

123rd Meeting of the South Carolina Aquatic Plant Management Council

Attendance:

Council Members: Chris Page, Terry Hurley, Jeannie Eidson, Tammy Lognion, David Wannamaker, Bob Perry, Larry McCord, Bill Marshall (via telephone)

Guests: Julie Holling, Matt Puckhaber, Casey Moorer, John Morrison, Chip Davis, John Grant, Jane Hood, Carl Bussells, Scott Lamprecht

Location: Clemson's Livestock Poultry Health Building, 500 Clemson Rd., Columbia, SC 29229

Call to Order: 10:13am 12/06/16

Minutes:

Chairman Chris Page called to order the 123rd Meeting of the South Carolina Aquatic Plant Management Council (APMC). Mr. Bill Marshall, representing the SC Department of Natural Resources (DNR) Land, Water, and Conservation Division, was attending the meeting by phone conference. Mr. Page introduced Terry Hurley as the new representative from SC Department of Parks, Recreation and Tourism, replacing Stan Hutto. He also introduced Julie Holling, who replaced Daniel Hood in the Aquatic Nuisance Species program. Mr. McCord introduced Jane Hood, the new Vice President of Environmental and Water Systems at Santee Cooper (SC). Mr. Page asked everyone to introduce themselves.

The first item on the agenda is approving the minutes from the 122nd Meeting of the APMC on March 8, 2016. Mr. Page offered to give everyone a few minutes to review the minutes. Mr. Perry noted two corrections on page 3. Pentel Partners should be Pintail Partners, and *Valcenaria* should be *Vallisneria*. Mr. Page asked if there were any other changes that needed to be made. While the council members were reviewing the minutes, Mr. Page thanked Clemson for providing the meeting space and Tammy for arranging it. He has attended several meetings here and thought it would be a good place to have one of our own. Mr. Perry made a motion to approve the minutes with the noted changes. Mr. McCord seconded the motion. Mr. Page asked for discussion. No discussion was brought before the board. Mr. Page called for a vote. The motion passed unanimously.

Mr. Page said the next item on the agenda is "Public Comments," but no one from the public was present, so that can be skipped. Mr. McCord asked if a notice of the meeting was sent out to the public. Mr. Page said he sent the information to the news staff to be put in a news release, but sometimes it does not get posted. The front page of the DNR web site usually has

the news on it but is currently focused on the wildfires in the upstate and staff has been focused on keeping the closure information up to date. He did not anticipate any attendance by the public. The end of the year wrap-up does not usually warrant much interest. He expects more at the next two meetings. Mr. McCord expressed surprise at the lack of public participation. Mr. Page agreed, but thinks those folks know what is going on because of conversations they have had with both Mr. Page and Mr. McCord in various other forums.

Mr. Page moved on to the recap of the 2016 season. He asked that Mr. Lamprecht go last, and if SC wished to go first. Mr. McCord confirmed. Ms. Moorer stepped to the front to do a presentation.

Ms. Moorer shared a slide of the species that were treated on the SC lakes. The total spent was \$745,000, but \$652,000 of that was spent on crested floating heart. Aerial treatment was done on 1200 acres during the summer. Test plots were done on 300 acres in coordination with one of the herbicide manufacturers and the University of Florida. This was where the majority of SC's money was spent this year. Aerial treatments, targeting giant cutgrass, were done in the fall on 491 acres in coordination with DNR and Santee National Wildlife Refuge. Of that, 125 acres were treated on the Santee National Wildlife Refuge. Hopefully, that work will continue in the coming years. The cutgrass will need to be treated annually to try to knock down some of that biomass to open up some of those areas for waterfowl hunting.

Mr. McCord noted that the giant cutgrass control efforts comes out of a joint effort by SCDNR and SC. We had meetings with some of the constituent groups and that is one of the reasons we are not having too many people interested in this meeting. He feels they will probably show up when the final decisions are made on the plan. Some of the duck hunting groups have been asking over the last few years for control work to be done on giant cutgrass, especially in the upper portion of Lake Marion. We got together with DNR and those groups to identify areas, both in and out of Wildlife Management Areas (WMA), and joined forces to do some helicopter treatment of the giant cutgrass in those areas so more beneficial vegetation can move in. Although giant cutgrass is native and small areas of it is beneficial to some species, large monoculture areas of it are not beneficial, especially for waterfowl. We do not know the results of the treatment, but we will see those in the spring.

Mr. McCord noted the work done with the University of Florida and UPI, the manufacturer of the Endothall products Aquathol and Hydrothol. Plots were created to test various treatment regimens of Aquathol K to control crested floating heart in upper Lake Marion. There has been good activity by those compounds, especially in areas that don't have much water movement. We are hoping to see good results from those treatments in the spring. That will help SC control the estimated 3000 acres of crested floating heart spread around the two

lakes. Ms. Moorer stated the plants came on later in the season because the water turbidity limited the growth early in the season.

Mr. Davis asked if floating heart was being seen on the National Wildlife Refuge. Ms. Moorer confirmed that it was and that was one of the locations they hoped to test Endothall. Unfortunately, it was not on the refuge's pesticide use permit and Clearcast had to be used. Mr. McCord stated there were some difficulties working with the US Fish and Wildlife Service (FWS), as their approved herbicide list is somewhat antiquated and does not contain many of the newer products. A special permit application is required to get herbicides added, which is a very cumbersome process. SC has been working with FWS for several years to get other compounds added to give them a better chance to control problem vegetation within the refuge boundaries.

Mr. McCord said crested floating heart is going to be a big part of our control efforts in the future. Those plants were severely impacted by the high water and high turbidity of the 2015 flood. The growth of the floating leaves was delayed. The plants have submersed leaves that are almost like a head of cabbage on the lake bed, which are generally there year-round. Light penetration to those leaves can have a big impact on growth.

Mr. Perry asked what chemicals were used on the *Zizaniopsis* (giant cutgrass). Ms. Moorer stated it was Imazapyr (Habitat, etc.), Glyphosate (RoundUp, Rodeo, etc.), and MSO. Mr. Davis asked for the application rates of the chemicals. Ms. Moorer said it was 48 ounces of each plus 1% MSO at 20 gallons per acre, which is a little hot. The application got pushed back a little by Hurricane Matthew. Mr. Page stated a rate of 32 ounces of each at 15 gallons per acre would probably have been sufficient. However, he and Ms. Moorer agreed that the additional herbicide cost was worth it to hit the vegetation a little harder, since the flight cost would not change. Ms. Moorer added the decision was aided by the fact that 48 acres of cutgrass had been treated at the higher rate in the Hatchery WMA a little earlier in the year and we could see the good results of that treatment.

Mr. McCord asked if that was the same rate that DNR is using on phragmites. Mr. Page said the phragmites rate is actually higher and at or close to the maximum rate. Mr. McCord noted that for some of the areas we are likely to be treating giant cutgrass in the future, we will be looking at replacing the Imazapyr (Habitat) with Imazamox (Clearcast) if we are treating areas where we are concerned about other vegetation, like trees and shrubs. You can effectively treat across those non-target plants pretty effectively with Imazamox, but Habitat is not as selective. These areas we treated on this go-round were areas where trees and shrubs were not an issue, which is why that mix was selected. It is the same situation that Mr. Page has on the areas on the coast. You are treating the target vegetation and not affecting much non-target vegetation because there is a large monoculture of the target vegetation. Mr. Page said that a lot of the areas

have to be sprayed because they are not rice fields that can be flooded to affect control. Mr. Perry said you cannot control it unless you can flood it very deep.

Mr. Perry asked for comments on the translocation mechanism for the herbicides in *Zizaniopsis*. Is it quick, or does it persist through the fall and into the winter? Mr. McCord said he can't comment on the translocation speed. Based on studies that have been done on cutgrass and similar species, the best translocation and control occurs with late season application. You want to hit the plant as late in the season as possible without it being affected by cold and frost, because the plant is pumping more energy and components into the root system. Therefore, the herbicides get translocated there, too.

Mr. Perry asked if standing water around the root system have any impact. Mr. McCord said it doesn't stop it, but the herbicides are more effective if the plants are on dry ground. In the lake system, we are dependent on the lake levels. Most of the areas that were treated this year were inundated. Mr. Page agreed that it works better on dry ground but noted that standing water was kept on the areas treated at Samworth WMA because there were other species in the area which we wanted to comeback after the treatment. We didn't want to sterilize the soil. We wanted other seed material to grow as soon as the cutgrass dropped out. Habitat is a soil sterilant that stays in the soil for up to a year or possibly longer, so trying to establish other beneficial plants takes longer. Mr. McCord said root uptake by non-target species is very likely when you spray Habitat on dry ground. Mr. Page noted you eliminate that when you have the plants in 8 to 12 inches of water, because it dilutes quickly.

Mr. Wannamaker asked for a comparison of the effects of the 2015 flood and Hurricane Matthew. Mr. McCord said there was probably more of an impact from the hurricane because there were direct impacts from wind and wave action in addition to the inflow from upstream. As far as inflows, there was more inflow from the 1000-year flood than the hurricane. The hurricane caused a significant impact from the wind, wave action, and inflow, all of which caused an increase in turbidity and have an impact on SC's survey work.

Mr. McCord noted, as he has in other meetings, that the SC lakes didn't experience a 1000-year flood in 2015. Much of the state did, but the lakes have experienced worse conditions before. The lakes suffered both direct and indirect impacts from the hurricane. Ms. Lognion noted the upstate didn't experience anything. Mr. Page said the Pee Dee and northern portion of Myrtle Beach experienced the most flooding from the hurricane. He believes the Waccamaw River crested higher this year than last year. The Lumber River, during the 2015 flooding, did not come close to what it did after the hurricane. Different portions of the state got hammered each year. Mr. McCord said they were two extreme events and were more extreme depending on where you were.

Mr. McCord discussed some preliminary survey work SC staff has done and some sightings of hydrilla. We had our aerial imagery planned to start the week before the hurricane, and it was started. After the hurricane, we had to evaluate whether it was worth completing the imagery. It was completed and is providing some benefit. Due to the delays, it is going to be a little more time before we get all the results. Some areas of the lake are clear. The bottom was visible and submersed vegetation was identified. The emergent and floating vegetation was identifiable. There were a lot of areas where submersed vegetation was not visible because of the turbidity, and that was confirmed during the ground truth surveys in the boats. December is not really a good time to be doing aquatic plant surveys, especially for hydrilla, but we will continue to do them probably through the month and possibly beyond. We hope that the recent rains don't increase the turbidity of the lakes.

Mr. McCord noted that the points shown of the maps in the presentation indicate multiple findings of hydrilla within the same area. In the limited survey we have done, sixty-five locations have been found where hydrilla is actively growing. The north side of both reservoirs was reasonably clear, because of the way water flows thru them. When we have large inflows of turbid water, it tends to impact all of the upper portion of Lake Marion and then the southern portion of the lower portion of it. We were lucky to be able to survey the northern sides of both lakes. Some of that was left over from the 2015 flood, and then hurricane Matthew made things worse. On the northern areas, we saw hydrilla, mixed with other native vegetation, growing in almost every cove we could access. Ms. Moorer noted the red areas on the map are the areas that were part of the ground truth surveys. Mr. McCord pointed out areas where they tried to survey but were too turbid to survey. They did not go up into the residential areas but will survey them later as those areas have supported a lot of hydrilla in the past.

Mr. McCord noted the impoundments on Potato Creek and Taw Caw Creek have been discussed before, and the rains from Matthew caused both of them to overtop their causeways. That is not unusual for the Potato Creek impoundment, but it is unusual for the Taw Caw impoundment. Both of those areas have had issues with hydrilla and have been treated in the past. Mr. Page said it was good that the screens have not been put in place. Mr. McCord said the screens were in place before the hurricane and got clogged with vegetation. However, it would not have mattered whether they were there or not, because floating islands of cattails, willows, and other vegetation got washed down from the upper ends of the impoundments. That vegetation washed up against the causeways, was about 50 feet wide and blocked the outlets. They have since been cleared off, but an additional five inches of rain may cause water to cross the road again. That is an area that is being worked on. The decision was made to stock grass carp to control the hydrilla, but that has not been done yet. The impoundments are prepared for that with the grates in place, although the grates need a little work before stocking takes place. Mr. Page was thankful the stocking had not taken place because fish would have been lost. Mr. McCord said the loss would not have been great. Carp have been stocked there in the past when

the water has overtopped the causeway. During those times, Mr. McCord personally witnessed carp swimming over the causeway, but we did not lose the majority of the population. Carp tend to be an upstream swimming species, and Mr. McCord's experience is that we do not see a huge number of them go out during overflow events like this. That may or may not be the case for spills at the dam on Lake Marion, but he suspects it is. He does not think we lose large numbers of fish, simply because there is not the appropriate habitat near those spills, and the majority of the fish are in areas away from the spillway. Mr. Page noted that hundreds of carp were lost out of Lake Murray during the 2015 flooding when the emergency spillways were opened. That is one of the deeper areas of the lake with very little vegetation. Mr. McCord does not deny that we lost some fish but would be surprised if it was significant numbers. It is guesswork at this point.

Mr. Davis asked if Mr. McCord was able to survey the area near the north shoreline between Elliot's and Jacks Creek that had hydrilla. Mr. McCord said it was too muddy up there but is sure that it's still there. Mr. Davis was curious if it had been scoured or shaded out. Mr. McCord thinks, from experience, that the high turbidity will slow its growth, but not stop it. It will bounce back as soon as the turbidity is reduced. He fully expects the hydrilla to be in that area when they are able to survey it. Hydrilla doesn't completely senesce in the SC system and has not for decades. He has no doubt that it will be actively growing in late year surveys. It is not the prime time to survey for native submersed vegetation, most of which does senesce and often breaks off to root crowns that are not easily identifiable.

Mr. McCord showed a slide of survey areas on the north shore of Lake Moultrie. Some of the hydrilla there was mixed in with *Lyngbya* algae, which slows the hydrilla's growth, and it was very difficult to discern. We did not have an opportunity to do extensive sampling out in the more open areas, but it was growing in water that was 6-8 feet deep. All the other areas were shoreline areas that were 1-4 feet deep at the time of sampling. We did see grass carp feeding in these areas. The carp are not that smart but are pretty good at finding hydrilla when it is starting to grow. The hydrilla is very widespread, in terms of where we are finding it again, and is repeating its historical condition. The next slide was a mix of native vegetation with hydrilla mixed in. That is where it usually starts, hidden amongst the natives. That was typical of most of the areas where we found it.

Mr. McCord said this is not documented in acres of vegetation, nor will it be. We do not want to get to that point. This is documenting areas where hydrilla is being found. He pointed to an area on the slide and said the hydrilla could probably be measured in square feet, but that makes it no less significant. It is in an area that is accessible to grass carp but is not being controlled at this point and is beginning to expand.

Mr. Morrison discussed the historical information on the next slide. It is an update of a graph that has probably been shown at a previous meeting. It only goes back to 2003 but shows hydrilla acres versus grass carp stocking. It does not show a lot of the declining carp population coming down from the hundreds of thousands in the 1990's. We start at 26,000 carp in 2003, based on the carp model, which allows for 32 percent annual mortality over the years. At that point, we were at a hydrilla level of about 200 acres. In the early 2000's, we had a lot of low water level events, with clear water. This allowed hydrilla to take off in some of the deeper areas of the lake. We had no grass carp stocking from 2003 until a small stocking of 2,000 fish in 2007. We went on and where the two axes cross shows about a 12,000 carp population. In 2009, we stocked to an estimated population level of 12,000, which we thought was significant at the time, because that was the level where the two lines crossed. However, you can see that the hydrilla acreage continued to advance. The next year, in 2010, we raised the carp numbers back up to 20,000, which is the 1 per 8 acre level that has been recommended by Phil Kirk, primarily from his work in Piedmont reservoirs. The next year, we were at 1,200 hydrilla acres. Then we decided to chase the hydrilla and raised the carp numbers to 30,000. During the next year, the hydrilla population nearly tripled to 3,600 acres. In 2012, we knew we needed to get back to the control measure of the carp and stocked 109,000 new carp into the system. During the same year, the hydrilla population increased from 3,600 to 7,000 acres. In 2013, we added an additional 114,000 carp. There were not any low water levels events in 2013. With the increase in carp numbers and turbidity, the hydrilla acreage went down to around 1,000 acres. Those were the last carp that stocked in the system. Right now, the estimated level of carp for 2017 is 43,000. We are starting to see hydrilla come back, but do not have a good estimate of the acreage yet because it is spotty.

Mr. Page asked to make some comments. He thinks we learned something from this. It happened the time before. In the early 2000's, when the hydrilla was under control and its levels were low, we could have been doing maintenance stocking. We would have stayed above the curve and continued to control the hydrilla. When we drop below that, we are not in maintenance mode anymore. We are in control mode. The hydrilla is outgaining the carp. Once you are in control mode, you have to have a threshold event, which gets enough carp in the system to once again gain control. You cannot chase your tail and expect the maintenance stockings to do control work. We had to get that big peak of carp numbers to be able to control the hydrilla. That is what we don't want to have to do again.

Mr. McCord agreed and pointed out that the 200 acres of hydrilla shown in the early 2000's on the slide was a base line number used at that time. In 2014, it is 100 acres, which is a base line decided on by Mr. McCord, based on what has been seen and years of experience. We are never without hydrilla. It will be around the system, trying to come back. There has been too much studying of tuber population and regrowth that shows they can last for fifteen years and regrow when conditions are right. Right now, based on what we have seen and extrapolating it

to the rest of the system, we are in a similar situation as the early 2000's. It is going to do exactly what it has done in the past. If we do not take action, we are going to see the same thing happen again, which is much more significant to SC than others.

Mr. Page passed out copies of a spreadsheet, which he had planned to cover later. Since it is already being discussed, he decided to go ahead and bring it up. It contains the information in the graph in the slide. It shows how things have repeated over the years. As scientists, we need to slow the curve down, so we can have a better idea of what is happening, without these big jumps in the carp population. That is one of the reasons we talked about carp last year and will again this year. Do we really think it will be effective to stock carp this year? No. Is it going to be effective from a standpoint of increasing our knowledge and making the science better? Yes, because he thinks we will be able to slow down that curve. Instead of taking giant steps, slow it down to baby steps, so we can catch up with it. He does not know about everyone else, but his brain can only analyze something so fast, especially the way hydrilla grows. You are looking at an event where it takes a couple of years to gain control of hydrilla anyway, once you get in a control situation. So, you have about a two-year lag. If we can slow that curve down, so we can get better figures on it and know the best number carp to keep the hydrilla in check. It may be 1:8, 1:10, or 1:6. We do not have enough information to know right now.

Mr. McCord pointed out that the purpose of the original grass carp stocking program, developed in the late '80s and initiated in 1989, had a long-term plan attached to that stocking. It was the largest stocking in the world, at that time, of grass carp to control vegetation. It was not a single stocking plan, or a several year stocking plan. It was a multi-year plan, out to infinity, to get control of and maintain control of hydrilla. The holy grail of that process is to find the magic number of grass carp that we want to try to maintain. Based on what we are seeing right now and what the best estimate number of grass carp is, which is about 40,000 fish at the beginning of 2017, we are seeing the same thing happen with hydrilla as we have seen twice in the past. We have not made the appropriate decision. He is not saying that 40,000 is the holy grail. He is saying the number of fish we are expecting to have in the system at the beginning of 2017, is very close and probably the closest we have been to being at the appropriate level to keep hydrilla under control. It is beginning to get out of control at a level of fish between 40,000 and 60,000, which is what we had at the beginning of 2016. He sees that as a very realistic target that is exactly what we have been trying to do for decades with this grass carp stocking program.

Mr. McCord noted that part of this organization's mandate to manage a grass carp level that will control hydrilla and allow native vegetation to grow. We are seeing *Vallisneria* coming up in all the areas we surveyed. The aerial photography picked it up and it has been ground truthed to confirm the species. He indicated the leaf lengths being seen and noted that the plants are actively growing. This species does not grow when the turbidity levels are high, or the lake levels are high, because there is not enough light penetration. That situation is beginning to

change, so it is beginning to grow, with seeds and root crowns sprouting. Those are some of the things we look for when trying to determine the appropriate number of carp in the system. It is an excellent place to start, if we treat it like we have talked about for years. The number will be adjusted based on mortality and what we see in the system. As Mr. Page said, we cannot allow hydrilla to start that upward shoot again, where we have to control it with large scale stocking of grass carp. It is bad for the system, the SC budget, and the management of the SC lakes. It is a bad precedent to be set by the APMC to do that again.

Mr. Wannamaker asked if stocking that many carp could be afforded. Mr. McCord said that question needed to be directed to either him or Ms. Hood, as it is the SC budget is the only budget that is affected by this decision. He wanted to make it clear that the cost of grass carp stocking and spraying herbicide for hydrilla and other weed control comes exclusively from SC. There is no cost share money coming to them through the program and the council, as there has been in the past. It is a significant budget impact. We have an opportunity here, with good information, to target a number that is not a ridiculously high number of fish. You are talking about 40,000 fish in a very large reservoir that is unlike any other reservoir where studies have been done that recommend lower level of fish. Those reservoirs do not have the capability to support as much hydrilla, because they don't have as much shallow water, the same nutrient load, the historic populations of hydrilla, and in some cases, have a different subtype of hydrilla than the SC lakes. They have a monoecious hydrilla, which is not as aggressive as the dioecious hydrilla in the SC lakes. All of those things need to be kept in mind. Mr. Page said he didn't want to have the hydrilla discussion now. That is not what this meeting is for. It is for a recap of the year.

Ms. Eidson asked for clarification on how many times this has happened before. She thought someone said it had happened twice. Mr. Page said it has happened once before. This is the second time we are approaching that threshold. It happened with the original stocking and we did not do the maintenance stocking as we should have. Mr. Lamprecht commented that we have this model number of 43,000, which is a good number to hang our hat on, but we have already discussed losing grass carp out of sub-impoundments due to flooding. The gates of Santee Dam were open for about 85 days from the October 2015 thru February 2016, so we lost a significant number of fish downstream and we have no way of estimating that. That number is a good place to start but realize the actual number may be lower than that.

Mr. McCord asked if Mr. Lamprecht had any numbers on previous spills during the life of the grass carp stocking project. Mr. Lamprecht has not scrutinized that, but there were spills during that time where mortality estimates were being made. Part of that estimate included immigration out of the system, so there was some spilling. Mr. McCord said we have had significantly bigger and longer spills in the past than what we had during the time frame you are talking about that could be affecting the number we are looking at now. These numbers have

never been adjusted based on spills from the Santee Cooper dams. Why would we do it now? He can get the numbers, but the spills from the 1000-year flood and Hurricane Matthew are not significant in comparison to other spills we have had during the life of the grass carp stocking. We have spills on a regular basis, because that's what the system is for. It has never been considered a big impact on the grass carp stocking model, nor have we changed our numbers based on an estimated number of fish we have lost during a spill event. We have no way of determining that.

Mr. Page said there were similar issues on Lake Greenwood and Lake Murray, and he will talk about that later. The issue there is that we have eye witness accounts from our fisheries biologists that we had hundreds, close to thousands, of grass carp that were dead in the parking lot at Saluda River Shoals Park. It flooded, and the carp were thrown out of that system up close to the dam. We do not know numbers. There is obviously some impact, but how do we monitor that and deal with it? Ms. Eidson said it would be nice to have the spill data for the lakes where stocking is occurring, so we can compare that information. Mr. McCord said he could get that data for the SC lakes. Mr. Page said he can find out what we can get. He is not sure they can provide that information, since they went to the emergency spillway, which is only used in dire circumstances. Anything that comes thru the Lake Murray dam is not going to have fish in it, because they are pulling from the bottom of the lake.

Mr. Page said he does not ever want to put 100's of thousands of grass carp in the SC lake system again, ever, because he knows what it does to everything else in that system. There is that threshold, and once you get past that stage, there is an awful lot of carp hanging around in there. Once they lose their preferred food source of hydrilla, they do start eating other stuff and it impacts the native vegetation at that stage. We don't want to impact the native vegetation. We need to get to that balancing point. We are trying to do something that is hard to do, to get to that perfect balance. If we have to do it in big steps, we are probably never going to get there. If we can do it in baby steps, to work our way to it and then back up if we go a little too far. We can probably get it if we go slowly. He thinks that balance may change from year to year, based on environmental conditions. We are trying to outsmart Mother Nature, to a degree. We know we cannot do it, but we can come awful close sometimes. We have screwed her up when start messing with her in these big swings. We need to do some little swings.

Mr. Page started reviewing the DNR work. We had some of the same issues that SC had. The cutgrass work included the work done on the SC lakes. The cost share shown for all the work is about a 50-50 split for the different groups. He thinks the actual money brought in through water recreation funds is about \$450,000, which covers staff, overhead, and control work. Our budget for just the control work ends up being about \$250,000 to \$300,000 per year. That is all we have. There are no state appropriated dollars or extra money. Luckily, gas is cheap, so people are buying it. The gas tax money is good.

Mr. Page discussed hydrilla, which is mostly in two spots. One spot is on Back River Reservoir, which has been there forever. We treat around the SCE&G water intake and they cost share that with us at a 50/50 rate. We also treat around the boat ramps. Both SCE&G and Charleston Public Works (CPW) pay us to treat that. The other part of the hydrilla number is 52 acres in Lake Greenwood. It has come back, and the carp numbers were down. We figured we have lost some somewhere, even though we were doing maintenance stocking. The response to that number was to increase the maintenance stocking from 250 to 500. Mr. Page was asking for forgiveness, because he did not ask permission from the council before making that change. He did the same thing in Murray and stocked 1500 instead of the planned 1100. He did that because of the uncertainty of what we lost, and watching those indicator species, such as the naiads, *Najas*, and *Vallisneria*. We have *Vallisneria* in Lake Murray and a bunch of it in Lake Greenwood. The hydrilla was mixed in with the *Vallisneria*, so we probably do not have either in the places that were treated with Sonar. That is the problem. There may have been enough carp, but they could not get to the hydrilla because it was hidden by the *Vallisneria*, or they were not hungry enough to eat the *Vallisneria* to get to the hydrilla. We saw a good fringe of *Vallisneria* in some of the coves. You would think that was all that was there until you threw a rake. On the rake was a lot of *Vallisneria*, a few naiads and all of the sudden, hydrilla. And it was down. It was so low in September and October when we discovered it, that it looked like new growth. It was not up earlier in the year. Duke also found eight acres of hydrilla in Lake Keowee, and they treated it.

Mr. Page said the second thing on the list is *Phragmites*. That represents a pretty good chunk of our agency money. That is basically all paid for by SCDNR. That is a lot of money to us. He did not cost share that completely with them. He cost shared that partially. That is done primarily on Santee Coastal Reserve, but also a few other places around the state. We are in this never-ending cycle where we treat it and get pretty good control. Then they look out there and don't see it for a couple years, think it is gone, and do not treat the areas. Two or three years later, they are calling back because it has come back. There were some issues with a high rate of turnover in the biologist position for managing the property. He has discussed it with the current biologists, who are pretty good, and we are trying to get them back into a maintenance mode. He's not lecturing them about it, and they are asking questions.

Mr. Page moved on to Water Hyacinth, is still an issue in the same places: Cooper River, Back River, and Goose Creek. Water lettuce is primarily on Goose Creek and is mostly under control. There is some *Salvinia minima* out there, in a few places on the SC lakes. There is no *S. molesta* yet. Primrose is pretty much state wide. Wherever there is water, there is potential for problems with primrose. The miscellaneous category covers a wide variety of plants that can cause issues. *Sesbania* is on there because that was at Bonneau Ferry in a field of planted corn. It cannot be flooded as deep as the manager would like to flood it to get rid of some of the

vegetation. Evidently, *Sesbania* seeds late in the season, and if you can treat it late in the season with something like a standard 2-4D, you can eliminate the seed pattern for that year. The herbicide can make the seeds non-viable. We tried that and it will be interesting to see how it works. As he understands it, the only real effective treatment for *Sesbania* is repeated, very deep-water flooding and tilling, pre-emergent herbicide treatment, or fire in combination with flooding. We already talked about cutgrass.

Mr. Page briefly reviewed the carp stocking numbers. They were: Lake Murray – 1,500, Goose Creek Reservoir – 1000, Lake Greenwood – 500, Lake Prestwood – 500, and Lake Long – 200. He figures the stocking number and then rounds to the next hundred to make ordering easier. We are going to talk about Lake Murray when we get to the next level.

Mr. McCord asked to go back to the *Salvinia* discussion briefly. The SC staff did find it in upper Lake Marion. He and Ms. Moorer did identify it as *S. minima*, but that is not a plant he is real familiar with. If we find it again, he would like to send it to someone who is more familiar with the process of identification. He is 99 percent sure but would not want to make a mistake on that plant. It was treated where it was found. Mr. Page said those could be sent to the university herbariums or possibly Cindy Smith, but he hasn't been able to get in touch with her. Mr. McCord said that could be discussed later, since we probably will not see any more of it until spring. We will make a point of going back to that area to see about pulling some more out for a positive identification. We will treat it differently depending on the species.

Mr. Page discussed the cooperative work that is being done. There are a lot of different groups that we are working with to control invasive species across the state. They include Santee Cooper, SCPRT, SCDNR Wildlife and Freshwater Fisheries Section, US Fish and Wildlife Service, local and county governments, NGO's (such as The Nature Conservancy), and private companies. He talks about cost share, but it is cooperative work where they pay us back. We don't give them any money. They pay us. We work with some of the local and county governments, but probably not enough of them use us.

Mr. Page mentioned The Nature Conservancy (TNC) as one of the NGO's we work with. Let's talk about the SC Waterfowl Association (SCWA). They approached SC and DNR with a project to potentially cost share some cut grass control, which would provide some better hunting opportunities on the SC lakes. After talking with Mr. Lamprecht, we found that it would provide some better fish habitat, too. SCWA is still in the planning stage, but they kind of gave us a new bone. Mr. Page and Mr. McCord both looked at it and Mr. Page probably jumped on it a little harder because it was something new and exciting. Mr. Page jumped in and started working on it. He kind of roped SC into helping, and they have done most of the legwork. We got the project going. We spoke to David Wielicki, with SCWA, and got a general map of the areas they wanted some cut grass control in. Ms. Moorer whittled that down, based on some earlier

surveys. She provided all the information about the sites we were going to work on. In the meantime, Mr. Page was talking with the biologists at Hickory Top, Sandy Beach, and Hatchery WMAs about what we could do in those areas to do the same things. We discussed what could be done to increase habitat, improve fisheries, and open things up. This will not be a one-year process. It will be a multi-year process. The SCWA said they think they can find some money to cost share with us, but they are still in the planning stage. We have already done almost 500 acres of work and it didn't cost that much, 30-40 thousand dollars. That's not that much, in the grand scheme of things. Hopefully, they will be able to find some money to give us to help cover the cost in the future. But it will build good will between us and the members of that organization. We are not trying to do anything to screw anyone. We are just trying to do what we are supposed to do. Part of that is to increase habitat and provide relief from problematic species. It is a good way to do it.

Mr. McCord disagreed a little bit with the characterization. It is not that he is not interested in pursuing that project. We did pursue it, treated a lot of vegetation, and are committed to continuing it. Before SC commits to doing something like targeting giant cutgrass, we have to look in the crystal ball and determine what we are going to have to do to control other species, like hydrilla and crested floating heart, as well as grass carp stocking, as the season progresses. We had to throttle our enthusiasm a little bit, but we are very enthusiastic about the project. He has talked with David Wielicki a lot about cut grass. He has also spoken with Clark McCrary and his group of people about it as well. He thinks it a worthwhile project that can be done without spending a huge amount of money. The biggest part of it is that when we first started talking to those groups, they wanted to develop a plan that would be reviewed by those groups. It was like they wanted to create another plant management council for the purpose of controlling one plant in isolated areas in the lake. We decided to go ahead and do what needed to be done based on what SC and DNR thinks is correct. We have already gotten a lot of work done and are well ahead those groups. He hopes that they are aware that that we have already made some significant progress towards what they wanted us to do. Mr. Page hopes they understand that they still need to back up their end of it and provide some money for the project. Mr. McCord would love for them to do that. Even though it will be a small amount of money, it is a commitment from them to be part of the process. Mr. Page noted that cutgrass work is already in the plan, so a separate plan for these groups isn't needed. It is a waste of our time.

Mr. Page continued his presentation and pointed out the details of the cutgrass work that was done on the WMAs and SC lakes. The total work done on SC lakes with everyone, was about 692 acres. He added in the work on the Hickory Top, Sandy Beach, and Hatchery WMAs. That is not all cutgrass work. It includes different things. We took a different approach in some places. We were trying to be very selective in places like Sandy Beach. Stoney Bay is part of Sandy Beach, and we treated that to open it up areas. Mr. McCord noted Stoney Bay is a waterfowl impoundment where the water levels can be easily managed. It is very important that

the right vegetation is there, and the wrong vegetation is not. It has been an area that SC and DNR have worked on together for a lot of years and it is looking good. Mr. Page said we have drawn a lot of information from the old work has done and what the biologists wanted.

Mr. Page noted that Hickory Top says “miscellaneous,” but it is a lot of cutgrass and primrose. It is an old river channel that used to be navigable but has grown up. The biologists asked if it could be opened up. Mr. Page asked if they wanted the whole thing opened up, or just a section. They wanted a section. He told them it could be done, but some stuff would be killed, and it would take a few years to do it if the water is there. That project started this year, too. He added all this up because it is habitat work. We didn’t go out there and try to kill everything, except water hyacinth. That is the only thing we have tried to get one hundred percent of. We knew we couldn’t get all of the floating heart, cutgrass, and other miscellaneous vegetation. We didn’t want to kill all the lotus in that area. So, we did it selectively.

Mr. Page pointed out some notes on the slide about different cooperative projects. Santee Cooper is down there, and they know the system. Ms. Moorer was kind enough to take the lead on most of the helicopter spraying. She was telling the pilots what to do and was there with them every day.

Mr. Page showed a few maps showing the color-coded areas that were treated on the SC lakes. There was an overview of both lakes, as well as zoomed in views of the upper third of Lake Marion and all of Lake Moultrie with the southeastern portion of Lake Marion. The treatment types included airboat treatments and the helicopter treatment of cutgrass in September and October. There was a little overlap of the helicopter and airboat treatments. Most of the airboat treatments were not focused on cutgrass but crested floating heart and water hyacinth.

Mr. McCord noted that Mr. Lamprecht was involved in the meetings about controlling cutgrass. Although many of these areas are highly used for waterfowl hunting, they would also be valuable for fishing habitat if we can get the cutgrass acreage down and allow different vegetation to come back that fish can move through. These monocultures of cutgrass only benefit fish because they create an edge. Fish cannot penetrate stands of cutgrass.

Mr. Page spoke about lakes in other states. The Toledo Bend Reservoir in Texas is very similar to the SC lakes, except for two things. It is on the border of Texas and Louisiana, so both states do control work. It has a problem with *Salvinia molesta* and they do hydrilla control every year. One difference is the depth, Toledo Bend is 110 feet at its deepest, compared to a little over 50 feet on the SC lakes. The acreage of Toledo Bend is slightly larger than the SC lakes, but not by much. Toledo Bend also doesn’t have a canal, so there is more free flow of water and species. There are grass carp in Toledo Bend.

Mr. Page thinks part of our problem is that we are treating the SC lakes as one big system when we think about carp and hydrilla control, but the canal is a bottleneck for the carp. The carp can swim and find more food, but they have to find a straw to move from one lake to the other. Mr. McCord agrees it is an issue, but SC tries to deal with that issue by determining the best locations to stock the fish. We are not going to put out fish in small numbers scattered through the system but will try to target areas where the hydrilla is located by releasing fish in both lakes as needed. Mr. Page stated we do not really know if the tendency for carp to swim upstream causes them to move from Lake Moultrie to Lake Marion when they encounter the canal. Mr. McCord knows that they do not all do that because of visual sightings and physical collections, but we do not know all of the impacts of that canal.

Mr. Page moved back to the slide presentation to show the rest of the *Phragmites* work, which was 27 acres done in the ACE basin and the counties adjoining the basin. The FWS and TNC took some time to survey and found some *Phragmites*. They have treated some tallow down there in the past. We did not do any tallow work this year, just *Phragmites*. We were lucky that the helicopter had that 1600 acres of *Phragmites* to treat on Santee Coastal and was feeling very generous. He went on a search and destroy mission that probably cost him more in fuel than he got paid for the treatment. On the slide shown, you can see how far apart the treatment areas are. Mr. Page pointed out the portions of the map that are part of the ACE basin, which consists of the Ashepoo, Combahee and Edisto rivers. The treatments were on the Ashepoo, South Edisto and Dawho rivers. We had some points, some of which were verified. The areas included two counties. We had some points that turned out not to be *Phragmites*, but the pilot had to traverse a good portion of all of these rivers to check the points and treat the areas that contained *Phragmites*. He had just looked at 1600 acres of the plant, so he knew what to look for. He even found an area of it that was not found during the survey.

Mr. Page reviewed our challenges, which include manpower, Mother Nature, a limited budget, and the public response to treatment. There are also two new species on the invasive species list. It is now illegal to own, propagate, or sell *Nymphoides cristata* (Crested Floating Heart) and *Nymphoides peltata* (Yellow Floating Heart). Mr. McCord was thankful that has happened, but thought it was the most ridiculous amount of time taken to list a plant. He thought he was going to retire before that happened.

Mr. Page noted that when the new committee was formed, we took a few terrestrial species off the list, which happened very fast. When they started to put some species on the list, they realized that it was mandatory for everything to go thru the legislature. They backwatered and it took nine months from the time they said it was going to be on the list to the time it actually got on the list. It required discussion with the lawyers to determine a process to notify the legislators and get the approval. This council has the authority to do emergency declarations, but he is not sure how that can be done if we are required to go thru the legislature. They

thought about the process but did not think it all the way through before they implemented it. We are on the right page now. Anything that you see or have, please let Mr. Page know. He can bring it up. They only have one meeting a year, but a meeting can be called at any time if there is a pressing issue.

Mr. Page noted the next two slides were the carp stocking information that was passed out earlier. He asked if there were any questions.

Mr. Wannamaker asked about the huge mat of vegetation on the freshwater side of Bushy Park Landing in Back River Reservoir. He wanted to know if we had gone in to break that up. Mr. Page said we do not have that capability. That ramp is supposed to be maintained by Berkeley County. He called Berkeley County and they said they did not have the money to do anything with it. They asked if we could spray it, so it would die. Mr. Page said that it would stay there all winter and when it dies and sinks, it will create a big pile of mud on the ramp.

Mr. Page noted there are similar floating islands in several waterbodies. Goose Creek Reservoir is most notable, with several that have moved down to their dam and are wedged against it. There are also a lot of trees down that are blocking or limiting navigation. The issue in the state is that there is no one wants to take credit for making the water navigable. In the old days, when it was the Water Resources Commission, we had the flood program, aquatic plant program, and the navigable waters program, there was some responsibility. When the agency got split up and divided, the SC Department of Health and Environmental Control (DHEC) took the responsibility of navigable waters, but they did not take it as going in to clean them. They took the jurisdictional responsibility. The Army Corps of Engineers might be able to do some of that, but they do not do much without a whole lot of pressure from the public. So there really is no one that is technically responsible for navigable waters in the state. In short, Berkeley County is responsible for that boat landing, but Mr. Page tried to help. There is the option for people to use the Cypress Gardens landing on Durham Canal, even though it takes longer to get where you want to go.

Mr. McCord said the SC staff has been scratching their heads on how to remove the floating islands from the impoundments on the lakes. It is something that we are going to have to take a look at, because it is not going to be easy.

Mr. Page called for a five-minute recess at 12:00.

The meeting was reconvened at 12:10.

Mr. Lamprecht presented information on the carp survey. We were commissioned to collect grass carp for a variety of purposes. Normally, we have used these collections to make

estimates of mortality, but you need a series of at least three years of collections to make those estimates. The other tool that is available is condition of the fish, which is what the fish should weigh under normal conditions versus what the fish weighs right now. It is a measure of the number of fish out there matching the edible habitat. It is another way of looking at what is going on. It is a backwards looking index, so we are looking at what went on this past year and what was available for them to eat. We did not gear ourselves up for this. We had to get a volunteer. We located a guy in Eutawville that had a customized boat, and he would take us out. We were a little bit at the mercy of his availability. He and his wife are avid bow-fishermen. You have to hunt these fish where you can see them, so you are looking at a certain portion of the lake, not all available habitat. It is not a perfect tool, but it is a good tool.

Mr. Lamprecht noted that because they were at the mercy of the volunteer couple, they brought their daughter with them most of the time. The daughter would almost immediately go to sleep amongst all the generators and noise, which was amazing.

Mr. Lamprecht reported that all the carp collected were taken back to the Dennis Center the next morning, where they worked up and measured and weighed. They were iced down when they were caught and probably treated better than any other samples collected in the past. The heads were dissected, and the otoliths removed, which is a very fun process that the crews got very good at it. The otoliths were mounted in plastic cement on slides and ground down. They were then viewed with a single fiber optic under illumination. In comparison to other fish, they are very hard to read, but Kyle Rogers (shown on the slide) got very good at aging them. Mr. Lamprecht sat down with Mr. Rogers and they were in almost one hundred percent agreement regarding the ages.

Mr. Lamprecht noted we had eight nights of efforts from late August thru early November and collected 103 fish. All but two were aged. Nine fish were deformed and not used to determine condition. When these fish are treated in the hatchery, under pressure, there is a developmental issue and you see a high degree of scoliosis-like deformity. They still eat but are probably not as effective as a healthy fish. We mentioned stocking history earlier. Just a reminder, about 2600 were stocked in 2007, and additional small stockings were made from 2009 through 2011. Then we really had to start chasing the expansion with much larger stockings in 2012 and 2013.

Mr. Lamprecht showed the ages of the fish collected. Remember that the year they were stocked was not the year they were born. The fish are at least a year old when they are stocked. We had a good number of four, five, and six-year-old fish. The surprising part was that almost twenty-five percent of the fish were what he calls legacy fish from the early hydrilla fight. These are really old fish and it was very hard to get accurate ages on them because the annual agates get so close together that you cannot count them very effectively. He did not want to spend a

half hour aging each one of these and not have much confidence in it. So, we just said 25 plus. Ms. Eidson asked if there might be a bias because these older fish might be slower moving and easier to hunt. Mr. Lamprecht said there is the possibility that we are sampling the easier, slower, senile fish. He noted that the gentleman volunteering his time and boat did end up shooting about a third of the fish collected, even though he was also driving the boat.

Mr. Lamprecht said we are looking for a condition factor of one. If you discount the deformed fish, we have an average condition factor of about 0.85 for these fish. Mr. Perry asked for a definition of condition factor. Mr. Lamprecht said it is the actual weight over predicted ideal weight. If the fish is very robust and has lots to eat, it may have a condition factor of over one. It is not unusual for other species to get over 1.2, but grass carp rarely get above 1.1, even during the abundant hydrilla years. That condition factor was developed during those years when they had a lot to eat. This is a published number that is in the white literature and was done by Phil Kirk from SC. The condition factor is a length to weight ratio.

Mr. Lamprecht also looked at the condition of the fish by year, and the legacy fish were in much poorer condition. When you drop those out, it increases the average condition factor by a little bit to 0.86. He also looked at collection by date, which is complicated by the fact that they changed collection locations. If we repeat this in the future, he feels the collections should be done in August and September. Even the best condition factors by date were sub-par. When you are going around at night, you see a lot of vegetation, but as you get closer, you see that it is lemon bacopa. Lemon bacopa proliferated during the trough in the early 2000 because it is very resistant to grass carp herbivory.

Mr. Lamprecht said there are still significant numbers of senile fish in the population, but their presence did not prevent recent hydrilla regrowth. While it appears that collection date and location can affect estimates of condition, the over-all 2016 collection was still in poor condition, given the year's growing conditions. If we repeat this in the future, we are going to have to find a funding source to compensate the guys and have a little more say about when we go out.

Mr. Perry asked for an opinion about the different collection methods, electro-fishing versus bow-fishing. Mr. Lamprecht said they just finished aging the fish on Thursday and he didn't pull the other data out, so it is kind of hard to make a comparison. Just looking at the collection dates gave me enough question in his own mind that he wants to look at seasonality. There is probably some change seasonally and it needs to be scrutinized a little more. This sample was not that big, so you cannot make any far-ranging conclusions. There is enough question there to say that we should be looking at these no later than September. Mr. Perry noted that more fish were collected with this technique. Mr. Lamprecht agreed, but noted that it was a lot of work and we couldn't have done it without the assistance of the volunteers. He thought we could have geared up and done it ourselves, but at the abundance level of the fish right now, you

have to travel a long way in very skinny water. There are a lot of hazards to navigate. He does not think they could have gone out for 22 days, a whole work month, and done the same. We probably would have seen enough fish, but we would not have hit them.

Mr. Perry noted the conclusion relative to the fish condition seems to be pretty similar to what you came up with before using other techniques. Mr. Lamprecht agreed, but at that time, the fish were much more abundant. We were at peak fish abundance in 2014 when we did that study. Now, three years later, we are probably at about less than half that number of fish. It would be very difficult to electroshock them. The catch rate would be much lower.

Mr. Wannamaker said he used to do a tremendous amount of calculating conditions on sportfish. This may have been taken into account in your graph, but do you see any difference in fish size and condition? Would a smaller fish inherently have a lower condition than larger fish? Mr. Lamprecht said that was taken into account in the formula. There was not any condition associated with length. We looked at age class and they are virtually the same. We had 31 age 4 fish and 27 age 5 fish and there was not a significant difference. When you are looking at the legacy fish, they were in much poorer condition versus the younger, more vigorous fish, which were in much better condition. That kind of lends credence to the idea of keeping the population young and vigorous. He does not know where you would draw the line of dropping them out as far as efficacy goes. We had one or two fish in the 2010 and 2009 stocking classes and none of the 2007 stocking class. But you would not expect to collect one of 2000 fish in such a small sample. Mr. Page said the efficacy factor, according to the data, is the fish that are three to eight years old are prime feeding machines. After they hit eight, they start to drop off.

Mr. Lamprecht voiced his opinion as a fisheries biologist and a habitat manager. We have not stocked up to this point because we had what we thought was more than enough fish in the system. Now we are getting into that area where we have to try to fine tune it. We cannot fine tune it because the tools we have for estimating are so blunt. He has lived through underestimating, as have several other people in the room, and he would probably give his assent to stocking at a maintenance level next year. That is his opinion and has not been formulated formally through DNR. Mr. Page asked if there were any other questions for Mr. Lamprecht.

Mr. Page noted we already kind of talked about the 2017 recommendations and probably got too far into the grass carp and hydrilla issue. He thinks some of the recommendations were included in the presentations. We know we have issues with crested floating heart, which needs to be reduced in several locations. We have hydrilla problems in the upstate and other areas, even potentially down here. We will know more when we get some actual acreage figures from SC. We have an idea of what is there and what is happening. Does anyone have any other preliminary issues? We really have already talked about a lot of that, as our major issue has always been grass carp stocking. The rest of the plan gets rubberstamped a lot of times. The

grass carp stocking is always something that we have to discuss. Mr. McCord thinks we are at a point, based on Mr. Lamprecht's and SC's information, for DNR and SC to get together to come up with a joint recommendation to the council. He suggested that the two groups get together before the next meeting to come up with that. Mr. Page agreed that would be a good idea.

Mr. Page asked if there were any other new items for council action. There were none.

Mr. Perry wanted to bring up some old business. On page ten of the minutes from the last meeting, we discussed the memorandum of agreement (MOA) between SC and DNR. At that meeting, we decided that a core group from both organizations would all get in the same room, project the document on the wall and try to make any changes that need to be made. He prefers that approach to having each group working separately without working out any differences. He proposed again that we come up with a mutually convenient day to have the attorneys, leadership and whoever else needs to be involved and go ahead and knock this out or decide that we don't need an agreement. He likes the agreement and he would like to see us move forward. Mr. McCord agrees that we need to get together to do that but thinks a good forum for doing that would be the same meeting we are planning to discuss next year's grass carp stocking recommendation. He feels both can be discussed at the same meeting. He is concerned about including lawyers. He is not going to exclude leaders, because he is not sure who Mr. Perry is designated as leaders, since many of us think of ourselves as leaders. If we go too high of a level, it is going to defeat the purpose. The original agreement was made at the operational level. None of the people that were part of writing that agreement were upper echelon staff from either organization. Fisheries and waterfowl biologists from DNR were included in the process and it took a good while to get all the details worked out. He thinks we should try to revise it amongst ourselves or, if it is a mutual decision that we do not need it, we go forward that way. He is fine with the agreement. Mr. Perry likes the agreement and it serves a good purpose. It is a mutually agreeable document that sets forth goals and objectives for both agencies. He only suggested the lawyers and leadership is because, ultimately, they are the ones that are going to have to sign off on it before the respective heads sign it. He was thinking of it as an efficiency measure. It is not like we are writing it from scratch. We have a good document that needs to be tweaked. He thought it would be a better approach to have all people involved and hopefully come out of the room with a document that we all agree is what we want to send to our respective heads for signature.

Mr. McCord said there needs to be some discussion within SC as to what the best agenda is moving forward. He thinks the agreement is a good thing for the SC system, but finds it interesting that we have to have an agreement to manage the SC lakes when no one else has an agreement to manage other waterbodies in the state. He is not proposing not having that agreement, because it says a lot of what it needs to say. He thinks it has been misrepresented by a number of people at many levels. He would like to clear up the verbiage in the agreement to

more clearly state what our two agencies would like to see continued in terms of management of the SC system. He is fine with having the agreement moving forward. SC has an aquatic plant management plan that was originally written in the 1940's, and has been updated, that basically says all the same things as the agreement does. There is nothing in the agreement that is different from what we have been doing all along, except we set a ten percent goal. It concerns him that the goal gets stated very often as a mandate. We will never be able to mandate ten percent coverage of any vegetation because we cannot manage vegetation to that level. There are too many variables. He thinks it is a great to have that goal and we need to move forward with revising that agreement.

Mr. Perry asked that Mr. McCord let DNR know how you want to move forward. Please know that DNR is comfortable with having your leadership being part of the process. If you decide that is not the approach that it fine, too. Mr. McCord thinks we should have some preliminary discussion at the recommendation meeting. Mr. Page said we can do that, but he agrees somewhat with Mr. Perry. It is a document already and there only needs to be some clarification of the statements that are being misrepresented. No matter what we put in there, someone is going to misinterpret it. He said we can discuss it at the meeting. Mr. McCord said we need to discuss it at the management level because that is what drives our decision-making process. He will discuss it with his management and see which way they want to go. Mr. Page likes both approaches, but we do not need to recreate the wheel. He does not think the document is absolutely necessary, but it is a good handshake between the agencies to show to the outside groups the interaction of the agencies. You are not going to have this issue on the other lakes, because no one is as invested in them like they are in the SC lakes. Nobody has the problems you have. You may get them on Back River and Goose Creek, but people are really invested in the SC lakes. More good news to report for the SC lakes. The number two bass lake in the country is the SC system, according to Bass Magazine's latest 2016 survey. Toledo Bend was number one. The SC lakes have climbed up that survey, while the hydrilla has been reduced. The lakes were not ranked in 2012 and 2013 when the hydrilla levels were up. Mr. McCord said that was something both SC and DNR should take some pride in, because that is one of the things we are mandated to provide. Mr. Page reminded everyone that Toledo Bend was number one and is slightly larger, but it is stocked by two different states, Texas and Louisiana. So, it is probably getting twice the stocking numbers as the SC lakes.

Mr. Page asked if there were any other new items for council action. There were none.

Mr. Page said he had a January/February meeting date on the agenda. He asked if the council wanted him to just put out a Doodle Poll to determine the next meeting, or if anyone had any suggestions for dates. Mr. McCord said we would be better served to look at late January or early February. He plans to have some additional information by the time we get together again. There is a lot going on in December and early January that has nothing to do with aquatic plant

management. Mr. Page agreed with that. Ms. Moorer reminded Mr. Page that the SCAPMS meeting is in late January. Mr. Page said we would probably be looking at late January or early February. He will have a draft plan to the council sometime before the next meeting and we will go through that draft and make changes to it before it is presented to the public. Once it is published on the web site and a public notice is put out, we give the public thirty days to comment on it. Normally, we get comments regarding the SC lakes. We do not normally get comments on any other system. We have even had to limit the types of comments we will accept, because we have gotten petitions where we could not verify the signatures. We get threats and praise in the comments. There are also comments on chat rooms, such as SC Ducks. If you have a thin skin, do not look at those sites.

Once we get those comments, Mr. Page will compile them and give them to the council members to digest. Then we will have a second meeting to sit down and decide if we are going to make additional changes to the draft plan based on the comments. When the plan is like we want it, we approve it. We approve it in sections sometimes. Most of the plan is never contested. We will approve ninety percent of the plan, and we will have two or three things that we need to approve on the side. For those of you that are new to us, it is a two-thirds majority of members present to approve the plan. The president can vote, but he has often abstained in the past. However, he is getting old and can retire at any moment. He is going to vote. He kind of cares less about some of the political issues and wants to do the right thing. The only thing that requires a two thirds majority is approval of the plan. Other votes only require a simple majority. If we do not get a two thirds majority of the members present on approving the plan, it reverts to the DNR to make the decision. That means the Director makes the decision based on recommendations from staff. We have never had that issue until last year. It was the first year the plan was not approved after vigorous discussion. It may happen again, or it may never happen again. We need to work things out and come to some consensus.

Mr. McCord mentioned that he still has concerns about the issues that took place at our 119th meeting and he does not plan to drop that. He will continue to pursue discussion on that at a later date. That is something that needs to be discussed and looked into moving forward.

Mr. Page asked if there was anything other business for the council. There being none, he asked for a motion to adjourn. Mr. McCord moved to adjourn the meeting. Ms. Eidson seconded the motion. Mr. Page called for a vote. The motion passed unanimously. The meeting adjourned at 12:46.