



# The Obligate

Maine  
Association of  
Wetland  
Scientists  
[www.maws.me](http://www.maws.me)

c/o Lauren Leclerc, TRC  
14 Gabriel Drive, Augusta, ME  
04330



## President's Message *Brad Agius*

Dear MAWS colleagues - What a great year we have had, and another fantastic one is in store too. I am amazed at how quickly the first year of my 2-year term has gone. Putting this message together has been a great opportunity to reflect and revisit the goals and objectives I outlined in last year's Obligate. First, I need to thank the MAWS Executive and Standing Committee Members and volunteers for their diligence and commitment to making our organization run smoothly. What follows are highlights of our accomplishments during the past year, upcoming events, future directions, and what you can do to get involved and contribute to our successes.

### Highlights from 2015—2016

MAWS has provided many training and educational opportunities, coordinated by Program Chair Sarah Watts. In May 2015 we hosted the Maine Invasive Species Network's iMapInvasives training led by Nancy Olmstead of the Maine Natural Areas Program. In September 2015, MAWS co-sponsored (with the Maine Association of Professional Soil Scientists (MAPSS), Maine Association of Site Evaluators (MASE), and Society of Soil Scientists of Northern New England [SSSNNE]) the Soils and Natural Resources Workshop at Sebago Lake State Park, spearheaded by Dave Rocque, of the Maine Department of Agriculture, Conservation, and Forestry. In January 2016, MAWS hosted a Winter Twig Identification Workshop led by Matt Arsenault and Dr. Eric Doucette of Stantec. The Winter Twig Workshop was the first MAWS event to have full online registration and payment.

After many requests, online registration is now available for all events on the MAWS website (<http://mainewetlands.org/store/>). Dave Brenneman has

worked diligently to get the online system in place and functioning properly. The new registration and payment system is very fast, easy to use, and allows us to get accurate head counts and contact information. We have even included an option on the online registration form for individuals that prefer to pay at the door or by check. Membership dues also can now be paid online.

On the regulatory side, MAWS members were provided with the revised Maine Department of Environmental Protection (MDEP) In-lieu Fee schedule, the U.S. Army Corps of Engineers (USACE) Regulatory In-lieu fee and Banking Information Tracking System (RIBITS) and Maine Programmatic General Permit. Many thanks to Audie Arbo (MDEP), Jay Clement (USACE) and Ruth Ladd (USACE) for keeping us apprised of these updates.

On the legislative side, MAWS, through Legislative Committee Chair Rod Kelshaw, tracked bills throughout the Maine sessions and ran several through the MAWS Action Item Flow Chart. In January 2016, MAWS provided important written and oral response by Lee Burman to LD 1478, An Act to Reestablish Recreational Use of a Historic Trolley Line in the Town of Gray to the Maine State Legislature's Joint Standing Committee on Environment and Natural Resources.

### Upcoming Events and Ongoing Activities

At press time, the Bat Workshop is scheduled for March 9th, 2016 at the Viles Arboretum. Lee Burman has pulled together presenters focusing on the latest science and regulations from Biodiversity Research Institute (David Yates); Maine Department of Inland Fisheries and Wildlife (MDIFW) (Cory Mosby); Maine Department of Transportation (Sarah Boyden and Eric Ham); USACE (Peter Tischbein); and U.S. Fish and Wildlife Service (USFWS [Wende Mahaney]). See page 24 for the Bat Workshop agenda and registration instructions.



The MAWS Winter Conference and Annual Meeting is on March 31st, 2016 at Bowdoin College in Brunswick, Maine. To me this is always a rite of passage and a sure sign that spring is right around the corner. This year's theme is Maine Wetlands: Science and Future Challenges. The agenda and registration information are on pages 21 and 22 and online. We are pleased to again host an exciting line-up of speakers, including the 2015 MAWS stipend winners and leading wetland researchers, natural resource professionals, and regulators. While we had to postpone the U.S. Environmental Protection Agency (EPA) Clean Water Rule workshop scheduled for August 2015, the annual meeting includes a presentation on existing regulations and potential changes as a result of the new rule (the rule is currently stayed in the U.S. Court of Appeals) by Erica Sachs. Last year's first annual Poster Session organized by Rich Jordan was a great success. We are pleased to have Danielle Tetreau coordinating posters this year.

MAWS continues to partner with MDIFW on Maine's 2015 Wildlife Action Plan (Plan) revision and implementation. The final draft plan is now available online (<http://www.maine.gov/ifw/wildlife/reports/MWAP2015.html>) with final comments and approval expected from USFWS this summer. The Plan identifies Maine's 378 wildlife Species of Greatest Conservation Need (SGCN) as well as non-regulatory conservation actions needed to conserve these species and their habitats over the next ten years. There are numerous conservation actions related to wetland habitats and associated SGCN. Dr. Phillip deMaynadier (MDIFW) will discuss some of these actions during the upcoming MAWS Winter Conference and Annual Meeting as well as opportunities for continued MAWS involvement during the next ten years of Plan implementation.

Due to popular demand, MAWS, MAPSS, and the Maine Association of Site Evaluators are co-sponsoring a second Soils and Natural Resources Workshop at Sebago Lake State Park on September 7, 2016 led by Dave Rocque. The workshop will include additional MAWS focused wetland components including hydrologic indicators, USACE Northcentral Northeast Regional Supplement

data forms, wetland delineations, and vernal pool assessments. Additional information can be found in Dave's write up on page 7.

The MAWS Executive Committee is already laying the groundwork for workshops in 2017 and 2018. Potential topics include evaluating wetland restoration and mitigation sites, natural resource workshops, and stream determinations. MAWS, led by Roger St. Amand, is also in the exploratory phases of developing a stream determination guide or protocol to assist wetland scientists with field determinations of stream jurisdiction/ classifications. Please let us know if you have workshop ideas or an area of technical assistance where we can be helpful.

While many of us may see each other only once or twice a year at MAWS functions, there is much that goes on behind the scenes to help grow and strengthen our organization. MAWS provides members with the latest regulatory and scientific wetland information, a voice in the legislature, and numerous networking and professional development opportunities. However, we can do so much more with your help. Whether you are a veteran MAWS member or a first year college student, we are always open to new perspectives, ideas, and feedback. There are many opportunities to become more involved in MAWS, such as volunteering at events, joining a committee, or running for office. Please contact any member of the Executive Committee for more information. As I wrap up the year's reflection, I am pleased with the progress that MAWS has made over the year, and I hope you are too. I look forward to seeing you soon.

If anyone would like to be part of MAWS executive or other committees please contact Brad Agius ([brad.agius@tetrattech.com](mailto:brad.agius@tetrattech.com)) or any member of the EC.

### Table of Executive and Standing Committee Members

Brad Agius	President (2017)	<a href="mailto:brad.agius@tetrattech.com">brad.agius@tetrattech.com</a>
Danielle Tetreau	President-elect (2017)	<a href="mailto:danielle.tetreau@stantec.com">danielle.tetreau@stantec.com</a>
Aleita (Lee) Burman	Treasurer (2017)	<a href="mailto:blburman@gmail.com">blburman@gmail.com</a>
Steve Knapp	Secretary (2016)	<a href="mailto:steve.knapp@kleinschmidtgroup.com">steve.knapp@kleinschmidtgroup.com</a>
Sarah Watts	Program Chair (2016)	<a href="mailto:sarah.watts@tetrattech.com">sarah.watts@tetrattech.com</a>
Rodney Kelshaw	Legislative Chair (2017)	<a href="mailto:rodney.kelshaw@stantec.com">rodney.kelshaw@stantec.com</a>
Katelin Nickerson	Membership Chair (2016)	<a href="mailto:katelin.nickerson@stantec.com">katelin.nickerson@stantec.com</a>
Kevin Ryan	Ethics Co-chair (2017)	<a href="mailto:kevinr@fbenvironmental.com">kevinr@fbenvironmental.com</a>
Shri Verrill	Ethics Co-chair (2017)	<a href="mailto:shri.verrill@gmail.com">shri.verrill@gmail.com</a>
Dave Brenneman	Webmaster – Communications Subcommittee	<a href="mailto:dbrenneman@trcsolutions.com">dbrenneman@trcsolutions.com</a>
Lauren Leclerc	Obligate	<a href="mailto:lleclerc@trcsolutions.com">lleclerc@trcsolutions.com</a>
Roger St. Amand	Vernal Pool Technical Committee (year term expires)	<a href="mailto:rstamand@ces-maine.com">rstamand@ces-maine.com</a>

#### Report of the Webmaster – Communications Subcommittee *David Brenneman*

Not too much has changed with [www.maws.me](http://www.maws.me) since last year's report. However, one significant improvement was implemented in late 2015, the ability to accept online payments and registrations for workshops and membership dues. The first official test of the new online process was a success and many that attended the Winter Twig Identification Workshop at the Vile's Arboretum commented on the ease of use for getting registered and paying. I don't want to give myself too much of an "Atta-Boy!," but it seems deserved here (it's a rare occurrence as a part-time webmaster so I'm basking in it for a moment). It will be short lived, any moment now I'll get an email asking where to find the MAWS Vernal Pool Survey Protocol (hint: there's a link in the sidebar on the homepage) or someone asking "Where is the Obligate from May of 1994, it's the only one missing from my collection!?!"

Of course, I say this all in jest (for the most part), and I'm happy to direct anyone to items on the website and am always open to suggestions to make the website more useful to the membership. I don't know what 2016 will hold as far as improvements, but some potential ideas are floating around so look for new innovations to continue.

Feel free to contact me any time with ideas, suggestions, or issues with the site or the e-mail list. You can also send information regarding upcoming events, employment, or other news to [maws.webmaster@gmail.com](mailto:maws.webmaster@gmail.com).

#### Legislative Committee Update *Rodney Kelshaw*

In 2015 MAWS watched several documents moving through the Maine State Legislature and we took action on one bill.

LD 153 An Act To Amend Setback Requirements and Standards Related to Species Migration under the Laws Regulating Development Near Vernal Pools. This bill requires the MDEP and the MDIFW to adopt rules regarding significant vernal pool habitats to define a fixed radial area of regulation around a vernal pool depression and allow for an alternative directional corridor area of regulation. Use of an alternative directional corridor area would have to be requested by the applicant, who must demonstrate to the MDEP that the use of an alternative directional corridor area would provide habitat protection value equal to or greater than would the fixed radial area of regulation. MDEP rules must specify the regulatory process and standards for obtaining a permit in an alternative directional corridor area.

MAWS submitted public testimony at the Environment and Natural Resources (ENR) Committee public hearing. Our position was "Neither-For-Nor-Against...MAWS supports the implementation of a regulatory process that allows applicants for development within 250 feet of a significant vernal pool to utilize a scientifically based alternative directional habitat area." Basically, we were in favor of the concept, however the devil was in the details which would need to be ironed out before we could support the bill. The ENR committee voted ought not to

pass; the document was filed as “Dead” on May 12, 2015.

The shortened Second Regular Session of the 127th Maine Legislature was convened on January 6, 2016 and statutory adjournment is April 20, 2016. MAWS is following new bills and has taken action on one, LD 1478 An Act To Reestablish Recreational Use of a Historic Trolley Line in the Town of Gray. This bill allows the Town of Gray to exempt certain strips of land from shoreland zoning setback requirements and vegetation clearing standards for the purpose of operating the Maine Narrow Gauge Railroad Company and Museum. The bill also exempts those strips of land from the requirement to obtain a Natural Resources Protection Act permit for the clearing of vegetation associated with the operation of the Maine Narrow Gauge Railroad Company and Museum.

MAWS submitted public testimony at the ENR Committee public hearing. Our position was, MAWS “respectfully requests that the ENR vote Ought Not To Pass on LD 1478 An Act to Reestablish Recreational Use of a Historic Trolley Line in the Town of Gray. MAWS understands the proposed project is located in an area that requires the applicant to undergo municipal and State of Maine natural resources permitting processes. MAWS will not comment on the specifics of the project and whether it should obtain permits. Instead, we provide our opinion regarding the general permitting and legislative process as it relates to the proposed project.” We explained that it is a dangerous precedent to set to allow projects to avoid permitting and go to the State Legislature for approval. This bill is still working its way through the legislature.

#### Other items of note:

The Maine USACE General Permit was released in October 2015. It can be found at this link:  
[http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/ME/Maine\\_General\\_Permit\\_2015.pdf](http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/ME/Maine_General_Permit_2015.pdf)

If you want to keep abreast of legislative happenings here are a few websites to watch:

The Maine State legislative page:  
<http://legislature.maine.gov/>

127th Legislative Documents:

[http://www.mainelegislature.org/legis/bills/bills\\_127th/billtexts/](http://www.mainelegislature.org/legis/bills/bills_127th/billtexts/)

If anyone is interested in becoming involved with the MAWS Legislative Committee please contact me at [rodney.kelshaw@stantec.com](mailto:rodney.kelshaw@stantec.com) or call (207) 944-6776.



A rocky stream in Maine taken by member Dave Brenneman.

#### **Vernal Pool Technical Committee Update – Stream Protocol Status Update Roger St. Amand**

At the 2015 annual meeting MAWS members agreed to have the Vernal Pool Technical Committee (VPTC) investigate the possibility of developing a stream protocol similar to the vernal pool survey protocol. MAWS felt this was needed to improve consistency in determining stream jurisdiction, mostly under MDEP jurisdiction for intermittent stream and borderline calls. Members commented on the wide range of stream determination calls that varied depending on staff, time of year etc.

The committee initiated discussions with Mike Mullen at MDEP. Mike indicated that MDEP could support the idea of developing guidelines and they have thought about this issue in the past. Mike recommended consulting with Tom Danielson, the MDEP water quality guru in the Division of Environmental Evaluation, to assist from a scientific perspective. Members may have met Tom at either the MAPSS meeting or the Sebago workshop where he brought in a sample of macroinvertebrates.



MDEP has used Tom in the past on difficult field calls and violations related to streams.

We discussed the idea with Tom, he was interested and thought it would be worthwhile, but indicated he could not get started on in until later this spring. In further discussions, Tom indicated the document might have more weight if MDEP developed this internally with input from MAWS, as opposed to MAWS developing it.

The VPTC met this winter to review the process and consider the MDEP response. There was much discussion on the issues surrounding streams calls that have been observed. A few of the ideas brought forth for possible protocol methodology included: minimum watershed size, length, and sampling protocol for aquatic organisms. The VPTC meeting concluded with a unanimous vote to continue to work on the protocol and work with MDEP to develop guidelines and possible edits to the stream definitions under rulemaking. The VPTC felt it was important to be proactive in moving ahead and work with MDEP to identify areas of concern, possible survey approaches, and provide a framework for what is needed from the consultant’s perspective.

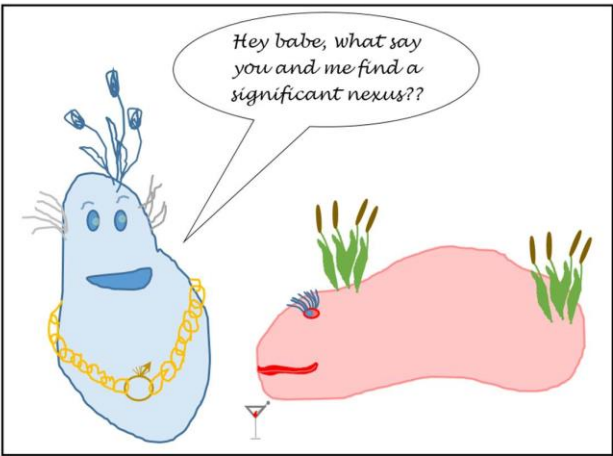
If members have suggestions on guidelines to incorporate, particularly tricky stream calls to address, suggestion on survey methods, or want to get involved, please feel free to contact me at [rstamand@ces-maine.com](mailto:rstamand@ces-maine.com).

**Ethics Update Kevin Ryan and Shri Verrill**

Last year we awarded \$500 research stipends to each of two graduate students, Carly Eakin and Rene Legault.

Carly is a PhD student in the Department of Wildlife, Fisheries, and Conservation Biology at the University of Maine. She is working collaboratively with a team of graduate students and researchers to further the conservation of vernal pools and vernal pool-breeding amphibians. When asked to give up an update in January, Carly submitted the following regarding her MAWS research and stipend award:

*“I am grateful for MAWS’ support of my study and in helping me to purchase the equipment needed to continue my study in 2015. My dissertation research at the University of Maine examines the health and survival of larval vernal pool breeding amphibians along an urbanization gradient. I hope to better understand how land use decisions may affect the population persistence of these amphibians. It is my hope that land managers and decision makers can use this information to enhance the ecological and economic sustainability of Maine communities by focusing conservation efforts in areas with high likelihoods of amphibian persistence and to reduce impediments to economic vitality in areas with low likelihoods of persistence. In 2015, I collected a second year of field data, including body condition measurements of >3,000 wood frog tadpoles and site conditions throughout the season in approximately 40 vernal pools in the Greater Bangor area. During the field season I also observed what appear to have been ranavirus-related die offs of wood frog tadpoles in at least 4 pools, and over half of the studied pools had tadpoles with hemorrhages indicative of ranavirus infections. These observations prompted me to conduct a ranavirus surveillance study in 2016 to explain how site conditions and tadpole morphology contribute to the prevalence and timing of ranavirus infection. I am currently analyzing data from 2014-15 and planning my 2016 field season to build on the results from these analyses. This past week I modeled survival and body condition based on site conditions, and preliminary results show a possible effect from urbanization-related variables. Over the next few weeks I’ll be further exploring the interactions of body condition and site characteristics on survival. Based on these analyses, I anticipate shifting my field and lab work schemes in 2016 to explore possible causative links between suites of site conditions and tadpole health and survival as suggested by preliminary*



Isolated wetland pickup lines

Comic by member and past-president Richard Jordan.



findings. I look forward to sharing these findings and my dissertation progress at MAWS annual meeting! Thank you for this opportunity.”



Carly Eakin's vernal pool research site.

Rene Legault is working towards a Master's Degree in Biological Sciences at the University of New England. His research examines the interactions between the non-native, invasive European strain of common reed (*Phragmites australis*), and smooth cordgrass (*Spartina alterniflora*), a native salt marsh plant.

When we asked for an update in January, Rene submitted the following regarding his MAWS research and stipend award:

“My master's thesis is exploring interactions between the invasive European strain of common reed, *Phragmites australis*, and a foundational native New England salt marsh plant, smooth cordgrass or *Spartina alterniflora*. I have been placing these two species in competition mesocosms and subjecting them to varying levels of nutrient inputs and temperature, which are meant to simulate upland runoff and global warming, respectively. With *Phragmites australis* migrating further down the high marsh zones, and sea level rise effectively pushing low marsh zones landward, this interaction could be key to the survival of *Spartina alterniflora* and the many ecosystem functions it supports. When I received the stipend from MAWS, I was extremely excited to get started on my work collecting and transplanting *Phragmites australis* and *Spartina alterniflora* into mesocosms to assess how competitive interactions affect their respective growths and success, both

above and belowground. Initially, my research was going to focus on the top-down versus bottom-up control of this competition through increased nutrient levels and herbivory stress, but I had to change directions when my herbivores, the exotic snail, marsh periwinkle, failed to survive under the conditions of my experiment. Luckily, the generous stipend MAWS provided allowed me to remodel my experiment and construct a number of small greenhouses to substitute temperature for herbivory as an experimental variable. I feel this will be equally useful for predicting the spread of *Phragmites australis* and the possible decline of *Spartina alterniflora* in New England. Data collection is currently still ongoing for assessing effects on aboveground biomass. In addition to data from this past summer, I hope to continue my experiment through one additional growing season to bolster my first-year results and allow me to include belowground biomass among my final results.”



Rene Legault's *Phragmites* research site.

Congratulations Carly and Rene, and we look forward to hearing your presentations at the MAWS Annual Meeting in March!

The 2016 stipend application was mailed out to an extensive list of college and university professors. We are always looking to add to our list, however, so please feel free to forward the names and e-mails of professors/advisors that you think should get the stipend information to [kevinr@fbenvironmental.com](mailto:kevinr@fbenvironmental.com) or [shri.verill@gmail.com](mailto:shri.verill@gmail.com).



## Sebago Lake State Park Soils and Natural Resources

### Workshop II *Dave Rocque, Maine Department of Agriculture, Conservation, and Forestry*

Looks like I have been talked into organizing one more Soils and Natural Resources Workshop. It will primarily be a repeat of the workshop held at Sebago Lake State Park last September but with an expanded wetlands component. I realize that I have been saying “this is the last one” for several years now but retirement is looming ever closer, I turn 65 next year. It’s time for the younger folk to step forward and probably time for a different type of workshop. I am though, very willing to assist with the organization of future workshops.

The MAWS Executive Committee thought an expanded wetland component would be a good addition to the workshop and I agreed. With MAWS folks in the lead for this component, at least three of the sites will be further developed by one or more of the following: detailed vegetation data plots, wetland delineations (by several persons to show the variability of boundaries by different individuals), identifying secondary hydrology indicators, and vernal pool assessments. MAWS representatives will be present at each of these stations to show what was done and how it was done and to answer questions.

The date for this year’s workshop is Wednesday, September 7, 2016. It will be once again sponsored by the Maine Association of Professional Soil Scientists, MAWS, and Maine Association of Site Evaluators.

For those who attended the workshop last year, you will remember that it was a very dry spring and summer, quite the opposite from what was experienced at Mt. Blue State Park the previous two years. As a result, all of the soil pits were dry and so were streams and wetlands used for the workshop. I wasn’t even able to collect much useful groundwater table data prior to the workshop it was so dry and Sebago Lake never completely filled up. Odds are this will be a wetter year giving workshop sites a much different look. That I believe is one of the benefits of repeating a workshop. Conditions are likely to change and, we all, including regulators, have had a year to think

about our original determinations. Most of the sites I select are difficult with “gray areas” allowing for considerable subjectivity which makes for some very interesting and lively discussion with the regulators. Repeat attenders will also have the expanded wetland sites to benefit from. For folks who missed out last year, I think you will find the sites very interesting and the setting is hard to beat on an early September day. Throw in comradery with folks we don’t get to see often enough and it makes for a most enjoyable and useful day in the field. Another benefit is being able to mingle with folks we don’t know, particularly from different professions. I have been told that mixed groups often tour the sites together, sharing professional knowledge and making useful connections. Rumor has it that a couple of folks met for the first time at one of my workshops a number of years ago and ended up getting married! Finally, for those of you who need continuing education credits, it’s hard to beat this opportunity. Good price, great setting with interesting sites and discussions. I look forward to seeing you there on September 7th.

PS: Refer to the 2015 Obligate for specifics about workshop sites.

### Membership Update *Katelin Nickerson*

Hello MAWS members! I would like to take a moment to recall the benefits of your membership. As a MAWS member, not only are you supporting a great organization, you receive reduced rates to all of our workshops throughout the year, you have regular updates on the most recent regulatory information and wetland news, and you enjoy numerous opportunities to connect with your peers and be involved in the wetland science community in Maine. How great is that!? If you know any colleagues, co-workers or students that you think would benefit from becoming a member, please encourage those you know to join. MAWS welcomed 4 new members in 2015, and we would like to keep that number growing in 2016. As always, if you have questions about your membership status or think you may have missed a year (or two, or three) of dues, go to our website or contact me at [katelin.nickerson@stantec.com](mailto:katelin.nickerson@stantec.com). I hope to see you all at the winter conference in March!



### Program Chair Update Sarah Watts

Hello MAWS members! It has been a busy year, and I hope for each of you, a good year! As I write this, the negative number on the thermometer tells me that winter is finally here! Looking forward to a return to Bowdoin again for the MAWS Winter Conference and Annual Meeting this year! The Meeting is scheduled for Thursday March 31, 2016, at Thorne Hall, Bowdoin College, in Brunswick, Maine.

Through the efforts of the many talented and dedicated folks on the MAWS Executive Committee, we've lined up a fantastic group of speakers, and an expansion—I am hopeful—of the poster session we introduced last year! Our theme this year focuses specifically on “home” and our great state of Maine – Maine Wetlands: Science and Future Challenges. Dr. Aram Calhoun from University of Maine – Orono will start us off on this topic, and she never disappoints! We'll delve into regulatory changes, with updates from perennial guest speaker Mike Mullen from MDEP, as well as LeeAnn Neal from USACE and Stacie Beyer from the Land Use Planning Commission. Then, Dr. Philip deMaynadier will provide updates on nongame wetland species and habitat projects from MDIFW, and we'll hear from our two 2015 stipend winners. Ph.D. candidate Carly Eakin—who presented a poster at last year's meeting—will present on her work focused on wood frog tadpole health, and M.S. candidate Rene Legault will focus on salt marsh grasses *Spartina alterniflora* and *Phragmites australis*. Just before lunch, Dave Rocque will give us an update on the plans to revamp and revisit the Sebago Workshop in 2016, and provide info on the ENVIROTHON.

During the lunch break, we invite attendees to spend some time checking out the posters and talk to the authors about their research. Posters will be set up on easels around the room. The poster session is intended to be a low key, informal way for individuals, students, or professionals to present academic or professional research, and talk to current wetlands professionals, build their contact list, meet potential future employers, and get feedback from the industry about their research.

After lunch, Erica Sachs of the EPA will provide some info on revisions to the Clean Water Act – Waters of the U.S. Then, Dr. Pam Morgan of the University of New England will talk about what science research can contribute to the future of Maine wetlands – I hear there is an interactive component to Pam's presentation, so keep your cell phone handy for her presentation so you can weigh in! We will round out the Winter Conference with presentation from Andy Cutko of Maine Natural Areas Program on ecological integrity assessment, and Dr. Paul Minkin of USACE on the New England Wetland Functional Assessment. After a short break, we'll hold the Annual Business Meeting; all are welcome to attend! For afterhours fun, please join us down the road to further discuss the hottest wetland topics and relive the Winter Conference highlights over a couple of snacks and beverages.

Ahead of my game this year, I've already obtained approval for Continuing Education Units (CEUs) for the MAWS Winter Conference and Annual Meeting from the usual suspects, and will be providing certificates of attendance for this event. [See the agenda on page 21 for more details on certificates of attendance.] We will provide a limited number of handouts (PowerPoint notes pages) of the speaker presentations again this year, hoping to avoid unnecessary waste of paper! Come early to make sure you get a copy! We hope that this will allow everyone to sit back, relax, and enjoy the presentations.

We are keeping the registration fee structure consistent with last year: if payment is received by March 21, 2016 (10 days prior to the event), registration for MAWS members is \$45 (not including annual dues); non-members is \$60, and students are \$20. For payment received AFTER March 21, 2016, including payment at the door, add \$10: MAWS members \$55, non-members \$70. Student registration fee will remain \$20. See pages 21 and 22 for online registration and payment info.

We hosted or co-sponsored several events this year including:

In September, MAWS again participated in the annual Dave Rocque/Maine Association of Professional Soil Scientists, MAWS, Maine Association of Site Evaluators





and SSSNNE Natural Resources Workshop at Sebago Lake Park in Casco, Maine. This workshop offered 7 sites which included sandy spodosol soils, flood plain soils, lacustrine sediments in pit and mound topography with an albic horizon, boulder fields in wet and upland areas, streams within the shoreland zone controlled by lake levels in Sebago Lake, and vernal pools. Sebago Lake water levels are carefully controlled with a drawdown of over 5 feet making it difficult to determine where to begin measuring for shoreland zone setbacks. MAWS has convinced Dave that revisiting Sebago Lake State Park again in 2016, and offering a greater wetlands and vernal pool perspective is a good idea! We look forward to continuing to investigate these complex and challenging sites, and engaging in discussions with experts from state, local, Portland Water District, and Federal regulators, who will be present to answer questions and provide valuable guidance for dealing with these difficult sites. See page 7 for Dave Rocque's write up on the Sebago Lake State Park Soils and Natural Resources Workshop II.

In January, MAWS held a Winter Twig Identification Workshop on a beautiful January day at Viles Arboretum, in Augusta, Maine. Two of Maine's top notch botanists—Matt Arsenault and Eric Doucette of Stantec—lectured and presented on winter twigs and aids to identification, and guided the keying out of about 80 different specimens by the group. After lunch, the group headed outside to test their skills with winter twig identification at the arboretum, which proved to be a bit tricky for a lay-person wetlands hack like myself, with a number of unusual varieties, but still it was lots of fun!

**If anyone has a workshop idea or would like to assist in organizing workshops and activities for MAWS, please contact Program Chair, Sarah Watts ([sarah.watts@tetrattech.com](mailto:sarah.watts@tetrattech.com)) or (207) 358-2383. She would gladly accept your help! ☺**



Participants of the Winter Twig Identification Workshop studying shrubs taken by member Lauren Leclerc.

MAWS is also planning a workshop on Bats(!) on March 9, 2016, back at Viles Arboretum. Hearing an interest from our members and Executive Committee on the implications of the listing and final 4(d) rule for northern long-eared bats, we decided this workshop was a good idea! You will learn about the basic biology and ecology of bats, the state and Federal regulations regarding the listing, and the practical implications. We'll have a round-table Question-and-Answer session where attendees will have the opportunity to ask more questions, and try to gain an understanding of how this will impact future development work and permitting in the state of Maine. See attached Bat Workshop agenda on page 24.

We are open to hearing your workshop ideas for 2016! If you have ideas for other workshops, please don't be shy!

See you in March!!



## Maine Association of Wetland Scientists Annual Meeting

### Minutes of Meeting

**Subject:** Maine Association of Wetland Scientists (MAWS) Annual Meeting

**Date:** March 24<sup>th</sup>, 2015

**Time:** 8:30 AM – 3:40 PM followed by a MAWS Executive Committee Business Meeting from 4:02-5:11 PM

**Location:** Thorne Hall, Bowdoin College, Brunswick, Maine.

**Attendees:** MAWS Membership, Executive Committee, and Guest Speakers (approximately 90 attendees)

The Maine Association of Wetland Scientists (MAWS) held its annual meeting on March 24<sup>th</sup>, 2015 at Thorne Hall, Bowdoin College in Brunswick, Maine. The session consisted of nine speakers each followed by an interactive discussion.

8:41-8:45 Brad kicks off the meeting and introduces the speakers for the day.

8:45-9:00 **MAWS Regulatory Update**, Rod Kelshaw, MAWS Legislative Chair.

- 1,000 + LDs reviewed over the course of the session
- 1 LD specifically related to wetlands: LD 153 dealing with setbacks for vernal pools, and directional habitat buffers rather than circular 250' buffers. Applicant could choose standard buffers or directional. MAWS has been in support of directional buffers since 2011.
- Representative Campbell spoke at the hearing for LD 153, neither for nor against, the 100' "no-build" zone was dropped in committee.
- LD is headed to Maine Department of Environmental Protection (Maine DEP) for rule making, MAWS plans to be at the committee meeting and the hopeful result is a workable and good bill.
- MAWS has sent a letter to the committee offering assistance during the process.

9:00-10:00 ***Maine DEP Environmental and Energy Resources Working Group: Devising and Implementing the State's Climate Change Recommendations***, Patricia Aho, Commissioner, Maine DEP. The Commissioner began her presentation by thanking MAWS for the invitation to speak at the annual meeting as well as for the work MAWS does as an organization. The Commissioner provided a brief overview of a number of changes which have occurred at the Maine DEP; changes designed to stream line the permitting process for applicants. The Commissioner outlined the State's sustainability initiative which has brought several programs together with the intent of improving "cross-media" awareness between programs. She then outlined Maine DEP oversight of programs dealing with climate change and strategic opportunities to integrate GIS into the climate issues.

She then discussed changes with regard to the Maine DEP and the role of the Department of Health and Human Services (DHHS). The Commissioner described the overlap of the Maine DEP and DHHS roles when dealing with water issues. The potential for infectious disease and issues related to public health has resulted in a move for the Maine DEP to take on certain roles/responsibilities of the DHHS as it pertains to drinking water and wells, subsurface disposal, swimming pools, and crematoriums. The stated goal of these changes are intended to improve Maine's water and ensure that it remains clean.

Following the presentation there was a short question and answer period:

Q: (Dave Rocque): DHHS has provided good service and Dave expressed concern about the ability of the Maine DEP to provide the same services.

A: Maine DEP will continue to improve the DEP approach. The DHHS will be helping Maine DEP with the transition process.

10:00-10:25 **BREAK**

10:25-10:55 ***New England District Compensatory Update***, Paul Minkin, U.S. Army Corps of Engineers (USACE), New England District.

Paul provided a brief overview of updates to the compensatory mitigation process. Important highlights include:

- Re-organization of the document.
- New sections on stream mitigation.
- Draft assessment of vernal pools now included.
- Ranges removed from mitigation ratios.
- Editorial changes.

Updates of wetland functional assessment. The goal of the update is to develop a new quantitative method to replace the existing highway methodology. During the course of the update several methods were reviewed and the current method combines elements from several functional assessment methods currently being used. Key characteristics of the updated methodology include:

- A method which is objective and repeatable.
- Use of NWI+ for classification.
- Function focus, not values.
- No overall functional score.

- Hybrid function/condition assessment is most useful for the USACE uses.

Paul closed his presentation noting that work continues on the functional assessment changes, but no real time line on completion. An update to the current wetland indicator plant list will be coming, likely in late summer 2015. This update will include an additional 200 species.

- 10:55-11:15 ***Shifting Vegetation Zones in Response to Culvert Enlargement of a Tidally Restricted Salt Marsh in Northern New England***, Shri N. A. Verrill, M.S. Biology candidate, University of Southern Maine.

Shri described her work on transitions in vegetation at Long Marsh, Harpswell, Maine following the replacement of an undersized culvert with a larger concrete box culvert. The new culvert allowed for re-introduction of tidal flow and an increase in salt water intrusion. The study focused on monitoring plots as well as the boundary of vegetation (i.e., *Typha angustifolia*) to examine whether shifts in plant zones would result from an increase in saltwater. Salinity in plot sets (in 2014) increased, as compared to reference conditions, and the monitoring showed changes in both the border of *Typha* as well as increase in stressed plants by the end of one growing season.

- 11:15-11:35 ***Comparative Population Structure of Vernal Pool Amphibians in Changing Landscapes***, Jared Homola, Ph.D. Ecology and Environmental Sciences Candidate, University of Maine-Orono.

Jared began by describing his research objectives which include quantifying inter-population structure for wood frogs and spotted salamanders and identifying potential barriers to gene flow between populations. Analysis was completed in 2014 on 1,228 spotted salamanders (collected from 65 sites), as well as 1,190 wood frogs (from 60 sites). Preliminary conclusions of the genetic analysis show that genetic structure is present within both species (strongest in wood frog populations) and that structuring may be the result of anthropogenic landscape fragmentation. Jared's next steps include closer analysis of evolutionary consequences of environmental change (i.e., urbanization/climate change) as well as looking at gene flow within the urban environment as compared to rural environments.

- 11:35-11:50 ***Maine Invasive Species Network (MISN) Update***, Nancy Olmstead, Invasive Plant Biologist, Maine Natural Areas Program.

The MISN is an informal network of professionals to share information and collaborate on invasive species and pests. Membership is approximately 100 members. In 2015 the MISN annual meeting was attended by over 60 people and included break-out sessions and networking opportunities. To Join MISN, contact Lois Berg Stack at [lois.stack@maine.edu](mailto:lois.stack@maine.edu), indicate your area of expertise, professional title, organization/business, and contact information. Nancy went on to describe the online iMapInvasives tool which is designed to map invasive species, track treatments, and is a free tool hosted by the Maine Natural Areas Program. The online tool is available at: [www.imapinvasives.org](http://www.imapinvasives.org). Key features of the tool include an online mapping database, free user accounts, smart phone or computer access, and the tool is ArcGIS compatible.

Currently there are over 2,000 observations including 51 species, 81 organizations participating, and 152 users. To set up an account contact [nancy.olmstead@maine.gov](mailto:nancy.olmstead@maine.gov).

### 11:50-1:20 **Lunch & Student Poster Session Break**

Following lunch, Dave Rocque made an announcement regarding the September workshop at Sebago State Park.

### 1:20-1:50 ***Maine's Wildlife Action Plan: A Collaborative Approach to the Next Ten Years of Wildlife Conservation***, Amanda Shearin, Ph.D., Beginning with Habitat Coordinator/Wildlife Planner, Maine Department of Inland Fisheries and Wildlife.

Amanda began by describing the sources for funding of game and non-game species which include Pittman-Robertson and Dingle-Johnson dollars for game species. For non-game species there was no stable source of funding for conservation until 2001 and now funding is through the State Wildlife Grant (SWG) program. In order to qualify for funds from the SWG, each state must develop a Wildlife Action Plan. Currently Maine receives ~\$48 million from the SWG program. A wildlife action plan requires the following:

- Species of greatest conservation need (SGCN)
- Habitats
- Stressors
- Conservation actions
- Monitoring standards
- Coordination with partners
- Public participation

Maine's first action plan was developed in 2005 and at that time 213 SGCN were identified. There were 21 key habitat types, 140 focus areas of statewide ecological significance, and hundreds of potential stressors identified. From the 2005 plan several conservation steps were taken, but in order to qualify for the SWG, the plan must be updated every 10 years. October 1, 2015 is the deadline for the submittal of updated wildlife action plans. The 2015 plan includes more prioritization, collaboration, performance monitoring standards, adaptive management, and climate change issues. The 2015 plan has also moved to an interactive online tool, rather than a larger bound document. The revision is largely complete, with only the conservation actions, monitoring standards, and review to be completed before October. Draft documents are available online at [www.maine.gov/ifw/wildlife/reports/MWAP2015.html](http://www.maine.gov/ifw/wildlife/reports/MWAP2015.html).

### 1:50-2:20 ***The Changing Climate of Asset Management at Maine Department of Transportation (Maine DOT)***, Judy Gates, Environmental Office, Maine DOT.

Judy started off her presentation by presenting data which illustrated the projected sea level rise as a result of current modeling predictions as well as the observed changes in precipitation from the 1900s through the current day and compared this to the capacity of current infrastructure. Federal Highway Administration (FHWA), Order 5520, Transportation System Preparedness and Resilience to Climate Change and Extreme

Weather Events, was provided on December 15, 2014. This order integrates consideration of climate change and extreme weather risks into planning, operations, and policy. Judy described the need for cost and benefit analysis in determining the need for structure replacement and that there is always uncertainty with regard to the occurrence of severe weather events.

2:20-2:50 ***StreamStats-It's a Snap***, Charles Hebson, Ph.D., Chief Hydrologist and Manager of the Surface Water Resources Division, Environmental Office, Maine DOT.

Charles began by providing a brief introduction to the StreamStats tool, which is an online web-based application for standard regression based hydrology. Regression hydrology is a simple, purely statistically method which is based on the watershed area and sometimes precipitation, wetlands, slope, geology, and location. Originally these regression equations were developed with paper maps, scales, and planimeters. Currently GIS software and databases are used to develop the information included. StreamStats was developed by the U.S. Geological Survey and was funded by the Maine DOT. The application is a “point and click” application which is freely available with no specific skills required. Key elements of the application include digital elevation models (DEMs), pre-processed state-wide stream network data, and other pre-existing data coverages. The online tool allows for the development of regression equations for streams within the state for users which input the required information.

2:50-3:20 ***Investigation of the Potential for Tidal Marsh Migration***, Elizabeth Hertz, Planner, State of Maine, Department of Agriculture, Conservation and Forestry.

Elisabeth began by describing the funding partners for the project which include the Maine Coastal Program, National Oceanic and Atmospheric Administration, United States Environmental Protection Agency, and the Maine Outdoor Heritage Fund. Assistance was also provided by Municipal Planning and Assistance, the Maine Natural Areas Program, and the Maine Geological Survey. The project area included two general locations, the south coast and the east coast. Analysis elements included land cover, freshwater wetlands (NWI), conservation lands, coastal ecoregions, and planning considerations. The project included the following steps:

- Mapping of tidal marshes;
- LiDAR ground truthing;
- Sea level rise simulations;
- Marsh migration analysis; and
- Communication of results.

Elizabeth described the methods required to map and simulate sea level rise in both the south coastal and east coastal regions, and then presented examples of the potential impact to marsh migration based on several scenarios. Elizabeth then provided examples which showed the importance of utilizing results from the work in planning scenarios.

3:20-3:40 **BREAK**

4:02-5:11 **Annual Business Meeting**

Rich called the annual business meeting to order at 4:02 PM. Rich expressed his thanks for his time as the MAWS President and introduced Brad Agius, as the current President. Brad thanked Rich and the MAWS membership and began the slate of items with the Executive Committee updates:

### **Executive Committee**

#### **Secretary's Report:**

Meeting minutes from the 2014 annual business meeting were presented in the Obligate. Chris Dorion made a motion to accept the meeting minutes as presented in the 2015 Obligate. The motion was seconded and then passed. None opposed.

#### **Treasurer's Report:**

The 2014 treasurer's report was presented in the 2015 Obligate. Tim gave an overview of MAWS finances; the current balance is \$5,000, which is similar to the previous year. Tim noted that the wetlands functions and values workshop did very well and resulted in \$2,375 from registration fees.

There was a question regarding the joint workshop between the Maine Association of Professional Soil Scientists and MAWS, and whether MAWS received a portion of the funds raised by the workshop.

Tim: MAWS volunteered time, in the future we should make sure that the fees are split.

Chris Dorion moved to accept the treasurer's report as presented in the 2015 Obligate.

The motion was seconded, none opposed. The motion passed.

Brad took a moment to thank Tim for his excellent work during his two terms as MAWS treasurer.

### **Program Update**

#### **Ethics Report:**

Lee provided a review of the stipend results: last year we awarded \$500 research stipends to each of two graduate students, Jared Homola and Shri Nageshvari Verrill.

Lee noted that she had looked into continuing education hours for ethics classes for New Hampshire and for other wetland groups, but there is no real specific need for MAWS to provide ethics courses. Lee noted that if others were interested in ethics, to contact her.

Rich- The ethics course presented by MAWS was not well attended

Q: There was a question as to whether the title of Ethics Chair could be changed to educational liaison or something similar.

A: The position is named in the MAWS bylaws.

Q: Regarding the MAWS research stipend, is it something MAWS can afford?

A: (Tim): Depends on the program turn-out.

Q: Is the stipend not enough money to encourage students to apply?

A: (Lee): The amount is in-line with other programs/organizations.

(Shri): The amount of money provided is fine, seeking out the request is difficult.

Chris moves to increase the stipend amount from \$1,000 to \$1,500.

Q: (Rich): Is the \$1,000 stipend award written in to the MAWS constitution?

A: (Tim): No, the amount is not specified.

Johanna seconds Chris's motion to increase the stipend amount to \$1,500. The motion was seconded, none opposed. The motion passed.

#### Legislative Report:

Legislative updates were covered during the meeting.

#### Membership Report:

From the Obligate: *MAWS gained eight new members in 2014 and welcomed back one old member. I received a number of requests last year to update physical or email addresses. I plan to post an updated membership list soon, so please check the membership tab on the website.*

#### Program Report:

An update of program activities was given during the meeting.



## **Standing Committee Report**

### **Vernal Pool Technical Committee:**

Roger: The protocol is no longer a “Draft.”

There was discussion as to whether MAWS should develop a stream identification protocol, similar to the vernal pool document.

## **Other Items**

### **Elections:**

President Elect: Danielle Tetreau

Treasurer: Lee Burman

Ethics: Kevin Ryan/Shri Verrill (Kevin UMO/ Shri USM)

Legislative: Rod Kelshaw

Rich asked for nominations from the floor, none were presented.

Chris Dorion moved to elect the slate of nominations as presented, Roger seconded. The motion passed, none opposed.

There was discussion following the elections: Lauren Leclerc will move into the role of Obligate editor and management of the MAWS Facebook account.

The issue of MAWS starting a Twitter account was raised.

(Rich): MAWS EC won't likely tweet due to lack of technical expertise. In addition “Tweeter” is a fad, like the internet.

(Rod): It's good for the kids.

### **Envirothon:**

Rich mentioned the merits of the program and that MAWS has been a longtime supporter of Envirothon.

Lee Burman moved to provide the customary \$1,000 to Envirothon.

Chris Dorion seconded. None opposed, the motion passed.

Open Floor Discussion:

Sarah brought up potential topics for the 2016 MAWS annual meeting and noted that getting students involved would be good. Rod mentioned that student involvement can be tricky.

Jim Boyle presented the idea of a mentoring program for younger wetland scientist hoping to enter the field. The idea was tabled for further discussion.

(Tim): Lee will take over the PO Box address for MAWS mailings.

Chris Dorion moved to adjourn the meeting. Tim seconded the motion. Meeting adjourned at 5:11 PM.

Respectfully submitted by:  
Steve Knapp  
MAWS Secretary  
January 19, 2016



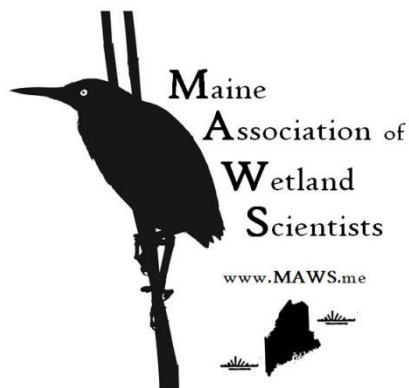
<b>MAWS Financial Statement - 2015</b>		
<b>From January 01, 2015 - December 31, 2015</b>		
Respectfully Submitted to MAWS Membership, February 24, 2016, by Aleita Burman, Treasurer		
	Beginning Balance 01/01/15	\$ 5,966.92
	Ending Balance 12/31/15	\$ 7,120.06
<b>INCOME</b>		
1	Annual Meeting (Bowdoin College - 24Mar2015)	\$ 4,060.00
2	Membership Dues	\$ 2,153.49
3	MAWS Merchandise	\$ 150.00
4	MAWS Share of Sebago Lake Workshop	\$ 514.00
5	MAWS After Dark (Invasive Plants Web Reporting)	\$ 74.00
6	MAWS Winter Twig Workshop (pre-January sales)	\$ 71.91
	<b>(A) TOTAL INCOME</b>	<b>\$ 7,023.40</b>
<b>EXPENDITURES</b>		
1	Annual Meeting (Bowdoin College - 24Mar2015)	\$ 3,220.66
2	MAWS After Dark (Invasive Plants Web Reporting)	\$ 250.00
3	Envirothon Grant	\$ 1,000.00
4	Student Research Stipend Award (2@\$500)	\$ 1,000.00
5	MAWS Domain Name, Website Hosting	\$ 229.31
6	Sec. State Fee	\$ 35.00
7	BOA, Bank Fees	\$ 12.00
8	PO Box Fee	\$ 100.00
9	Stamps / Envelopes / Shipping	\$ 23.29
	<b>(B) TOTAL EXPENDITURES</b>	<b>\$ 5,870.26</b>
	<b>2015 PROFIT (A-B)</b>	<b>\$ 1,153.14</b>
<b>GAIN / LOSS</b>		
1	Annual Meeting	\$ 839.34
2	Membership Dues	\$ 2,153.49
3	MAWS Merchandise	\$ 150.00
4	Workshops	\$ 409.91
5	Envirothon Grant / Student Stipends	\$ 2,000.00
6	Other Expenses	\$ 399.60
		<b>\$ 1,153.14</b>



## MAWS Business Meeting Agenda 2016 Annual Meeting - March 31

1. President's Introduction and Update – Brad Agius
2. Executive & Standing Committee Updates
  - Secretary Update (approval of minutes from 2015 annual meeting) – Steve Knapp
  - Program Chair Update – Sarah Watts
  - Legislative Chair Update – Rod Kelshaw
  - Treasurer Update – Lee Burman
  - Membership Chair Update – Katelin Nickerson
  - Ethics Chair Update – Kevin Ryan and Shri Verrill
  - Ad-hoc Subcommittees:
    - Education/Student Outreach Committee – Lee Burman
    - Vernal Pool Technical Committee – Roger St. Amand
    - Outreach Committee (maws.me & Obligate) – Dave Brenneman and Lauren Leclerc
3. Executive Committee Elections (*2-year terms*)
 

Open Committee Chair Position	Nominees ( <i>nominations will also be accepted from the floor</i> ):
Secretary	Audie Arbo
Program Chair	Sarah Watts ( <i>incumbent</i> )
Membership Chair	Katelin Nickerson ( <i>incumbent</i> )
4. MAWS Research Stipend Discussion and Award Vote
5. Envirothon Donation - Discussion and Award Vote
6. Open Floor Discussion
7. President's Closing Message, Meeting Adjourns



**Maine Association of Wetland Scientists  
Winter Conference & Annual Meeting  
Thursday, March 31, 2016  
Thorne Hall (Bldg 67), Bowdoin College, Brunswick, ME  
(See attached map showing location and parking)**

**Maine Wetlands: Science and Future Challenges  
AGENDA**

- 8:00 – 8:25 **Registration**
- 8:25 – 8:30 **Welcome, Introduction of Speakers**, Brad Agius, MAWS President
- 8:30 – 9:30 **Maine Wetlands: Science and Future Challenges**, Dr. Aram Calhoun, Professor of Wetlands Ecology, Department of Wildlife, Fisheries, and Conservation Biology, University of Maine – Orono (60 Min)
- 9:30 – 9:50 **MDEP Regulatory Update**, Mike Mullen, Maine Dept. of Environmental Protection (20 min)
- 9:50 – 10:10 **USACE Regulatory Update**, LeeAnn Neal, U.S. Army Corps of Engineers New England District (20 min)
- 10:10 – 10:30 **LUPC Wetlands/Regulatory Update**, Stacie Beyer, Senior Planner, Land Use Planning Commission (20 min)
- 10:30 – 10:45 **Break**
- 10:45 – 11:05 **An update on nongame wetland species and habitat projects at MDIFW**, Dr. Philip deMaynadier, Wildlife Biologist, Maine Department of Inland Fisheries and Wildlife (20 min)
- 11:05 – 11:25 **Wood frog tadpole health and survival along an urbanization gradient**, Carly Eakin, Ph.D. Candidate, Wildlife, Fisheries, and Conservation Biology, University of Maine - Orono (20 min)
- 11:25 – 11:45 **Spartina alterniflora and Phragmites australis: Effects of Nutrients, Temperature, and Competition in mesocosms**, Rene Legault, M.S. Candidate, Biological Sciences, University of New England, Biddeford (20 min)
- 11:45 – 12:00 **Sebago Workshop II & ENVIROTHON Plug**, Dave Rocque, Maine State Soil Scientist (15 min)
- 12:00 – 1:15 **Lunch & Poster Session Break**
- 1:15 – 2:15 **Revisions to the Clean Water Act - Waters of the U.S.**, Erica Sachs, U.S. Environmental Protection Agency (60 min)
- 2:15 – 2:45 **What can science research contribute to the future of Maine wetlands?**, Dr. Pamela Morgan, Professor, Department of Environmental Studies, University of New England (30 min)
- 2:45 – 3:15 **Ecological Integrity Assessment: A New Tool for Evaluating Maine Wetlands**, Andy Cutko, Ecologist, Maine Natural Areas Program (30 min)
- 3:15 – 3:45 **Update on the New England Wetland Functional Assessment**, Dr. Paul Minkin, U.S. Army Corps of Engineers New England District (30 min)
- 3:45 – 4:00 **Break**
- 4:00 – 5:30 **Annual Business Meeting**

We will provide certificates of attendance for attendees at the conference for 6.5 hours of contact time for the conference and 1.5 hours for the annual business meeting. We have received approval for 6.5 hours of CEUs from the State Site Evaluator for the Subsurface Wastewater Program and 7 hours from the Maine Department of Economic and Community Development Code Enforcement Officers (CEO) Program.

## Maine Association of Wetland Scientists

### Winter Conference & Annual Meeting

Thursday, March 31, 2016

Thorne Hall (Bldg 67), Bowdoin College, Brunswick, ME

➔ Register online at: <http://www.maws.me/store>

For those that prefer, you may register on line, and send payment to:  
Aleita Burman, MAWS Treasurer, P.O. Box 145, Orrington, ME 04474

Any questions, please feel free to call or email Sarah Watts,  
MAWS Program Chair, Phone: (207) 358-2383, Email: [sarah.watts@tetrattech.com](mailto:sarah.watts@tetrattech.com)

**Registration should be received by March 21, 2016**

**No Refunds for Cancellations**

### Bowdoin College

Automated Switchboard  
207-725-3000

General Information  
(David Saul Smith Union)  
207-725-3375

Admissions  
(Burton-Little House)  
207-725-3100

Alumni Relations  
(83 Federal Street)  
207-725-3266

Communications,  
Public Affairs; Association  
of Bowdoin Friends  
(McLellan Building)  
207-725-3253

Controller's Office  
(McLellan Building)  
207-725-3737

Development  
(85 Federal Street)  
207-725-3404

Events and Summer  
Programs  
(Coles Tower)  
207-725-3433

Hawthorne-Longfellow  
Library  
207-725-3280

Human Resources  
(McLellan Building)  
207-725-3837

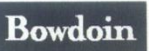
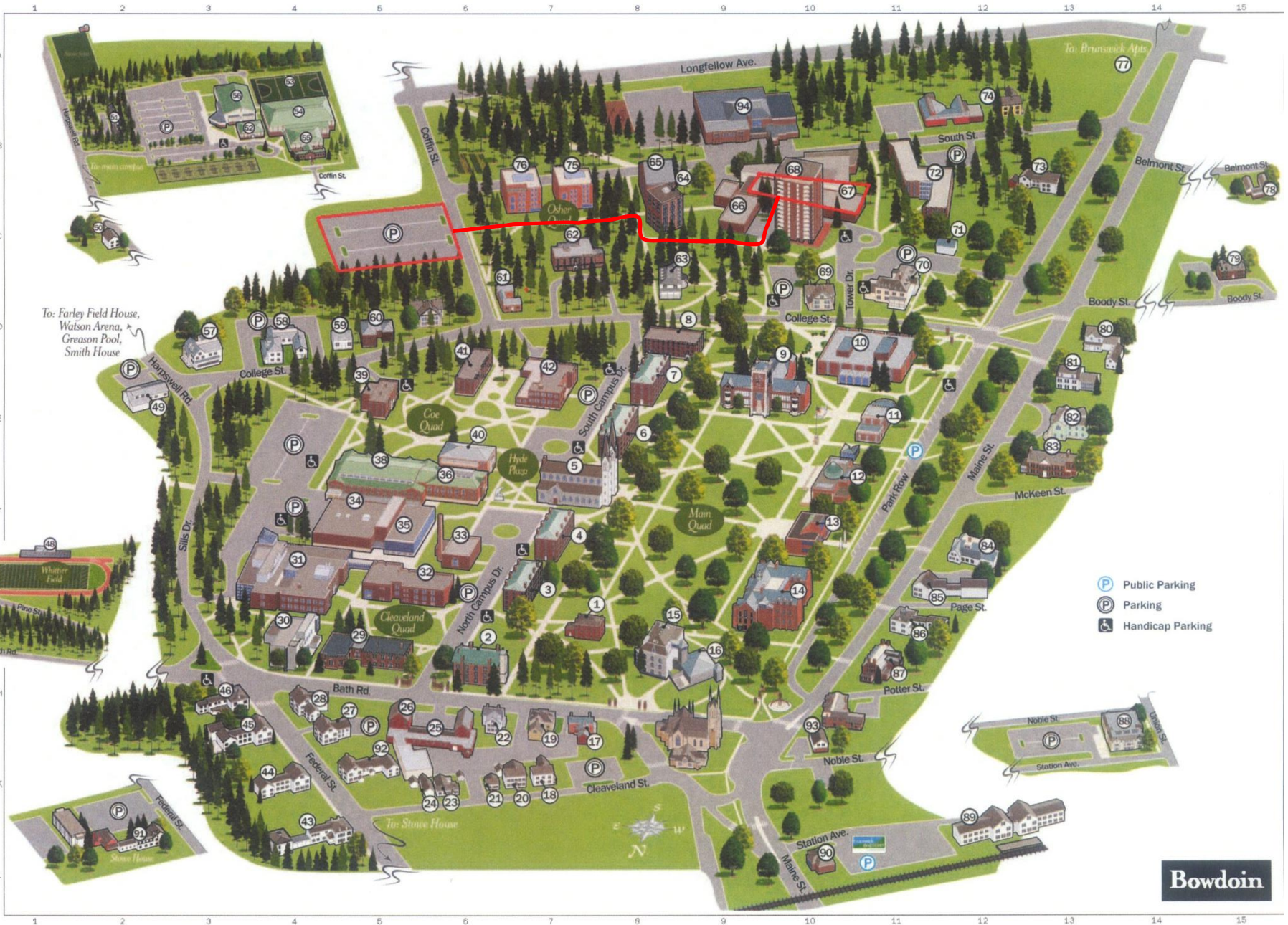
Bowdoin College  
Museum of Art  
207-725-3275

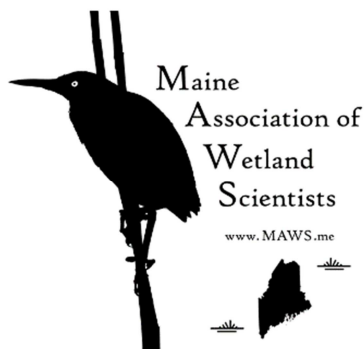
Peary-MacMillan  
Arctic Museum  
(Hubbard Hall)  
207-725-3416

Safety and Security  
(Rhodes Hall)  
207-725-3314  
Emergency-725-3500

Sports Information  
(Sidney J. Watson Arena)  
207-725-3061

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**Maine Association of Wetland Scientists**  
**Bat Workshop**  
**Wednesday, March 09, 2016 8:00AM - 12:00PM**  
**Viles Arboretum**  
**153 Hospital Street, Augusta, ME 04330**

The Maine Association of Wetland Scientists (MAWS) is hosting a Bat Workshop with the Regulators! You will learn basic biology and ecology of the recently listed bat species in Maine, the State and Federal regulations regarding the listings, and the practical implications being faced. Please join us! (Seating is limited to 100 - please register early)

**Agenda**

- |                     |  |
|---------------------|--|
| 8:00 AM - 8:30 AM   | <b><i>Registration</i></b> (coffee and breakfast snacks will be provided)  |
| 8:30 AM             | <b><i>Welcome and Introduction of Speakers</i></b>   |
| 8:30 AM - 9:10 AM   | <b><i>Bat Biology, Ecology and Habitat:</i></b> David Yates, Biodiversity Research Institute   |
| 9:10 AM - 9:30 AM   | <b><i>Regulations - IF&amp;W Perspective:</i></b> Cory Mosby, Maine Department of Inland Fisheries and Wildlife  |
| 9:30 AM - 10:00 AM  | <b><i>Regulations - US FWS Perspective:</i></b> Wende Mahaney, U.S. Fish and Wildlife Service  |
| 10:00 AM - 10:45 AM | <b><i>Bat Studies and Practical Implementation:</i></b> Eric Ham and Sarah Boyden, Maine Department of Transportation  |
| 10:45 AM - 11:00 AM | <b>Break</b>   |
| 11:00 AM - 12:00 PM | <b><i>Roundtable Question and Answer:</i></b> David Yates, Biodiversity Research Institute; Cory Mosby, IF&W; Wende Mahaney, US FWS; Eric Ham, MDOT; Sarah Boyden, MDOT; Peter Tischbein, U.S. Army Corps of Engineers |

MAWS Members \$25 / Non-Members \$35

Register on-line at [www.mainewetlands.org/store](http://www.mainewetlands.org/store) or [www.maws.me/store](http://www.maws.me/store)

We will provide certificates of attendance for workshop attendees for 3.5 hours of contact time.