

2: What are the implications of subjecting aquatic pesticide applications to CWA NPDES permits?

In addition to meeting the requirements of FIFRA and specific product labels, entities involved in these pesticide applications would be required to meet numerous planning, performance, recordkeeping and reporting requirements contained in CWA NPDES permits. Violations of the CWA's NPDES permitting requirements could subject an entity to civil and criminal penalties, and citizen suits. Fault is not required to support liability. Instead, enforcement of NPDES permits is based on "strict liability" (even if the permittee did not mean to violate its permit, it is liable for the results). For more information on enforcement, go to <http://green-law.org/net/content/page.aspx?s=19506.0.101.19069>

3: What factors determine if an NPDES permit is needed for aquatic pesticide applications?

The Clean Water Act (CWA) makes it unlawful to discharge a pollutant from a point source to a waters of the US without an NPDES permit. Each of these underlined factors is legally defined and, for pesticides, has been the subject of court decisions. As a result of these decisions, applications of aquatic pesticides are considered "discharges," the excess pesticides or residues that remain in the water after the product has performed its intended beneficial use are considered "pollutants," the hoses, nozzles or airplanes that apply the pesticides are considered "point sources," and the lakes, rivers, creeks and other jurisdictional waterbodies are "waters of the US."

4: EPA's November 2006 aquatic pesticide rule was intended to clarify these policy issues and determine when pesticides could be classified as "pollutants." What did that rule state?

EPA's promulgated final rule [71 Fed Reg 68.483 40 CFR Part 122. 11-7-06] sought to clarify that no NPDES permits were needed for pesticides when applied according to the FIFRA label. EPA ruled those pesticides were not "chemical wastes" or "pollutants" when applied directly "to," or "over" including "near" waters of the US, where some of the pesticide could unavoidably enter waters of the US, on the basis that "they are products that EPA has evaluated and registered for the purpose of controlling target organisms, and are designed, purchased, and applied to perform that purpose." EPA also ruled that any excess pesticide or residues remaining in water beyond the intended treatment period are "nonpoint source pollutants," for which no NPDES permit is required. Spray drift was not addressed by EPA's rule.

 Letter from the President

By: Larry Feller, Syngenta



I guess we can officially say the drought is over for now. As I crossed the Broad River recently, it is obvious that we have plenty of flowing water for the time being. With all this moisture, one would think we should plan for an increase in the spread of invasive aquatic species.

The challenge will be paying for what needs to be treated. With budget cuts and tough times, it is important to utilize your resources to the best of your ability, which I know you will. I would like to thank you for writing letters and calling your legislators on behalf of the SC state budget cut proposals that will affect a significant percentage of our society. It is important that we make our voices heard so Senators and Representatives know the importance

that aquatic plant management plays in the overall welfare of NC, SC, and GA.

Also, several members from SCAPMS are on the schedule to meet with the full SC House Ag committee to discuss the NPDES rulings. We have an opportunity to assist in the fight to reverse the 6th circuit court ruling via legislators and if not successful there, we have the opportunity to be a voice for reason when it comes to implementation of NPDES permits.

Please continue writing and calling legislators to encourage them to fight to get the ruling overturned and put the fate of NPDES in the hands of the legislative body of Congress.

Respectfully, Larry Feller

NPDES Extra...

1: What is the EPA undertaking?

As a result of a 2009 6th Circuit Court ruling that "aquatic" pesticide applications are subject to the Clean Water Act (CWA), EPA is developing general NPDES permits to regulate those ("aquatic") pesticide applications made "to," "over" or "near" waters of the US.

See page 6 of this newsletter for more answers to some of the most common questions concerning NPDES permitting and how it may affect applicators.

Inside this issue....

Letter from the President

Member of the Year: Dr. John Rodgers

**Phillip M. Fields Scholarship winner:
Amanda Rotella**

**Santee Cooper: Update on Crested
Floating Heart**

Call for APMS papers



2009 SCAPMS Member of the Year: Dr. John H. Rodgers



At the 48th annual meeting of the SC Aquatic Plant Management Society Dr. John H. Rodgers Jr. was selected as member of the year for 2009.

John H. Rodgers Jr. has been working in the aquatics industry for over 30 years. He received his B.S. in Botany in 1972 and his M.S. in Botany/Plant ecology in 1974 at Clemson University. While serving his country in the U.S. Airforce, he earned his Ph. D. in Botany/Aquatic Ecology from Virginia Polytechnic Institute and State University, Blacksburg, VA in 1977. Shortly after he began his professorship at East Tennessee State University (1yr) followed by the University of North Texas (~ 10 years), the University of Mississippi (~10 years), and finally making his current home, at his alma mater, Clemson University where he has been since 1998.

Through the years Dr. Rodgers has published hundreds of peer-reviewed journal articles, as well as book chapters, and government documents. He has served on committees and/or advisory panels for this society as well as APMS, the Society of Environmental Toxicology and Chemistry, the National Council for Air and Stream Improvement, the USDA Jimmy Carter Plant Materials Center, and countless others.

To date over 75 students have graduated with either a M.S. or Ph.D. from Dr. Rodgers program, many of whom have gone on to be influential in aquatic sciences, specifically in aquatic toxicology. He is known for his dedication to his students and for preparing them for what awaits them after graduation.

Dr. Rodgers has been a very supportive member of SCAPMS for many years. He encourages his students to present at our annual meetings and support the Society in many other ways. He has assisted the SCAPMS Board with writing position papers as well as help to host annual meetings.

Many thanks goes out to Dr. Rodgers for his exceptional dedication and exemplary service to the society in the past year. It should be noted that Dr. Rodgers will continue working with the society in a big way as he is set to be the president of the society in 2010-2011.



Call for Student Papers!

The Aquatic Plant Management Society (APMS) is soliciting student papers for the upcoming 50th Annual Meeting of the Aquatic Plant Management Society. The meeting will be held July 11-14, 2010 at the beautiful Hyatt Regency Coconut Point; Bonita Springs, Florida. Oral and poster presentations of original research on the biology or ecology of aquatic and wetland plants, control methods (biological, chemical, cultural, mechanical) for invasive exotic or nuisance native plant species, and restoration projects involving wetland or aquatic plants are solicited. Twenty-six students from 12 universities participated in the 2009 annual meeting; this was a record for student participation that we hope to surpass at the 2010 meeting.

The APMS has a strong ethic of student support and all qualified attendees will be provided room accommodations (based on double occupancy) and waiver of registration fees. In addition, 1st, 2nd, and 3rd place prize money will be awarded in separate contests for both oral and poster presentations. This meeting presents an opportunity for students to develop their presentation skills, learn about the field of aquatic plant management, and network with key Government, University, Industry representatives and peers with similar educational and professional interests.

The meeting will conclude with an optional 2-day (July 15, 16) student tour of regional programs related to aquatic plant management. Last year's tour was well-attended and sponsored by the Aquatic Ecosystem Research Foundation (AERF), Lake Pewaukee Sanitary District, Dane County Aquatic Plant Management, Wisconsin Department of Natural Resources, US Army Engineers Research and Development Center, and Sepro Corporation.

Please log on to www.apms.org to learn more about the Aquatic Plant Management Society and this year's meeting. Students may register and submit an abstract by following the instructions under the "2010 meeting" link. The submission deadline for Title and Abstract is April 16, 2010.

For more information on the student paper contest or tour, please contact:
Dr. Rebecca Haynie at hayniers@uga.edu or by phone at (843) 991-8069



Crested Floating Heart Update (Continued)

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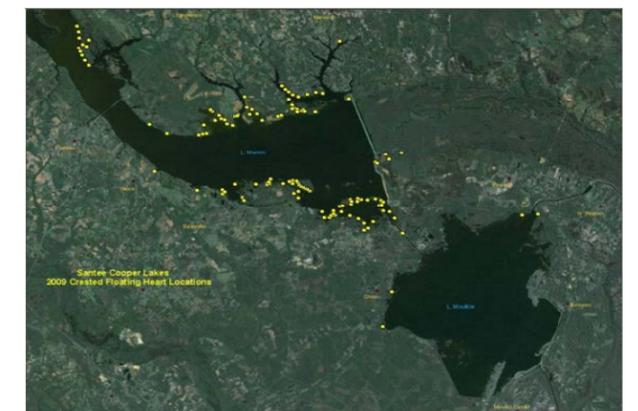
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Over the past four years Santee Cooper's Analytical & Biological Services staff has performed control operations using numerous contact and systemic EPA approved aquatic herbicides targeting Crested Floating Heart. Our most promising results to date have been subsurface applications of Aquathol K at 3.0 ppm for control in isolated coves where water movement is not an issue. The major concern for control of Crested Floating Heart is in open lake areas where the plants are growing in up to ten feet of water and subject to high energy due to wave action from wind and boating activity. Spot applications of a tank mix using Clearcast (1.0 gal./acre)/Touchdown PRO(1.0 gal./acre)/TopFilm (16 oz./acre) have shown promising results in these areas in 2009, but further evaluation of regrowth in the spring of 2010 will determine overall efficacy.

At the time of this writing, Crested Floating Heart has been identified in only one waterbody in South Carolina, outside of the Santee Cooper system. Jack Whetstone – Associate Professor/Extension Aquatic Specialist with Clemson University has identified the plant in a small pond in Georgetown County.

Crested Floating Heart has been submitted for inclusion in the South Carolina Noxious Weed List.



Maps above indicate the aggressive nature of Crested Floating Heart. Map on top shows 2008 locations while map on bottom shows 2009 information.

For further information on Crested Floating Heart in the Santee Cooper system please contact:

Chip Davis or Larry McCord at Santee Cooper.
(843) 761-8000 ext. 4564 or by e-mail at:
jmdavis@santecooper.com or rlmccord@santecooper.com



2009 Phillip M. Fields Scholarship Winner: Amanda Rotella



Ms. Amanda Rotella was chosen as the 2009 Phillip M. Fields Scholarship winner. As usual, there was very stiff competition for the award this year with 11 entries representing students from four universities around the southeast. There was a wide range of research topics covered, from nanoparticles to beach vitex, with even some research being completed at Kamfers Dam in Kimberly, South Africa.

Amanda is a student in the Coastal Marine and Wetland Studies Graduate Program at Coastal Carolina University. During the annual SCAPMS meeting held at the Madren Center in Clemson, SC she presented her research entitled "The Growth and Distribution of Water Hyacinth in a Tidal Blackwater River System, SC".

Ms. Rotella states, "*Eichhornia crassipes* (water hyacinth) is an invasive aquatic plant. It currently exists in almost all regions of the world, including Africa, Australia, China, India, and Japan. This cosmopolitan range is limited by temperature. Water hyacinth can be found in freshwater habitats ranging from shallow temporary ponds, marshes, large lakes, reservoirs, and rivers. It can also be found in slightly brackish environments as well as tidal fresh waters. Populations of water hyacinth now exist in the Waccamaw River, although vigor of these populations is questionable.

The Waccamaw River is a unique system, originating from Lake Waccamaw, NC, twisting and turning its way through North Carolina and South Carolina. It joins with the Intercoastal waterway and the Pee Dee River, finally emptying into the Atlantic Ocean near Georgetown, SC. Unlike most river systems, the Waccamaw River experiences semidiurnal tides as it approaches the coast. The boundary between fresh and brackish water, depends on precipitation, river flow, and tidal stage.

My research was to understand the growth and distribution of water hyacinth in the Waccamaw River over a growing season. An initial boat survey in March revealed only three persistent populations of water hyacinth. The populations appeared to be struggling, if not completely dead. Plants were mostly senescent with occasional signs of green tissue.

By late April there was surprising regrowth from what was thought to be dead plants. Eighteen sites were established, six in the upper Waccamaw near Peach Tree Landing, six in the mid-Waccamaw between Enterprise Landing and Bucksport Marina, and six in the lower river near Longwood Island. Spring and fall harvests were done to measure plant density within the three large populations. A salinity experiment was designed to test plant sensitivity to salinity.

The results of the study showed that mid and lower river sites had more plant growth and population growth than the upper river site. The majority of growth occurs in leaves. Biomass is greater in the back of the mats during the fall season (380 g/m²), than in the spring (200 g/m²). The salinity experiment indicated that salt levels over 3 ppt resulted in inhibited growth. The research showed that standing crop and growth can be relatively high in this system, but as plants move down the river towards higher salinity levels, they will die off."





Santee Cooper - Crested Floating Heart Update

Article Provided by:

Larry McCord, Supervisor Analytical & Biological Services Santee Cooper



Nymphoides cristata (Crested Floating Heart), an Asian native, was first identified in the Eutaw Creek area of Lake Marion in 2005. This non-native, floating leaf plant has proven to be extremely aggressive in its growth habit, as well as its spread within the Santee Cooper system. In spite of herbicide applications beginning in 2005 when the plant covered less than one acre in an isolated cove, aerial surveys in 2009 indicate some 2000 acres now infested with this invasive plant.

Early identification of this plant is extremely important in preventing its spread into other water bodies.



Nymphoides cristata, Crested Floating Heart (left in photo to left) can be misidentified as *Nymphoides aquatica*, Big Floating Heart, which is native to the southeast (right in photo). Differences in the floating leaves are the most obvious way to identify these plants. The native Big Floating Heart has thick light green leaves up to five or six inches across with dark red to purple undersides with prominent veins and a textured feel, while Crested Floating Heart has more flaccid light green leaves up to four to five inches across with a reddish, smooth underside. Identification can be confirmed by a close examination of the small white flowers arising from the stem, just below the floating leaf. Both species have white flowers, usually five petals, with ruffled edges, approximately 1/2 to 3/4 of an inch across. Crested Floating Heart flowers have a crest (cock's comb-like structure) rising from the midrib of each petal, perpendicular to the petal surface. Big Floating Heart flowers have smooth surfaces with no crest. Big

Floating Heart generally grows in protected creeks and coves and seldom covers more than one acre.

Control efforts targeting Crested Floating Heart in Lake Marion began immediately after confirmation that *Nymphoides cristata* was indeed growing in the cove in Eutaw Creek. Our identification of this species was confirmed by USGS staff in Florida, where the plant was found in the late 1990's and has continued to spread. Prior to the infestation in Lake Marion, the plant had only been identified in the state of Florida. Santee Cooper staff contacted University of Florida Center for Aquatic and Invasive Plants, Florida Department of Environmental Protection and Florida Water Management District biologists for information on effective treatment options. Aquatic herbicide manufacturer representatives were also contacted for any involvement they may have had with successful control operations in Florida. BASF, SePro, UPI, and Syngenta were among those contacted for information on control of Crested Floating Heart. (Continued on page 5)