue discussions on regional data sharing.
 - National Sea Grant Law Center is developing an MOU in alignment with the model legislative provision and regulations for watercraft inspection and decontamination programs.
- New Committee formed: “Decontamination Think Tank” was created to help tackle technical level aspects and increase communications related to watercraft decontamination.
 - An Advanced Watercraft Decontamination training course was hosted by New Mexico and taught by Pacific States Marine Fisheries Commission and Colorado Parks and Wildlife AIS trainers at Lake Navajo in April 2018.
 - The committee is creating a standard specification sheet for AIS decontamination units and intends to seek Cleaning Equipment Trade Association (CETA) certification upon completion.
- New Committee formed: “Seaplane Inspection and Decontamination” was formed to develop inspection and decontamination protocols specific to seaplanes with accompanying minimum training requirements and quality control measures. The committee will also compile a list of research needs to better understand the threat seaplanes pose as a vector.

Gulf and South Atlantic Regional Panel

- The GSARP’s spring 2017 meeting was held on May 11-12th, in Savannah, GA in conjunction with the North American Invasive Species Forum.
- The GSARP’s spring 2018 meeting was held on April 10-11th, in Jackson, Mississippi.
- The Panel is continuing to help disseminate the research findings from the Region 4 USFWS AIS Small Grants Program throughout the region by inviting PIs to present at, and participate in, Panel meetings. Over the last four years, this program has been able to fund 26 projects totaling \$556K ranging from developing control measures, assessing impacts on native species and habitats, and distribution for a variety of invasive species (*Salvinia*, *Hydrilla*, *Phragmites*, *Didymo*, Asian Carp, Rusty Crayfish, Speckled Crayfish, Red-rimmed Melania, Lionfish, Apple Snail, Asian Clam, and an invasive parasite of American Eels).
- The Panel and GSMFC are continuing efforts to develop a new Panel website. This new site will have many new features, including a clearinghouse of developed ANS outreach materials, and the points of contact who can provide more information on their availability. The hope is that this will help to reduce duplication of effort by just modifying materials that have already been developed to meet a particular state’s needs, and help to increase a unified message about invasive species in the region. The Panel will also be incorporating a clearinghouse of completed risk assessments into its new website, and currently has about 370 plant risk assessments that were conducted by Texas.
- Invasive Species Traveling Trunk: The Panel decided that it was time to update the content in the trunks and expand the number of species covered. All of the information for the 11 species currently covered in the trunks has been updated, and three new species have been added to the content: Asian carp, feral hogs, and apple snails. The Panel’s Education and Outreach Workgroup

will also explore the possibility of incorporating a game for elementary-aged children, and developing a poster that teachers can display in their classroom that will keep the message about invasive species in the class after the lesson is complete.

- The Panel voted to establish a Distinguished Achievement Award in 2016 that will be given out on an annual basis. A new nomination form has been developed and added to the Panel's website, and a nomination review committee has been established. The first award was presented to Dr. Earl Chilton in 2017.
- At the spring 2018 GSARP meeting, the panel members elected Lisa Gonzalez as Chairman and Peter Kingsley-Smith as Vice Chairman.
- The Panel is planning to hold its fall meeting in San Antonio, Texas in October.

Northeast Aquatic Nuisance Species Regional Panel

- The Northeast Aquatic Nuisance Species Panel (NEANS Panel) was not able to convene its spring and fall 2017 meetings due to the meeting prohibition issued by the US Fish and Wildlife Service. The Panel's spring 2018 meeting was convened in Grand Isle, Vermont in April. The Panel will next meet in December on the New Hampshire seacoast.
- Mid-term conference calls are convened in or around February and August to keep Panelists connected and to prepare recommendations for the ANSTF meetings.
- The Panel welcomed new representative, David Wong, MA Department of Environmental Protection.
- The Climate Change Work Group continues its work to formulate an existing and likely invasive species list based on changing environmental conditions.
- The Spread Prevention Work Group is developing a project on the Connecticut River in Vermont, New Hampshire, Massachusetts, and Connecticut including surveys, outreach tools, and DNA testing.
- The Panel plans to fund a *Myriophyllum heterophyllum* rapid response project on Long Lake in Maine and a marine rapid assessment survey from Connecticut to Maine.
- The NEANS Panel has stepped up to participate on the ANSTF Communication, Education, and Outreach; Boating; and Economic Committees, the latter in a leadership role.
- Through pro bono work, the NEANS Panel maintains listserves for the Panel and interested individuals and organizations as well as for regional panel principals. Other pro bono donations include computers, audiovisual equipment, teleconference and webinar services, meeting refreshment and other catering, and other services, materials, and equipment.
- All meetings are negotiated at gratis spaces with cooperating organizations and agencies. There are often temporal and other restrictions on the use of these spaces that make logistics challenging. It is not a sustainable model, given that these organizations will not provide the favor more than once. The NEANS Panel has institutionalized its voluntary meeting registration fee, which it piloted several years ago. No one is barred from participating in the meeting if he/she cannot pay the fee. There is no transparency for anyone to see who has paid or who has not—participants register separately from the payment device. Not everyone is able to pay the fee so the returns are modest but cover some of the material costs to provide light refreshments (but not the additional contractor time and equipment for catering the meetings and covering additional costs, which would normally be included when renting a conference space).

Mississippi River Basin Regional Panel

Major Accomplishments (bullets):

- Final report was received in April 2017 for an evaluation of the effectiveness of a potassium chloride and formalin treatment currently used to kill zebra mussel veligers in fish hauling scenarios. The MRBP funded project was initiated in July 2016.

- Provided funding support in August 2017 for the First International Snakehead Symposium.
- Published a request for proposals in February 2018 for the completion of a live bait pathway analysis in the Mississippi River Basin. A proposal was approved for funding in May 2018.

Ongoing Work (bullets):

- Developing an agreement with Gunderson Consulting for completion of a live bait pathway analysis in the Mississippi River Basin. Project anticipated to begin in May 2018.
- Developing an agreement with the University of Wisconsin Extension for completion of project to create acceptable alternatives to the Buddhist practice of live animal release. Project anticipated to begin in May 2018.
- Initiated development of a new website for the MRBP; new website anticipated to go live in June 2018.
- Organizing a joint panel coordination meeting with the Mid-Atlantic Panel scheduled for July 17, 2018.
- Working with Mid-Atlantic Panel and Virginia Chapter of the American Fisheries Society to plan and host the First International Snakehead Symposium July 18-19, 2018.

8b. Regional Panel Recommendations

Western Regional Panel

1. Funding: maintain and/or increase financial allocation to the panel(s) to support annual meetings, coordination and panel activities.
 - Response: We recognize that Regional Panels provide essential coordination and work production for the Task Force at the Regional and local levels. As described at past meetings, sequestration resulted in a significant deficit within the AIS program in FY13 and we continue to have to make difficult budget decisions.
 - In FY 18, regional panel funding will continue at \$40K/Panel.
2. Funding: maintain funding to support highest priority components of QZAP and the 100th Meridian Initiative.
 - Response: The ANSTF Co-chairs support this recommendation. The U.S. Fish and Wildlife Service continues to support the implementation of QZAP through the funding of the State/Interstate ANS Management Plans and through grant support for projects to control the spread of invasive mussels.
3. Assist: Support state efforts to obtain ballast water treatment system evaluation data to assess risk to state/local waters.

Background: The U.S. Coast Guard has data on ballast water treatment system effectiveness that they collect through their type-approval process. Parts of a system's application package are proprietary (e.g., specifics about how treatment is carried out), but other portions should not be (e.g., end-of-pipe discharge data). West coast states have petitioned for end-of-pipe discharge data through the Freedom of Information Act process, but the petitions have been denied. States will appeal the decision, citing the need for non-proprietary data to ensure state protection of state natural resources.

 - Response: The ANSTF Executive Secretary has contacted the USCG in regards to the ballast water concerns of the Western States. ANSTF Executive Secretary will continue to coordinate communication as needed.

- USCS Response: FOIA process governs how the Coast Guard's Marine Safety Center has communicated with requests from Western states and will guide their response to the appeals.

Northeast Aquatic Nuisance Species Regional Panel

1. Restoring full funding for the six regional panels to last year's level will cost a total of only \$60,000 nationally. The Northeast Aquatic Nuisance Species Panel recommends that the Aquatic Nuisance Species Task Force identify and secure \$60,000 to restore this funding and work within the US Fish and Wildlife Service and other agencies to identify and secure additional and dedicated sources of support so that the panels may continue to provide the high level and high quality services and products for which they were tasked by the Aquatic Nuisance Species Task Force.
 - Response: See response from Western Regional Panel.

9. Public Comment

None

Wednesday –June 13, 2018

Welcome

The ANSTF co-chairs welcome attendees to Day 2 of the meeting.

10. Review of Materials / Instructions for Group Sessions

ANS Task Force members and regional panel representatives were divided into 6 Goal Teams (each representative serving on two Teams). The Goal Teams, which align to the strategic goals in the 2013-2017 ANS Task Force Strategic Plan, were Prevention, Early Detection / Rapid Response (EDRR), Control / Restoration, Outreach and Education, Research, and Coordination / Funding. The co-chairs asked each Goal Team, in their respective breakout session, to identify ANS priorities for their assigned Goal that can be progressed within the next five years and utilize existing resources, or with resources pursued by Federal agencies through their budget processes. Goal Teams were also encouraged to identify priorities and strategies that require collaboration among the ANS Task Force members, rather than those that are pursued by independent agencies or organization. In the morning sessions, Goal Teams were tasked to identify priority objectives (three objectives per Goal is recommended) and strategies to accomplish the priority objectives (three strategies per objective is recommended). The results of the session were to be presented to the remaining ANS Task Force members in the afternoon session.

In preparation for the Goal Team sessions, the ANS Task Force members and regional panels performed a SWOT (strength, weakness, opportunity, threat) analysis on the current ANS Task Force operations. Strengths identified included the collaborative nature of the ANS Task Force, the diversity of its membership, and inclusion of the regional panels. Weakness included limited Congressional support, lack of authority, and uncertainty in the roles and responsibilities from members. Opportunities included ability to gather economic data in the impact of ANS, engagement with the Western Governors Association, and broadening public awareness. Threats included the ongoing and unpredictable nature of ANS, competing priorities, and lack of technology to detect and control ANS. The responses from the SWOT analysis were summarized to help focus the scope of the next ANS Task Force Strategic Plan. It was determined that a central role of the ANS Task Force should be to provide guidance and resources to support regional and local ANS efforts. The ANS Task Force should also strive to identify priorities and take action at the national level. The Strategic Plan should capture collective work to achieve goals that

are specific to the ANS Task Force, yet should also highlight individual member actions that funnel up into the overall ANSTF mandate.

11. Goal Team Breakout Session

Prevention Goal Team. This Goal Team identified prevention as actions to prevent new introductions in the U.S. as well as to prevent the spread of existing ANS populations into un-infested waters. The authorizing legislation of the ANS Task Force directs the Task Force to establish and implement measures to minimize the risk of introduction of ANS to water of the United States, including actions to identify pathways by which aquatic organisms are introduced, assess the risk of aquatic organisms, and evaluate whether measures to prevent introductions of ANS are effective and environmentally sound. The Goal Team further discussed strategies to implement consistent science-based risk assessment and screening procedures to assess and prioritize pathways and species including the need to develop and refine risk assessment tools and the need to improve communication of the results of risk assessments. The Team also identified the need to take steps to identify and interdict high priority specific pathways and species by developing and implementing regulatory and non-regulatory measures. Other topics that were suggested to support the prevention goal included the need to expand HACCP training, incorporate ANS management in to emergency response measures, and to consider ANS prevention measures to reduce impacts to infrastructure.

EDRR Goal Team. This Goal Team concluded that the role of the ANS Task Force under this goal was to ensure that the Task Force members and partners are positioned to implement EDRR. To accomplish this, the ANS Task Force should explore potential strategies to establish an emergency rapid response fund, provide guidance and tools for a nationally coordinated EDRR approach, and develop a national strategy specific to EDRR. The Team determined that the ANS Task Force should also ensure that members are regularly reporting to the USGS NAS database and should identify relevant authorities and environmental regulatory resources. The Team also discussed tools needed for a nationally coordinated EDRR approach, including developing existing model rapid response plans, maintaining the ANS experts database, providing Incident Command System training, and a providing a reporting mechanism for EDRR activities. The Team identified the importance of engaging the public and industry in EDRR programs and suggested increased effort to communicate across the spectrum of jurisdictions and supporting state and regional panel efforts in citizen science training.

Control and Restoration Goal Team. This Goal Team determined that the Control and Restoration goals of the current Strategic Plan should be merged as restoration is often conducted following a control action, or control of ANS is performed as part of a larger restoration effort. The Team also suggested engaging agencies and other coordinating bodies to streamline and eliminate barriers that may impact control operations. The Team identified that the ANS Task Force is directed under NANPCA to coordinate the development of control and management programs through the development of species specific management plans; however, there is a lead is needed for each plan to report on the progress and help leverage support for priority actions. It was suggested that the ANS Task Force should facilitate information sharing of effective control tools, including creating a forum for information sharing and building a clearinghouse for these materials on the ANS Task Force website. The Team also identified a need to identify gaps where no control options are available and encourage partnerships with non-federal entities to advance tools to fulfill these needs.

12. Goal Team Report Out and Discussion

Each Goal Team provided a summary of their discussions to the ANS Task Force, allowing members and regional panel representatives to provide input. A need was identified to focus on what the ANS Task Force can advance by working together, rather than as individual organizations. The ANS Task Force must provide resources and guidance to efforts at the regional and state level that support national priorities. For the prevention goal, there was support for priorities identified by Goal Team. A need was

identified to provide standards for risk assessment tools and define thresholds that establish categories of risk. The members also identified that areas that overlapped into several management areas; for example risk assessment is important to prevention and early detection. These issues will need to be considered as the strategic plan is streamlined and refined.

In discussing the EDRR goal, the members expressed that the role of the ANS Task Force is to provide guidance, technical support, and background documents and templates for work to be conducted, and allowing work to be managed by the appropriate entities. Many of the tools for response have already been developed, funding is critical to conduct actions as many states do not have the resources to implement ANS response or control efforts. The EDRR Framework provides a structure to build the capacity for a national EDRR network; the ANS Task Force should consider how to assist implementation of the framework, overcome obstacles, and help bridge the gap between local, State, regional, and national efforts.

ANS Task Force members reviewed and supported the priorities of the Control and Restoration Goal Team. Additional thought should be given to reporting mechanisms needed to shared success (and failures) of control efforts as well as methods to track and show value of the species-species control plans. Species control plans should also be reviewed to see what actions ANS Task Force members may be able conduct or assist.

13. Public Comment

Marshall Myers (lawyer, past Invasive Species Advisory Committee member): Doing research on ANS is cumbersome as information is stored on multiple websites and not difficult to find. A central depository is needed for ANS documents so that past work can be easily located and not repeated.

Thursday –June 14, 2018

Welcome

The ANSTF co-chairs welcome attendees to Day 3 of the meeting.

14. Goal Team Breakout Sessions

Research Goal Team. This Goal Team focused discussion on actions that could be taken to facilitate research to reduce environmental, economic, and (human and wildlife) health risks and impacts associated with ANS. This included identifying emerging needs to improve ANS management, evaluate environmental and socio-economic impact and benefits of management actions, and investigate the relationship between ANS and environmental stressors (e.g. climate change). The Goal Team also recognized that the authorizing legislation of the ANS Task Force directs the Task Force to administer a competitive research grant program, to do such would require securing funding dedicating to this purpose and/or leverage agency resources to conduct priority ANS research. The Team also discussed strategies to track and disseminate results to incorporate in management decisions and activities, including establishing a clearing house to maintain guidance documents, protocols, and best management practices.

Education and Outreach Goal Team. This Goal Team discussed priorities for the ANS Task Force to develop and implement effective and coordinated strategies and tools to increase awareness and change behaviors to prevent the introduction, establishment and spread of ANS, and to build support for ANSTF and ANS programs. Recognizing that numerous outreach efforts already exist at local, state, regional, and national levels, there is a strong need for a national strategy to encourage consistent

communication, education and outreach efforts. Developing this strategy would necessitate conducting an inventory and evaluating existing campaigns and tools. This effort would also require an enhanced community of practice by leveraging partnerships with industry and NGOs and crafting tailored messages for pathways (rather than species) and target audiences including aquatic recreationalists, pet owners, religious and cultural entities, agency decision makers, and elected officials. Once the national strategy is completed, it will be the responsibility of the ANS Task Force to facilitate the consistent implementation of the strategy, including disseminating tools, best management practices, and materials tailored to pathways and user groups, promoting uniform communications, and providing a forum for regular engagement and support for the consistent implementation of the national strategy. The Goal Team also identified a need to track and evaluate the implementation actions identified in the national strategy through qualitative and quantitative measures to demonstrate value and improve effectiveness. To do so would require guidance and tools to evaluate campaign effectiveness and a mechanism to gather and analyze evaluation data from practitioners.

Coordination and Funding Goal Team. This Goal Team discussed strategies to maximize the organizational effectiveness of the ANS Task Force, recognizing that coordination is the central role of the ANS Task Force. One of the primary duties of the ANS Task Force is to provide mechanisms for communication and networking, this includes planning semi-annual meetings with a focused agenda anticipated outcomes that address elements from the strategic plan. ANS Task Force members should be expected to encourage staff attendance and involvement at ANS Task Force and regional panel meetings. Items that should be completed to maintain ANS Task Force operations include requiring members and regional panels to annually report on accomplishments and planned efforts as they align to the strategic plan, create bylaws for the ANS Task Force and information packet for new members, continue technical support for the drafting of State ANS management plans, and compose of annual report to Congress that include ANS Task Force successes and the need for proper policies and funding for ANS. To create a stronger and consistent voice, members should also strive to clearly communicate ANS Task Force priorities, needs, and meeting outcomes using regular (short) communications. To ensure the ANS Task Force represents a balanced viewpoint, the group should identify other industries and interests that are impacted by ANS and invite them to participate in ANSTF and regional panel meetings and activities. The ANS Task Force should also coordinate with other interagency invasive species groups (e.g., ITAP, NISC, FICMNEW) to reduce overlap and work collaboratively on shared priorities. In order for the ANS Task Force to accomplish its mandates it must work to leverage and secure dedicated funding for the ANS Task Force and its Regional Panels, this may be accomplished through actions such as developing partnerships with outside groups (e.g., NFWF) to develop a targeted ANS grant programs, drafting briefing documents to communicate priorities and funding shortfalls. Information sharing is also an important function of the ANS Task Force and should be accomplished through such actions as building a database of ANS Task Force and member activities, cross-walking information to priority issues (e.g., infrastructure), and maintaining a clearing house of management documents. Another role of the ANS Task Force should be to identify gaps in authorities, regulations, and programs and make recommendations to streamline and remove barriers.

15. Goal Team Report Out and Discussion

Members noted the ANS Task Force does not conduct research, but should inform and/or provide recommendations on priorities and investment to research and development to pertain to ANS. There was also a recommendation for the strategies under the research goal to specifically call out social science and human behavioral research, as there is an urgent need for this type of information. The ANS Task Force should encourage a third party evaluation of emerging technologies (e.g., eDNA/molecular approaches).

In reviewing the priorities of the Education and Outreach goal, the members determined that education and outreach for general public awareness and targeting specific groups are both useful; however, emphasizing behavioral changes to prevent the spread of existing species is most important. The ANS Task Force should continue to utilize and invest in existing campaigns. Species strategies do not seem to be effective, outreach should

focus on pathways and targeting specific audiences. There needs to be a greater understanding on what barriers exist to ANS outreach and developing strategies to overcome these obstacles. The Task Force also discussed strategies to identify and contact potential partners to develop a comprehensive, diverse community of practice. If the ANS Task Force does more forward with developing a communications framework, commitment and buy-in from members will be essential to implement it.

ANS Task Force members reviewed and supported the priorities of the Coordination Goal Team, agreeing that the facilitating efficient coordination and communication among Task Force members and partners should be the primary role of the ANS Task Force. In carrying out this mandate, the ANS Task Force should look for additional opportunities for capacity building and ensure sure that ANS management efforts have consist standards and avoid duplication.

16. Public Comment

None.

17. Meeting Summary

A list of final action items and decision items was discussed (see above).

The Summer 2018 ANS Task Force Meeting was adjourned.