



June 30, 2015

Chesapeake Bay Program Office, Joe Macknis Memorial Conference Room (Green Building
near the water)
410 Severn Ave, Annapolis, MD 21403

Conference Line: 866-299-3188 **Code:** 410-267-5731

Adobe Connect: <https://epa.connectsolutions.com/mapais/> (Note: Enter as Guest with your
name and affiliation)

AGENDA

Tuesday, June 30, 2015

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| 9:00 am | Coffee | |
| 9:30 am | Call to Order | <i>Ray Fernald, Panel Chair</i> |
| | <ul style="list-style-type: none">• Welcome/Housekeeping• Introductions | |
| 9:40 am | Review & Approve Agenda/Minutes | <i>Ray Fernald</i> |
| 9:50 am | Fall 2014 Meeting Action Items | <i>Ray Fernald</i> |
| 10:00 am | Funded Projects Update | <i>Mike Allen, Panel Vice-Chair</i> |
| | <ul style="list-style-type: none">• Update on 2014 funded grants• Update on ongoing/completed projects | |
| 10:15 am | ANSTF Update | <i>ANSTF Representative</i> |
| 10:30 am | Break | |
| 10:45 am | Small Grant Update on “Environmental DNA Monitoring of the invasive freshwater diatom, <i>Didymosphenia geminata</i> , in Mid-Atlantic waters” | <i>Steve Keller, University of Vermont</i> |
| 11:15 am | Small Grant Update on “The Good, the Bad, and the Ugly: an invasive species toolkit for Educators” | <i>Cindy Etgen, MD DNR</i> |

11:45 am	Small Grant Update on “Mid-Atlantic Field Guide to Aquatic Invasive Species”	<i>Sara Stahlman, PA Sea Grant</i>
12:15 pm	Lunch	
1:00 pm	Small Grant Update on “Bushkill Township Invasive Species Management Project”	<i>Jason Smith, Hanover Engineering Associates, Inc</i>
1:30 pm	Small Grant Update on “Engaging Lawyers to Facilitate Access to Private Lands for Eradication and Control of AIS”	<i>Stephanie Showalter Otts, University of Mississippi School of Law</i>
1:50 pm	2015 MAP Grants Competition <ul style="list-style-type: none"> • Overview of proposals • Discussion • Award Selection 	<i>Mike Allen/Hannah Martin</i>
3:00 pm	New Business and Decision Items: <ul style="list-style-type: none"> • 2015 Panel Budget • Funding to print Mid-Atlantic Field Guide to AIS 	<i>Mike Allen</i>
3:15 pm	Member/Interested Parties Updates	<i>Panel Members and Interested Parties</i>
3:45 pm	Next meeting	<i>Panel Members and Interested Parties</i>
4:00 pm	Adjourn	



MAPAIS- Spring 2015 Meeting

Meeting Minutes

June 30, 2015

Annapolis, MD

CBPO-Fish Shack

Participants:

Ray Fernald, VDGIF (Chair)
Mike Allen, MD Sea Grant (Vice Chair)
Hannah Martin, CRC (Staff)
Cindy Etgen, MD DNR
Kevin Heffernan, VA Natural Heritage
Robert Hilderbrand, Appalachian Lab UMCES
Brianna Hutchison, SRBC
Stephen Keller, University of Vermont
Jay Kilian, MDNR
Mark Lewandowski, MDNR
Don MacLean, USFWS HQ
Jonathan McKnight, MDNR
Steve Minkinnen, USFWS
Bob Morgan, PFBC
Marian Norris, NPS
Susan Pasko, NOAA
Gloria Putnam, NC Sea Grant
Chelsea Richardson, VA Natural Heritage
Shailesh Sharma, NOAA
Stephanie Showalter Otts, University of Mississippi School of Law
Jason Smith, Hanover Engineering Associates, Inc
Sara Stahlman, PA Sea Grant
Edna Stetzar, DNREC
Sarah Whitney, PA Sea Grant
Bill Wilmoth, USDA Wildlife Services

Action Items:

- MAP Panel update to ANSTF—Post on MAPAIS website
- Expert Database; review and report updates to MacLean
- Add the following as users of the experts database
 - PA: Sarah Whitney
 - DE: Edna Stetzar

- MD: Jonathan McKnight
- NC: Gloria Putnam
- VA: Ray Fernald and Kevin Heffernan
- MAPAIS send recommendation to FWS to restore funding for nutria work
- Coordinate with Showalter Otts with correct state contacts for the review process of regulations for treating AIS on private lands
- Fernald, Heffernan, Allen to take lead on updating the MAPAIS website
- Review MAP website and let us know if any state reps need to be updated
- Fernald will work with Stetzar to plan Fall 2015 meeting in DE—Nov 16-20th

Decisions:

- Fall 2014 Meeting Minutes approved
- \$8,500 to Engelmeyer project
- \$21,500 to Stahlman project
- \$5,000 to update website

Minutes:

Fall 2014 Meeting Action Items

Allen was able to roughly update the website.
The RFP was updated and released.

Update: Currently Funded Projects (Allen)

MAPAIS funded 10 projects in this cycle; six projects are either closed or closing in July 2015, two close in Oct/Dec 2015, and two are open through next fiscal year.
Several updates will be presented at this meeting.

One project update not being presented is the Pennsylvania project dealing with the invasive New Zealand mudsnails that is led by Dr. Levri. This project was funded late last fall (Oct 2014-Oct 2016) and the team has been working since late last Fall and began to sample sites in central PA. Most locations where they found the snails are in Spring Creek (runs through State College area) and one site in Bald Eagle Creek. The team is planning to do a lot more sampling this summer.

Update: Aquatic Nuisance Species Task Force-ANSTF (MacLean)

The most recent Taskforce (TF) meeting was in Fort Lauderdale, FL. The agenda included a lot of presenters from the South Atlantic region with an overview of South Florida; Everglades Invasive Species Action Plan efforts to deal with non-native freshwater fish, python management and research, and FL aquatic invasive plant program. The meeting field trip included fish shocking for exotic species in the canal.

Consider inviting Pam Fuller to a future MAPAIS meeting; presentation on ANS database for whatever region and gives new information about what has shown up in different regions.

The TF is working with the American Boat and Yacht Council about developing boats that do not easily spread AIS in various ways. There are also plans to revitalize the Habitatitude campaign and looking at hydraulic fracturing as a new pathway.

Decisions made at TF meeting: reaffirm/approve QZ, Snakehead plan, Lionfish plan, voted to add Lake Tahoe planning agency to the TF membership.

Looking for new executive secretary of the TF. Next TF meeting is Nov 4 and 5 in Silver Spring, MD.

The AIS hotline has been discontinued due to low usage.

Discussion:

At the meeting, each panel gives a report and makes recommendations to ANSTF and we presented MAP panel update that summarized what we had done since last ANSTF meeting with a formal recommendation regarding funding issue that discussed panels reduced \$50K to \$40K per year. Two other panels submitted recommendations along the same line. In the president's budget, \$47K per panel now.

ANSTF is submitting a Report to Congress. The draft report was sent around to the panels and members to look at it. Overall looks good and presents the work of ANSTF and regional panels. Currently undergoing final editing and pushing through approval process.

The Government Accounting Office is conducting an audit of ANSTF; auditor interviewed all the federal partners and panel chairs. MAPAIS works differently than other panel so the auditor is looking at how we do our work, how we assign tasks, what resources we rely on, and our challenges.

Expert Database is up and running and MacLean has access to it. However, MacLean heard from FWS Regional AIS Coordinators that reported some problems with it; first tier contacts cannot access second tier contacts.

Action: look at it now and see if things need to be updated, send to Don.

Norcutt sent usernames and passwords—someone from each state should review the database or add names. At this point, the following are the only ones that can access: Allen, Fernald, Minkinnen, Martin

Action: Add these users to the list

PA: Sarah Whitney

DE: Edna Stetzar

MD: Jonathan McKnight

NC: Gloria Putnam

VA: Ray Fernald and Kevin Heffernan

Whitney: We previously submitted a request for the continued funding for nutria work. Has that been addressed? Follow up request.

Wilmoth: We were working with Norcutt to get support from FWS for funding. It has come through in that ANSTF communicated support to FWS but FWS has not given funds.

Action: MAPAIS send recommendation to FWS to restore funding for nutria work

Presentation: Small Grant Update on “Environmental DNA monitoring of the invasive freshwater diatom, *Didymosphenia geminata*, in Mid-Atlantic waters” (Keller)

Keller is a population geneticist and interested in studying invasive species from a genetic perspective.

Recent research focuses on working on an environmental DNA approach to detecting distribution of didymo in mid-Atlantic waters. This is indirect monitoring approach of eDNA genetic monitoring uses

DNA-based tools to track individuals, populations or species and is particularly important for detecting early invaders. It is an emerging area with rapidly developing tools with a lot of promise for applying to samples of streams and lakes and rivers where we are tracking invasive species.

Didymo is a freshwater diatom that is displaying invasive behavior. It prefers coldwater streams, low in nutrients especially phosphorus and forms dense mats and covers benthos which shifts macro community. Didymo can also form stalked nuisance blooms and its undetermined why some communities are able to form these stalks. For this study, Maryland is the focus site.

RESEARCH QUESTIONS

- is it native to MD?
- expected in cold and cool streams, but elsewhere?
- low level abundance everywhere?
- is it invasive?
- is it a single spreading lineage or a genetically diverse population?

STUDY OBJECTIVES

- baseline assessment of didymo distribution across MD
- sequence didymo positive samples to determine diversity (single strain or diversity of strains)

Teamed up with MBSS to sample 76 sites with a plankton drift net. In addition, contacted by Matt Shank (SRBC) and in collaboration sampled 16 sites in PA in Pine Creek watershed. Tested those 16 sites for eDNA analysis.

RESULTS:

Only 2 MD sites contained didymo, both already known positives from visual surveys. No new didymo occurrences detected. Suggests MD streams do not have didymo in widespread distribution across the watershed.

It is not a single clonal strain that's spreading. Each positive test contains high diversity strains. No obvious population structure between Gunpowder and Savage Rivers. Additional sequencing ongoing to finish sequencing clonal isolates and determine realized detection thresholds.

Discussion:

Morgan: we want to know if there's a relationship between Savage River population and another site, because recreational guys travel between the two and want to know if they are the source of didymo spreading.

Keller: would be very open to use genetic methods to test if they show to have similar lineage.

McKnight: work suggests there isn't background of native didymo that suddenly blooms for some reason, there was recently published study that says didymo is native species. This work gets us closer to disproving it as non-native. Opinion that it makes it look more invasive?

Keller: may have native presence in certain regions but that doesn't mean its native to every region and isn't spreading locally into areas where it has never been present in an invasive way. Distinguishing between the concepts is important and our research helps address that. Clear that didymo is not widespread in MD and historically you need a long term monitoring sequence which we lack right now. But now we have a 2014 baseline for MD. Maybe the main point is preventing spread.

McKnight: For regulatory and management information approach to controlling spread, what's the best advice?

Keller: minimize traffic in and out of sites where the known infestations are and continuing support for long term monitoring. Link eDNA assay to MBSS monitoring and educate anglers.

Norris: how long do DNA particles last in the environment?

Keller: research works on live cells, live unbroken diatom cells that are in the water column.

Presentation: Small Grant Update on “The Good, the Bad, and the Ugly: an invasive species toolkit for Educators” (Etgen)

The objective of this project is to educate students, parents and teachers on impacts of AIS, especially economic impacts. Met with the MD DNR Invasive Species Matrix Team to brainstorm a list of Mid-Atlantic AIS and wrote draft fact sheets for each species selected. The next step was to work with teachers to develop lesson plans/curriculum for different grade levels. The team received input from the MD State Department of Education to order to better align the toolkits and lesson plans with science standards and common core. The program will include traveling trunks with all the materials needed to implement the lesson plans. The team is developing the loaner trunks based on wildlife and heritage service trunks that are popular in MD. These trunks include lesson plans, videos, books, and hands-on examples like a Nutria pelt or water chestnut sample.

Next steps include finalizing the kits and presenting at professional development events and workshops.

Discussion:

McKnight: Excited about this project, key thing is the ability to find a solvent for the way we operate and how the schools operate. Bureaucracy in which schools do lessons are incredibly complex. Worked with the teachers and fit within the codes required by the schools so they can teach these lesson plans.

Fernald: In Virginia we were able to get Feral Hogs into the Standards of Learning (SOL)

Presentation: Small Grant Update on “Mid-Atlantic Field Guide to Aquatic Invasive Species” (Stahlman)

In 2011, MAPAIS funded the Pennsylvania field guide, which was completed/printed in 2013 and distributed to more than 800 agencies. Currently, working on update to the guide and requests to add species with the hope to have it finished by end of 2015. Also working on developing field guide smart phone app.

The Mid-Atlantic field guide is modeled after the PA guide. Will solicit help for reviewing after the development phase ends around Dec 2015.

Discussion:

MacLean: love the PA guide and consult it regularly on iphone/ipad in pdf format

McKnight: cost for printed copies?

Stahlman: \$15-17K for 500 copies. As you order more, the cost goes down. People can also print from the high res pdf version (cheaper on standard paper) we can have that discussion if they want go that route.

Water proof paper is really nice and people using in the field will last a lot longer.

Presentation: Small Grant Update on “Bushkill Township Invasive Species Management Project” (Smith)

Smith is an environmental consulting supervisor at Hanover Engineering in the Bushkill Township in Pennsylvania.

This project was a culmination of invasive species management efforts in order to get information out to residents and of other municipalities. This project targeted plant species that are the biggest problems that destroy natural wetland and upland habitat. Student wanted to ID where these plants fell in respect to distance to water, floodplain, hydric soils, etc. projections of where we expect them to migrate if left untreated. This was used to create the app and management plan.

Discussion:

McKnight: iMap Invasives, have you looked at that?

Smith: looked at iMaps but goal for this project was smaller homegrown application to use at township level. Watershed mgmt most effective is done at small and local level. Feel as though at the smaller level, its more personal and for residents that don't understand the issues (the ones that we need to engage) keeping it small is less threatening to get them engaged.

Heffernan: are volunteers using this app now?

Smith: ready to use, did make recent changes to improve. Next step is to get out to the public in township. A lot of different partners for stream conservancy and good township newsletter for advertisement for presentations and trainings.

Presentation: Small Grant Update on “Engaging Lawyers to Facilitate Access to Private Lands for Eradication and Control of AIS” (Showalter Otts)

This project focused on improving regional understanding strategies available for the state to get access to private lands and collaborative guidance for in the future.

Progress to date; first 6 months the team focused on background legal research of 8 Mid-Atlantic States and DC about regulations and laws of AIS on private lands. Control authority for AIS and noxious weeds and plant pests, authority of state natural resource agencies and agricultural. 30-35 page report that team condensed to 1-2 pg for each state. Starting point but didn't finish DC yet. Circulated to AIS coordinators in the states, and received VA MD and NY responses.

Next Step: later summer 2015 working on incorporating comments from state review, develop assistant attorney generals for AIS issues or agency contact list and law enforcement contact.

Convene small working group with representatives from all the groups to share strategies or lessons learned or case studies to be basis for collaborative work in the future.

If you didn't receive the summary until Mike sent it, let us know so we make sure we have the right contact for your state. Send comments back about the summaries.

Discussion:

Otts: want to reach out and have conference call with attorney or multiple agencies involved to run through the summary or gather more information about the issues that come up in your state about accessing lands.

Action: Otts will send the state contact list to the MAPAIS list.

Small Grants Discussion

Received three proposals this year and each proposal was reviewed by 6 MAP members.

1. BEELAR, “Educational Resources for AIS Prevention”:

Institution: Friends of Deep Creek Lake

Requested Amount: \$8,175

Objectives: Friends of Deep Creek Lake will undertake a survey of existing literature and resources designed to educate key target populations about AIS prevention. They will assess these materials for appropriateness for Maryland-owned and managed lakes and lake users, the focus of the recently adopted

State Lakes' Invasive Species Act. They will field test the selected materials and determine their effectiveness and make recommendations for their use.

2. ENGELMEYER, "Training and Evaluation of Dogs for Early Detection of Nutria"

Institution: VA DGIF

Requested Amount: \$13,700

Objectives: Through this project, they will measure whether a dog can determine nutria presence or absence effectively, by controlling for the following variables. This will enhance our understanding of the feasibility and efficiency of using trained dogs for nutria detection, and the environmental variables that affect their efficiency and effectiveness. In addition, we will henceforth have one, and possibly two, fully-trained nutria-detection dog(s) for immediate deployment in Virginia and, possibly, in adjacent states to assist with final eradication of low-density nutria populations.

3. SMITH, "Municipal-based invasive species management project"

Institution: Hanover Engineering Associates

Requested Amount: \$9,000

Objectives: The Municipal-based invasive species management project includes three primary components; 1. Mobile Application development for invasive plant species identification and mapping for Moore Township, Upper Mount Bethel Township and Lower Mount Bethel Township based on the original mobile app developed for Bushkill Township, 2. Invasive Species Management Plan reconfigured from the Bushkill Township plan with focus on proper identification and treatment, 3. Invasive Species Identification and Mapping field evaluations to identify and map targeted invasive species

Decisions:

\$8500 to Engelmeyer.

Recommendations: Serve as a model for future wildlife trained dogs to detect nutria. Would give the project a longer lifespan if it used as a pilot to train other law enforcement trained dogs. Revise the scope of work and budget and resubmit to MAP and present findings in the future at completion of the project.

Recommend to Smith to resubmit until the Bushkill pilot has more results.

Other Budgetary Decisions:

\$21,500 to Stahlman to print the mid-Atlantic field guide. Recommend printing both waterproof and non-waterproof versions of the guide.

\$5,000 to update the MAPAIS website. **Action:** VA and MD will take the lead—Fernald and Heffernan as well as Allen to look into this. Provide updates at the Fall 2015 meeting.

Member Updates

Heffernan: published paper on Carrie Wu's work with *Phragmites*, expanding work throughout watershed to discern native vs nonnative haplotypes are located. Getting better idea of how to distinguish in the field.

Fernald: USDA released AIS feral hog program and looking at that and working hard to change other agency attitudes to get regulatory changes to effectively deal with feral hogs.

Allen: MD Sea Grant working with partners to finish up live bait vector project; MD extension agencies distributed flyers and stickers to local bait shops to stick on bait bags and hand out as extension project of that research project. That campaign reached social marketing experts; no funding currently for additional outreach. Final write-ups to put together research papers.

Norris: NPS VERSAR will be doing sampling in Rock Creek in DC looking at snakehead occurrence; approached by MDNR about snakehead reports in Chesapeake and Ohio canal, previously fish inventories were done in the canal and remarked that there is a lot of fish diversity.

Minkinnen: continue to coordinate with VA and MD and DC and DE on issues with snakehead and survey work and coordinating amongst the agencies

McKnight: zebra mussels in the upper bay and conducting experiment with how they interact with higher salinities. Draft Invasive Species plan is in house in MDNR.

Kilian: putting up signs and should work with the public access group. MDNR is also aware about contaminated gear for monitoring, but there has not been one consistent policy in place. Working on a document for terrestrial and aquatic for all MDNR employees to follow.

Morgan: PAFBC has biosecurity procedures to share.

Stetzar: DE could use something like that too and we don't have a policy at all

Morgan: hot water detergent water, or freezing. NZ mudsnail is resistant to chlorine. Otherwise chlorine works.

Whitney: PA Sea grant working on new AIS prevention sign for non-motorized boat traffic like kayaks

Morgan: snakehead has moved up the DE river to almost the NY border, new outbreak of hydrilla in a reservoir, NZ mudsnail is in all of spring creek drainage mainstem and a few minor tribs, PA invasive species council is taking on legislature and governor and putting together funding rationale to get the state to fund AIS work in the state.

Wilmoth: Chesapeake Bay nutria eradication project; dogs have had first confirmed wild detections of scat. Beyond proof of concept. Sent two more dogs to training center, hoping to add three more handlers and 6 more dogs by the end of this year to this program. 2 dogs per handler. Nutria project; all watershed within the Delmarva Peninsula, no watersheds that have not been treated (knock down trapping completed), either in mop up or verification or surveillance phase within. No known breeding populations of nutria. Dealing with small individuals or small pocket populations.

Feral hogs not confirmed in MD, but recently received money in case. Let us know if you hear about it.

Stetzar: confirmed blue cats in Nanticoke, Matt Ogburn of Smithsonian Environmental Research Center tagged the blue cats, and we got the receiver. Contacted commercial waterman that get catfish as bycatch to inform them of the issue. Snakehead; continue get reports in same watersheds but got a lot more reports in tributaries in known spawning areas for bass. Put together contaminant analysis of Nanticoke snakeheads because people want to know if they are safe to eat. DE invasive species council got more money and got metal stop aquatic hitchhikers signs. Lionfish; distributed basic information to scuba shops, no reports. Flathead catfish; one confirmed report in northern DE, got another confirmed in pond in campground in lower DE so it was stocked.

Next Meeting:

Recommendation for next ANSTF meeting: continuation of funding CB nutria eradication program.

Delaware for next MAPAIS meeting in fall 2015. Tentative week Nov 16-20, 2015.

