AERF NEWS
Aquatic Ecosystem Restoration Foundation
Restoration
Research
Regulatory

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David Petty, Editor

President's Address

Joel Fruendt

2012 was a busy year for the AERF, and we transformed our focus in many areas. You will notice the new logo and color scheme that relates to our increased attention and commitment to the environment and sustainable water resources. In addition, a new mission statement was developed:

Mission: *The Aquatic Ecosystem Restoration Foundation is committed to sustainable water resources through the science of aquatic ecosystem management in collaboration with industry, academia, government and other stakeholders.*

The concept of sustainable water resources puts our industry in the spotlight of one of the world's biggest problems – the global water crisis. Our challenge is in performing our work with minimal environmental impact while insuring the availability of healthy water for years to come. We are not unique, though, as sustainability has become a top priority for many businesses and organizations as they aspire to balance business practices with deference to the environment and the requirements of future generations.

I recently attended the 79th annual meeting of the American Mosquito Control Association, (AMCA), a fairly intense program that traditionally is focused on mosquito biology, control and disease transmission appealing to the needs of attendees from mosquito control districts, academia, health and regulatory agencies. This year, though, a new symposium entitled "Sustainability within the Mosquito Control Industry" introduced an entirely new dimension to the program and the industry at-large. This symposium included speakers that sought to introduce the relevancy of incorporating sustainable initiatives to the business of mosquito control. It was readily accepted by the audience and provoked an energetic dialogue that hopefully will continue beyond the AMCA annual meeting.

So, what does this have to do with the AERF and Sustainable Water Resources? Everything, that is, if you feel that a sustainability journey is important and an opportunity to transform our industry. We should welcome the opportunity to examine new ways to conduct our work that addresses not only our current needs, but those of generations to come. What a significant and exciting vision!

Your thoughts? Post them on the AERF Facebook page under Sustainable Water Resources

Endangered Species Tool

The US Fish and Wildlife Service has established a website (http://ecos.fws.gov/ipac/) called the Information, Planning, and Conservation System. The initial scope of the project is to find out if any threatened or endangered species, designated critical habitat, or other natural resources of concern may be affected by your proposed project and then receive a list of conservation measures (or best management practices) designed specifically for your activity types. In the future it will have the capability to get USFWS-recommended project design measures that help you avoid anticipated effects on proposed and listed species. With the upcoming IPaC Project Manager tool, you will have a way to enter the details of your projects, such as actions, locations, and timelines, and have IPaC provide a more narrowed and refined list of project design measures. Based on this information and input from you, IPaC can then assist you in creating your Biological Assessment and other Environmental documents.

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Robofish Grace glides with the greatest of ease

Tom Oswald and Xiaobo Tan, Michigan State University (*reprinted by permission*)

A high-tech robotic fish hatched at Michigan State University has a new look. A new skill. And a new name.

MSU scientists have made a number of improvements on the fish, including the ability to glide long distances, which is the most important change to date. The fish now has the ability to glide through the water practically indefinitely, using little to no energy, while gathering valuable data that can aid in the cleaning of our lakes and rivers.

Designed and built by Xiaobo Tan, MSU associate professor of electrical and computer engineering, and his team, the fish is equipped with an array of sensors that not only allow it to travel autonomously, but also measure water temperature, quality and other pertinent facts. It is currently equipped with a Turner Designs Cylops 7 sensor which can measure rhodamine dye concentrations as well, the fish can be adapted to carry other water quality sensors conforming to its power and weight limitations.

"Swimming requires constant flapping of the tail," Tan said, "which means the battery is constantly being discharged and typically wouldn't last more than a few hours."

The disadvantage to gliding, he said, is that it is slower and less maneuverable.

"This is why we integrated both locomotion modes – gliding and swimming – in our robot," Tan said. "Such integration also allows the robot to adapt to different environments, from shallow streams to deep lakes, from calm ponds to rivers, with rapid currents."

The robot's ability to glide is achieved through a newly installed pump that pushes water in and out of the fish, depending on if the scientists want the robot to ascend or descend. Also, the robot's battery pack sits on a kind of rail that moves backward and forward, in sync with the pumping action, to allow the robot to glide through water on a desired path.

The robotic fish now has a name: Grace, which stands for "Gliding Robot ACE."

Late last year Tan and his team took Grace for a test drive on the Kalamazoo River, where it exceeded all expectations.

"She swam at three sites along the river and wirelessly sent back sensor readings," Tan said. "I'm not sure, but we may have set a world record – demonstrating robotic fish-based sampling with commercial water-quality sensors in a real-world environment."

The Kalamazoo River is the site of a 2010 oil spill. Interestingly, the robot's crude oil sensor had some readings upriver from where the spill occurred, although the readings downstream from the spill site were higher.

Underwater gliders, or seagliders, are becoming more common in oceanography. In fact, one traveled all the way across the Atlantic Ocean in late 2009.

One major difference in Grace is that, aside from its swimming capability, it is about 10 times smaller and lighter than a commercial underwater glider.

Tan's research is supported by the National Science Foundation. For more information contact Dr. Tan at xbtan@egr.msu.edu

A Review of Aquatic Plant Monitoring and Assessment Methods

This new whitepaper, prepared by John Madsen and Ryan Wersal of the Geosystems Research Institute of Mississippi State University is now available in PDF format on the website under the publications menu item. Hard copies are also available through Carlton Layne.

The paper explores various methods for the immediate and long-term evaluation and assessment of aquatic plant and weed populations towards the goal of providing some standardized techniques for lake managers and applicators, in order to assist in the NPDES aquatic pesticide monitoring program requirements.

2013 Short Course Announcement

AQUATIC WEED CONTROL
SHORT COURSE

The University of Florida IFAS Annual Aquatic Weed Control Short Course will be held from May 6 through May 9, 2013 at the Coral Springs Marriott and brings together more than 400 applicators, educators, and industry representatives to learn new techniques and refresh core competencies in aquatic and upland weed control. This course focuses on invasive and exotic species affecting Florida and provides many networking opportunities so that participants may share field experiences and lessons learned. The conference is divided into two types of sessions – general sessions which cover CORE standards and concurrent sessions on Aquatics, Right-of-Way and Natural Areas. Participants have the flexibility to attend multiple sessions in order to reach their CEU credit requirements. Up to 22 Florida CEUs may be earned by attending this short course in categories that include Aquatics, Natural Areas, Rights-of Way, Demo & Research, Forestry, Private, Regulatory and CORE/ General Standards. For those looking to become licensed applicators, the course offers CORE and category testing at the conclusion of the course, as well as an exam study session the evening before exams.

You should plan to join us at Short Course if you:

- Need Florida CEUs to keep your pesticide applicator license current.
- Are responsible for aquatic weed control in canals, lakes, golf course ponds, rivers, parks, residential developments and other waterways.
- Operate and calibrate herbicide and pesticide application equipment.
- Are employed by a public agency or private company which is responsible for vegetation management along right-of-ways and in natural areas.
- Are an employee of a manufacturer or distributor that markets aquatic or vegetation management herbicides.
- Use biological control techniques to suppress aquatic weed growth.
- Need to identify or grow aquatic and wetland plants.
- Establish and maintain wetland mitigation areas.

For more information, please visit the Aquatic Weed Control Short Course website at:

http://conference.ifas.ufl.edu/aw/ or contact Dr. Lyn Gettys (lgettys@ufl.edu).

Use of 2,4-D for Eurasian Watermilfoil Restricted in NY

The New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources recently released the document "Recommendations Regarding the Use of Aquatic Herbicides in Fish-Bearing Waters of the State".

The document sets forth the following rule for the use of 2,4-D products:

The Bureau of Habitat considers all 2,4-D formulations acceptable for use, as long as all products are applied in accordance with their label and the limitations listed in regulation.
Regulations were promulgated in 6NYCRR Part 327.6(c) that specifically govern the use of 2,4-D in New York State above and beyond the product labels. Those regulations include the following restrictions:

A. Authorized only for the control of emergent plants having a large part of their leafy growth projecting above or lying flat on the water surface;
B. Use restricted to late spring or early summer when the chemical is most effective;
C. Use of chemical solutions (i.e., liquid formulations) for dosage of up to eight pounds active ingredient per acre may be permitted in the treatment of dense stands. Use of pellets for subsurface application requires special authorization.
D. The treatment area shall not extend beyond 200 feet from shore or beyond a maximum depth of six feet, whichever gives the greater distance from shore.
E. Use of waters for irrigation shall be prohibited for a period sufficient to permit the decay of phytotoxicity (i.e., plant toxicity). The treated waters and those waters affected by the treatment shall not be used for other purposes during the treatment and for at least 24 hours thereafter.

2,4-D is often proposed for use to control of Eurasian watermilfoil. Eurasian watermilfoil is not classified as "emergent" vegetation, however, the use of 2,4-D has been justified because at full growth, milfoil gives the appearance of being emergent because it can produce mats of leafy growth projecting above or lying flat on the water surface. Like most other herbicides, 2,4-D is most effective when target plants are rapidly growing, which is in the spring or early summer, well before milfoil reaches the stage when leafy growth projects above the water's surface. In years past, 2,4-D was the only systemic herbicide active ingredient available for control of Eurasian watermilfoil. Now, there are three systemic herbicide active ingredients available for Eurasian watermilfoil control – fluridone, triclopyr, and imazamox. Given the availability of other products for Eurasian watermilfoil control, DFWMR strongly recommends that until such time as they are changed, the provisions of 6 NYCRR Part 327.6(c) be strictly interpreted, and 2,4-D should not be used for control of Eurasian watermilfoil.

NYCRR Part 327.6 does not explain what constitutes the "special authorization" needed for the use of granular, pelletized formulations of 2,4-D. In the absence of other guidance, the approval of an Article 15 permit application to use granular 2,4-D products by the Regional Pesticide Control Specialist should be construed as the necessary special authorization required by the regulations. The entire document can be viewed at: www.dec.ny.gov/docs/fish_marine_pdf/aquaticherbicide2012.pdf

New Search Engine For Regulatory Information on Pesticides

EPA has released Pesticide Chemical Search, a new Web-based application that will allow users to easy access to chemical-specific information from the Office of Pesticide Programs' website and several other important sources. Pesticide Chemical Search is designed to consolidate information related to pesticide chemicals (active ingredients), making it easier to find related regulatory and scientific information: www.epa.gov/pesticides/chemicalsearch

The new application collects existing Web pages on specific chemicals on EPA's Office of Pesticide Programs' website and allows users access to this information through a single portal. Users will also be able to quickly find the current status of a chemical and where it is in the review process.

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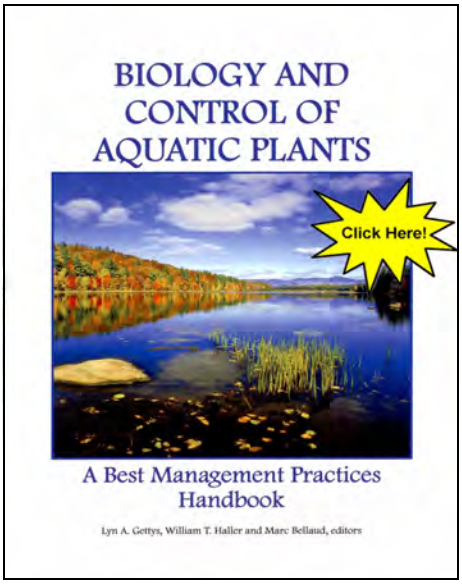

Sponsorship

The AERF respectfully requests that you consider sponsorship. AERF will continue to work on your behalf, and as a member, you will greatly benefit from our work on regulatory and research aspects of aquatic plant management. With changes in the regulatory environment now and in the future, it is essential to be involved and to support all the hard work of your AERF associates.

Please contact Carlton Layne for information on how you can best participate.

The AERF Mission

The Aquatic Ecosystem Restoration Foundation is committed to sustainable water resources through the science of aquatic ecosystem management in collaboration with industry, academia, government and other stakeholders.

Strategic Goals

- Provide the public information concerning the benefits and value of conserving aquatic ecosystems including the aquatic use of herbicides and algaecides in the aquatic environment.
- Provide information and resources to assist regulatory agencies and other entities making decisions that impact aquatic plant management.
- Fund research in applied aquatic plant management at major universities.

Upcoming Meetings

July 13-17	**APMS: San Antonio, TX**
September 16-18	**Midsouth APMS: Tunica, MS**
October 14-17	**Florida APMS: St. Augustine, FL**

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