17-18 November 2015

Delaware Department of Natural Resources and Environmental Control
Shoreline and Waterway Services Facility
901 Pilottown Road, Lewes, DE 19958
302-855-7290

http://www.dnrec.delaware.gov/swc/Shoreline/Pages/Shoreline-and-Waterway-Services-Facility.aspx

Conference Line: 1-800-377-8846 **Code:** 22380764#
Adobe Connect: https://epa.connectsolutions.com/midatlanticpanelaquaticinvasivespecies/
(Note: Enter as Guest with your name and affiliation)

AGENDA

Tuesday, November 17, 2015

9:00 am	Coffee	
9:30 am	Call to Order • Welcome/Housekeeping • Introductions	*Ray Fernald, Panel Chair*
9:40 am	Review & Approve Agenda/Minutes	*Ray Fernald*
9:50 am	Spring 2015 Meeting Action Items	*Ray Fernald*
10:00 am	Funded Projects Update • Update on 2015 funded grants • Update on ongoing/completed projects	*Mike Allen, Panel Vice-Chair*
10:15 am	All Panel Meeting, *2 November 2015*	*Ray Fernald*
10:30 am	ANSTF Update	*ANSTF Representative*
10:50 am	Break	
11:00 am	Invasive Shore Crabs	*Christopher Petrone (UDE)*
11:20 am	Delaware's Invasive Species Council	*Ashley Peebles, DE Forest Service*

11:40 am	Use of Water Buffalo for Plant Control/Restoration	*Robert Line (DNREC)*
12:00 pm	Lunch	
1:00 pm	*Phragmites* Control in Delaware	*Jason Davis, DNREC*
1:20 pm	Northern Diamondback Terrapin Nesting Beach Restoration Project	*Bob Meadows (DNREC)*
1:40 pm	Chesapeake Bay Sentinel Site Cooperative	*Sarah Wilkins, Coordinator*
2:00 pm	Waterwheel Plant (*Aldrovanda vesiculosa*) at Ft. A.P. Hill, Virginia	*Bobby Floyd, Natural Resources Specialist, Colorado State University, Ft. A.P. Hill*
2:20 pm	Break	
2:30 pm	Small Grant Project Report and discussion: "Engaging Lawyers to Facilitate Access to Private Lands for Eradication and Control of AIS"	*Catherine Janasie, University of Mississippi School of Law*
3:00 pm	Small Grant Project Report and discussion: "Mid-Atlantic Guide to Aquatic Invasive Species"	*Sara Stahlman, Pennsylvania Sea Grant*
3:30 pm	Member/Interested Parties Updates	*Panel Members and Interested Parties*
4:00 pm	Adjourn for day	

Wednesday, November 18, 2015

9:00 am	New Business and Decision Items: • 2015 Panel budget • Funding to print Mid-Atlantic Field Guide to AIS • Web site evaluation and design • Review of RFP priorities for 2016 • Project/Grant budgets and scheduling • MAP Project or Workshop ideas • Next Meeting	*Mike Allen, Ray Fernald*
10:15 am	Small Grant Project Report and discussion: "New Zealand Mud Snail"	*Dr. Ed Levri (Penn State)*

10:45 am	Break	
11:00 am	Tour of the UDE Research Facility (likely 1-2 hours duration, the Research Facility is adjacent to our meeting location)	*Christopher Petrone (UDE)*

Minutes of the Mid-Atlantic Panel on Aquatic Invasive Species Meeting in Lewes, Delaware
November 17-18, 2015

Participants:

Ray Fernald, VDGIF (Chair)
Mike Allen, MDSG (Co-Chair)
Kyle Runion, CRC (Staff)
Jenna Clark, MDSG
Jay Killian, MDNR
Steve Minkkinen, USFWS
Rebecca Bobola, DEFW
Edna Stetzar, DEFW
Siyalesh Sharma, NOAA
Bob Meadows, DNREC
Rob Line, DNREC
Jason Davis, DNREC
Catherine Janasie, Ole Miss
Jason Applegate, Fort AP Hill
Rob Emens, NC DEQ
Dan Thayer, USGS
Jonathan McKnight, MDNR
Ed Levri, PSU
Jil Swearingen, NPS
Sara Stahlman, PASG
Bob Morgan, PAFBC
Gloria Putnam, NCSG
Susan Pasko, NOAA
Don McLean, ANSTF
Chris Petrone, UDel
Ashely Peebles, DEFS
Bobby Floyd, Fort AP Hill
Sarah Wilkins, NOAA
Sarah Whitney, PASG

Action and Decision Items

Decision: Minutes from the Spring 2015 meeting are accepted.
Action: Send your name as well as taxa of expertise to Fernald, Allen, and Runion for addition to the ANS Task Force Experts Directory.
Action: Contact Ray Fernald if you are interested and willing to serve on the ad-hoc NISA review committee.
Action: Focus on developing materials for the Envirothon and Science Olympiad as both are focusing on invasive species. Members of each conservation district should reach out to the Envirothon chair.
Action: Fernald will follow up with Wilkins to determine in what capacity invasive species monitoring could be involved with the Sentinel Site program.
MOTION by McKnight, second by Steve Minkkinen: Formally propose we list waterwheel on our list of species of concern. Action: Consider and vote on this motion at the next meeting.
Action: Initiate dialogue with other panels to decide if there is interest in re-booting the "Access to private lands" project at a regional or national level.
Action: Contact Sara Stahlman for access to the Google Drive folder to review profiles for the Mid-Atlantic Field Guide to AIS.
Action: If members have any comments/issues/updates for the RFP priorities, contact Allen & Fernald by January 15.
Action: RFP to be distributed in February 2016 by Allen.
Action: Develop ad-hoc work group to review website design and content.

Day 1

Call to Order:

Decision: Minutes from the Spring 2015 meeting are accepted.
Action: Send your name as well as taxa of expertise to Fernald, Allen, and Runion for addition to the database.

Update: Funded Projects
The "Engaging Lawyers to Facilitate Access to Private Lands for Eradication and Control of AIS" project is completed & the "New Zealand Mud Snail" project on track. "Mid-Atlantic Guide to Aquatic Invasive Species" is under development. Full report summaries presented at meeting and discussed later in notes. "Invasive Species Toolkit" project is on track and will end in December.

Update: All Panel Meeting
All Panel meeting took place on November 2, 2015 with all panels represented. Several panel expressed concern with limited funding available. Some panels are growing concerned that participants are dropping out, because funding to get participants to meetings is limited.

President's FY16 budget request had $47K for each panel, but it is not clear what the actual budget numbers will be until after Congress appropriates funds in December.

Budget history for the ANSTF and regional panels was described. 1993: first appropriation for AIS work in USFWS. Mid-Atlantic panel started was the last to be established in 2003. Currently $12M is available to the USFWS for AIS work, though most of that is allocated to specific projects. In 2012, Congress directed USFWS to do Asian Carp work at $2-3M, but numerous legislative requirements were funded from the same pot of funds. Thus, USFWS didn't have enough funding to do all of the required projects, particularly as the sequester was enacted. 20% of panel budgets were moved elsewhere because of required expenditures during the sequester year. Those funds have not yet been restored.

Panel reporting to the ANSTF was a big discussion at the all panel meeting. An ad hoc group is trying to develop a new protocol for reporting to ANSTF, but the first draft is a 24 page document that is very cumbersome. They are adjusting the report structure such that goals, strategies, and objectives be assigned to each project description rather than each goal/strategy/objective require a separate description. Expect this to be out and reviewed before the holidays. There is also some concern at the ANSTF that credit for TF directed accomplishments and those AIS accomplishments that are conducted by other groups be credited appropriately.

NISA Reauthorization: Parties are considering separating the pursuit of increased funding separate from the reauthorization bill (separate but parallel legislative tracks). Several proposals are being discussed to increase funding. The American Fisheries Society has adopted a resolution supporting funding the 6 regional panels at $1Million per panel, with $53 million for the states (and 3 territories), $1Million for QZAP, and $1Million for the USGS NAS ($61Million total recommended). One action MAP panelists can take is to encourage involvement of their Congresspersons on the Invasive Species Caucus.

One action being considered: Develop an ad hoc committee among panels to review NISA. This group would review and develop recommended changes to NISA. The Great Lakes Commission had done an initial push on this years ago. Chair made a request for interested persons to participate, but no one

immediately volunteered. Action: Contact Ray Fernald if you are interested and willing to serve on this ad-hoc NISA review committee.

Update: ANSTF (MacLean)
Spring 2015 meeting took place in Fort Lauderdale, Florida, and the Fall 2015 meeting was in Silver Spring, MD

Task Force had a panel on economics of invasive species for getting more info on how an economic assessment of AIS impacts might be done. Economists talked about a recent UK study on AIS to help the TF understand what is involved in such and analysis and what the next steps for an economic study might be.

Dr. Susan Pasko has been selected to serve as the Executive Secretary for the ANSTF (MacLean has been acting Exec. Sec.).

TF had a boating design discussion about technologies to prevent transfer of ANS. Exec. Sec. is working to get a boating rep on the TF.

ANS Charter Document: There is a long approval process, but it was approved in September for the next two years.

Report to Congress: Going to OMB for review now.

TF members must be vetted through White House. Constantly submitting nominations due to turnover.

State ANS Management plans – 42 have been approved over the years. $1M available to implement all plans which equates to $23-25K issued per plan (divided evenly). If more money becomes available, some of it may be base and the rest offered competitively to the states. Funding is authorized by Congress at $4M. MacLean suggests states request actual budget that they need rather than what is expected as an award.

An ANS Management Plan is currently under development by Maryland. They hope to get a draft to ANSTF/MacLean by the end of the calendar year, but will submit it to the TF for preliminary review during the Maryland comment period.

Effort funded through the Western Regional Panel titled “Building consensus”: developing model legislation for interstate acceptance of inspection protocols for boat launching. This group is having ongoing discussions in the western US.

The “Stop Aquatic Hitchhikers” website is being revamped. The project is currently under renewal. There has been no money to keep the site up-to-date or the campaign active. Project leaders are looking at co-branding with other campaigns (e.g., “Clean Drain Dry”).

“Clean Drain Dry” is being trademarked by Wildlife Forever. Group plans to give the trademark to the Association of Fish & Wildlife Agencies (AFWA) so that it can be used universally.

Next ANSTF meeting will be held in Traverse City, Michigan during the first week of May.

Invasive Shore Crabs, Chris Petrone – Environmental Education Specialist with the Delaware Sea Grant and University of Delaware. petrone@udel.edu; @seaPetrone

A major vector of invasive marine species is ship ballast water. Others include hull fouling, intentional introductions, recreational boaters, aquaculture, hobbyists, and natural spread. Limitations such as tides, wave energy, salinity, and substrate can limit invasive success.
Invasive shore crabs in the Delaware region:

- European Green Crab
    - Established in the region. Often used as bait by fishermen.
- Chinese Mitten Crab
    - Potential invader with a few sightings around Delaware and Maryland. Prefers low salinity.
- Asian Shore Crab
    - Prefers shallow, rocky intertidal areas. Very high fecundity with wide salinity and temperature ranges. Strong competitor. Parasite free on the East Coast.
        - The ASC spread substantially since first sighting in 1998, displacing multiple native crab species. However, the abundances have decreased substantially since the early 2000s and natives have rebounded.
            - Possibly due to food limitations, sediment change due to sea level rise, change in the habitat/community, change in larval supply/recruitment, cyclical reversal…

Discussion – We haven't measured the sediment change through sea level rise here in Delaware, but there is literature that has documented this.

Report sightings! http://mittencrabs.nisbase.org

Delaware's Invasive Species Council, Ashley Peebles, Delaware Invasive Species Council/Delaware Forest Service

Our mission is to "Protect Delaware's Ecosystems by preventing the introduction and reducing the impact of non-native invasive species." DISC focuses on outreach and community education in order to fight invasive species. DISC has a non-regulatory invasive plants list.

- Priorities:
    - "Stop the Spread" workshop through State Park's training program. Working to engage members throughout the year.
    - Delaware's Most Wanted teacher workshop.
    - Envirothon and Science Olympiad focuses on invasive species over next two years. Delawareinvasives.net.
    - "Plants for a Livable Delaware" is a campaign to identify and promote superior plants that thrive without becoming invasive.

DISC's recent annual meeting offered participants two pesticide professional development credits, ¾ nutrient management professional development credit, and one nursery professional development credit for attendees who pursue relevant certificates.

Discussion: Action: Focus on developing materials for the Envirothon and Science Olympiad as both are focusing on invasive species. Members of each conservation district should reach out to the Envirothon chair to lend assistance, if interested.

Use of Water Buffalo for Plant Control/Restoration, Robert Line, DNREC

Brandywine Creek State Park has a marsh that has been overcome by invasive species, with overgrazing of natural grasses as a contributing factor. In 2012, a prescribed grazing project using River Water Buffalo took place to improve marsh habitat for native species and break up the root mat of the invasive Reed Canary Grass. Two yearling bulls spent 50 days in the marsh during the summer of 2012. The bulls were effective at grazing, consuming 50 lbs/day of vegetation and, due to their weight, were able to break up the root mat and monoculture of the Reed Canary Grass. The project resulted in increased native diversity in years following (some invasive species increased, too).

This style of management is also a great way to gain media attention and community interest.

***Phragmites* Control in Delaware,** Jason Davis, DNREC

Phragmites australis is a common invasive species in the mid-Atlantic area. The estimated introduction date is 11-40 thousand years ago and it has been noted as "plentiful" in nearby areas in the early 1900s. *Phragmites* is a rhizomatous perennial, meaning it has underground stems that serve as a bud bank for new shoot growth. It can tolerate a wide range of environments but typically is found in wet areas such as wetlands and even drainage ditches. *Phragmites* possesses aerenchyma, which allows air transfer between above-ground vegetation to below ground rhizomes and roots. A C-3 rather than C-4 carbon fixing pathway allows it to benefit from higher N availability, and its seedlings can tolerate some sulfide. As a result, fresher brackish marshes are vulnerable to invasion. The invasive *Phragmites* may be darker gray-green color and taller than native *Phragmites*, though some consider the two to be indistinguishable morphologically. Clonal integration allows *Phragmites* to grow around unfavorable habitats.

Phragmites control: mowing and burning only affect the aboveground portions of stands. Burning removes shading effects and reduces the heavy litter but does not kill the roots, allowing the plant to grow back during the next year.

The most effective control has been found to be the herbicide glyphosate. Glyphosate is broad spectrum so applicators must be careful of drift. Luckily, it degrades quickly and does not reside in the soil.

Division of Fish and Wildlife – *Phragmites* Control Cost-Share Program (PLAP). Any landowner with 5-200 acres of treatable *Phragmites* may receive treatment by helicopter herbicide spray. PLAP sprays about 2,000 acres of private land per year, with another ~4,000 acres of state area land. Cost share options allow prices to fall to $44.17 per acre of spray, with only $22/acre for private landowners. The Delaware Environmental Quality Incentives Program may drop this total cost to about $5.30/acre for the landowner.

Discussion: Small projects (under 5 acres) are feasible to spray via hand application with a backpack. Burning and mowing can also start to be effective at killing after multiple years as it stresses the plant.

Northern Diamondback Terrapin Beach Restoration Project, Bob Meadows, DNREC

A documented terrapin nesting beach near Liston Point and Peach House Ditch in Delaware has been overrun by *Phragmites* after having none of the invasive plant in the late 1970s, early 1980s. By the early 2000s, *Phragmites* had invaded the former sand beach habitats, well below the high tide mark (terrapins nest just above the high tide mark), making the terrain extremely difficult to navigate for nesting terrapins. The thick underground rhizome mats of *Phragmites* also make for difficult digging for mother terrapins.

Phragmites measurements have been made as early as 1954, and nearly 100% cover over large areas in Silver Run along the Delaware River was measured in 1989.

Terrapins have an estimated high percentage of depredated nests. Shoreline erosion is another issue for terrapins. Spraying *Phragmites* in these shoreline areas open habitat for nesting, but can leave an area vulnerable to erosion. Natural species such as *Spartina patens* help prevent erosion while being navigable by nesting terrapins.

Chesapeake Bay Sentinel Site Cooperative, Sarah Wilkins, CBSSC

The NOAA Sentinel Site Cooperative is a program of monitoring efforts throughout the nation, with five regional sites including the Chesapeake Bay. The Cooperative attempts to create a collaborative structure of thinking and problem solving rather than the traditional stove-pipe structure. The Chesapeake Bay region has 10 locations that contribute to the cooperative where monitoring data such as water level, above ground and submerged vegetation, water quality, and groundwater dynamics are collected.

Phragmites and purple loosestrife are two primary invasive species that are being studied at many of these sites.

The Sentinel Site Cooperative has an interest in setting up workshops around hot topics including subsidence.

Discussion: Action: Fernald will follow up with Wilkins to determine in what capacity invasive species monitoring could be involved with the Sentinel Site program.

Waterwheel Plant at Ft. A.P. Hill, Virginia, Bobby Floyd, Colorado State U. and Jason Applegate, Natural Resources Specialist at Fort AP Hill

Aldrovanda vesiculosa, Water Wheel, is an endangered, carnivorous plant in the old world and a potentially invasive species in America. The 6-20 cm, rootless plant can double its biomass in two weeks, growing ~9mm of new stem and one new whorl per day. It lives in the upper water column with direct or intermittent sunlight in slightly acidic, tannic, low nutrient, dystrophic water. Continued senescence of the Water Wheel may improve conditions for itself and it may thrive in very shallow water.

Not very much literature about the Water Wheel in the U.S. Only three confirmed locations in America (Fort AP Hill, VA; Lake Owassa, NJ; Big Pond, NY. Multiple other unconfirmed locations in VA and NJ.) Fort AP Hill has seen a rapid spread since the summer of 2013 and is concerned about further spread. A publication in *Castanea* is coming soon and Fort AP Hill is reaching out to state partners and academic institutions to coordinate projects to study and prevent the spread of Water Wheel.

MOTION by McKnight, second by Steve Minkkinen: Formally propose we list this species on the Mid-Atlantic Panel list of species of concern.

Action: Vote to ratify this motion at next meeting.

Small Grant: Engaging Lawyers to Facilitate Access to Private Lands for Eradication and Control of AIS, Catherine Janasie, NSGLC

Project purpose is to improve regional understanding of the strategies available to access private land for eradication and control of ANS/AIS and to lay the foundation for the collaborative development of guidance for implementing these strategies.

Used Building Policy Consensus approach to:

- Inventory and analyze state laws and regulations
    - Legal authority generally rests with Natural Resource agencies and Departments of Agriculture to control ANS, noxious weeds, and plant pests.
    - Sent summaries for each state to AIS coordinators and MAP members earlier in 2015.
        - Found that NC, NY PA VA, WV can get access to private lands for noxious weeds without landowner consent. Express legislative authority to enter private land to control and eradicate ANS is rare.
        - MD, VA, NY – can enter private lands with notice or warrant for removing ANS.
- Compile a state contact list
    - Developed complete contact list for NY and VA
    - Have some contact info for DE, MD, NJ, NC, and WV
    - Have no contact info for DC and PA
- Hoped to create a working group, but was unable to due to the lack of response.
- Potential next steps: create a small committee with certain states to further pursue a coordinated approach; MD, NY, VA?

How can the MAP or ANSTF further pursue these issues? Help to fund or support initial outreach on a regional basis with the state AGs. These ANS issues are generally not on AGs' radar in eastern US states.

Action: Initiate dialogue with other panels to decide if there is interest in re-booting the "Access to private lands" project at a regional or national level.

Small Grant: Mid-Atlantic Guide to Aquatic Invasive Species, Sara Stahlman, PASG

Guide development continues with about 40 profiles complete (obligate aquatic plants and most of wetland/facultative plants) and 47 to go (fish, invertebrates, mammals, birds, reptiles, pathogens, and algae), though about 25 of the 47 are completed for PA and only need to be translated to the entire mid-Atlantic. With about 100 species, the guide will be ~200 pages long.

These profiles still need extensive review. Review can start now but will mostly take place during Field Guide finalization in April – August 2016.

Action: Contact Sara Stahlman for access to the Google Drive folder to review profiles.

With an additional project cost of $21,500 (already allocated in FY 2015 budget), approximately 250 copies can be printed on waterproof paper and 1,000 copies on glossy paper. The exact breakdown

between these two paper types is yet decided. An additional option discussed was splitting the field guide into more specific mini-guides (e.g., only plants, only animals); however, there was not much enthusiasm for this additional step at this point.

Member updates

Rob Emens: NC DENR has a new name and is now titled NC Department of Environmental Quality (DEQ). The North Carolina invasive species management plan was not advanced to review and signature by the governor. As such, the plan is currently on hold. Aquatic weed control program is now funded at $500K/year from fuel and boat taxes and fees.

McKnight, Maryland DNR: Maryland nutria eradication project - 2 new dog handlers were trained in GA and are active in MD now. Only 15 nutria have been killed this year suggesting the population is near eradication. Now is not the time to cut funding for this project.

Dan Thayer, USGS Gainesville: Plants are being added to the national sighting database. Would like to add new species such as Water Wheel as they arise.

Ray Fernald, Virginia DGIF: Waterwheel actions are being considered at regulatory levels. The state is still working on nutria in SE VA and feral hogs. Interest in mandatory boat inspection and decontamination programs is growing among some constituencies and lakeowner groups in VA, but there are no funds to support such a program.

Barb Beelar (announced by Allen): Discussion about the lake inspection workgroup and the consensus options that may go forward. (McKnight) Likely to be a single lake (Deep Creek) with a voluntary boat inspection program. (Fernald) Some western states are offering free training for boat washing and inspection for interested individuals/states, travel not covered.

Mike Allen, Maryland Sea Grant: The first article from the live bait project at SERC was released and distributed to the TF. The project has officially ended but there is interest in continuing as a regional/cross-regional project. (Fernald) The NEANS is interested in a joint meeting in spring 2017 where this could be a topic.

Kilian: Asian swamp eel is on a banned list in MD but was found in an impoundment in 2014. Found in 2015 for sale at a market in Rockville. Went with law enforcement and confiscated 61 eels. Imported as Indian mottled eel. During the court case last Tuesday, the defendant was facing four counts with a max fine of $10,000, but wound up only being fined $1,000. Maryland will be revising its regulations to expand to all species within the genus.

Whitney: PASG organized a mock rapid response exercise at the end of October. A small, but dedicated group participated from state agencies. A new sign for non-motorized boat ramps (kayak, canoes, etc.) with aquatic hitchhiker information and been developed and distributed. Stahlman worked with students at Penn State Erie to develop an app for field guide. This will be available at the end of the year through the iTunes store. There was a *Hydrilla* outbreak along the northwest PA/OH border in a state park area. No one wants to take ownership of this issue. *Hydrilla* has been identified in 10 state parks. DCNR doesn't want to invest too much money into *Hydrilla* removal in any one place. Not sure what else they can do.

Do any of the states in the mid-Atlantic region have regulations about preventing AIS spread on boat trailers? (McKnight) In MD it is illegal to launch a boat with any plant or animal on it into a state lake. Mandatory self-certification would be an option as a legal requirement to stop transport of species into new waters. (Kilian) Boat vs. trailer may clear this up in new legislation coming out regarding Deep Creek. It is illegal to transport certain species in Maryland.

(Day 2 Member Updates)

Steve Minkkinen, USFWS: monitoring for northern snakeheads continues; was in an Aquakids episode collecting snakeheads on tributaries of the Potomac River: https://www.youtube.com/watch?v=foUx8n9Msdk. A new publication is coming out that describes how to distinguish male testes in snakeheads.

Edna Stetzar, DEFW: Fish consumption advisory network has tested two individual snakeheads for contaminants. The team is looking for additional funding for blue catfish and snakehead testing (PCBs, pesticides, other contaminants) in Nanticoke River. There have been no nutria occurrences in a couple years. How does a state get a mount or pelt for education? Edna would like to request a pelt from VA.

Bob Morgan, Pennsylvania Fisheries and Boat Commission: Round goby has now entered French Creek.

Day 2

New Business and Decision Items, Mike Allen

- 2015 Budget
    - Administering the grant from the USFWS continues to be a challenge. Unlike other panels, the MAP issues sub-awards to grantees – some over multiple years. During the last fiscal year a number of projects did not spend the money they were allocated at a regular pace, resulting in a higher level of unspent funds than in previous years. The USFWS prefers to see funds spent in the same year it is awarded (despite the fact that the period of performance for the overall award is five years). In the future, we intend to fund any multiyear projects in multiyear increments. This will help ensure funds are spent closer to the award date and could possibly allow more projects to be funded during FY16.
- Review of RFP Schedule for 2016
    - RFP Priorities:
        - Develop outreach and educational materials for classroom and specific populations to prevent the introduction and spread of AID
        - Conduct research on AID issues in the region such as prevention, early detection, rapid response, emerging invasions, and how climate change may influence AIS
        - Conduct innovative approaches to AIS control/eradication, or control/eradicate a high priority AIS population
        - Continue to develop vector management strategies for states and the region
        - Encourage states to implement AIS management plans
    - Panel requested no changes to existing priorities. Action: If members have any comments/issues/updates for the RFP priorities, contact Allen & Fernald by January 15.

    - Action: RFP to be distributed in February 2016 by Allen.
- Website evaluation and design, Jenna Clark
    - $5,000 budget allocated to redesign.
    - Initial meetings on website design project will identify goals and objectives of the website with a focus on which audience(s) we want to target. We are looking at WordPress for the design of the website. Content on the current website will be transferred and updated if possible.
    - After initial meetings, the website will then be built, reviewed by the work group, and presented at the spring MAP meeting before it is publicly released.
    - Redesign of the logo is another priority. Should it be updated or kept? A number of designs were presented. The panel agreed to defer the design choice to Clark and the ad-hoc web committee (and review at the spring meeting). They also agreed to keep the acronym MAPAIS for official, public facing documentation.
    - Action: Develop ad-hoc work group to review website design and content. Sarah Whitney agreed to help. Jay Killian and Rob Emens agreed to solicit input on the site design from their agency expert(s).

- MAP Project or Workshop Ideas
    - Whitney: Through our recent *Hydrilla* response, we've found that PA has limited abilities for emergency permitting to deal with AIS outbreaks. Do other states have emergency permitting plans or regulations? Do they need to be developed? This could be a regional project idea. (Fernald) Getting chemicals labeled for certain uses is difficult and time consuming. Getting permission to apply chemicals for off brand uses (e.g., AIS control) is also difficult. This, along with the private access issue, can be sent to the TF for possible help/collaboration.
    - Fernald: Outreach to district attorneys or judges about taking invasive species violations more seriously to more effectively enforce the laws. This could be as simple as a letter from top state DNR/DEQ/Etc. officials to keep the importance of these issues on their radar.

Small Grant: New Zealand Mud Snail, Ed Levri, PSU

There are at least three different clones of the invasive New Zealand Mud Snail in North America: US1, US2 (Ontario), and US3. The snail is asexual, which helps us follow the spread more easily by each clone. They are now abundant in the western U.S. after being first documented in 1995 from trout stocking, and are spreading to the east and Great Lakes. In Lake Ontario, densities fluctuate substantially, but the snail has limited movement upstream from the lake in New York.

The species has a broad environmental tolerances, high reproductive rates, and can exist at very high densities. As an invasive species, they can outcompete native grazers, influence predator populations, alter food webs, and alter N and C cycles in streams. They can be eaten by fish, but some are excreted live (bad food source).

The snail is easily transported due to its small size, desiccation resistance, and high density. Levri is trying to determine if the PA genotype is an existing clone in the US or a newly introduced clone.

In Pennsylvania, the snail is found in locations in Spring Creek, Centre County. No additional spread was noted in 2015 from summer surveys of 18 locations in neighboring counties. However, snails must be at high densities to detect, so new populations may not yet be at detectable limits. Additional surveys will continue next summer. Mark Dybdahl at Washington University will be doing the genotyping work.

This PA clone is:

- Less desiccation tolerant than US1,
- Travels further than Ontario clones,
- More geotaxically inclined than Ontario clones,
- More negatively rheotaxic than Ontario and US1 clones.

Future work:

- Quantifying chemical properties of water in locations where the snail is present/absent
- Dispersal experiments
- Behavioral response to the detection of predators

Closing Notes

We will follow up on expert database information and deliver new names to Don McLean. If you have a desire to represent your state on specific taxa, send your information to Fernald, Allen, and Runion. (Action above)
Fernald will send out a reminder for the NISA review group soliciting volunteers. (Action above)
Follow up with environmental educators in your states about developing materials for the Envirothon and Science Olympiad. (Action above)

<u>All Panel Interest</u>

- Reboot of SG Law Center's private land access project
- Restrictions and permitting delays with pesticide use for rapid response in an invasive species situation
- Enforcement of AIS laws

<u>Next meeting</u> to take place in Spring 2016 at Annapolis, MD over two days, likely between May 17-19.

<u>Meeting adjourned</u> at 11:00 AM to a site visit at the adjacent University of Delaware campus.