

AQUATIC NUISANCE SPECIES TASK FORCE: MINUTES OF THE 2010 SPRING MEETING MAY 5–6, 2010

On May 5 and 6, 2010, the Aquatic Nuisance Species Task Force (ANSTF or Task Force) met at the Holiday Inn Hotel and Convention Center by the Bay in Portland, ME. Decisions and action items are listed below, followed by a summary of the two-day meeting.

Decisions

The ANSTF made the following decisions:

- Approved meeting agenda and minutes for the fall 2009 ANSTF meeting
- Support expanded panel efforts commensurate with additional funding
- Keep current ANSTF committee structure but review membership and identify discrete tasks
- Formalize ANSTF Hotline

New Action Items

The ANSTF assigned the following action items:

- (Executive Secretary) Link Northeast Aquatic Nuisance Species (NEANS) “Online Guide to Aquatic Invasive Species in Northeastern North America” to the ANSTF Web site and consider links to additional ANS guides.
- (Executive Secretary) Post Oregon’s *Management Assessment for Invasive Species* report on ANSTF Web site.
- (Jonathan McKnight) Report on vector workshop at next ANSTF meeting.
- (Executive Secretary) Invite Congressional Affairs Specialist to next ANSTF meeting to discuss contact with Congressional representatives.
- (Executive Secretary) Provide roles and responsibilities of the Task Force, panels, and committees at next ANSTF meeting.
- (Anne Marie Eich) Follow up with Sophie Foster regarding Canadian Aquatic Invasive Species Network (CAISN) model and its applicability for integrating academia into ANSTF objectives.
- (Anne Marie Eich) Develop options for implementing partnerships with youth groups.
- (Executive Secretary) Contact federal members to request committee chairs and members and identify committee tasks.
- (Dave Britton/ANSTF/Regional Panels) Provide updated list of Regional Panels and ANSTF contacts.
- (U.S. Fish and Wildlife Service [USFWS], U.S. Geological Survey [USGS], and Association of Fish and Wildlife Agencies [AFWA]) Update the experts database.
- (Regional Panels) Develop an ANS responders list.

Topics for Upcoming ANSTF Meetings

- Regional collaboration on the Asian carp
- Discuss update schedule for the Strategic Plan

1. Welcome and Preliminary Business

USFWS Co-Chair Brian Arroyo, Assistant Director for Fisheries and Habitat Conservation, and National Oceanic and Atmospheric Administration (NOAA) Co-Chair Pat Montanio, Director of Habitat Conservation, welcomed ANSTF members and observers to Portland, ME. Peg Brady, NOAA Liaison to the National Invasive Species Council (NISC) and ANSTF, introduced herself and covered meeting logistics. ANSTF Executive Secretary Susan Mangin, USFWS, thanked the NEANS Panel for organizing the spring ANSTF meeting and field trip. Michele Tremblay, NEANS Panel Coordinator, announced the evening reception at the Gulf of Maine Research Institute. Following introductions, the ANSTF approved the agenda for this meeting and meeting summary with a change noted for the fall 2010 meeting in Silver Spring, MD.

2. Review of Spring Action Items

Mangin reviewed action items from the fall meeting.

- *ANSTF Strategic Plan*—Anne Marie Eich, Knauss Fellow with the USFWS, provided an update on follow up actions for three 2010 priority objectives from the *ANSTF Strategic Plan*: (1) facilitate development and science-based risk assessments to determine the risk associated with ANS and methods to mitigate the risks (Objective 1.1); (2) facilitate monitoring and control of ANS (Objective 2.1); and (3) ensure people of the United States understand the problems and issues associated with ANS (Objective 4.1). Action items were correlated with these objectives last fall. For Objective 1.1, Eich is compiling a list of risk assessments and a list of 2010 risk assessment projects to determine if the ANSTF general risk assessment is sufficient. For Objective 2.1, Eich is compiling a list of existing infestations. Joe Starinchak, USFWS, has developed a needs assessment of the *Stop Aquatic Hitchhikers!* campaign for Objective 4.1.
- *ANSTF National Guidelines for Recreation*—This task has been completed.
- *ANSTF presence at National Invasive Species Awareness Week in January 2010*—The ANSTF Executive Secretary provided a presentation about the ANSTF.
- *Quagga-Zebra Mussel Action Plan for Western U.S. Waters*—The final version was submitted in March and is on the ANSTF Web site.
- *Cover Letter for the Quagga Zebra Mussel Action Plan for Western U.S. Waters (QZAP)*—Two letters were drafted that asked for support: one for ANSTF members to submit to their agency and one for ANSTF members to send to agency leaders.
- *Quagga/Zebra Mussel Coordination Subgroup*—This item is scheduled for session 12.

3. Role of Invasive Species in Shifting Benthic Community Composition in the Gulf of Maine

Larry Harris, University of New Hampshire, discussed shifts in the benthic community composition in the Gulf of Maine from 1970–2010 and the increasing roles of invasive species. Harris has primarily studied areas along the southern Maine and New Hampshire coastal zone, such as the Isles of Shoals, and is involved with sea urchin fisheries and aquaculture.

Historically, kelp beds with a varied understory and a crust of coralline algae were the climax community. In 1980, populations of sea urchin (*Strongylocentrotus droebachiensis*) began converting kelp bed communities to urchin barrens. Overharvesting of the urchins created a cycling pattern of a dense carpet of introduced red alga (*Neosiphonia harveyi*); recruitment of mussels (*Mytilus* spp.); predation by sea stars (*Asterias* spp.); and back to red alga. Other predators soon altered the pattern. In 1998, heavy recruitment of Jonah crab (*Cancer borealis*) led to densities of about one adult crab per square meter. Crab numbers declined to normal densities by 2005, but almost no urchins survived this

predation. *Codium fragile* ssp. *fragile*, which was introduced from Asia, first appeared at the Isles of Shoals in 1982, began to spread in the mid 1990s, and became the dominant canopy species for 5 years. A specialist herbivorous sea slug (*Placida dendritica*), combined with heavy colonization of large *Codium* plants by epibionts, led to reduced *Codium* densities that played more of a subcanopy role. Algal recovery led to cunner (*Tautoglabrus adspersus*) recruitment, which further reduced mussel and urchin populations. A series of introduced algal and animal species became dominant members of benthic communities during the 1980s and 1990s, including red alga (*Bonnemaisonia hamifera*); bryozoan (*Membranipora membranacea*); and colonial tunicates (*Botrylloides violaceus*, *Diplosoma listerianum*, and *Didemnum vexillum*). As temperatures increase, *Bonnemaisonia hamifera* is persisting throughout the year and can dominate 50–60% of the bottom cover. Species such as *Membranipora* and *Diplosoma* have acquired native predators, but we do not know how increases in these predators impact their native prey. Benthic and fouling communities in the Gulf of Maine are now a mix of native and introduced species, and the introduced species appear to be increasing in distribution and dominance in many habitats. New benthic community assemblages now exist that have no precedent in the literature, and they are still in a state of flux. Our understanding of how these systems function and their impact on regional ecosystems and fisheries is poor at best, but being aware of how much marine communities are changing and how introduced species are playing a prevalent role is important.

4. The Spread of the Invasive Tunicate on the Georges Bank Fishing Ground off New England

Page Valentine, USGS, discussed the spread of the invasive tunicate, *Didemnum vexillum*, on Georges Bank in the Gulf of Maine region. The first occurrence was noted in 2003. In 2005, *D. vexillum* was well established within areas closed to fishing. Currently, Valentine has documented well-established colonies in four large areas of gravel substrate. A cross section of the colony reveals individuals enclosed in a tunic that is impregnated with carbonate spicules that enable the organism to be strong and resistant. In weak currents, the species increases its distribution by forming tendrils that easily break off and form new colonies; in strong currents, it forms mats that are tightly cemented to its substrate. It grows on all living and nonliving substrates, except mud and moving sand, and has overgrown scallops, mussels, sponges, other sessile species, and gravel on Georges Bank. Colonies are a nuisance in aquaculture farms but do not always kill bivalves. However, colonies on the seabed may form a barrier between fish and prey, reduce seabed area suitable for larval settlement, and reduce suitable shelter for juvenile fish and invertebrates.

Presence/absence data from 2005 to 2009 indicate *D. vexillum* is persisting on Georges Bank. In coastal areas, *D. vexillum* regresses in the winter. Settlement plate studies from Woods Hole, MA, indicate regrowth begins in April and that, although over 90% of a colony can disappear during the winter, it does not die off. Valentine displayed a map of predicted *D. vexillum* spread on Georges Bank—approximately 23,058 square kilometer (km²) are susceptible to colonization based on temperatures required for sexual reproduction, but not considering substrate availability.

Discussions included information about the USGS Web site that documents identifications around the world and contains many links with additional information. Valentine noted that both freshwater treatment and air drying are effective in killing colonies on aquaculture equipment. However eradication of *D. vexillum* at a site has never been successful because it is impossible to remove all colonies or fragments of colonies.

5. Online Aquatic Nuisance Species Identification Guide

Leslie Mathews, Vermont Department of Environmental Conservation, and Karen Hahnel, Maine Department of Environmental Protection, demonstrated the new “Online Guide to Aquatic Invasive Species in Northeastern North America” that was developed by the NEANS Communication, Education, and Outreach Committee. The guide includes 20 species that are either present in or threaten the northeastern region. Because this guide is available online, it can be updated, is customizable and searchable by the user, and can be distributed as either a print or electronic guide. All photos were donated and the photos and information were reviewed by NEANS although no formal review process exists.

The guide is available at <http://www.northeastans.org>. After accessing the guide, the presenters demonstrated how to use the guide, including how to filter, choose photos and topics, upload a logo, and create a PDF. They have considered including a footer on all guide pages that includes the ANSTF hotline phone number and a brief spread-prevention message and adding a category of natives that look similar to aquatic invasive species (AIS). An ANSTF member suggested checking the USGS, National Biological Information Infrastructure, Sea Grant, and Army Corps of Engineers (ACOE) Web sites for public domain photos.

6. Canadian Risk Assessment

Becky Cudmore and Nicholas Mandrak, both with the Department of Fisheries and Oceans Canada (DFO), reported on the National Aquatic Invasive Species Committee (NAISC). The NAISC is a federal–provincial task group that meets regularly to allow conversation between Canada’s federal government and each province. From 2005–2010, the NAISC received \$85 million in federal funding. The 5-year program was renewed for the same amount in 2010. Out of the 10 million dollars dedicated to AIS, half is budgeted to augment the Sea Lamprey Control Program. The other half is budgeted to the DFO’s National AIS Program, which focuses on prevention through regulations, early detection and monitoring, and research and risk assessment.

The DFO’s Center of Expertise for Aquatic Risk Assessment (CEARA) was created to develop a national standard for conducting biological risk assessments of AIS, educate practitioners, prioritize risk assessment needs, advise headquarters on national risk assessment priorities, and coordinate and track progress to ensure deliverables are met. A biological risk assessment determines the likelihood of introduction and magnitude of consequences and is a three-step process: 1) Rapid Assessment Protocol; 2) Screening Level Risk Assessment; and 3) Detailed Level Risk Assessment. CEARA has completed risk assessments on 5 species of Asian carp, the northern snakehead (*Channa argus*), 5 species of tunicates, the green crab (*Carcinus maenas*) and Chinese mitten crab (*Eriocheir sinensis*), 6 species of freshwater fish, the bloody red mysid (*Hemimysis anomala*), and the New Zealand mudsnail (*Potamopyrgus antipodarum*). Risk assessments on the swamp eel and 7 pathways are ongoing. Risk assessments are useful for conducting research, developing monitoring and early detection programs, developing policy, making decisions, and conducting management activities.

The group discussed ballast water monitoring and how a lack of historical data makes knowing what is native and what isn’t difficult, how much information is necessary for a large-scale risk assessment, and Canada’s framework for regulations that ban zebra mussels (*Dreissena polymorpha*) and quagga mussels (*Dreissena rostriformis*).

7. Update on the Risk Analysis Working Group

Cindy Kolar, USGS, presented a Risk Analysis Working Group (RAWG) update. The RAWG facilitates the development and use of science-based risk assessments, reviews and updates the 1996 *Generic Nonindigenous Aquatic Organisms Risk Analysis Review Process*, provides technical assistance on the methodologies and processes proposed for specific NISC/ANSTF sanctioned risk assessment projects, maintains a library of existing risk assessments, ensures coordination efforts with the Non-native Wildlife Screening Working Group and other working groups, and ensures coordination efforts with the NISC/ANSTF via the Prevention Committee.

To update the 1996 *Generic Nonindigenous Aquatic Organisms Risk Analysis Review Process*, the RAWG must develop a database of former uses of the document, collate information on current risk assessment and risk analysis tools, diagram the risk analysis puzzle to show the relationship between the domain of the Non-native Wildlife Screening and Risk Analysis Working Groups, develop a revised risk assessment tool, develop risk management components, develop a revised risk analysis framework, complete the final document, and submit the document for review.

8. Measuring the Effectiveness of Outreach Campaigns

8.1. Joe Starinchak

Starinchak spoke about the effectiveness of outreach campaigns at the national level and how they fit within our changing world. Challenges to invasive species outreach include declining State revenues, higher public sector priorities, and resistance to change and collaboration. For many reasons, today's issues are very complex, and people must think creatively to solve them. According to Starinchak, holistic thinking and rigorous analysis can provide strategic insights for doing things differently.

Starinchak then summarized requirements of the federal agencies (delivering their mission, conserving fish and wildlife, and mitigating environmental impacts) as well as other tasks they want to do, such as embracing multiple leadership roles, developing new paradigms, improving performance, and collaborating with and engaging other stakeholders. Social innovation provides the means, and he talked about how the federal agencies could address the social side of conservation through marketing, branding, and social science processes to connect regulatory and voluntary mechanisms, leverage the country's sense of place at the local level, and reframe the context of conservation to pursue "blended value." In essence, social science provides the theoretical basis on which outreach should be based, and the agencies can make use of the associated tools. Right now, most of the tools used are enforcement-driven, but social marketing appeals to people's social networks and willingness to do what's right. He gave examples of strategies that blend regulatory and voluntary mechanisms to change people's behaviors.

He added that the isolated delivery of current outreach campaigns is not useful. These campaigns must be strategically positioned via blended values. Traditionally, economic, social, and environmental values have been considered as separate, leading to a "silo" mentality. Blended value tenets hold that these value types overlap (as in a Venn diagram, with sustainability at the center).

Starinchak listed several characteristics that distinguish the USFWS as the operational arm of the ANSTF. These provide a national platform and enable ANSTF members to link partners' advocacy efforts to resource management actions. He noted opportunities to pursue blended value, including integrating the concepts of biodiversity conservation (threatened by invasive species) and "going green," adding that demonstrating leadership and embracing change are key. To do these things, the federal agencies must focus on individual behavioral change by learning about and thinking like the public. We must answer the "what's in it for me" question effectively for people with diverse values.

Starinchak discussed how *Stop Aquatic Hitchhikers!* and *Habitattitude* have helped stimulate America's entrepreneurship and innovation, leveraged community interest and engagement, positioned behaviors as catalysts for community actions, and addressed common reactions. He then discussed the return on investment for these two campaigns. *Stop Aquatic Hitchhikers!* is in its eighth year and has attracted 896 partner organizations willing to communicate the same message, generated international brand equity, solidified a relationship with the States, and attracted substantial funding and Web site traffic. *Habitattitude* is in its sixth year and has led to a cooperative relationship with the Pet Industry Joint Advisory Council and "big box" retailers promoting conservation messages. Overall, for every dollar of USFWS funds spent on these campaigns, \$14 of external funds have been leveraged.

Ultimately, we have to look at the objectives of the campaigns to evaluate them. Although there are a number of short-term objectives, the long-term objective is to change individual behaviors. Producing this result at multiple levels of government requires a balance of process, strategy, operations, and positioning. Performance measures exist at the national level, processes at the regional scale, and strategies at the state and local scale. Results are then evident as local resource conservation.

According to Starinchak, this way of thinking can create blended value and diverse benefits. Instead of consumers, industry, and government working against each other, they and others can work together to catalyze innovation, leverage external funding and resources, facilitate shared ownership, creatively destroy the "jobs vs. environment" paradigm, and move society toward solving complex issues. Despite the return on investment that the USFWS has seen, we still need to make these outreach campaigns a priority and secure resources to evaluate behavior change at the community level.

8.2. Jason Goeckler

Jason Goeckler, Kansas Department of Wildlife and Parks (KDWP), reported on outreach efforts in Kansas. In 2005, the ANSTF approved the Kansas ANS management plan, which contained the management goal of educating all aquatic users through an outreach program. Goals of the Kansas outreach program are to increase ANS awareness and understanding and evoke more people to take preventative measures. Human dimensions research (e.g., boater and angler surveys) and field tests are being used to measure outreach success.

In 2008, the KDWP conducted a boater survey of 5,000 randomly selected boaters. These data were compared to a similar survey conducted in 2000. Results indicate the outreach programs are working—in 2000, 39% of respondents had never heard of the zebra mussel; by 2008, only 7% had not heard of this species. Results also indicated more boaters are taking precautions to prevent the spread of zebra mussels and the outreach programs were generally using effective means of communication. However, the surveys also identified communication gaps regarding what precautions boaters should be taking to prevent the spread of ANS. The KDWP now offers a voluntary ANS online certification course to educate boaters about proper decontamination procedures. Some communities are requiring this certificate before boaters are allowed to launch on their waters.

The next survey was conducted to determine if wild-caught bait could be a vector for spreading ANS. Survey results indicated most bait is being purchased, but those who collected bait were collecting at a location different than where it was being used, and then releasing any unused bait even though regulations prohibit such activities. In addition, less than 20% of respondents were able to identify Asian carp when presented with a picture of the fish. When asked, respondents preferred the KDWP restrict the transport of wild-caught baitfish and conduct an extensive educational campaign. Although regulations provide the framework, the KDWP must continue educating the public and identify new regulations that need to be enacted. All recommendations must be uniform, focused, and directly relevant.

9. Update on the Management Assessment for Invasive Species

Sam Chan, Oregon State University, shared information and results from a statewide management assessment of land and aquatic invasive species in Oregon. The assessment, a first for Oregon and possibly the first of its kind in the United States, provided a comprehensive look at how invasive species are managed in Oregon. The scope included federal, State, local, and tribal governments; nonprofit organizations; and academic institutions, and it was conducted to learn about authorities, roles, and responsibilities; challenges to policy enforcement; conflicting actions that could undermine ANS efforts; strength of collaboration between agencies; status of funding; types of invasives; and a host of other management issues.

Chan summarized assessment methods, including a literature review of ANS regulations, a survey, and data analysis. Of 234 public and nongovernmental entities contacted for surveys, 128 responded. He then explained results of assessment activities.

The researchers found that the biennial appropriations for invasives funding in Oregon total \$4 billion each year, but only \$28 million is actually spent on invasive species. And half of that is spent on management and control, which amounts to less than \$8 per capita. Yet the economic impact of invasives in the state is close to \$400 million. Education and outreach accounted for about 6% of the total budget, with a third of that being informal educational opportunities. They found redundancies between different agencies, meaning that different dollars were being spent on the same actions.

They also looked at the effectiveness of existing management and strategic plans. Of the agencies without plans (41%), almost all of them are in partnerships with those that do have plans. Few plans are costed or linked, and most are underfunded. Local governments tend to be more effective, probably because of local control issues. The major obstacle to effectiveness is funding, although others include public awareness and private landownership.

Based on the results, researchers developed a number of recommendations regarding prevention; outreach and education; monitoring, surveillance, and early detection/rapid response; effectiveness monitoring; coordination; policy; research; funding; and management and control. Relationships between the various entities were also mapped, and a gap analysis was conducted of invasive species database users and managers. The primary obstacle was time, but inability of databases to “talk” to each other, lack of funding, and confidentiality of data were also major obstacles.

Chan summarized that Oregon is at a crossroads. To succeed, Oregon needs “one invasive species strategic plan to ensure the highest priorities are funded to demonstrate Oregon’s commitment and accountability to this important economic, environmental, and social issue.” The assessment led to a report with recommendations, but those recommendations need to be acted on to help Oregon succeed.

After his presentation and clarifying questions, Chan was asked what recommendations he would give Task Force members if they were involved in similar processes. He suggested having a dedicated group of people who could do personal interviews, and focusing on interviewing big investors. He added that his study found no conflicts in ANS management response plans, but they found many social conflicts, though these were not addressed in this study. Chan invited people to read the report, with its detail and list of recommendation, which will be posted on the ANSTF Web site.

10. Regional Panel Updates

10.1. Gulf and South Atlantic Regional Panel (GSARP)

James Ballard, Gulf States Marine Fisheries Commission (GSMFC), reported that Texas legislators passed a statute that requires the Texas Parks and Wildlife Department to establish a white list for exotic aquatic and riparian plants. All plants on the list will be evaluated for potential risk to aquatic environments using a scientific risk analysis that they have developed based on Pheloung et al. (1999).¹ Texas has also developed an outreach campaign to provide greater information to the public on the harm caused by releasing exotic species. Giant salvinia (*Salvinia molesta*) is the first species to be addressed by this new effort. Their campaign is titled, “Hello Giant Salvinia—Goodbye Texas Lakes.” Ballard reported on several other GSARP activities:

- Mississippi will submit their AIS plan for final approval at the fall ANSTF meeting.
- The GSARP is looking into working with Caribbean countries to protect biodiversity and help with existing project activities.
- The Mexican government is going to start a program that will offer a reward for captured lion fish.
- The GSARP voted to adopt the 2010–2014 strategic plan.
- The GSARP revised its Rapid Response Plan. The revised draft incorporates the Incident Command System and has updated state information. The GSARP’s Early Detection and Rapid Response work group will hold a meeting this summer to review the new draft and refine it into a final draft. They will also incorporate state information for states that have joined the GSARP since the original plan was written.

At the spring meeting, the GSARP discussed how to revitalize its workgroups and gave them new tasks to work on by the fall meeting. Ballard stated that the GSARP strongly encourages the ANSTF to continue to work on securing more funding for state plans and the panels so they can start to be more proactive in their efforts to control AIS. Ballard closed by thanking all of the federal agencies that are helping with the oil spill in the Gulf of Mexico.

10.2. Great Lakes Panel (GLP)

Phil Moy, Wisconsin Sea Grant Institute, reported that the GLP recently submitted position statements for federal ballast water regulation and renegotiation of the *Great Lakes Water Quality Agreement*. The GLP expects to submit an additional position statement that urges timely reporting of new AIS discoveries. Other GLP actions include working on Asian carp Regional Coordination Committee issues, supporting the Asian carp control strategy by providing demonstration sites, developing a statement on the ecological separation of the Great Lakes and the Mississippi River basins to prevent AIS, responding to requests for input on the *Great Lakes Water Quality Agreement* renegotiation, and securing panel representation for Illinois. The panel committees have updated species and research priorities, worked with NOAA and the Great Lakes Aquatic Nonindigenous Species Information System (GLANSIS) database to develop a species hot list, and developed a position statement on pre-import screening for species.

¹ Pheloung, P. C., P. A. Williams, and S. R. Halloy. 1999. A weed risk assessment model for use as a biosecurity tool evaluating plant introductions. *Journal of Environmental Management* 57:239–251.

10.3. Mid-Atlantic Regional Panel (MARP)

Jonathan McKnight, Maryland Department of Natural Resources, reported on the MARP invasive species list—a list of 48 “hot” species, some of which have been mapped to act as an early warning system for surrounding states. MARP states have been working with public landowners to eradicate small populations of common reed (*Phragmites australis*), studying characteristics of invasive fish, developing an invasive species field guide for Pennsylvania, and funding research and targeted control to eradicate local populations of nutria (*Myocastor coypus*) in North Carolina and develop better technology for eradicating nutria region wide. In addition, most MARP states are signatories to the Chesapeake Bay Agreement, which has a separate set of plans for six invasive species. Regionally, the MARP is cosponsoring a mitten crab watch with the Smithsonian Environmental Research Center (SERC) to monitor the species’ occurrence. On December 2, 2009, the MARP hosted a workshop focused on examining and controlling exotic species vectors. Regarding the three MARP recommendations, McKnight acknowledged that Mangin has been working hard to facilitate focused and results-oriented communication and coordination between the regional panels and observed that the panels must interact to a greater degree to identify AIS management obstacles and must examine vector pathways to find strategic ways to manage prevention and control.

McKnight will share outcomes from the vector workshop at the fall ANSTF meeting.

10.4 Northeast Aquatic Nuisance Species Regional Panel

Jan Smith, Massachusetts Coastal Zone Management, reported that New Hampshire will present a draft management plan at the fall ANSTF meeting. NEANS has been considering drafting a regional rapid response management plan that would include invasive species. Other projects include an online guide; a citizen monitoring program for invasive species; and a regional rapid assessment survey for marine species that focuses on docks and piers, as well as adjacent intertidal habitats, to determine if species are spreading to natural habitats or just growing on artificial substrates. Finally, NEANS has developed a poster to identify new invasive crabs and sponsored an invasive tunicate meeting.

Recommendations to the ANSTF included working with Congress to appropriate the full authorization for state management plans and identifying and securing other sources of funding to support regional panel initiatives and expenses. Smith noted that the USFWS grant payments have not been timely, and new restrictions have been placed on any writing or printing produced by NEANS. Unfortunately, limited funding has prevented state representatives from attending panel meetings.

10.5 Western Regional Panel (WRP)

Karen McDowell, San Francisco Estuary Project, reported that traveling to meetings is a large portion of the budget so the WRP only meets once each year. Finalizing the QZAP has been the key WRP activity. Other WRP projects include “Train the Trainer” programs with Master Gardeners, water trail user prevention workshops, and participation in the 100th Meridian Initiative.

The WRP thanked the ANSTF for approving the QZAP, which will be reviewed and updated as necessary. Recommendations included considering a WRP representative to the ANSTF QZAP Coordination and Implementation Team and discussing plan implementation at each ANSTF meeting.

10.6 Mississippi River Basin Panel (MRBP)

Goeckler reported that 19 MRBP states are implementing approved management plans, and 2 more plans are being written. The MRBP is looking for contractors to conduct a risk assessment of pay lakes as vectors. They are also considering some research projects, including live food fish as a vector. The MRBP continues to refine their assessment tools and have funded a student to help with a rapid screening tool. A state model risk assessment tool was developed and updated this year to remain relevant. The Asian carp control plan is a high priority and the MRBP is training many panel members

in the incident command system. Grass carp (*Ctenopharyngodon idella*) review is still ongoing. The MRBP funded two boater surveys this year and two more next year. Goeckler encouraged the members to review the submitted report for greater details.

The MRBP recommended that the ANSTF work with its partners to ensure full funding is authorized for state management programs and the ANSTF should request the USFWS move forward with immediate implementation of the national Asian carp control plan.

11. Regional Panel Roles

McKnight reported on budget needs of the regional panels. The panels were invited to bring additional funding requests to the fall 2009 meeting. At this meeting, the Task Force was presented with diverse funding requests so the regional panels were asked what they would do with an annual budget of \$1,050,000. USFWS staff suggested panels spend \$150,000 on staffing and \$50,000 on administrative needs; \$50,000 on travel; and \$800,000 on training, facilitation, education and outreach, research grants, and other programs necessary for combating AIS. McKnight acknowledged the panels were not entirely clear about their role and suggested that the Task Force might share some of this uncertainty. During a lengthy discussion, the Task Force and regional panels raised the following issues and suggestions:

- Regional panels can report their accomplishments and present materials they have developed to Congress. The regional panels can also send letters of concern to States and act as advisory groups to the Task Force. And, although the panels cannot write letters as a Task Force representative, they can write a letter to the Task Force co-chairs who can write a letter to the State. Members suggested inviting a Congressional Affairs Specialist to the next ANSTF meeting to discuss appropriate contact between Congressional representatives and regional panels.
- Regional panels need to be informed about what happens to their recommendations and need to make others aware of their successes, such as providing the template for the state management plans.
- Regional panels address the diverse issues in their regions, and increasing their budgets would enable them to further the goals of the Task Force on the ground.
- The group agreed Mangin would provide a one-page summary document at the next meeting that describes the roles and responsibilities of the Task Force, regional panels, and committees.

12. Quagga/Zebra Mussel Update

Mangin presented an update on recent quagga/zebra mussel activities. In fiscal year 2010, the USFWS received \$2 million that targeted quagga/zebra mussel efforts. Of these funds, \$800,000 was dedicated to prevention efforts in the Lake Tahoe Region (i.e., inspecting motorized and nonmotorized watercraft) and \$600,000 will be divided equally between states that request support for quagga/zebra mussel projects identified in state and interstate plans, such as increased monitoring, evaluating biocontrol agents, and providing Hazard Analysis and Critical Control Points (HACCP) training. Finally, \$600,000 was dedicated to supporting the following three priorities identified in QZAP:

1. Expand early detection monitoring programs to western water jurisdictions
2. Continue developing effective watercraft inspection and decontamination protocols and standards
3. Develop standard and effective equipment (nonwatercraft) inspection and decontamination protocols

Proposals will be chosen that implement these priorities. A status report updating the ANSTF on QZAP implementation will be provided at every meeting.

The Department of the Interior (DOI) is forwarding QZAP to Congress in response to Senate Appropriations language. Finally, the BOR will be hosting the 17th International Conference on Aquatic Invasive Species from August 29 through September 2 in San Diego, CA.

13. Public Comment

No public comments were submitted.

DAY 2

Introductory Remarks/Housekeeping

Mangin announced a minor change to the agenda and Moy reported on environmental DNA (eDNA) tests completed over the last 8 months. The Monitoring and Rapid Response Advisory Committee for the regional coordinating committee recommended conducting a smaller rotenone test if there was another positive eDNA test. After intensive sampling, no Asian carp were collected in the Little Calumet River above the electric barrier. This result could be because Asian carp are hard to capture at low densities. The Illinois Department of Natural Resources will treat 1.0 mile of river with rotenone the third week in May 2010, and then collect any Asian carp that surface; recovery is expected to be good this time of year. The canal will be closed for 6 or 7 days. Asian carp have been captured 8–10 miles from Lake Michigan and have probably been present for 18 months.

14. Expanding ANSTF Membership

Eich proposed that the Task Force ask members of academia to join as ex-officio members to provide necessary help and expertise. Eich envisioned an organization where a member could bring Task Force needs to students and academics who could then distribute the workload. Many classes and programs are already sampling aquatic sites; they just need to know what to sample. Eich suggested contacting the Society for Integrative and Comparative Biology.

The Task Force and regional panels raised the following issues and suggestions:

- Some of the regional panels have integrated academic members, which has worked well at the local level. However, participants expressed concern about expanding this practice to the Task Force.
- Members suggested adding a member of academia to the Research Committee.
- The Adaptive Management Workgroup on the Colorado River is a Federal Advisory Committee Act (FACA) committee with a group of science advisors (similar to the ANSTF) and a standing technical workgroup. Perhaps the ANSTF should add a technical workgroup.
- Brady suggested the Research Committee review the CAISIN model. Cudmore offered to organize CAISIN model information for the Task Force.
- Al Cofrancesco, ACOE, suggested reviewing the Ecosystems Study Unit as a way to interact with universities.
- Participants agreed that the Research Committee would need to define monitoring needs first and some kind of leadership was necessary.

15. Boy and Girl Scouts of America Partnership

Eich also proposed the ANSTF develop a formal partnership with the Boy and Girl Scouts of America. The ANSTF could provide the scouting community with information on potential volunteer opportunities available through member agencies using one all-encompassing, easy-to-use Web site. Eich suggested integrating ANSTF needs as a Gold Award or Eagle Scout project that could be adopted and maintained by the troop.

Eich proposed this partnership would provide the ANSTF with an opportunity to address critical ANS needs and the scouts with valuable hands-on conservation work with visible impacts and results. ANSTF members suggested scoping out other groups and considering how the Task Force would coordinate and provide oversight for this program before contacting the Boy Scouts of America National Council or the Girl Scouts of America National Board.

16. Re-energizing ANSTF Committees

Mangin described the ANSTF framework, which consists of the Task Force and the following five committees: 1) Control; 2) Research; 3) Communication, Education, and Outreach; 4) Detection and Monitoring; and 5) Prevention. The co-chairs select the committee chairs after consulting with the ANSTF. The committees are supposed to meet annually and members are supposed to fund their involvement. The Research Committee does not have a chair, although it does still have members; the Detection and Monitoring and Control Committees are relatively inactive; the Communication, Education, and Outreach Committee has one member; and the Prevention Committee is the most viable committee with three working groups.

When asked, the committee chairs noted the following reasons for a lack of committee interest: the same people have been doing most of the work for most years; the members lack funding, staff, and time; the full committee is often unable to meet; and committees are not fully represented by ANSTF members.

During a lengthy discussion, ANSTF and regional panel members agreed the federal agencies need to populate the committee chairs and the ANSTF needs to articulate specific tasks to the committees. Since the committees align with the strategic plan, they are crucial for making headway on the strategic plan. Participants suggested that committee meetings be scheduled as part of the ANSTF meetings; those who cannot attend should be included via phone.

17. Citizen Scientist Efforts

17.1 Massachusetts

Adrienne Pappal, Massachusetts Office of Coastal Zone Management, reported on the Marine Invader Monitoring and Information Collaborative (MIMIC), which was initiated in 2006. Once an organism has invaded marine ecosystems, control is difficult if not impossible, making early detection the best opportunity for AIS control and management. MIMIC is a network of trained volunteers, scientists, and State agency workers who monitor for 20 easy-to-identify marine invasive species along the New England coastline using identification cards with photos and descriptions. Monitoring occurs four times per season at fixed locations selected by local watersheds and includes performing a visual assessment survey, recording presence/absence of the 20 priority species within arm's reach for 1 hour or until all surfaces are viewed, and recording temperature and salinity. Data are entered into a field sheet and a database. A trained expert visits most sites once a year for updated training and quality control. The most frequent error is recording a species look alike.

Results from these efforts indicate *Didemnum vexillum* is expanding, and emerging threats include *Grateloupia turuturu* and the Dungeness crab (*Metacarcinus magister*). They've learned they must keep the program interesting, but simple and easy to understand; the results must be applicable to managers; the number of visits to one site is more important than the number of sites visited; the volunteers become a close community; and communication is key. The program needs funding for additional regional, State, and provincial partnerships and to support the database.

17.2. Alaska

Linda Shaw, National Marine Fisheries Service, reported on citizen monitoring programs in Alaska. Alaska has a coastline that is longer than all other 49 states combined, is sparsely populated, lacks ballast water regulations, and is subject to natural dispersal from southern coasts. In addition, climate change could bring additional ANS survivability along the Alaska coastline.

SERC initiated citizen monitoring in 2000 by working with the Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). Citizen monitoring has grown into four coordinated hubs: southeast Alaska, Prince William Sound, Kachemak Bay, and Seward in Resurrection Bay. Overall coordination is facilitated by the Marine Subcommittee of the Alaska Invasive Species Working Group.

Two organisms are being targeted: European green crab and botryllid tunicates. Shaw reviewed green crab monitoring methods and locations. To date, no green crab have been discovered in Alaska. Outreach materials have been distributed that provide reporting information, and the Alaska Department of Fish and Game has developed a green crab response plan. Shaw reviewed tunicate monitoring sites and methods and listed other AIS identified by the tunicate monitors. The SERC Web site contains a platewatch database with data organized by location and date. An outreach pamphlet is also being distributed to vessel operators and the general public.

The program plans on seeking funding to support ongoing efforts and expand future efforts. Plans include combining green crab data, training volunteers to identify *Spartina*, engaging the aquaculture industry in monitoring, developing demonstration management projects for removing tunicates, testing caged plates for tunicate predation rates, monitoring the Queen Charlotte Islands for green crab in a cooperative effort with Canada, and initiating arctic monitoring in cooperation with industry.

Paul Zajicek, Florida Department of Agriculture and Consumer Services, agreed to help connect Shaw with the Alaska Sea Grant. Another participant suggested contacting shellfish grower's associations. Other participants reiterated the importance of coastal ballast water regulations and an onshore ballast water treatment facility.

[Note: Since this meeting, the Sitka Tribe, Alaska Department of Fish and Game, Romburg Tiburon Center of San Francisco State University, Sitka Sound Science Center, National Marine Fisheries Service, and SERC, through the Marine Subcommittee of the Alaska Invasive Species Working Group, coordinated and co-sponsored a marine invasive species citizen monitoring "bioblitz" on June 12–13, 2010, in Sitka, Alaska. During this monitoring event, the invasive tunicate, *Didemnum vexillum*, was discovered for the first time in Alaska in an oyster aqua farm in Whiting Harbor. The discovery was confirmed through genetic testing by the Romburg Tiburon Center. Options for response and control of this population are currently being considered.]

17.3. Maine

Roberta Hill, Maine Volunteer Lake Monitoring Program (VLMP), spoke about the Center for Invasive Aquatic Plants and the Invasive Plant Patrol (IPP) program. The IPP has 902 volunteers monitoring almost 500 lakes and 608 certified water quality monitors actively monitoring 440 lakes. The VLMP Center for Invasive Aquatic Plants was initiated in 2003 to support Maine's AIS action plan by providing early detection of new AIS. The first plant patrol project was held in 2001; in 2009, the 15 IPP workshops were held that trained 307 individuals. An additional 73 volunteers participated in abbreviated training sessions, bringing the 2009 total to 380. Of these, 107 volunteers elected to become Certified Invasive Plant Patrollers, giving Maine 366 active Certified Invasive Plant Patrollers. In 2009, volunteers reported 403 surveys on 181 bodies of water.

Survey results indicate 256 more surveys were conducted and 34 new waterbodies were added to the list in 2009. Volunteers played a critical role and comprised 81% of all surveyors—an estimated contribution of \$152,000. In fact, it was a volunteer who discovered the pioneer colony of *Hydrilla verticillata* in Damariscotta Lake.

Maine is challenged with 6,000 lakes and ponds and thousands of miles of stream habitat and 11 plants listed as threats. To date, 5 invasive plants have been detected, and 32 lakes are known to be infested. The ultimate goal is to have active patrollers at all 6,000 lakes, which will require rapid growth and sustainability. The IPP You Leaders, IPP Jump Start (to activate citizen-based monitoring on waters where activity is lacking), IPP First Responders, and the IPP Sustainability Initiative (multi-level organizational structure) are programs designed to meet these challenges.

Kathe Glassner-Shwayder, Great Lakes Commission, acknowledged this program is a great model for the other regions and that the Great Lakes Region could use help setting up a similar program.

18. Aquatic Nuisance Species Hotline

David Britton, USFWS, spoke about the ANS hotline, which originated a decade ago to document species sightings and help develop the ANS database maintained by the USGS. The ANS hotline meets several specific objectives (1.3, 2.1, and 2.3) of the *Aquatic Nuisance Species Task Force Strategic Plan, 2007–2012* and has evolved over time for function and increased use.

Britton explained and demonstrated how the hotline works and discussed its advantages and disadvantages. A caller receives immediate recognition, no calls are missed due to hangups, information can be clarified and verified, and a response is potentially faster. However, agents are not biologists and cannot answer specific questions from callers, the number of on-call USFWS or USGS staff is limited, and the list of contact authorities across the United States is incomplete.

Most calls come in from people wanting to report an unusual invasive, ask a question, request a brochure, reach State wildlife or park agencies, or complain. Though incoming calls are from all over the nation, Region 2 of the USFWS bears the costs, and partnerships are difficult to develop, given that there is no guarantee of sustainability.

Britton detailed the current structure and proposed several actions regarding the hotline: establishing a sustained existence for the hotline, including commitments from the USFWS and USGS; providing one nationwide number; and encouraging State participation and adoption. He requested that the Task Force help sustain this valuable tool, especially since this mechanism addresses specific strategic plan objectives.

Considerable discussion focused on continuing to build the USGS experts and 100th Meridian databases. Some experts are much better at identifying species than responding so that capacity also needs to be enhanced. ANSTF members agreed to request lists of contacts from the panels and to supplement, with additional federal contacts, an initial list of USFWS contacts provided by Britton.

Other issues raised were the possibility of cross-border communications with Canada, including a renegotiation of the Great Lakes agreement, promoting a nationwide number, and linking the hotline with local and other law enforcement agencies.

19. Rapid Response in Border Waters

Mark Burrows, International Joint Commission (IJC), reported on the Binational Aquatic Invasive Species Rapid Response Work Group. The IJC is comprised of six appointed commissioners—three from the United States and three from Canada—and was established by the Boundary Waters Treaty of 1909. The IJC is a spokesperson for the water source and an arbitrator. Several IJC advisory and control boards are spread out along the border. IJC could be a channel of communication between these boards and the regional panels for collaboration.

IJC priorities are processed in 2-year reporting cycles. IJC considers AIS to be a cross-cutting issue because they affect water quality and the food chain and have chemical impacts. The 2007–09 work group report and biennial meeting workshop reported several key findings and recommendations. A full list is available in the biennial report. Work group tasks include an Asian carp rapid response planning and implementation gap analysis, an assessment of the Great Lakes basin AIS early detection and monitoring programs, a jurisdictional analysis and pilot plan for rapid response planning, and a proposal to carry out a portion of work via the Great Lakes Restoration Initiative interagency agreement. The work group will meet May 12.

Although IJC recommendations are often implemented, the IJC cannot force either government to take any action.

20. Commission for Environmental Cooperation Invasive Species Projects

Tom Hammond, Commission for Environmental Cooperation (CEC), was not able to attend, so Brady summarized CEC activities. In 1993, Canada, Mexico, and the United States signed the North American Agreement on Environmental Cooperation (NAAEC) as a side agreement to the North American Free Trade Agreement (NAFTA). The NAAEC established the CEC.

The CEC recently identified resources to study the status of invasive species and their impacts to the Gulf of Maine and Gulf of St. Lawrence ecoregions. Two papers have been drafted, and the CEC is seeking comments. The papers are available on the CEC Web site, but access may be limited. The CEC has also published the *Trinational Risk Assessment Guidelines for Aquatic Alien Invasive Species*; copies were made available for Task Force members. Finally, the CEC is trying to initiate conversations with the North American Invasive Species Network (NAISN). The NAISN work plan is available on their Web site (www.naisn.org).

The next CEC meeting will be at the Weeds Across Borders 2010 conference in June.

21. Discussion Recommendation from the National Invasive Species Awareness Week (NISAW)

Kim Bogenschutz, Iowa Department of Natural Resources, reported on NISAW 2010. Held in January 2010, the event lasted for four days and focused on three themes: invasives species and climate change, green economy, and energy and biofuels. A plenary session based on these themes was held each morning, and a breakout session that covered a variety of topics was held each afternoon. On the last morning, each agency gave a 5-minute introduction to facilitate networking. Results of the conference included two white papers (*Invasive Species and the Green Economy* and *Invasive Species and Climate Change*) that will be discussed at the June Invasive Species Advisory Committee (ISAC) meeting. If adopted by ISAC, the recommendations will become formal recommendations for action to federal agencies and Congress.

Suggestions for NISAW 2011 include meeting at a different time of year when Congress is in session. However, NISAW 2011 lacks a coordinating organization and funding. The planning committee has considered splitting the next conference into two parts: information and advocacy.

Brady discussed the paper, *Invasive Species and Climate Change*. This panel assembled a good discussion document that will launch a number of conversations. As mentioned by Bogenschutz, the paper closed with a series of recommendations that will be discussed at the June ISAC meeting. Some of the recommendations are in line with discussions here and include funding research, building partnerships to enhance detection, developing rapid response plans, managing vectors, and expanding education and outreach programs. Brady suggested ANSTF members share this paper with others as well.

Discussions included how invasive species are being pursued for biofuels and oil production.

22. Member Updates

ANSTF members were asked to provide brief updates from their organizations.

American Water Works Association (AWWA)—John DeKam represents AWWA, a professional drinking water association. AWWA members are concerned about zebra mussels, which are now established in the southwestern United States, and many water utilities are seeking information. DeKam offered to help the regional panels find an AWWA member to serve on their panels if they were interested.

Animal and Plant Health Inspection Service (APHIS)—Maria Boroja, APHIS, did not have any information to report.

Army Corps of Engineers—Cofrancesco acknowledged that Asian carp has been the cornerstone of ACOE invasive species activities, and reported the ACOE stands firm on maintaining the electric barrier system between the Mississippi River and Great Lakes basins. To support the barrier program, the ACOE is researching the voltage required to keep smaller fish from passing through the barriers. The ACOE is also working with several universities to determine how long eDNA can be detected after Asian carp have been in an area. The ACOE has published an invasive species policy and has an invasive species leadership team who are now writing implementation guidance. Cofrancesco also reported the ACOE has secured funding to control AIS in the Pend Oreille River, is developing a template to ascertain how money is being spent on AIS, has developed classes in Puerto Rico for managing AIS; and is working with the U.S. Department of Agriculture to develop biological controls for Hydrilla. Finally, the ACOE is concerned about the Columbia River system and how fish ladders may be impacted by zebra and quagga mussels.

Association of Fish and Wildlife Agencies (AFWA)—Bogenschutz reported as the vice-chair of AFWA's Invasive Species Committee. Tom Remington, Colorado Division of Wildlife, is the chair. AFWA legislative working groups have been working on the screening of imports and analyzing the Lacey Act. AFWA recently wrote a letter to the Environmental Protection Agency (EPA) regarding the best management practices (BMPs) developed under the Clean Boating Act and offered to provide information as the EPA develops BMPs for recreational craft. AFWA is working with the Council for Sustainable Biofuels to develop sustainability guidelines. Concerns include using potentially invasive species, genetically modified organisms, and non-native algae as sources of biofuel. A small committee is writing a white paper that outlines State and federal roles in ANS management—where responsibility lies and where there are gaps. The Invasive Species Committee submitted a National Conservation Need proposal for the development of new methods for early detection and rapid response to the Multistate Competitive Grant Competition, but their proposal was not selected for funding. The National Governor's Association recently consulted with AFWA while updating their invasive species policy. The Western AFWA sent letters to the DOI and U.S. Department of

Agriculture, urging federal participation in QZAP and requesting that they examine their roles in preventing the spread of ANS. Both departments replied with QZAP support. The Forest Service is reorganizing their budget to give more money to integrative resource restoration.

National Association of State Aquaculture Coordinators (NASAC)—Zajicek reported that NASAC and the National Aquaculture Association recently analyzed the Lacey Act. The analysis is available online. Zajicek reported seeing a lot of participation by the aquaculture industry regarding this subject and encouraged the panels to recognize that stakeholders only participate when the subject affects them, so panels should be more flexible in their membership rules. New regulations always interest stakeholders.

Great Lakes Commission (GLC)—Glassner-Shwayder reminded participants the GLC is a binational organization that has been working on prevention and control issues since the early 1990s. At the February meeting, the GLC reached consensus on a resolution for permanent ecological separation between the Mississippi and Great Lakes basins to prevent migration of Asian carp and future exchange of aquatic species. The separation will also need to address issues related to stormwater and flood control, water quality, and recreational boating and commercial shipping. The GLC has encouraged the ACOE to finish the dispersal barrier, noting the need to extend ACOE authority to examine measures to prevent further migration of Asian carp into the Great Lakes.

The GLC is also working to develop a monitoring program using polymerase chain reaction (PCR) analysis and microbes. This program should be integrated with established monitoring plans. Finally, the GLC is developing a strategy for common reed (*Phragmites australis*) management in Michigan and will be holding a regional symposium to scope out a framework for a management strategy.

Gulf States Marine Fisheries Commission (GSMFC)—Ballard reported the GSMFC recently reviewed the policies for protecting the South Atlantic ecosystems from invasive species. The document is still in draft form; recommendations included removing invasive species from management units.

Lake Champlain Basin Program (LCBP)—Meg Modley, Aquatic Invasive Species Management Coordinator for the LCBP, reported on the following activities: the Boat Launch Steward Program is finishing its fourth year, and the LCBP will present its results at the San Diego ICAIS meeting; the Rapid Response Program is receiving appointments; the majority of Lake Champlain Basin ANS management plan funding will be spent harvesting water chestnuts (*Trapa natans*); and the Lake Champlain Basin Aquatic Invasive Species Identification Guide is being printed. Vermont recently promulgated regulations that make transporting all aquatic plants, zebra and quagga mussels illegal and gives authority to the Agency of Natural Resources to oversee rapid response programs and enter private land if invasive species are suspected. New York is also developing a transport law. Variable-leaf milfoil (*Myriophyllum heterophyllum*) was discovered in part of Lake Champlain this year, Asian clam (*Corbicula fluminea*) is still present in the canal, and quagga mussel and round gobi (*Neogobius melanostomus*) continue to advance toward the lake. The LCBP will conduct a feasibility study for a barrier on the Champlain Canal to limit the movement of aquatic invasive species in and out of the Lake Champlain Basin. Funding for this project was secured by Senator Leahy.

Massachusetts Office of Coastal Zone Management—Smith asked participants to refer to his NEANS report for his updates.

National Oceanic and Atmospheric Administration—Montanio announced the \$2 million available for Sea Grant institutions specifically mentions state ANS management plans. The announcement closes May 17. After the grant solicitation process is over, the Task Force can recommend ways to make the process more relevant in the future.

Brady reported that NOAA is examining its grant agreements with partners and analyzing their awareness of invasive species as part of the Great Lakes Restoration Initiative. NOAA is considering grant conditions that specifically recommend Invasive Species Risk Assessment and Planning (ISRAP) plans. They have also been developing protocols and monitoring procedures that have to be tailored to specific projects and will likely be contacting the Task Force for support. An interagency group has been participating in the development of a volunteer guidance document from the International Maritime Organization in an effort to control AIS introductions through hull fouling (biofouling). The Invasive Species Advisory Committee meets on June 2–4 in San Francisco; the agenda is focused on a range of local and national AIS issues.

San Francisco Estuary Project—McDowell reported the first meeting of the Bay Area Early Detection Network was held in March 2010. This group was formed in 2006 to develop and implement an ecological and integrated approach to the early detection of harmful and noxious weeds, and the rapid response to them. The Web site is available at www.baedn.org where anyone can record observations of invasive species. The San Francisco Estuary Project is a partner and is hoping to expand the group into more AIS.

The California Invasive Species Council recently developed a ranking system for invasive species; however, many aquatic species have not yet been ranked. The California State Water Board received funding to continue Japanese seaweed surveys in three or four marinas. Susan Alice, State Invasive Species Coordinator, attended the first meeting for the interstate management plan organized by the Lake Tahoe Regional Planning Agency. This program has provided over \$20 million for invasive species activities, including implementing prevention techniques.

Smithsonian Environmental Research Center—Dr. Whitman Miller, SERC, reported on Aquatic Bioinvasion Research and Policy Institute (ABRPI) activities, including a 12-year North American continental-scale fouling project and the National Ballast Water Information Clearinghouse, which measures the changing patterns of ballast water delivery, manages vessels arriving in U.S. ports, and synthesizes national data on patterns and impacts of alien species in coastal ecosystems. The ABRPI is also working collaboratively with the Maritime Environmental Resource Center to test the efficacy of different ballast water treatment technologies. Finally, ABRPI has been testing different methods for eradicating green crab and a Japanese snail (*Viviparis malleatus*) and is working on a risk assessment and AIS survey of maritime vessels reassigned to Guam and what these reassignments might mean for invasive species in that location.

State Department—Dr. Stephen DeVincent works within the Office of Oceans, Environment, and Science where he is responsible for reviewing all international agreements that deal with invasive species. Although the United States is not a party to the Convention on Biological Diversity, representatives do attend the meetings, and the State Department tries to abide by their protocol. Dr. DeVincent expressed interest in having his office become more involved with the Task Force and assured everyone his replacement would be present at the fall meeting.

U.S. Bureau of Reclamation (BOR)—Michael Gabaldon, BOR, reported that the BOR has been researching detection methods for quagga mussel and talking with irrigation districts who are interested in eradicating quagga mussel. The BOR has installed educational signage, in both English and Spanish, and is considering monitoring an additional 200 reservoirs for quagga mussel. The BOR has also been working with Native American tribes to eradicate invasive species in the reservoirs on tribal land.

Gabaldon suggested aligning ANSTF programs with Secretary Initiatives to obtain funding. Projects that may link to invasive species include the Memorandum of Understanding signed by the DOI, Department of Energy, and ACOE that focuses on increasing energy generation at federally owned facilities and exploring opportunities for new development of low-impact hydropower.

U.S. Coast Guard—Commander Gary Croot, U.S. Coast Guard, noted the Coast Guard has been working closely with the EPA to harmonize the EPA’s Vessel General Permit program with the Coast Guard’s ballast water management program. A new study to examine different methodologies that can or should be used to determine appropriate processes for identifying environmental standards will be jointly sponsored by the Coast Guard and EPA. The Coast Guard is also working on distributing Great Lakes Initiative funding by encouraging vessels to install ballast water treatment systems. The Great Lakes Ballast Water Collaborative has been formed to encourage the United States and Canada to form a consensus for regulating ballast water in the Great Lakes and preventing ANS introductions through commercial shipping. This collaborative will harmonize differing policies whenever possible and expedite the evaluation of useful technologies. Finally, the Coast Guard is going to be reexamining their recordkeeping and reporting requirements and will release a proposed rulemaking this summer.

U.S. Fish and Wildlife Service—Mangin continues to arrange meetings with Task Force members and co-chairs to increase Task Force coordination and effectiveness. The Task Force conditionally approved the Georgia ANS management plan at the fall meeting; she received the plan with the Governor’s signature last month and the Task Force has accepted the final plan. Comments have been submitted on the Mississippi ANS management plan and Don MacLean, USFWS, recently asked Task Force members to review the Nebraska plan. Requests for Proposals were recently sent to States for proposals to support implementation of their plans. The USFWS continues to work for increased funding to support plan implementation.

U.S. Geological Survey—Dr. Sue Haseltine, USGS, reported that the USGS and BOR just finished a 3-year effort to synthesize information on *Tamarix* spp. and Russian olive (*Elaeagnus angustifolia*) in riparian zones. According to the data, these species do not use more water than native species. Work on predicting invasiveness continues and is focused on climate change and the link between phenology and invasiveness. Dr. Haseltine asked anyone with phenology records in aquatic systems to contact her. The USGS received funding from Congress to work on detecting zebra/quagga mussel, and Dr. Haseltine recommended that other agencies consider aligning their needs with Secretarial priorities to obtain funding. Finally, the USGS is shifting their research plan and studying genomic approaches to predicting invasiveness.

23. Public Comment

No public comments were submitted.

24. Meeting Summary

Mangin thanked NEANS for organizing the meeting and reception and thanked participants for attending.