

## **126<sup>th</sup> Meeting of the South Carolina Aquatic Plant Management Council**

### **Attendance:**

**Council Members:** Chris Page, Terry Hurley, Jeannie Eidson, Sarah Reed, Willie Simmons, Larry McCord, Bill Marshall, Tammy Lognion

**Guests:** Julie Holling, Matt Puckhaber, Casey Moorer, John Grant, Carl Bussells, Debra Guerry, Caity Homan, Scott Lamprecht, Hugo Burbage, Ernie Guerry, John Morrison

**Location:** Dennis Wildlife Center, 305 Black Oak Road, Bonneau, SC 294313

**Call to Order:** 10:03am 11/13/17

### **Minutes:**

Chairman Chris Page called to order the 126<sup>th</sup> Meeting of the South Carolina Aquatic Plant Management Council (APMC or Council). He stated the agenda is going to be rearranged to deal with all the business before going on the field trip. He noted two new members are present. He asked everyone to introduce themselves, which everyone did. Ms. Eidson noted that Jim Glover, the replacement she introduced at the last meeting, has since retired and moved to Arizona. She has recruited Chad Aldman, a fisheries biologist, as her new replacement. She noted that she is present today because he was having some back issues, but he will be at meetings in the future.

Mr. Page said the South Carolina (SC) Department of Natural Resources (DNR) is undergoing a legislative review by the Oversight Committee. He was asked to do an attendance sheet of members since their inception on the Council. He could not go back far enough to get all of Ms. Eidson's information, as she is probably our longest serving member. He asked her when she started. Ms. Eidson said it was twenty-five years ago.

Mr. Page said a legislator has scrutinized the membership of this Council and has introduced legislation to redo the Council. Mr. Page doesn't feel the changes are fair and equitable, and made copies of the bill available to the Council. If any of the current Council members are opposed to the changes and have departmental legislative liaisons, they should take action. The bill would remove the Department of Agriculture, the SC Department of Health and Environmental Control's (DHEC) Office of Coastal Resource Management (OCRM), and replace Clemson University's Department of Fertilizer and Pesticide Control with their Department of Forestry and Environmental Conservation. It would add one member appointed by the Chairman of the Senate Fish, Game, and Forestry Committee and one member appointed by the Chairman of the House Agriculture, Natural Resources, and Environmental Affairs

Committee. Mr. Page said that of all the Council members, he thinks the Department of Agriculture is the only group that does not have much of a dog in the fight anymore, but their representative is not here to defend his agency. The Council relies on Clemson Regulatory to tell us if we are doing things the right way sometimes, based on their experience with pesticides and the law. To Mr. Page's knowledge, the Department of Forestry and Environmental Conservation does not even have a program that deals with aquatic plant management. Most of the work we do is in the coastal plain, so OCRM is an integral part of the Council.

Mr. McCord feels that it is a case of misinterpreting lack of attendance with lack of need. The filling of the OCRM position has been discussed many times in past meetings, and it needs to be addressed. Mr. Page noted Ms. Reed has filled that position and he feels that she will continue attending, although she may miss a few in the near future with good cause. Those will be considered excused absences. The weak point was OCRM. The previous representative attended approximately 19 percent of the meetings. The next lowest was Clemson at 56 or 58 percent of the meetings. Everyone else was in the 80<sup>th</sup> percentile or higher. Some of us were at 100 percent, at least within the last 10 years. Mr. Page only went back to 2007. If any of the Council members want that information, please let him know.

Mr. Page noted that the bill to change the Council was tabled last year, and this is the second year of the legislative session. It can potentially be brought back up. Mr. Page hopes that the agencies would respond to their appropriate legislators and tell them it is not a good thing. Ms. Eidson asked what spurred the legislator to want to change the Council. Mr. Page said it was the legislator's conversation with Ms. Eidson. The legislator spoke with several people, including some members of the Council. Mr. McCord noted the legislator attended a Council meeting and disliked the answers he received during the meeting. The legislator left that meeting after saying, "We'll see about that." Mr. McCord thinks this legislation is a result of the legislator attempting to do something to back up his threat. Ms. Eidson said she did not recommend changing the Council. Mr. Page said no one on the Council made that recommendation to the legislator.

Mr. Page noted that the Council was put in place to limit the power of any one individual or a small group of individuals. It was designed to provide a broad approach to treating invasive species, whether they were natives that have become a problem or truly invasive species. It goes back to the late 1980s, when Water Resources was part of DHEC. Before the legislation that created the Council was passed, this was a Governor's issue. The Governor put forth an executive order to start the Council. In the subsequent years, when the agencies began to break apart and merge, it moved over to the legislation you see today. That legislation has been changed two or three times because of reorganization. Ms. Eidson respectfully said she disagreed with the fact that because she took a phone call from him was the reason he introduced this legislation. She feels this was initiated long before that call. Mr. Page agreed and

apologized. He was not in meeting mode and was picking. He misspoke on that. He thinks the legislator had an agenda and started trying to move that agenda by contacting us.

Mr. McCord made note, in regard to the history of the Council, that the Governor put forth the creating legislation at the request of Santee Cooper (S-C), SC Wildlife and Marine Resources, a number of industry folks, and university staff members. Those groups came together to recommend the creation of the Council, which would be similar to what had been done in other states that had major aquatic invasive species problems before we did. It was created prior to the *Hydrilla* infestation, but during the infestation of Brazilian elodea, which was the next worst plant in terms of how many acres it took over. A whole lot of money was spent on that. Most of it was cost share money. The Army Corps of Engineers (Corps) was probably involved in setting up the Council, as they controlled most of the federal money that was part of the cost share money. Mr. Page said that most of the money was from federal sources, as the state did not have much of a budget for invasive control.

Mr. Page said the history of the Council is in the files and offered them to anyone that wanted to dig through them and get educated. It was a long process to get the information about the attendance, as all of the minutes had to be reviewed. The attendance report was requested by Representative Hickson, on the Oversight Committee. He is also the Chairman of the Agriculture Committee. Mr. Page will have the attendance information available to the Oversight Committee at their next meeting on November 30<sup>th</sup>.

Mr. McCord spoke again regarding the original Council. He noted that not all the members had a direct impact from aquatic vegetation control state wide, but they all represented agencies that at some point had some contact with those issues. The people put on the Council had a general understanding of aquatic plant management issues and were able to provide input to create a statewide aquatic plant management plan. Mr. Page said it was a well thought out legislative process. Mr. McCord said that to move in the direction of the pending legislation is basically going to create a political entity that has very little understanding of the biology of lake management. If anyone in this room or the legislature wants to see how that works, they can just go to North Carolina and see their council. It began as a mirror of SC's Council. They have since brought in more and more representatives of different areas to the point where they cannot make decisions. They have people on the Council that do not understand the biology of the issues they are trying to deal with. This Council has had loads of disagreements, but we have always been able to come to a decision and our decisions are based on scientific information. We all have some political input that comes into play, but nothing like we will see if this legislation becomes law.

Ms. Eidson asked what we can do as agencies. Is there something we can do collaboratively, rather than individual agencies? Or would it be better for the individual agencies

to respond? Mr. Page thinks the individual agencies need to review this pending legislation that will either remove them or put them on a Council that will be ineffective due to political pressure. Mr. McCord noted that although S-C is not currently being reviewed by the legislative Oversight Committee, as DNR is, it is under tremendous legislative scrutiny at the moment. There is no chance that he can push for anything related to the Council at this moment. The S-C legal staff are focused on other issues right now. Mr. Page thinks that the supervisors and legislative liaisons for each agency should be made aware of this bill, and will hopefully say they are opposed to the changes.

Mr. Page moved onto the approval of the minutes of the 125<sup>th</sup> meeting of the Council. He hoped everyone had a chance to read them before coming. He noted that since that meeting, some realizations have come to light about some of the data and issues discussed. For the most part, the minutes reflect that S-C has always been one of our most contentious things. The two other places that are going to be issues in the future are Lake Greenwood and Lake Murray. If he is not mistaken, what we did in the Council last year was work through the process and compromise. The numbers were higher than some people wanted and a little lower than other people wanted in S-C. We got it into a five year plan, so that we can stick to something and see what is happening with it until we can get more information. It may not be as contentious as it has in the past.

Mr. Page said it was brought to his attention that there is one other set of minutes that needs to be approved. He was supposed to send them out by email and get a vote. Since we did not bring copies of them to this meeting, he will send that email out when he returns to the office. He apologized for not taking care of that.

Mr. McCord noted one issue in the minutes regarding the S-C lakes. On page 17, there is a comment by Mr. Dale Cozart, who is a member of the Goat Island Boat Club and a long time home owner. He was very much concerned about how the grass carp number discussion went. The Council had previously met and agreed on the number of 13,843, which is what was in the draft plan. His concern was that when we came back at the next meeting, new information was presented and extensive discussion had about whether to stick with 13,843 or go down to 8,700. As a means of moving forward, we came to a compromise of 10,000 fish.

Mr. McCord noted that Mr. Cozart's concern was that if the plan goes out for review, you are taking comments from the public, and then when you get together for the next meeting, you change something as important as the number of fish, that makes the public review questionable. Since that meeting, Mr. Cozart has mentioned that to Mr. McCord multiple times, as have other members of that organization who attended that meeting. Mr. McCord thinks that is very important and he happens to agree with them.

Mr. Page stated the purpose of a draft plan is to try to get a number that is close to where we want to be. We know that it is not set in stone until we meet to make the final decisions. We have changed the plan almost every year in the past, based on other discussion. It is not a popularity contest. If we went by the number of people who agreed or disagreed with the plan, there would have been some years that we probably would not have stocked fish when we did and vice versa. Mr. McCord said he never said it was a popularity contest. He just wanted to point out a public comment he happens to agree with. We have made changes based on public comments in the past, but we have not changed an agreed upon stocking plan. Mr. Page said the information we brought to the Council was with an understanding that we already had an agreement in place with various entities in the Council. Some entities in the Council did not value that number and wanted to append it lower. We did not want to see that happen, so we compromised based on the scientific information we had. The members of the Boat Club, including Mr. Cozart, were present and got the same information to explain the slightly lower number. We argued for years about the stocking rate for that system. The difference between 13,000 and 10,000 fish in an 110,000 acre system is negligible. The Council discussed everything in front of the Boat Club members and came to that decision. It was not like it was done behind closed doors. In coming to that agreement of 10,000, we got a couple things done because we put the stipulation in that we stick to that number for several years to see where it will take us, unless something drastic happens.

Mr. Page asked if Mr. McCord had any changes to the minutes. Mr. McCord said there was a statement in the minutes that he agreed we would continue with 10,000 fish for five years with no regard to changes in the system. He said that is not the case. Mr. Page asked what page that was on. Mr. McCord was not sure, as he had not been able to find it again. Ms. Moorer said it was the top of page 15. It says that Mr. McCord did not disagree with the first statement in the paragraph. Mr. McCord said he would not in his right mind agree not to take into consideration what is going on in the system when discussing grass carp stocking. Mr. Page said it says you did not disagree. Mr. McCord believes it says he does not disagree with sticking with a number regardless of what happens on the system. Ms. Eidson noted that on page 20 it says Mr. McCord does not disagree, but it would be dependent on what the increase in vegetation is. Mr. McCord said that as long as the statement is in there that we will be looking at what is going on in the system, it is okay. Mr. Page said we always put the caveat in anytime we are stocking grass carp that it is based on vegetative regrowth. If we see something in further surveys, we can increase or decrease those numbers. Ms. Eidson noted that on Page 20, "Mr. McCord said no, it is a target number to stock, but it is adaptive plan. We are setting it at 5 years. It will be nice if it works for 5 year, but things change a lot on the lake."

Mr. Page asked Mr. McCord if he is okay with the language in the minutes. Mr. McCord said he was okay with them. Mr. Page asked if there were any other changes to the minutes. There were none and he asked for a motion to accept the minutes. Ms. Eidson made a motion to

accept the minutes. Ms. Lognion seconded the motion. Mr. Page asked if there was any more discussion about the minutes. There being none, he called for a vote. The minutes were approved unanimously.

Mr. Page moved on to the next agenda item of public comments. He asked if there were any members of the public present that wished to comment. There were none, so we moved on to the Preliminary Findings of 2017 Triploid Grass Carp Health.

Mr. Marshall asked if we had prior minutes that needed to be dealt with first. Mr. Page said we would do that by email. Those minutes were sent out prior to the 125<sup>th</sup> Council meeting, but he would send another copy out requesting any changes and then approval.

Mr. Page said we would have Mr. Lamprecht's presentation and then some follow up information from Mr. McCord. We are trying to get everything done, so that the members who do not wish to stay for the field trip can leave. Mr. Page asked if everyone was okay with changing the agenda that way. No one objected.

Mr. Lamprecht started off with a picture showing the differences between grass carp and common carp. They are very different animals, even though they have both been used for different types of weed control. They have different mechanisms for doing that. He gave a quick review of what has been done as far as stocking numbers go. We had a big, three year hiatus on stocking. We were chasing the *Hydrilla* growth as it started increasing, but fortunately had a muddy year in 2015. For this work, we collect carp using bow hunting. It is the most unbiased method we have found. The carp can be electroshocked, but there is a tendency to bias the collection toward weaker fish. These are huge, strong fish that usually have to be stuck twice to get them into the boat.

Mr. Lamprecht said that after collection, the fish are taken back to the work-up room, where careful measurements are taken of length and weight. We developed an index of health based on the length to weight relationship. This gives a snapshot and an indirect way of looking at the food availability for the fish in the system during the time the fish are collected and maybe a month or two before the collection time. By looking at that index, we can get a relative idea of what is going on in the background regarding the vegetation they like to eat. They like *Hydrilla* the best and will select that over anything else. If they cannot find it and get to it, they will eat other vegetation that is less beneficial and less palatable to them.

Mr. Lamprecht noted that they also take aging structures from the fish. Those structures are very difficult to deal with. We have not aged this year's samples yet. The fellow that we had taught to age the fish has moved on and we are struggling to get to where he was. We are hoping to get that done before too long. This is important because we found that 22-23 percent of last

year's sample were senile fish that were stocked back in the 1990s. They were in excess of 22 years of age. They were still hanging on, but we don't feel they were having a significant impact on weed control. All the *Hydrilla* came back in the presence of these older fish, so we do not feel like they are doing much to contribute to present day weed control.

Mr. McCord asked how Mr. Lamprecht's team determined that the fish were senile and not just old. Mr. Lamprecht said they made up a disproportionate number of the sample, and we felt they were easier to shoot. That is a subjective, not objective. Having 22 percent of the sample being over 22 years old did not make sense.

Mr. Lamprecht said that this year's sample is very similar to last year's sample. The average condition factor is lower than last year's, but it is hard to say if it is significantly lower. The difference is the four smaller fish were ones stocked this year. They ranged in weight from 3.7 pounds to 6.25 pounds. Although Mr. Lamprecht never saw any of the stocking, he assumes that they were between 12 and 14 inches long. So, they were between 0.75 pounds and 1.25 pounds at the time of stocking. These fish have been in the system for about 5 months and they have grown significantly. To put that in perspective, back in the *Hydrilla* years when they were first stocked, the winter samples had fish in their mid-teens. There is tremendous growth potential if the fish have lots to eat. The smaller fish probably have access to shallower water and different areas that the bigger fish cannot get into.

Mr. Lamprecht showed the collection data from last year for comparison. There were five fish that were over the standard weight or condition factor. That condition factor was created during the *Hydrilla* years, so these are really health fish. Anything between 0.9 and 1.0 would be considered to be in pretty good health. The average condition factor last year was about 0.84, and that was before the older fish were taken out. For this year, we have fish in slightly poorer condition, with some bigger fish. Things shifted to the right a little as those fish age, but similar results. From this information, Mr. Lamprecht would conclude that we had enough fish in the system this year. It might be a little on the heavy side, but we still had enough fish in the system.

Mr. Lamprecht spoke a little about moving forward. We talked about stocking 10,000 fish per year in the near future. If we do that, we will start 2018 with about 36,000 fish. That is based on recent numbers, since 2007, and applying the 32 percent mortality rate per year, including the year the fish were stocked. We slide real gently into a total number between 20 and 30 thousand fish, depending on what we see growing. That is assuming that all those fish of different sizes and ages are consuming vegetation at the same rate. We do not have hard data on consumption versus age. There is no scale on the left side of the graph he showed. This is just a conceptual representation of consumption rates. There is probably a peak effectiveness and the

fish tend to decrease their consumption as they age. It is important to have a variety of ages in the system, which was a point Mr. McCord made last year.

Mr. Lamprecht illustrated that by showing a graph that aged fish out after the eighth growing season. If we take those older fish, which are not actively growing and consuming vegetation, out of the calculations, we will drop the total numbers below 20,000. He doesn't think that is desirable in the long term for the management of the system. A possible solution to that going forward would be to adjust the stocking rate up in 2019 and 2020 to account for the three years when no stocking was done. That would prevent us from dropping below the 20,000 mark. Then we could adjust going forward. This is just food for thought. Obviously, the Council does not have to address that this year. This is just something Mr. Lamprecht wanted to put out there for the Council to think about for the future.

Mr. McCord thinks this is good information to have. Continuing to collect fish will provide valuable information, but it is not absolute. The health value of these fish related to that condition value of 1, which represents fish when we had over 40,000 acres of *Hydrilla* in the system, is a little skewed. He would argue that a healthy fish on Mr. Lamprecht's scale is well below 0.9. That opinion is based on fish that Mr. McCord has seen collected. He does not think that the majority of the fish being collected are unhealthy. That being said, this is only one bit of information. It is not absolute, but it is useful information. The information we have to look at very carefully, which is what we have historically used to determine grass carp stocking and what is used by other large reservoirs, is what is happening with the invasive vegetation you are trying to control.

Mr. McCord said S-C does not have those numbers yet. We are actually beginning our in-depth survey work tomorrow. We just had our aerial photography flown, which will identify some vegetation, but it does not identify *Hydrilla* growing on the bottom. In all our work around the lake, we are seeing *Hydrilla* coming up in historic areas. We do not have any acreage numbers yet, but we are seeing more *Hydrilla* this year than last year. That is a big concern to Mr. McCord, but we are going to have to wait until we have that information to present before we can make an educated decision based on it.

Mr. McCord wants to make sure we do not overemphasize the health numbers. He said that although Mr. Lamprecht said that bow fishing is the least biased way to collect grass carp, Mr. McCord feels it is still biased toward less healthy fish. Big, old, senile fish are the easiest ones to collect. Fish that are not as healthy and are not as capable of getting away from you are the next level of fish that are easiest to collect. There is no tried and true collection method that is guaranteed to collect the healthiest fish in the system. That is another caveat that needs to be out there. He feels it is important information. S-C has been cooperating with the collection of

fish and will continue doing that in every way we can. He feels it is important to know as much about the system as we can, both about the grass carp and the vegetation that is growing.

Mr. Page said he agrees with Mr. McCord to a degree. What he took from the presentation is that we need to be looking at age classes as much as the total numbers of fish. It is obvious from all the research that has been done that the older age classes do not consume as much vegetation as the fish in the two to eight year classes. It is important to do regular stockings to keep an age class consistent with fish that are actually eating the proper vegetation. So if we get a bunch of old fish in the system and they cannot get to the shallower areas to get some of the vegetation, especially *Hydrilla*, we have a problem. We may have the numbers, but we have a problem. We have got to focus on the age classes in the system. We started that last year and the year before.

Ms. Hurley said the other piece is that you are catching up again, correct? She asked if we were going to be adding more fish in the system for two years to catch up from dropping to 10,000. Mr. Lamprecht said that part of his presentation was just food for thought. He said that approach would work. Mr. McCord said that was S-C's thought process last year, to try to get fish in there. The intent for a lot of reasons is to maintain enough fish in the system to keep *Hydrilla* from getting back started in the system. That has always been our major focus for a lot of reasons. *Hydrilla* can get out of control quickly, which then throws all our stocking plans out the window. We are trying to get to a point where we are fairly confident that we have enough fish in there to keep it under control. We are not at that point yet. Once we can hopefully determine that, and this year's numbers may get us closer to that, then we will be much better moving forward. There is also more information to be added to the pot this year than what we have had in the past, which he will talk about in a minute.

Mr. Page said we are trying to slow the curve to get close. It is not going to be a magic number. The research says 1:8 fish. The total stocking now is closer to 1:6 fish. Mr. McCord noted that the research was on Piedmont lakes. That research is not based on the S-C system. Mr. Page said he thought they had some information out of the S-C system on that 1:8 ratio. Mr. McCord said no, but we adopted that at one point. Mr. Page said we have gone to the 1:6 ratio for our numbers, which is about 25,000 fish in the system. We are approaching that in the next two to three years. The old 1:8 ratio is closer to 20,000 fish in the system. He remembered arguing against the 1:8 and trying to get a little higher number. We want to slow the curve and have the changes not be so drastic when we see them. We do not want to stock 100,000 fish. We cannot afford to do that again.

Mr. McCord asked Mr. Lamprecht to go to the first slide in his presentation and pointed something out to the newer folks in the room. If you are out in the field and trying to compare grass carp with common carp, the one in the picture is not typical body shape. They are

generally a little more cylindrical. That picture is a very good one for seeing the other ways you identify a grass carp. Most of the grass carp you see will be more streamlined and not have as much of a gut. Mr. Page said the primary identifier is the dorsal fin. Mr. Lamprecht said that is an old slide from the *Hydrilla* years, probably from a Rotenone survey. They can get very pot-bellied, but we did not see any this year.

Mr. Bussells asked Mr. Lamprecht if he had considered making his own condition factor equation with the new length and weight information or if there was enough data to do so. Mr. Lamprecht said it pretty easy to do, but we would need to do some additional work. Mr. Bussells said it would be nice moving forward to have a new baseline. Mr. Lamprecht said you could set 0.9 as your goal, which should be the perfect balance. As Mr. McCord said, this is just a snapshot of what we have and is another way of looking at the issue from a different angle. It is useful, but not the answer by itself. Mr. Page said it is one of the tools in the toolbox. Mr. Lamprecht said it does have its shortcomings, but it is a valuable snapshot.

There was a discussion amongst Mr. Lamprecht, Mr. Page, and Mr. McCord regarding the eating habits of grass carp as they age. The studies have shown that the quantity they eat peaks at about five years and declines rapidly after that, but most of those studies were done in the 1970s in Florida where the growing season is longer. Triploid grass carp stocked in the United States are expected to live 10-12 years. Fish have been collected in the S-C lakes for several years now that are 20-25 years old, and possibly older. Those fish are still healthy, so they have enough food to eat. The importance of having various age classes in the system was stressed as a very important factor by everyone, but there are environmental factors which are out of our control. Those factors could make it seem like we do not have an ideal number of carp in the system.

Mr. Page thanked Mr. Lamprecht and asked Mr. McCord if he had some stuff to show the Council. Mr. McCord said he did.

Mr. McCord said he has mentioned this before, but S-C pays for 100 percent of the aquatic plant control on the S-C system, with the exception of some work that is done by DNR in the Wildlife Management Areas (WMAs) along with some cutgrass work done jointly. He points that out because that budget has to cover everything, including grass carp stocking, chemical *Hydrilla* control, and now the control of giant salvinia (*Salvinia molesta*) in Lake Marion. For those of you who are not familiar with giant salvinia, it is considered by many in the industry to be the worst aquatic plant world-wide, because it spreads easily and is difficult to control. We are trying to control it as fast as possible, but it is going to be a significant problem. It is native to Brazil and Argentina.

Mr. McCord noted this is the second significant finding in SC. It was first found in SC by Clemson University and DNR in a small, private pond near Walterboro. They identified it and treated it very effectively. Because it was in a small pond and you could get to all of it, it was eradicated. He believes it was found in a couple other small ponds, but it was eradicated in those ponds as well. We have not seen it since 2005. Mr. McCord said we have now found it in the worst possible place, in the upper portion of Lake Marion. It will soon be in the lower portion of Lake Marion and in Lake Moultrie, because of the way this plant moves.

Mr. McCord showed a slide indicating the location of the original 1995 SC discovery, the location of the recent discovery in Lake Marion, and the location of its discovery in 2000 in a North Carolina (NC) cypress swamp. It took over ten years for the folks in NC to think they have it eradicated in that small, 40 acre swamp. They have not investigated it in the last two years. Mr. Page said they have checked recently. He spoke to Bridget Lassiter, who did an extensive check and found nothing. He said that doesn't mean it is all gone.

Mr. McCord moved onto pictures of giant salvinia near the original discovery location in Lake Marion. The discovery was made during surveys in preparation for crested floating heart (CFH) treatments. The *Salvinia* was found floating amongst water hyacinth and other stuff. It was recognized as something that did not belong there and was brought back for further investigation and identification. He provided several different pictures showing how it spreads. Juvenile plants move out from the edges. Under the proper conditions, it can double its coverage in three days. It is one of the fastest, if not the fastest, growing aquatic plant we have in the system. *Hydrilla* might compete with it.

Mr. McCord said this is a free-floating fern. It does not have true roots. The structures that look like roots hanging down below the plants are actually modified leaves that act like roots. He showed pictures of other areas near the discovery location. There are quantities of water hyacinth, which has been a significant problem this year, and CFH, which has been slowed by the high turbidity. There is giant salvinia mixed in with all of that. He showed various close up pictures to illustrate how difficult it can be to find amongst the other, larger plants. That is what we are fighting. We have to find all the plants to get it under control, which is going to be practically impossible.

Mr. McCord showed a picture of one of the areas of possible initial infestation, with the giant salvinia mixed in with duckweed. That site led several hundred yards to a cypress swamp and an old mill pond that was breached in 2015. It is unknown if it was in any of the ponds upstream or not. There is a potential source of contamination from Louisiana close by, but we have no idea if that is where it came from or not. Louisiana has major problems with this plant. Anything dealing with water that comes out of Louisiana needs to be looked at very carefully, because they have so much of it there. It turns out that we found it above and below the original

location, as well as on the other side of the river. It is in lots of areas now and has probably been in the system for at least one full growing season before we found it.

Mr. McCord showed a picture of the same area after a diquat treatment. This plant is very susceptible to diquat, which is one of our older, approved aquatic herbicides. Getting it onto all the plants is the difficult part. We are actually having to treat some vegetation we would prefer not to treat because this plant is growing underneath it. We have to go after it as hard as we can, or it will become a major problem. We did get good results by treating the water column, with the plants taking it up pretty readily.

Mr. McCord presented a picture of an area about five miles downstream of the original location, so it is moving. The harder we look for it, the more we find. We are going into areas we do not normally go into, and are finding this plant in almost every cove or feeder creek we go into. Ms. Hurley asked Mr. McCord about the potential contamination from Louisiana and how he thinks it might have come here. Was it by boat or some other method? Mr. McCord does not want to accuse anyone of anything, but we do have a crawfish distributor in that area of the lake that buys from Louisiana. It is a possibility that is the source, but he has not found any evidence to support that.

Mr. McCord showed pictures of a number of areas showing how it is growing under and among other invasive and native vegetation. We have done treatments in a number of areas with diquat, which has various trade names. Some are by directed spray, which is more difficult to get it on the plants, but they do take it up very readily. It does a very good job of cleaning those areas up, but it does not get all of it. So you have to back to the same area several times. That is problematic for any program, but particularly so for S-C, because we have so many things we need to be dealing with in a time when our budget has been cut by tremendous amounts and is going to continue to be cut in the next several years.

Mr. McCord did do a little project with one of the students that presented at the Aquatic Plant Management Society (SCPMS) meeting in Myrtle Beach in October. The student is doing work with drones or unmanned aerial vehicles. This was impressive. He was able to get some good shots of the areas we treated. He was also able to fly into areas where we cannot get to by boat very easily. If we see *Salvinia* in some of these locked in areas, we can try to treat them by helicopter or some other means. One of the pictures shown was of an area that had a submersed application, which did not affect many of the other plants in the area. It is a good means of trying to control this plant, if you are in the right kind of area to be able to do so.

Mr. McCord showed a map of the sites where giant salvinia had been found as of October 20<sup>th</sup>. It was originally found on the west side, about one-third of the way down, just to the north of where the river channel comes in. We were hoping that it was all isolated below the railroad

trestle at Rimini, because the 12,000 acres Sparkleberry Swamp is above that. He doesn't want it to get into Sparkleberry Swamp for a whole lot of reasons, but it has already moved up that direction, possibly by either boat traffic or animals that move between the two areas.

Mr. McCord showed some pictures from Louisiana. We have been working very carefully with Dr. Chris Mudge, with the Corps of Engineers in Louisiana and works with Louisiana State University. They are working to try to get control of this plant in Louisiana and southeast Texas. One shot showed a cypress swamp, similar to what we have. There is no open water left in that entire swamp, and they are actively trying to control it. Another shot showed them trying to treat an area that was difficult to access using a john boat with a mud motor, but they got stuck for over an hour. He noted that this plant can grow on top of itself, up to three feet thick. You can go treat over the top, but you are only killing the top layer. That layer dies off, but new stuff comes up underneath it.

Mr. McCord's next picture was of an 8000 acre Louisiana lake, which at the time was two-thirds covered with giant salvinia. He also showed a picture behind the overflow dam on the same reservoir, which showed the plants stacked up behind it and extending into a cypress swamp.

Mr. McCord came back to the S-C system with a map that started off as showing the areas he thought were most likely to be infested with giant salvinia. He gave up and put a yellow ring around the whole system because there is nowhere in the system it cannot grow. We have a big battle on our hands. We are still treating this plant in mid-November. According to Dr. Mudge, they can still get effective control as long as the plant as long as it is still green. So, we will be treating into December if we still see green.

Mr. McCord said if we do not get a very hard winter this year, we will have plants surviving. It will die if it gets a hard freeze that freezes the plant to the water surface and slightly below. We will just have to see what Mother Nature does for us or to us. Mr. McCord inform the Council about a brochure being worked on to send out to all of the home owners and commercial facilities around Santee Cooper's lakes. It was created in cooperation with DNR's Aquatic Nuisance Species (ANS) program. The brochure provides information to help people identify giant salvinia and distinguish it from common salvinia, which is not nearly as invasive, but is being seen in the lake as well. The difference, which is only visible under magnification, is the hairs on the leaves. On giant salvinia, the tips of the hairs look like eggbeaters. On common salvinia, the tips are opened up. The general appearance and size of the two species are similar. Giant salvinia (*Salvinia molesta*) is a much faster growing plant and much more invasive. Common salvinia (*Salvinia minima*) rarely needs to be controlled. Oddly enough, we are finding common salvinia at the same time as we are finding giant salvinia. His guess is that they both came in at the same time and in the same manner.

Mr. McCord believes the first infestation came in on some plants that the individual bought from a nursery. Mr. Page said they actually think it came in as a spore on fish. Mr. McCord noted this plant does produce spores. The experts claim that spores are not an effective means of reproduction, but that just means that only ten percent of the spores are viable. If you have a lake covered in plants, those plants are producing billions or trillions of spores. Ten percent of that creates a viable method of reproduction. Most of the reproduction here seems to be vegetative. Any little piece of the plant that has a node on it can create a new colony fairly quickly.

Mr. McCord noted the brochure contains contact information for their offices at S-C and the ANS program. Some of that information is already out on S-C's website and on social media. We are waiting on our print staff to finish up and print the brochure for distribution. He asked the Council members and their representing agencies to help with eradicating giant salvinia from not just Santee Cooper lakes, but from all of the South Carolina's waterbodies. It will be greatly appreciated. That is important because this plant is subject to being moved from one waterbody to another. This is much more problematic than a small pond in someone's back yard. He noted there is no evidence to show that giant salvinia has any beneficial qualities toward wildlife, waterfowl, recreational users, and invertebrates. One of the problems we had with *Hydrilla* and CFH was the fishermen felt those plants were beneficial to the fish populations. There are other reservoirs in the county that are maintaining a population of *Hydrilla*. They think that if they remove it, their large-mouth bass population is going to disappear. That is false and he feels it is ridiculous. Unfortunately, this strategy is being used by people in other states.

Mr. McCord moved on to Potato Creek impoundment. The picture he displayed showed some lotus and a few other things in the background, with *Hydrilla* topped out in the remainder of the impoundment. This is a WMA that is primarily used for duck hunting. The *Hydrilla* has been treated in there many times over the years, but it is back out of control again. The Council approved stocking grass carp there, but that has not been done yet. Unfortunately, we kind of lost track of what was going on in there because of all the other things going on. He showed several other pictures from various angles, which were taken last week.

Mr. McCord said while we were in that impoundment, we collected samples to send off to the University of Georgia (UGA) to be tested for the cyanobacteria *Aetokthonos hydrillicola*, which is a newly discovered and named cyanobacteria that causes eagle deaths, among other things. All sorts of water birds are dying after feeding on this vegetation. Lake Thurmond, on the border of SC and Georgia (GA), has had issues with it. They are still screwing around with

controlling *Hydrilla* in that system while watching birds die. There is now evidence that other species, including reptiles, amphibians, and fish, are being affected.

Mr. McCord reported that the Potato Creek impoundment tested positive for *Aetokthonos hydrillicola*, so he is in discussion with Dr. Susan Wilde of UGA, who identified this cyanobacteria along with her students. They isolated it, have done research on it, and named it. The scientific name means “eagle killer that grows on *Hydrilla*.” Over 120 bald eagles have been killed by this on Lake Thurmond. Countless waterfowl, particularly coots, have been affected or killed by the toxin produced by this cyanobacteria. Numbers are not kept and some of the migrating waterfowl could be dying elsewhere. The toxin is spread when herbivorous waterfowl ingest the contaminated *Hydrilla* and other waterfowl predators like bald eagles are consuming these infected animals. Ms. Eidson asked if this has been found previously in the S-C system. Mr. McCord said it has never been found on *Hydrilla* in the past, and there have been numerous samples taken over the years. Dr. Wilde has actually used *Hydrilla* from S-C as their control during their research work. In 2007, it was found growing on *Bacopa* in a very isolated spot of the hatchery in Lake Moultrie.

Ms. Eidson asked for confirmation that this is in Potato Creek. Mr. McCord confirmed that it is in Potato Creek impoundment, which we were planning on doing both chemical treatments and grass carp stocking to control it. That will go on as planned. He and Mr. Page will be having some discussions with Dr. Wilde regarding the potential to do some research on the impoundment, because it has not been found this far north before. Ms. Eidson asked Mr. McCord if Potato Creek was the only location tested. Mr. McCord said it was the only location tested so far, but will be collecting *Hydrilla* from around the system in the future and will be sending it to Dr. Wilde for analysis.

There was an extensive discussion about this blue-green algae, which included information on what species it can grow on, what water bodies it has been confirmed in, how the algae is transferred, what is required to get it to toxic levels, how it affects birds, and what other species are being affected. Some information about Dr. Wilde’s original studies was also discussed.

Ms. Eidson asked when Mr. McCord got the test results. Mr. McCord stated he got the call from Dr. Wilde on November 10<sup>th</sup> letting him know it was positive, and that they wanted to come do more samples.

Mr. McCord stated that he has argued to err on the side of keeping *Hydrilla* under control, but with this additional information, we cannot afford to play around and let *Hydrilla* get out of control again. It is a budget issue. It is a lake management issue. It is a bigger issue because we already have this blue-green algae in the S-C system. *Hydrilla* from the Potato

Creek impoundment has almost certainly gotten into Lake Marion. He showed, for Mr. Page's benefit, that the water control structures on Potato Creek impoundment has grates in place to keep grass carp in the impoundment when we do stock it, as that was one of the stipulations of stocking fish there. He noted that people fish and duck hunt in this impoundment. He said the Council probably needs to discuss stopping those activities within this impoundment this season. He knows it is not his decision, but he has a problem with putting people in an impoundment there they are very likely going to transport that blue-green algae to other waterbodies. We need to be very careful about allowing that to happen. We are going to aggressively try to control it with both chemicals and grass carp. Mr. McCord asked Mr. Simmons if that was his area. Mr. Simmons said it was and we might be looking at some legal issues. He would need to know today, because if we do not move now, it will not get into the rules and regulations. Mr. Page suggested including Dr. Wilde in this conversation. Mr. McCord said he intended to and would include both Mr. Page and Mr. Simmons in those conversations, which he was planning on doing this week. Mr. Page said he didn't know how much proof Dr. Wilde had of a direct link to humans. Mr. McCord was not planning on claiming a direct link to humans and asked why that was necessary. Mr. Page said you cannot eliminate waterfowl hunting if it is not going to be harmful to humans. Mr. Simmons said we were only concerned about translocating the algae. Mr. McCord asked if we could not prevent translocation of a noxious organism if it is harmful to other organisms. Mr. Page said we could and suggested making Clemson Extension aware of this issue.

Mr. McCord and Mr. Page had a discussion about Lake Thurmond, which has been a hot spot for this algae. They discussed the management of the lake, which in their opinions has been slow moving and poorly done. They feel this is due to the manager's feeling that *Hydrilla* is important for bass fishing, as well as political pressure within the Corps. Mr. Page said the only thing that moved the Corps to react at all was the US Fish and Wildlife Service, which threatened to sue them for illegally taking eagles.

Mr. Lamprecht asked to switch the discussion to the *Hydrilla* in the Broad River above Columbia. Mr. Page confirmed there is a patch in the Broad River. Mr. Simmons asked Mr. Lamprecht where the *Hydrilla* was located on the Broad River. Mr. Lamprecht responded by saying in between Parr Reservoir and Columbia and it is really thick. Mr. Page said it is not adjacent to the dam. That was the first report he got. We checked that out and that was actually Brazilian elodea, which is not that problematic in colder waters. Mr. Lamprecht asked Mr. Page if the *Hydrilla* in the Broad River had been positively identified as monocious *Hydrilla*. Mr. Page said he did not know the answer to that. Mr. Lamprecht said he saw some last fall and it was different. It was *Hydrilla*, but he was looking at it because of its size. It was after Thanksgiving, late in the growing season and it was senescing, but it was very diminutive. He thought it might have been Canadian elodea. Mr. McCord said, sometimes late in the season, dioecious *Hydrilla* will look like that. He would not discount the fact that it could be monocious.

We just have never documented it in the S-C system. Mr. Lamprecht said this *Hydrilla* was flowering. Mr. McCord said so is the *Hydrilla* in the Potato Creek impoundment, and more heavily than he has ever seen. Ms. Eidson asked Mr. Lamprecht if the Broad River population was near Peak. Mr. Lamprecht said it is below Peak, near the Chestnut Hill subdivision. Mr. Simmons said a lot of people take the ride from there down to Columbia International University (CIU) and get out there. He asked if anyone had surveyed to see if any more was located further down toward CIU. Mr. Page said we have not had a chance to. Mr. Lamprecht said that if it is different, there is the possibility of it transferring downstream during high water flow.

Mr. McCord noted that *Hydrilla* is in the Santee River system below the Lake Marion Dam, as far down as the highway 52 bridge, or at least it was last year. He said that with the limited discharges from Lake Marion, it should still be there. There has not been enough flow to wash it out. Mr. Page said the Cooper River is the same way. Mr. Lamprecht asked if the flow of the rivers tends to discourage the growth of the cyanobacteria growth. Mr. Page responded that none of the samples collected from the Cooper River have come back positive, so far. Mr. McCord said none of the samples from the Santee Copper Lakes have come back positive, either, so he does not know that we can make that statement. He thinks we need to defer that question to Dr. Wilde. Mr. Page stated we have agreed to send Dr. Wilde more samples from the Cooper River for testing.

Mr. Lamprecht said they have a *Hydrilla* pond out back. It is currently drained and drying out. He is encouraging the manager to freeze it out this winter. It has been a perpetual problem for ten years in one of their production ponds. Mr. Bussells reported that he sent samples from that pond for testing and it was not *Aetokthonos* positive. Mr. McCord asked when that was tested. Mr. Bussells said it was probably three years ago. Mr. McCord suggested anyone in the state that has *Hydrilla* should send samples to Dr. Wilde for testing. We would prefer not to find out by seeing impaired birds.

Mr. McCord noted when they were at the Potato Creek impoundment, there were about a dozen or so coots and four or five ducks. The ducks jumped up and flew away. The coots did not seem any more impaired than usual, since they do not fly well anyway. They did jump up and attempt to fly off. He was a little concerned because a lot of them did not fly away from the boat like they usually do. They just kind of sat there and looked at us. That could be attributable to something else. Mr. Page said it could just be the beginning of it with them, since it is cumulative. The toxin builds up in their system and the lesions form and progress, even after the birds are removed from the vegetation. Mr. McCord noted that toxin production increases dramatically during this time of the year. That was one of the concerns he discussed with Dr. Wilde. He said she is talking about potential coot collections, like we have done in the past and all came back negative. He said she would also like to collect more vegetation, and grass carp

after we stock them. He noted that she obviously is not trying to talk us out of trying to control the vegetation, but there is some good information that could be collected as we proceed.

Mr. McCord wanted to mention the issue of duck hunting, because he knows there will be people in there duck hunting. He suggested that we at least sending out a public service announcement telling people not to eat the brains of the ducks they shoot. He does not know if that is a normal thing to do or not. Mr. Page hopes that would not be a normal thing. Mr. McCord said there is evidence that the toxin can be passed on through muscle tissue also, if he is remembering correctly. Ms. Moorer confirmed that was the case, since it is a neurotoxin. Mr. Simmons said he would mention it, but most neurotoxins would be denatured by heat if it is cooked correctly. He said he would be in contact with Mr. McCord after speaking with some other staff members.

Mr. McCord hated that this is all coming up really quick and at this time, but that is the nature of the beast. We just collected the samples last Wednesday and sent them immediately to be tested. Ms. Loginon asked where the tumors were happening on the animals. She asked if it was just in the brain, or in the muscle tissue, too. Mr. McCord stated it does not cause tumors, but vacuoles in the brain tissue. Mr. Page said it was originally named Avian Vacuolar Myelinopathy (AVM). Mr. McCord stated it is no longer being called AVM, but just Vacuolar Myelinopathy (VM). That is because it is impacting organisms other than birds, which is where the avian portion of the name came from. Mr. Lamprecht asked if it has the same effect as Mad Cow disease where the disease makes vacuoles within the brain tissue. Mr. McCord said he believes it is similar, but he does not know enough about Mad Cow disease to say. It does create these very obvious openings in the brain tissue, which eventually leads to death once the animal builds up enough of the toxin in its system. He said it is a nasty organism and should be very quickly dealt with, particularly when we have the tools to deal with it.

Mr. Marshall asked if this algae is just associated with *Hydrilla* and not any other vegetation. Mr. McCord said it has been found growing on other vegetation, but *Hydrilla* is the only plant that will cover thousands of acres in any of the reservoirs where it has been found. It seems to be much more prevalent on *Hydrilla*, probably because it also provides a tremendous amount of surface area and sites for the algae to grow. It will grow on native plants. He sent a sample of *Vallisneria* to Dr. Wilde, when we had thousands of acres of it in the system. It has an upright growth pattern and a flat stem, so it has limited surface area for the blue-green algae to grow on. *Hydrilla* has thousands of sites for the algae to grow on. It seems to prefer it from that standpoint, but he does not think you could necessarily say it has a symbiotic relationship with *Hydrilla*. Mr. Page said it is primarily a density issue. Mr. McCord said it grows on whatever dense vegetation is out there. *Hydrilla* is what is usually the densest out there.

Mr. Marshall asked if giant salvinia has too much of a closed canopy for algae growth. Mr. McCord responded that the algae is a submersed plant that grows in the first foot or so of water, but that depends on the water clarity. He noted that what they are finding in Lake Thurmond is in the first 12-18 inches of water, growing on the *Hydrilla*. Mr. Page said it could be temperature dependent, as well. When there are massive amounts of *Hydrilla*, the water temperature in those areas actually rises above normal water temperatures. It could just be the perfect conditions that make *Hydrilla* fit that mold. He asked if that was all the discussion for that subject. No one had anything else.

Mr. Page moved into new action section of the agenda. Mr. Page stated we have *Hydrilla* again on Lake Greenwood. We have treated over 100 acres there with various methods. Most if it looked like very new growth. It started in mid-summer and was around 8-12 inches tall. In late summer, we had the same issue of the opposite side of the lake. It started off as 50 acres and then another 50 acres. It was all in the same general vicinity. We treated that with various herbicides and we did stock more grass carp in there, too. That was done with the idea of keeping our ratios right.

Mr. Page said we also had a significant regrowth of some indicator species in Lake Murray. They had a lot of problems on Murray this year. The water has been up. They have not taken it down at all in the last few years. We stocked more grass carp in Lake Murray, based on other information. If you will remember, we had all these discussions about the stockings. We did not know how many fish we had lost out of Murray. Obviously, our fifty percent assumption was way off. So, we went ahead and did that. He has the information in the new plan to increase those number slightly and kind of stick with our management plan. That is where we stand on that stuff.

Mr. Page noted that we have had a massive infestation of water hyacinth on the Ashepoo River. He showed a map and pointed out where it is. There were issues above and below the US 17 bridge. He conferred with Ms. Holling about how many river miles we treated. Ms. Holling said the water hyacinth was in the system about 18 miles below the bridge, although we did not treat that far. Mr. Page said we treated down to the brackish water. Ms. Holling said we treated as far upstream as we could get an airboat. Mr. Page said we treated about nine acres in this area last year. That was all we found. This year, we got a phone call mid-summer from home owners, boater, and all sorts of people. That river completely blocked in some areas with water hyacinth mats.

Mr. Page noted that it has been a bad year if you are an aquatic applicator and trying to get rid of stuff. If you are making money at it, it has been a good year, because you have been able to treat all over the place. The Ashepoo River was a mess for us. He thinks this year has been a mess for all of us. We had 23 days, during the three summer months, of treatment days

we had scheduled, when we could not treat because of rain. It has been a nightmare. We have had this massive influx of freshwater, which has moved the salinity lines down in some of these areas, he believes. He said that has probably exacerbating the situation by allowing those plants not to get into that brackish or salt water and die. Mr. McCord asked Mr. Page how many acres they treated on the Ashepoo. Mr. Page told the Council they were treating 70 to 80 acres a day. Ms. Holling stated we treated five or six different times. Mr. Page said we could not get to all of it.

Ms. Eidson asked for confirmation on the distance of fifteen miles. Mr. Page said that was about right, both up and downstream. He said that up above the 17 bridge, it branches out with the right section called Horseshoe Creek, and the left side is still the Ashepoo River. We got to the end of the water hyacinth on both branches. The problem was we could not get to everything. When you treat and have these mats, you leave boat trails as you move into areas. We were also dependent on tides, so we could only treat some areas at certain times of the day. We treated one section with a helicopter, because we could not get in there without the airboats getting stuck. We were using mostly diquat, with some Renovate earlier in the season to try to get some systemic control. It was a matter of trying to cut it back, like you would do a wood line. Our first priority was providing river access, so we had to concentrate on getting the big mats out of the river by circling around them to treat them. Then we worked on the landings and canals. There are a number of canals, which are fairly large. The last few times, we were trying to get it cleaned up. We are not sure where it came from. We looked at that river last year and we did not see it. But in mid-June to July, we were seeing bull hyacinth out there that were three feet tall. We cannot find a source for it.

Mr. McCord said someone probably took it out of S-C, because it is quite pretty when it is blooming. He asked Ms. Moorner how many acres they treated this year. Ms. Moorner said they were at 800 acres for this year already and they will still treat until we get a good freeze. McCord stated it has been a bad hyacinth year for S-C as well. Ms. Moore stated that last year, they treated over 2000 acres of CFH, but have treated less than 1000 this year. However, we have picked up on other things. Last year, we sprayed 500 acres of hyacinth, but will be well over 800 this year. Mr. Page noted that we said when we find a cure for CFH, something else would pop up. Ms. Moorner said we did not find a cure. Mother Nature helped us out.

Mr. Page and Mr. McCord both hoped for a colder winter and discussed the ways it could help limit the growth of *Salvinia*, hyacinth, and *Hydrilla*. Growth patterns and growing seasons were discussed, with the latter being longer over the past few years. Some treatment options were also discussed, including a new product called Procellacor that has a shorter contact time and is more selective than the products currently on the market.

Mr. Page said the other project that we undertook, and the staff at S-C has lead the charge, was the cutgrass control again this year in the Santee Cooper Lakes to improve habitat

for waterfowl and fisheries. He asked Ms. Moorer for an update on the project. Ms. Moorer stated they treated a total of 400 acres last year, in cooperation with DNR and the US Fish and Wildlife Service (FWS) at the Santee National Wildlife Refuge. This year, we treated 985 acres. She said we are able to treat more acres this year because we did not do a CFH aerial. We took our budget for that and used it on cutgrass work as well. We treated Hickory Top and quite a few WMAs, as well as other areas in the lakes. Mr. Page asked if she was waiting on the maps from the helicopter contractor. She said she had the maps we sent to them, but she does not have their flight paths yet. She just got the invoices last week. Mr. Page said the maps have been slow coming in from the contractor again. He reminded everyone that for all of the work we do by airboat, we have a map of the area we treated. We get that data daily. The work we do by helicopter, we are supposed to have a map, but we have to get that information from the helicopter after they have completed all the work, because it has to go back to their main office in Virginia to be converted. Ms. Moorer stated they stayed within the pre-flight polygons, except for a couple that had to be adjusted. One of those was Hickory Top. When the pilot went up, the original polygon was a little bit over into the cypress and he was kind of unsure and asked her to fly with him. She did and told him not to hit those trees. You could see where we treated last year. Mr. Page said it is difficult to draw those polygons with aerial photography sometimes. Ms. Moorer said we had one over at Big Oak that we adjusted as well.

Mr. McCord stated they have been in some of the areas treated last year that did exactly what we were hoping for. The cutgrass is mostly eliminated. He provided information about this species and what makes it problematic, as well as what we hope to see by treating these areas. He thinks it is going to be a positive thing moving forward as we continue to work on this effort. We will see the results of what we did this year towards the end of next year. Then a plan can be made as to whether there are other areas that need to be treated. Ms. Moorer said this is something they are hoping to keep in their budget and continue to work with DNR and Santee National Wildlife Refuge. Mr. Page noted this is being done in conjunction with Pintail Partners, the Waterfowl Association, and the DNR WMA managers. They have asked for areas to be opened up and hopefully we have gotten that done, but it is an ongoing process.

Mr. McCord reiterated that S-C was glad to be able to find the money to do that work this year, because he really does not know where anything is going to come from moving forward. S-C is undergoing tremendous budget cuts to try to recoup the money spent on the now defunct nuclear project. He provided some details about what they are expecting over the next few years. He was really happy they were able to do something this year, and hopefully that will create some good habitat for several years down the road. The cutgrass should not come back in very quickly. We do need to watch those areas very closely, because either S-C or DNR can go into these areas and keep it from coming back in without spending very much money, as it takes cutgrass a while to take over. It would be a shame for it to fill right back in.

Mr. Page noted we also treated Bonneau Ferry, Santee Coastal, Samworth, and a few other areas. Samworth, in particular, is getting a lot of flak from some local residents down there. DNR has not been able to get their impoundments back up to par, because they cannot get

anyone qualified enough to make the repairs to the dikes after damage done by two years of storms. They got the full effect of one hurricane and some effects from a second one. ANS has tried to help them out. Most of these places have been paying their own way, but we are helping with the logistics. On Santee Coastal Reserve, we treated about 900 acres of *Phragmites* (Phrag), mostly on Murphy and the Cape. He noted that we are at a point where we cannot quite get it finished before it catches back up with us on that cycle where we need to do maintenance.

Mr. Page has stressed the maintenance issue with all the managers of these properties, and with SC Parks, Recreation, and Tourism (PRT) staff. Simple management practices, that do not seem like a lot at the time, can make a big difference three to four years down the road, if you are constantly hitting problem plants and cutting them back. That would eliminate some of the big treatments and we can move onto other things.

Mr. Page said we have also been re-engaged with the ACE Basin group. We did Phrag work last year on three river runs in the ACE Basin. It was only about twenty to thirty acres total. We have discussed some issues that deal with private property owners paying their own way for Phrag control on private property, but we would provide the logistics by having the helicopter in the area, and the right prescription of herbicide to use. We would not be paying for the work. In conjunction with USFWS, DNR, and the other project partners, the landowners want to be very pro-active in searching out and destroying *Phragmites* before it becomes established in that area. Mr. Page praised them. He noted that Phrag is not nearly as bad down there as it is in Georgetown.

Mr. McCord asked Mr. Page what the ANS budget is looking like for the upcoming year. Mr. Page provided information about the ANS funding from the water recreation money, which covers salaries, equipment and treatment. It varies some by year because it is part of a fuel tax.

Ms. Eidson brought the discussion back to the potential option to request more funding to deal with the state-wide threat of giant salvinia. Mr. Page and Mr. McCord discussed that option, but both felt it was unlikely to happen in the current political climate. One legislator in particular is very opposed to anything that will put money on the S-C system. That legislator that put a proviso on the DNR budget that we would hunt a federal protected migratory bird on the Santee Cooper Lakes. The details of that proviso and the fallout from it were discussed. Discussion regarding potential ways to get additional funding continued for several minutes.

Mr. McCord asked Ms. Moorer how much S-C has spent this year. Ms. Moorer stated around \$800,000 dollars. They provided additional details on what still needed to be done, how money was shifted to treat the most important issues for the year, and how the budget cut will affect treatments over the next few years.

Ms. Eidson said the Corps used to provide match money on the S-C lakes and we used to have a lot of money to help. She noted that we are not in a recession anymore. We should act like we are recovering and not like we have to beg, steal, and borrow from the stuff that should

rightfully delivered to the people of SC. Mr. McCord said the ANS Program needs considerably more money in their budget to fight both what they already have to fight, but also what they are potentially going to have to fight. Ms. Eidson felt that with S-C facing other issues and a new invasive species that will likely affect the entire state, the APMC has a sound argument to bring to the table. Mr. Page said he would put another press on it.

Ms. Eidson voiced concerns that the S-C budget cuts over the next few years would have a similar impact as the recession in 2008 that impacted the state budget so hard. She feels S-C will lose money and people to the point that treatments will not get done. Mr. Page noted that the 2008 situation did not affect the ANS program much, in that we had that dedicated supply of money. There was discussion about the ANS budget and potential ways to increase the available money.

Mr. Simmons asked how much money, if you were doing a wish list, would you need to ask for in your line item. Several people indicated that would be difficult to determine. There was an extensive discussion about cost per acre for treatment, which is different for different species as well as application method, but ranges from \$90 to \$300 per acre for airboat application and much higher for helicopter application. There is also the difficulty of determining acreage for *Salvinia*, due to its small size and ability to hide under the canopy of larger plants. There is also the difficulty of explaining the extent of the problem to both legislators and the public, who do not understand that treatment needs to start in the early stages of growth to be effective at a lower cost. Ms. Moorer noted that for their Galileo data that was flow several weeks ago, we have added giant salvinia to the analysis. We are hoping to have background data from other places where they have spectral data from, so we can try to quantify the acreage.

Mr. Page went back to Mr. Simmons question and thinks that \$100,000 dollars will be too low. Mr. Simmons stated he was thinking \$200,000 or \$250,000. Ms. Eidson asked where the small ponds were where *Salvinia* found before, and if they were mapped. Ms. Moorer said those were in Walterboro, and that they only mapped the S-C lakes. Ms. Eidson said all the known locations should be shown to make the argument that it is a statewide problem. Ms. Moorer said it is likely in the waterways downstream of the S-C lakes. Mr. McCord said that because of how this plant spreads and how easily it spreads. Ms. Moorer relayed that Dr. Mudge stated that giant salvinia can live between bunk boards on a boat trailer for up to two weeks. S-C staff stated it makes that plant so much easier to spread even with a proper cleaning of your boat and trailer. Mr. McCord stated this plant is a significant issue and he thinks it is going to be a significant issue, for not just the people in this room, but for the whole state. It needs to be looked at monetarily by the legislature, if at all possible. Some money needs to come from somewhere. Mr. Page said they would make another run at it, and he will discuss it with Mr. Simmons and Ms. Cope.

Ms. Eidson moved back to the bill to change the Council and asked who was against passing H-4163. Mr. Page stated no one is against the bill. Ms. Eidson asked if there was anyone

adamantly opposed to it. Mr. Page stated that there is no real opponent in there that is going to argue with the representative that introduced it. Mr. McCord informed the Council that the representative proposed to change the Council last year and discussed its progress. He stated most of the local representatives from around the S-C lakes were against H-4163, as far as he knows. That does not include this representative, who represents Florence and Darlington. Ms. Eidson suggested we get those representatives to introduce a bill to get more funding. There was some discussion about how legislators work and make deals, and use provisos to avoid taking something thru the whole legislative process. Mr. Page stated that DNR had limited what they requested due to being under review by the Oversight Committee. He reiterated that he would talk about it again with the DNR staff.

Mr. Page said that Louisiana and Texas have the money to address it and they cannot get a handle on it. Of course, Louisiana has some political issues that prevent them from spraying at certain times of the year. Mr. McCord noted that politics does not work well with natural resource management. Mr. Page gave a history of the fight against giant salvinia in Louisiana and Texas after it was introduced into one of their border lakes. This included ways to prevent it from going across the state line and ways they tried to control it. There was some discussion about the difficulty of using biological control methods.

Mr. Page moved on to the next agenda item and asked if there were any new items to bring to the Council's attention. Mr. Page said he would send out the 124th meeting minutes via email. The Council members can respond to the email with their corrections. Mr. Page will then resend another email out with the corrected minutes and call for a vote. Mr. Page asked for suggestions for a future meeting date. He suggested mid-January. Mr. McCord said January or February would be ideal. Mr. Page noted that there needed to be a meeting of just DNR and S-C before the Council meeting. S-C staff said they needed to have some time to get all their survey data in first, which will hopefully be the end of December, but more realistically mid-January.

Mr. Page told the Council he will only be sending them the portions of the draft Aquatic Plant Management Plan that need to be change or added. Ashepoo had to be added back. It was in there for twenty years and he removed it. He is never taking anything out again. You will probably only get Ashepoo, Lake Greenwood, Lake Murray, and Santee Cooper. Hopefully, there will not be many changes on Santee Cooper, and the data supports that. He does not think there are many changes to the others, but he has already tweaked them a little.

Mr. Simmons asked if SCE&G was ever asked to join the Council. Mr. Page said no because there are no private entities that are part of the Council. It is made up of state agencies or public service authorities. Mr. McCord noted that their representatives used to come to some of the meeting, but have not done so in a long time. Mr. Page said the only representative that has not shown up in a long time is the Governor's Office. It is kind of a remnant from when the Council originated from a Governor's executive order. Mr. McCord said that was the last governor that knew what the Council was. He said Bill Marshall was the last representative from the Governor's Office. Mr. Page said it was actually Hank Stallworth, when he was the

Governor's Natural Resources or Science representative. Mr. Stallworth came at Mr. Page's request. Mr. McCord said it was somewhat helpful that Mr. Stallworth was a former DNR employee and knew something about the Council. Mr. Page said it was somewhat funny about how that works. That position is not in the Governor's budget. The agency the people are pulled from continue to pay that person while they work in the Governor's office.

Ms. Eidson went back to the money request. The bacteria we are finding is a state-wide issue, not an S-C issue. So we have two issues that could be used to get additional funding. Mr. McCord said something he is reminding his staff of with the blue-green algae is the terminology. He has a tendency to call it a bacteria, because it technically is a cyanobacteria. He tries to avoid calling it a bacteria, because the public perception of a bacteria is that they are going to catch it. He would prefer to use the term blue-green algae when referring to it. Mr. Page said that if we do include that when we bring it up, he thinks we will get less response because it indicates *Hydrilla* and we will get more fight over that. He thinks we might be able to push funding for *Salvinia* on its merits, but does not think we could get money for the AVM. Ms. Eidson said you should not focus on the plant, but on the eagles.

Mr. McCord said he was going to pay for Dr. Wilde to come make her presentation to the Council and any other group of people he can find. If you watch her presentation, and do not get it, he does not know what type of people we are dealing with. Mr. Page said that when Dr. Wilde first discovered this when she was working at the College of Charleston, she was not recognized by the scientific community, which was the Southeastern Cooperative Wildlife Disease Study (SCWDS). The people there did not recognize her data then, but now she works for them. Once she got to the University of Georgia (UGA), they recognized it as an avian disease. Mr. Page does not think they recognize anything else yet. Mr. McCord said it is all related to *Hydrilla*. That is why they had a hard time recognizing her. It is all based on the bogus information that you have to let *Hydrilla* grow to have successful fishing. That is where it is coming from. That data is just as bogus now as it was thirty years ago. Ms. Lognion said she does not understand how they can still agree with that data when endangered species are dying.

Mr. Page said, before we adjourn, he asked Mr. McCord for some details about the field trip. Mr. McCord asked for a show of hands for people going on the boat trip. Eight people raised their hands and there was discussion about transportation to the boat landing. S-C staff requested people ride with them, as parking is limited at the landing. Mr. McCord said the plan is to go to the boat landing, go straight across the lake to Angel's Landing for lunch, and then do a tour of the lake as we make our way back to this side of the lake. The weather is supposed to be better a little later this afternoon.

Mr. Page thanked Mr. Lamprecht for providing the space at the Dennis Wildlife Center for the meeting and Santee Cooper for the field trip. Mr. McCord made a motion to adjourn. Ms. Lognion seconded the motion. Mr. Page called for a vote, which was unanimously passed. The meeting adjourned at 12:45pm.