

**LGA Trip Report & Synopsis**  
**SOUTH CAROLINA AQUATIC PLANT MANAGEMENT SOCIETY (SCAPMS)**  
**August 15, 2007 Annual Conference**  
**Written by Member of LGA Weed Committee**

SCAMPS opened on Wed, Aug 15, 2007 at 1:00 pm in Myrtle Beach, SC. Breaks were working breaks with snacks and drinks provided by the Commercial/Sustaining members. Nightly between 6 pm and 10 pm, there was hospitality “pupus” and drinks which provided a lot of one-on-one and group discussions. Professors and students from NCSU, Clemson, Mississippi State, FSU, along with other professionals gave three days of presentations on various subjects. The only speaker who was absent was Jim Malone (Grass Carp) who had a family emergency.

Dr. Bill Haller, director for the center for Aquatic and Invasive Plants, Gainesville, FL gave the Keynote address “Looking Back; 20 Years From Now”. Dr. Haller gave a synopsis of the chemical industry from 1955 until today, went over his predictions from 20 years ago (of which none came to past), and his predictions for the next 20 years (of which he said based on his previous predictions, he wouldn’t “bet the farm” that his new predictions will be any better then his previous predictions). Some data that he put out is as follows:

From 1955 to 1970, before EPA, there was no regulation on herbicides. There were over 20,000 labels from many companies. By 1980, the big six herbicides consisted of copper, diquat, endothall, 2,4,D, glyphosate, and fluridone. At that time, there was 325 herbicides labels of which 125 were too toxic, 150 wouldn’t control hydrilla (now have eliminated 275), 50 could control hydrilla, 32 had ALS inhibitors (of which 4 are coming) and 18 new herbicides have a potential for being approved. After the EPA, when testing was required, companies either merged or died. By 1999 hydrilla resistance fluridone was suspected, and confirmed in 2001. New ALS herbicides include Imazamox, Penoxsulam, and Carentrazone, which are all systemic herbicides.

Bob Burns from BASF corp gave a presentation on the Selective Control of Chinese Tallow Tree using ClearCast Herbicide. ClearCast herbicide has been found effective as a good control of hydrilla on small enclosures, but is not effective in large lakes. It works as a PGR (plant growth regulator).

Carlton Layne, Executive Director of AERF in Marietta, GA gave a presentation on Aquatic Ecosystem Restoration Foundation update. This society deals with research, education, and outreach. It promotes interaction between Federal, state and local regularity agencies.

Mike Hooks, SCDNR presented an update on the Phragmites in SC. Phragmites is a tall grass which grows so thick that nothing else can grow. They are treating 44 water bodies on a 50/50 cost share. Last year they treated 6129 acres at a cost of \$1,109,039. The ground is so wet, and the Phragmites so tall, they almost always have to treat with a helicopter. They are found mostly in coastal areas. Mike also said they treated 16,333 acres of water hyacinth at a cost of \$1,319,785. We can thank out lucky stars that we have escaped these invasive plants to date.

Larry McCord from the SC Public Service Authority presented an update on the Santee Cooper Lakes. They employed ReMetrix LLC satellite image to determine the plant growth areas. Based on that

data, they have just completed “ground truthing” for this year. (Note: They completed “ground truthing” during the height of the growing season, not in November like we do). Their goal is a total of 10% vegetation. Based on this, they are adding an additional 2,500 grass carp this year, and are placing the grass carp in the areas they found the most hydrilla during “ground truthing”. (Another note: They are not just dumping in the grass carp in the lake and letting them find the hydrilla, but placing the grass carp where the hydrilla is located. They found the grass carp do not move very far from the stocking point if there is food available. AMAZING isn't it that we haven't figured that out yet).

Rob Emens from the NCDENR gave a presentation update on the NC weed control. He informed us that Alligator Weed is becoming a big pain in the butt, and that we are controlling it with both herbicides and biological, (with the beetle which is about the size of a flea). NC spent \$333,287 last year on weeds, of which \$265,000 was spent on hydrilla, of which Lake Gaston got \$200,000. He raised the concern that Lymbya was the next big concern, mainly because we really don't understand it.

Ken Manuel, Duke Power Co. head aquatic biologist gave a presentation update on the Catawba River Basin. He talked about the water milfoil, hydrilla, and parrot feather infestations on Lake James, Lookout Shoals, and Lake Norman. I guess the most profound statement he made was that “you cannot base your eradication plan (note: he said eradication, not control as he does not believe hydrilla can be controlled or managed) of hydrilla by trying to protect the 2% or so of native vegetation”. He also stated that “Hydrilla must be eliminated, and then you can think of protecting/establishing native vegetation”.

Michael Netherland from the US Army Engineer Research and Development Center gave a presentation on the Factors that Influence the Efficacy and Longevity of Herbicide Treatments for Submerged Plant Control. This presentation explained how different herbicides worked on different plants. He raised the question of whether we were treating the water or the weed since the weed take up of the herbicide was only 1% to 5% of the product. He explained the way herbicides should be applied, as thermal gradients affected its performance, and recommended that GPS be used for application of herbicide to ensure the target weed be treated at the correct PPB (parts per billion) required delivery rate to effect control/eradication. He was also concerned with the fluridone resistant hydrilla.

Lara Block, U of SC gave a presentation on Managing Harmful Algal Blooms: Preliminary Research and Future Plans Integrating Research efforts and Pond Management in SC. This study consisted of mostly harmful algal blooms in storm water detention ponds. The study identified 26 species of algal in SC which was determined to be harmful, and ways in which it was controlled/eliminated.

Sarah True, NCSU, gave a presentation on Phragmites Control with Imazapyr, Glyphosate, and Triclopyr. This was another study on Phragmites using some new herbicides to determine their effectiveness at a given amount of herbicide/acre of vegetation to control/eliminate Phragmites.

Rebecca Haynie, Clemson U, gave a presentation on Field Assessment and Management Plan for the Thurmond Reservoir Avian Vacuolar Myelinopathy Epizootic. This is the study of the Cyanobacterium on hydrilla which is killing Bald Eagles and is known as AVM. Apparently the

toxicity bacteria build up in coots which eat the hydrilla, and then the eagles eat the coots. The eagles lose motor control and end up dying. I asked if it is a problem with Ospreys, and the answer was that grass carp do not seem to build up a toxic level, and since fish are the Ospreys main source of food, it hasn't been a problem. Rebecca said she would send me some data she has on Lake Gaston and Cyanobacterium. The bottom line is that they know of 12 dead eagles last year at Thurmond Reservoir. Their objective is to eradicate all hydrilla.

Brenda Johnson, Clemson U, study was the Performance of *Schoenoplectus* and *Typha latifolia* in Constructed Wetland treatment systems for Produced Water. This was a project to use plants to "suck up" the contaminants that are discharged/or have be discharged into a water system. The biggest problem encountered was the need to keep wildlife from eating the now contaminated plants. This is being accomplished by finding plants which "suck up" the contaminants, but wild life doesn't care for.

Brad Gardner, NCSU, presentation dealt with Intensive Grass Carp Stocking Effects on Reservoir Invasive Plants and Native Fish Populations. This study was designed to test out the most economical method of controlling invasive weed which is with grass carp. They released 100 grass carp/vegetated hectare to assess control of parrot feather. They also tagged some grass carp, but all died, and no data was received from them. The object was to see if grass carp would control an invasive weed which is not a preferred food, yet still not effects the fish populations. Study is still going on, but there was significant amount of parrot feather consumed and electro-fishing before and after stocking grass carp, showed no significant decrease in fishing. Long term effects are pending.

Roy Roten, NCSU, presentation was about Giant Salvinia Control and Potential for Over-Wintering. This is mostly a problem for NC in the Southeast, down by the Wilmington area. Another "Thank the Lord" we don't have the problem yet.

Amanda West, NCSU, presentation was Monoecious Hydrilla tuber and Biomass Monitoring in Three NC Lakes. This is the study that Rob Richerson is doing on the lake which involves 9 sites, with 8 to 12 points taken per site, and each site is a 4 inch circular sample. The tuber are then screened and counted. The first (initial) set of data has been taken, and another set of data will be accomplished in the fall. The object is to see the tuber count on areas which have never been treated, treated every year, and treated every other year. This is a continuing long term project.

Adam Frank, NCSU, study was about Variable Leaf Milfoil Response to Selected Herbicides. Again, not a problem on Lake Gaston yet!!! (Note: you may notice a lot of studies/projects done with herbicides, and that is because they get funded by the chemical companies. However, as many products were not satisfactory for controlling/eradicating a specific weed and this was noted in many of the studies, I think they were done fairly and without influence).

Joshua Cheshier, U of MISS, study consisted of Common Reed: *Phragmites australis*: Life History in the Mobile River Delta, AL. The study consisted of 4 sites each of which had a significant different salinity content. Because of the salinity problem, different herbicides were evaluated and of course, different results were obtained.

Sarah Williams, SCDNR, presentation was Integrating Plant Management within Ongoing Field and Laboratory Research on avian Vacuolar Myelinopathy. Another AVN project dealing with bacteria on

hydrilla and other native plants effecting Bald Eagles. Of note, 12 eagle deaths on Lake Thurman but no eagle deaths on Lake Murray. It was noted that there is also no hydrilla on Lake Murray (quite a coincidence, HUH!!!!!!)

Bob Bellinger, Clemson U., conducted a presentation on Pesticide Safety Stuff. The conference was attended by many applicator, and product companies. This was directed to them, it consisted of a multiple choice quiz with what the words on the labels really mean. Good safety review for everyone. A lot of discussion and some misconceptions.

Mark Heilman, SePRO, presentation consisted of their product Galleon SC: Newly Registered Aquatic herbicide for Control of Submerged, Floating, and Emergent Vegetation. This was a “plug” for their new herbicide which Trade name is Galleon SC, but is known as Penoxsulam. It is a single application herbicide, which you can monitor PPB and can conduct FasTEST in order to insure correct application for desired weed.

Rob Richerson, NCSU, presentation consisted of a Summary of Two Years of Research with Penoxsulam. This consisted of experiments/study of the herbicide on different weeds at different strength with a result of severely damaging the plant or killing it.

Steve Hoyle, NCSU, presentation consisted of the Response of Selected Weed Species to Imazamox. This is another new herbicide out by BASF, with a brand name of ClearCast, and the study that went with it.

Thurs afternoon, we had a 3 ½ hour panel discussion consisting of Dr. Bill Haller(U of F), Dr. Michael Netherland (ACOE), Dr. Ken Manuel (Duke Pwr), Mr. Chip Davis (Santee Cooper), and Dr. John Rogers(Clemson). It was moderated by Dr Rob Richerson. The topic was “The Past, Present, and Future of Aquatic Plant Management”. Items of interest were new herbicides, and the testing that is needed. Another big topic was Grass Carp and the all or nothing syndrome. There is talk of limiting the life of grass carp. The life span could be done as an ion, or electrical, or change in DNA. It would effectively be putting a “Kill switch” in the carp. There was of course a big question of ethics involved in this. The last big item of discussion was Lymbya. It was stated that “if you don’t have it you will”. It is a difficult algae, and all are not equal. It appears that each infestation found is of a different strain. Lymbya is everywhere, and has been around for millions of years. In fact it was said by Clemson U who has been conducting studies on it, that it is the basis of all the oil and fossil fuels found on the planet.

John Rodgers, Clemson U, presentation was the study of the Variance of Responses of Lymbya to Algaecide Exposures. Lymbya is defined as a prokaryote. It has a mucilaginous sheath and a cell wall. It has excellent productivity with rapid growth even in low light. It smells terrible. It can propagate and is dispersed by fragments. It is toxic, and can result to “swimmers itch” when contacted. Clemson U has conducted studies and have had success with the different (and all have been different) Lymbya from High Point, NC to TX. No one algaecide has been effective. In order to treat it, you must analyze the water to determine what algaecide or combination of algaecides are required to kill it. Parameters which affect the use of algaecide are: PH, conductivity, hardness, alkalinity, and temp. It is widespread and spreading. As an action item, Clemson U will try to make

a matrix of the parameters versus algaecide to assist applicators on the correct algaecide/algaecides to use to combat this smelly mess.

Tammy Lark, Clemson U, presentation consisted of the Worker Protection Standard Update. Again, this was mainly for the applicators. New regulations and laws pertaining to herbicides and their requirements for application.

Wayne Batten, NCSU Extension, Pender Co, gave a presentation on the Comprehensive Salvinia Survey of the Northeast Cape Fear River Watershed. They conducted a survey of the Cape Fear River Basin for Salvinia, participants included Duke Pwr, NCSU, Pender Co, and NCDER. With all conducting survey on the same day, each with a different quadrant, they were able to document the entire basin for Salvinia, and by GPS mark it for eradication.

Steve Compton, Clemson U, gave a presentation on Invasive species and Control in SC. This was about invasive species of both plants and insects which are considered a threat to the state, and how they are monitoring/controlling outbreaks. Some of the invasive species that he talked about were: Cogongrass (one of the worst 10 weeds in the world, subspecies Red Baron), Tropical Soda Apple (about 17 acres infested in SC), Giant Salvinia (no reported sighting since 2004), Red Imported Fire Ant (looking at virus or maybe a fly to control), Redbay Ambrosia Beetle, Cactus Moth, Japanese Dodder, Chinese Needle Ant, Japanese Knot Leaf, Tropical Spiderwort, Asian Longhorn Beetle, Giant Asian Land Snail, African Honey Bee, Emerald Ash Borer, Sirex Wood Wasp, and Gypsy Moth. SC has pamphlets made up on most of these invasive species, and handed them out to the group.

Jim Petta, Aquatic Control Technology, gave a presentation on Case study: selective Control of Eurasian watermilfoil using Diquat- Four years of Results. In 2003, a shallow lake (about 15 feet deep) in Conn was selectively treated in areas that was interfering with recreation (the whole lake was not treated). The result is that the Diquat did control the watermilfoil in the areas treated. Of note, I asked if native vegetation came back as a result of watermilfoil being gone. The answer was native vegetation didn't recover in the areas treated.

Andrew Gardner, NCSU, gave a presentation on study of Watermeal Response to New Herbicides in Comparison to Fluridone. Again another study using the new herbicides I have mentioned above which shows their "kill rate" versus the rate of application. Again even though the Chemical Co. paid for the grant for this study, not all data were partial toward the chemical companies (some data showed it would not work at the recommended concentrations). It appeared to be an impartial study without influence from the people who funded the study.