

125th Meeting of the South Carolina Aquatic Plant Management Council

Attendance:

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

Guests: Julie Holling, Matt Puckhaber, Casey Moorner, John Grant, Jane Hood, Carl Bussells, Debra Guerry, James Glover, Caity Homan, Emily Cope, Paul Taylor, Clark McCrary, Doug Blesie, Kris Blesie, Jen Palladino, Mike Palladino, Dale Cozart, Betty Cozart, Alfred Kelly, Jennifer Miller, Bridget Cotti-Rausch

Location: Sesquicentennial State Park, 9564 Two Notch Rd., Columbia, SC 29223

Call to Order: 10:30am 4/17/17

Minutes:

Chairman Chris Page called to order the 125th Meeting of the South Carolina Aquatic Plant Management Council (APMC or Council). Ms. Lognion, from Clemson, will not be here, as she is sick. Mr. Thompson, from the Office of Coastal Resource Management (OCRM), has joined us on the phone. Mr. Page asked that everyone speak up, so Mr. Thompson could hear, and asked Mr. Thompson to let us know if he had problems hearing any of the conversation. Mr. Page reviewed the purpose and makeup of the council for the new Council members and the members of the public that were present. He then noted that there were some extra copies of the handouts for the meeting, and he put them out for anyone that was interested in them.

Mr. Page stated that there had been some issues with email at the South Carolina Department of Natural Resources (SCDNR). The posting of the draft report was delayed a few days because of that.

He asked that the Council members take a few minutes to review the minutes. While that was being done, he asked everyone in the room to introduce themselves. Mr. McCord thanked Ms. Hurley for hosting the meeting. So far, it is a very good place to have a meeting. Mr. Page agreed and loves having the meetings in the parks. They are good places. It moves us around the state and lets us get an idea of where we might want to take our vacations.

Mr. Marshall asked if it would be appropriate, given the length of the minutes, to allow review to go after this meeting, maybe for a week. Mr. Page said that would be appropriate. Mr. McCord seconded that motion. Mr. Page said Mr. Marshall made a motion that we defer the approval of the minutes to a later date via email, and Mr. McCord has seconded the motion. He

asked if there was any discussion on that. Ms. Eidson stated that we could probably abbreviate these. These minutes are like reading the meeting verbatim. She has never seen this type of minutes and thinks that hitting the highlights would be sufficient. Mr. Page said the Council meeting minutes have always been detailed, but we can work to streamline them and get rid of some of the extraneous discussion. Mr. Page asked if there was any other discussion. There being none, he called for a vote. The motion passed unanimously.

Mr. Page moved on to the next agenda item, Public Comments. Before reviewing the comments sent in via email and other methods, he asked if there were any comments from the folks present at the meeting. Mr. Cagle stood up. He came to show his support for Santee Cooper (S-C). He has seen what they have done. He lives on Potato Creek in Lake Marion. It was completely choked off by *Hydrilla* and had an awful odor to it. They have cleaned it up and he appreciates everything they have done. He does not consider the Goat Island Boat Club as a special interest group, because we have hunters, fishers, boaters, and even people that do not even own a boat. Those club members support what we do cleaning up the lake and our scholarship fund. We give \$2000. A marine biologist got it this year going to Clemson. We support S-C in what they are doing and thank them for what has been done already. Mr. Page thanked Mr. Cagle for his comments and asked if anyone else had comments. There being none, he moved to the compiled comments.

Mr. Page noted that these comments are similar to what has been seen in the past. All of them are good comments. This year, there were only a few that were opposed to it. There were quite a few that supported it. The total number of comments was down significantly from years past. We usually average 70-80 comments per year. Mr. Page thinks that is the case because we have made a concentrated effort to do some things for some people around the lake, most specifically the Waterfowl Association. Ms. Moorer spearheaded a project last year where we did a lot of cutgrass work to improve fisheries and waterfowl by opening up some areas. We sprayed nearly 400 acres and split that cost down the middle, and it was not very expensive at about \$23,000. He thinks that makes people realize that we are trying to work with people and making a good faith effort to get things done, which calms peoples' nerves. Sometimes when you work proactively with people, you get a lot more done and get more satisfaction out of it. Those constituents become part of the solution, not part of the problem.

Mr. McCord noted that the entire S-C aquatic plant control program is predicated on doing things for people around the lakes. We do not just do special projects, like the cutgrass. Most of the work we do on a day to day basis is the same type of work for different groups of people and organizations, and the public as a whole. The cutgrass work was just a targeted effort that several groups were interested in seeing done. He does not want to take away from the fact that is essentially how the S-C program runs. We do that kind of work to maintain open access for people to do all the things they do on the lake. Mr. Page agreed and noted that is how the

Aquatic Nuisance Species Program runs, too. However, it often goes unnoticed until you call attention to it.

Mr. Page asked if everyone had read the comments and asked if anyone had anything else to add. There being none, he moved on to the approval of the management plan. He hopes that everyone had a chance to download or print a copy of it off the web site. He did print out one copy, if anyone needed to look at it, but did not want to waste the paper needed to print one for everyone. It does not change much from year to year, but there are several items that he wanted to call attention to. Lake Murray has an increase in grass carp being stocked to compensate for losses due to the floods during the past couple years. The indicator species are also showing that the system is starting to regrow. Lake Greenwood is a hot spot this year. There is a *Vallisneria* problem, with about 50 acres that are drastically affecting some homeowners. We did not put it specifically in the plan, but we are going to treat it as closely as we can to those usage areas and try to leave the other portions alone. There are two or three coves that are completely cut off because of *Vallisneria*. It is a very bad problem that is worse than *Hydrilla*. We did have *Hydrilla* pop back up in that system and we treated it in October. It seems to be gone. We also put a few more grass carp in this year, based on the plan.

Mr. Page reminded everyone that much of the remainder of the plan has stayed the same. We have kept things fairly constant, even through the flooding. We still have problem species in Goose Creek Reservoir, Back River Reservoir, and Cooper River. These are never ending and will continue to be in the plan unless something very drastic happens. If you have no comments or questions about the rest of the plan, we will move on to the S-C portion, which is always the most controversial.

Mr. Perry suggested that since most of the plan is rather routine, that we divide the question. He made a motion to divide the question to consider all parts of the plan with the exception of S-C and then separately consider all parts of the plan that involve S-C. Ms. Eidson seconded the motion. Mr. Page asked for discussion. Mr. McCord noted that this has been done in the past, but he does not agree with separating S-C from the rest of the plan. S-C gets the lion's share of the attention, in some cases, he thinks, improperly. The requirements on the S-C system are completely different from any of the other systems in terms of data that has to be collected or discussions that are had. We skirt right over all the others, whether it is grass carp stocking or whatever. He thinks pulling those out and putting S-C separate emphasizes the differences more. This Council was created to oversee aquatic plant management throughout the state and all the waterbodies, not just the S-C system. It is not an S-C aquatic plant management council and other waterbodies council. It is one Council overseeing all of those waterbodies. He thinks they should remain together. It does not change how long we spend talking about the other systems. He does not see any reason we should separate it. Mr. Page said that was a good point and asked if there was any other discussion.

Mr. Perry stated he made the motion as a matter of efficiency, not to draw attention to anything. Ms. Eidson said she seconded it for the same reason. Mr. McCord understands that, but we have essentially finished talking about the other lakes, so how is it going to make it more efficient. Mr. Page asked if there was any more discussion. There being none, he called the motion to a vote. There were 7 aye votes, and 1 nay vote. The motion passed.

Mr. Page asked if there was a motion to accept the plan as written for all of the waterbodies other than S-C. Mr. Perry made the motion. Ms. Eidson seconded the motion. Mr. Page asked if there was any discussion. Mr. Perry asked if Mr. Page would spend a little time further discussing Lake Greenwood, since we have had constituents bring this to our attention. He asked for a brief description of the eel grass issue and how it will be tackled. He noted that before the meeting, Mr. Page said there were 50 acres of eel grass, of which about 35 acres were problematic and requires control to meet those constituents' needs.

Mr. Page stated Lake Greenwood has been surveyed with the help of Greenwood County, and there are about 50 acres of area that has been impacted by *Vallisneria*. It did not really senesce over the winter, which is unusual, but we really have not had a cold spell to reduce the water temperature. His process is to whittle that number down to what is usable by property owners and provide boat owners with access to their property. The other sections that are in the back of coves and cannot normally be accessed by property owners, as well as the undeveloped areas, will not be treated. That reduces the area to be treated to about 35 acres. *Vallisneria* is very difficult to kill. It has a shallow, rhizomatous root system, and you have to get down into that root system to kill it. He does not like killing it, because it is a highly beneficial species. In most cases it is not a problem, and he has often told property owners in the past that they were living on a public waterbody and that is a native plant.

Mr. Page said the cost is rather prohibitive. One of the issues right now is how do we do this at the end of the fiscal year, when our budget is very tight, and we are almost out of spending authority. Normally at this time of year, we are wrapping things up. This year we have been treating and surveying thru the months of January, February and March, which is highly unusual. To kill these plants, we are going to need about 3400 pounds of a granular Komeen product, which is a copper-based product, which will be applied directly to the bottom, so it gets the roots and the crowns of the plants. It costs about \$10 per pound. That budget is automatically 32-36 thousand dollars, not including labor. This late in the fiscal year, that is kind of hard to do, considering we have other places we have to treat before July 1. There are a couple state park lakes and the Cooper River that need to be treated before July 1. We also have some contractual obligations to The Nature Conservancy before July 1. So, it is going to be kind of difficult to find that money.

Mr. McCord asked what rate Mr. Page was planning on using. Mr. Page said it was Komeen crystals. The manufacturer told us the regular Komeen and Diquat mix would burn the plants down but would not give us a sustained period of control. He does not remember the exact rate. Mr. McCord noted for the Council members who don't deal with herbicide that you have to be really careful with Komeen and other copper products, because of fish issues. If you get too high of a concentration of copper, there is the potential for fish kills. Mr. Page said they are trying to stay below that concentration level. Mr. McCord made a few other comments regarding the use of copper products and then asked what other submersed vegetation was present.

Mr. Page said there is *Hydrilla* in that system, which was treated last year with Sonar. Some of the *Hydrilla* was in the same areas as the *Vallisneria*, but the Sonar did not have much effect on the *Vallisneria*. There are naiads and others typical of the Piedmont lakes. There is not a lot of vegetation anywhere except for the *Vallisneria* and *Hydrilla*. Naiads have occasionally been a problem species up there and were treated years ago in several locations. It is very similar to Lake Murray, in that it is more of a Piedmont lake that is relatively non-vegetated. It has a little bit of a different bottom than Murray and is not as sandy. There are some sandy areas, but it has more of a mucky bottom. Greenwood is one of the few lakes where trees are still strapped to the bottom with chains. The staff has to patrol the lake on a regular basis to ensure that those trees have not broken the chains, or the chains have not rusted and failed, and the trees have floated to the surface. Mr. McCord noted that the S-C system has that problem, too.

Mr. Page asked Mr. McCord if S-C was leasing that lake for electric production. Mr. McCord was sure if that was the proper term. He asked if there was any target level of vegetation that they are looking for and would that *Vallisneria* be considered part of that total, or if it was a treat as necessary situation. Mr. Page said it is a treat as necessary to relieve the homeowners' areas. He would like to leave it all, but that cannot always be the case when you have a significant number of homeowners being impacted. It is in the southeast quadrant of the lake, which is more heavily developed.

Mr. Page noted we have had *Vallisneria* in the lake in the past, but it has been in some of the undeveloped areas. We have not treated it. It kind of came and went several times on its own. This will probably do the same thing over time, but it is causing issues. We could hardly get a boat in there to survey, so he understands where the property owners are coming from. We did explain to the property owners that it is a good plant and we were not going to kill everything. We do not want to make it a swimming pool, but we want to provide them with some relief. If we didn't know that it had *Hydrilla* tubers mixed in, it would be a good place to get some nursery stock to plant in other locations. He believes the *Hydrilla* popped up because it was sheltered from the carp that are in the system.

Mr. Page noted some of the differences between Lake Greenwood and the other Piedmont lakes and the S-C system. Mr. Marshall said he may not have the latest version of the plan, but *Vallisneria* is not list in the Greenwood portion of his copy. Mr. Perry said we need to add it, along with a plan to control it, to the Greenwood section of the plan. Mr. Page thinks he added it to his copy, but that was not what was posted. He made some additional comments regarding the other option for killing the *Vallisneria*. That involves Hydrothol, which is a very caustic herbicide that Mr. Page chooses not to use. Mr. McCord made some additional comments regarding its toxicity to fish and the care that needs to be taken when it is used. There was some additional discussion regarding aquatic herbicides and their use.

Mr. Page asked if there was any other discussion on Lake Greenwood. Mr. Perry asked, if all the council members are in consensus, you will add *Vallisneria* as a problem species and make the other changes we have discussed, that we move on. He made a motion to approve all parts of the plan for state-wide waterbodies, with the exception of the Santee Cooper system. Mr. Marshall seconded the motion. Mr. Page asked for discussion. Mr. McCord repeated his concern that we blanket approve all the other waterbodies in the state with very limited, if any discussion. Yet, we spend a huge amount of time discussing every potential detail on the S-C system, even given the fact that there is a tremendous amount of data collected to support all the recommendations on the S-C system. We have not data on the other systems to make educated decisions. We just do blanket approval. He does not think that is appropriate. Mr. Page noted his concern and asked if there was any other discussion.

Mr. Wannamaker asked why we do not have more data on the other lakes and if it was not needed. Mr. Page noted we have had discussion on other parts of the plan in the past, Lake Murray specifically. The rest of the lakes have not gotten much attention. The Goose Creek and Back River Reservoirs and the Cooper River have not gotten much attention. The only time we had major discussions on Lake Murray was when we were first fighting *Hydrilla* and having lots of public meetings. We were doing chemical control out there from year to year, and it was still getting away from us, very similar to the situation at S-C. We couldn't keep up because we did not have the budget or the man power, and the herbicides were not nearly as effective. We had a period of 2-3 years where we went through that process of having public meetings. We had the same responses then as we got on S-C. There were local groups on both sides of the issue. Some groups wanted it barren, like a swimming pool, and some wanted vegetation in the system for hunting and fishing. S-C is different from Lake Murray, which is more of an urban lake, with more development on more of the shoreline. The S-C system has some developed areas, but more of it is isolated.

Mr. Page said the two systems are physically different. S-C is a shallow lake. Murray is a deep-water lake. We have been through those similar discussions on both lakes. There was similar data for Murray and it is probably in the archives. We developed a plan on Lake Murray

to eliminate *Hydrilla* that took all the lessons we learned on S-C into account. We modeled it out when there were low water conditions due to the improvements being done to the dam over two years. We were able to put about fifty percent of the number of fish in there as would have been needed at full pool. We had really effective control. The substrate is different, so the plants are not producing as many tubers. We did that model and put in about 67,000 fish sometime between 2003 and 2006. It would have been 150,000 if the lake had been at full pool. Fortunately, that number worked, and it stayed that way for a while. We did not start maintenance stocking until a few years ago. That maintenance stocking for a 50,000 acre lake is only 1100-1200 fish per year, which is not a lot of fish. You do not get much comment when the numbers are that low.

Mr. Page noted that the S-C lakes have been classified as a sportsman's paradise. Lake Murray hasn't gotten that kind of designation. It has been called the "Jewel of the Midlands." Mr. Wannamaker asked if there really have not needed to be as many studies done in Murray and most of the other lakes. Mr. Page agreed with that, although there is some vegetation back in Lake Murray. Most of it is native vegetation, some of which was planted. The native vegetation is similar to what is in Lake Greenwood. The vegetation in the upper portion of Murray was primrose and alligator weed. Most of the property owners have taken care of that by manual removal over the years. The drought and drawdowns have taken care of much of the rest of it. That is why you do not hear much complaining.

Mr. McCord said that the *Hydrilla* has stayed under control by keeping the number of grass carp at a fairly level number by continuing the maintenance stocking. There has never been a mandated stoppage of the maintenance stocking to get to the point where we keep getting back to on the S-C system. Mr. Page said that Lake Murray is a prime example of what you can do with *Hydrilla* if you do maintenance stocking continuously to have the age classes and the correct number of fish. It is currently in the range of a 1:10 to 1:8 ratio. We started at 1:10 on Murray and 1:8 on S-C, but we have noticed that we are going to have to go up on those numbers. That is in the plan to move toward 1:8 on Murray. It is based on indicator species. In the S-C system, which we will discuss in a little while, we are probably going to move the ratio from 1:8 down to the 1:6 to 1:4 range based on some numbers we have. We have had two discussions about the level we need to move to.

Mr. Page asked if there was any other discussion about the motion. Mr. Glover briefly discussed an article he wrote in 2010 about mercury levels in fish in Lake Murray and how drawdowns affect those levels. It is somewhat relevant to the discussion and he offered to send copies to the Council members, if they were interested. Mr. Page said that would be useful to have and asked if there was any other discussion. There being no more discussion, Mr. Page called for a vote on the motion to approve the plan state wide except for the S-C section. There were 7 aye votes and 1 abstain. The motion passed.

Mr. Page moved on to the S-C section. He noted the original draft included a number of 13,800 grass carp, which was previously discussed in a meeting of the S-C and SCDNR staff. The Council agreed to put that in the draft plan, without much discussion. It was put in there, so we would have a working number to be put out to the public. Mr. McCord disagreed with that. We had extensive discussion about that number, where it came from, and why it needed to go in there. Mr. Page pulled together some figures to provide a graphic view of what that number would look like if we extended that annual stocking rate out into the future. He had a presentation, which was also provided in a handout. We had quite a few discussions with the aquatic staff about these numbers.

Mr. Page said the original concept for this is to get age classes into this system. We have to have significant numbers of different age classes to be able to take over for the carp that have not been restocked. They are too old to be eating much. Grass carp are at their highest level of control between the ages of 5 and 8. That is when they are at their prime and are very efficient. Between the ages of 3 and 5, they are pretty efficient. Once you have not stocked carp for a while, you have an older age class, which is less efficient. The mortality rate on the S-C system averages about 32 percent per year. It has been as high as 39 percent and as low as 22 percent, based on the data collected. For comparison, the Piedmont lakes, like Murray and Greenwood, usually have a 22 to 24 percent annual mortality.

Mr. Page discussed the information on the handout, while the technical difficulties with the computer and projector were resolved. The handout included three sheets of tables that contain the information included in the graph. It includes a wide variety of stocking numbers. We started with a zero-stocking rate to provide a base line, which is the bottom line on the graph, to show you what is going to happen to the population. He modeled this out to 2030. We will be completely out of fish by that time, with no stocking. The most important thing is the next 4-5 years. The red model line at the top is if we stock at 13,483 fish per year. Mr. Wannamaker asked if the goal was 1:8. Mr. Page said that was the original goal, based on the literature. That literature is based on Piedmont lakes, so the only model we have is the Piedmont model, so we know that is as low as we can ever go. We know that on the S-C system, the 1:8 ratio will probably not work. Remember that models are a guide.

Mr. Page noted the top, red model line levels out at about 43,000 fish, which is above the 1:4 ratio. These numbers account that you lose fish due to annual mortality and then you stock. You do not count the mortality of the stocked fish until the next year. Going back to the no stocking option, somewhere in that process, around 2018-2020, we will get to a big bloom of *Hydrilla* and we will need a lot of carp to control it. That is not what we want.

Mr. Page pointed out the red lines going across the graph, which indicate the total number of fish needed in the system to have different ratios. We want to slow the descent of the fish levels by stocking. For the sake of the model, we are saying these numbers are being stocked in perpetuity, but we know that these numbers will be managed yearly, based on what we see in the lake. The blue line is the annual stocking rate of 6700 fish, which levels off around 22,000 fish. That stocking rate does not move us below the 1:6 ratio of 26,666 fish until about 2022. The yellow line represents an annual stocking rate of 8700 fish, which levels off just above the 1:6 ratio. The dark grey line is the annual stocking rate of 9000 fish, which levels off at about 28,000 fish. The light grey line is an annual stocking rate of 10,000 fish, which levels off just under the 1:5 ratio.

Mr. Page said the 6700 stocking rate is probably not enough. The 8700 stocking rate is pretty close to enough. Mr. McCord asked, "Based on what?" Mr. Page said based on supposedly keeping a level number of carp in the system. Mr. McCord asked, "To do what?" Mr. Page said to control *Hydrilla*. Mr. McCord noted that the current number of carp in the system are not controlling *Hydrilla*, which is what we talked about in the previous meeting. We are seeing *Hydrilla* starting to come back, even in the very adverse conditions of high, muddy water. This leads those of us that are very experienced on the system to believe that *Hydrilla* is coming back extensively at a level of 43,000 fish. Those numbers you are showing have us dropping way below the 43,000 level of fish that are apparently struggling to control *Hydrilla* expansion now. If we drop below well below that, we are going to see a tremendous expansion of *Hydrilla*. Then we are going to have to stock very large numbers of grass carp, which is problematic for everyone in this room, mostly for S-C. We cannot afford to spend that kind of money, and we do not want to adversely affect the biology of the S-C lake system. We have talked multiple times about this. This graph is interesting, but it does not take into account the amount or location of the vegetation on the lake. It is only looking at the numbers of grass carp and what-if scenarios. He can pull up a graph, shown at the last meeting, that shows both hydrilla levels and grass carp numbers, which clearly shows that some of the numbers you are showing here are not enough fish to maintain control of *Hydrilla* in the S-C system. We are pushing very hard to try to stick with a number that we feel comfortable and confident with that will maintain control of *Hydrilla*, not experiment again to see how low we can get with grass carp before seeing what we have to do to react to *Hydrilla* getting out of control. We already know what that is going to be.

Mr. Perry asked how many acres of *Hydrilla* are in the lakes right now. Mr. McCord said he could not say. We have not done a new survey since the end of last year. Mr. Perry noted that our report says 237 acres. Mr. McCord said that was based on the work that was done at the end of last year, under adverse conditions, which by no means documented all the *Hydrilla*. If we look at the last time we lost control of *Hydrilla*, it started out at about 300 acres. The next year it was 800 acres, then 1200, and up to 7000 acres before we agreed, as a Council, to stock

fish again. We stocked over 200,000 fish in successive years. Mr. Perry noted that during that time period, the Council, for a number of different reasons, chose not to stock fish. Mr. Page noted that the carp numbers went well below 20,000. We had a period of time where it looked like we were hanging in there with 200-300 acres of *Hydrilla*, where we had between 34,000 and 16,000 fish. The *Hydrilla* took off after we got to that level. It took several years for it to jump, but it did start multiplying. Then we started chasing our tail to gain control. We hoped it would work, but it did not. Mr. Page differs with Mr. McCord on those numbers. That chart shows the danger zone where we should have been restocking. The levels of both species were fairly stable for a while before *Hydrilla* takes off.

Mr. McCord finds it interesting that at the last meeting, where we discussed that graph, everybody was in agreement with the stocking number of 13,843, except Mr. Perry. Now, a few months later, it appears that the other members of DNR are now in agreement with Mr. Perry. He would like to know what changed since the last meeting. Mr. Page said he went back and looked at the numbers and started doing this graph. Based on the other graph, he started thinking that somewhere between 20,000 and 40,000 was the ideal number of carp. When looking at this graph, it seemed that the 13,000 stocking rate was a little high. His magic number on there is probably the 10,000 stocking rate, which keeps us close to the 1:5 ratio of 32,000 fish in the system. He does not disagree with the 8700 stocking rate, which keeps us fairly close to it, too.

Mr. McCord said that the way Mr. Page is looking at the numbers is a little skewed, as well. When you look at that top line, which is where we would be if we stock 13,843 fish, that stocking number is the mortality number. All you are doing is maintaining that number of fish. Mr. Page said they do not disappear as soon as you put them in. They disappear over the period of the year. Mr. McCord agreed, and asked how many have disappeared since we calculated that 43,000 number. We are already a quarter of the way through the year. Mr. Page said the way we have always done the model is the first year fish go into the system, they go in at 100 percent. The next year, you take out the number that is the mortality rate, then you add more fish to it, so there is a peak number. Mr. McCord said you are not taking into account what is going on in the real world. Mr. Page said, for modeling purposes, we have always accounted for the mortality at the end of the year, which is how he came up with the number in the graph. Mr. McCord and Mr. Page had additional discussion about when the fish are most likely to die and how that might affect the vegetation in the system.

Mr. McCord reminded everyone that at the last meeting, everyone except Mr. Perry was in agreement that what we are seeing an uptick in the amount of *Hydrilla* and other native vegetation (indicator species). The native vegetation has had a tremendous uptick in growth, which is an indication that *Hydrilla* is also growing at a much faster rate. Mr. Perry said you cannot make that statement. Mr. McCord said you can make the statement that an increase in

native species is an indication of an increase in growth of *Hydrilla*. The Chairman made it earlier for another reservoir and no one objected to it, so it can be made for the S-C reservoirs.

Mr. Perry said we have a unique situation in Marion and Moultrie, which he likens to a gigantic prescribed fire. The successional stage of the lake has been set back remarkably. We have extraordinary regrowth of native aquatic vegetation. We must not risk that. Mr. McCord agreed. He said that is exactly what we are risking by not stocking enough grass carp to maintain the level of *Hydrilla* and maintain the level of native vegetation. Mr. Perry said that what Mr. McCord consistently wants is Phil Kirk's model plus 100 percent or more. He is not opposed to stocking grass carp. The stocking of almost 14,000 sterile grass carp this year would be an excessive stocking and would place the recovery of the native plants in that system at risk.

Mr. McCord asked if Mr. Perry had been out on the system recently to see what is actually out there. Mr. Perry said it had been a couple years since he had been out there. Mr. McCord urged the Council members to go out and take a look at what is on the lake. Mr. Perry mentions a really scary thing about vegetation disappearing. We have tremendous amounts of vegetation. Mr. Perry countered that Mr. McCord is prophesizing the scary concept that *Hydrilla* is going to take over the lake. We know where the danger points are. We know what happened in the past and why it happened. We must never allow it to happen again. We are so far above that point right now that this is sort of ridiculous to talk about it. Mr. McCord asked Mr. Perry where we are on native vegetation. He feels Mr. Perry does not know, because he has not been out there. Mr. Perry said that by all accounts from DNR staff, fisherman and hunters, there is a rather remarkable, not seen in a long time, recovery of native vegetation. Everyone likes that.

Mr. McCord said that has occurred while there are 43,000 fish in the system. He asked why we would reduce that population to give *Hydrilla* a chance to really take off and displace that native vegetation. Mr. Perry said we all know that the fish that are in there are not thrifty. They are not eating like young fish are when we put them in. That is why he is an advocate of a measured stocking and a consistent rate of stocking for at least a five year period of time. We talk often about adaptive management in here. We do not do adaptive management. You have to do something consistently for about five years before you can figure out what that baseline is. Then you can do something that is adaptive to that baseline.

Mr. Perry recommends that we stock at a rate of 8700 fish for at least 5 years, and not waver from it. At about that time, we will be down to about 30,000 fish in the system, which is the Phil Kirk model plus 50 percent. We would not get into what he considers the danger zone that occurred in 2005, when we did not stock for a number of years. We know where those danger zones are, because it has happened twice. We know what not to do. There is no compelling reason to overstock the lake with carp at this time, based on 237 acres. We need to work toward a level of 30,000 fish for five years. If the *Hydrilla* remains low during that period

of time, he is an advocate of reducing to a target level of 25,000 fish. That would be the Phil Kirk model plus 25 percent. There is no indication that almost 14,000 fish need to go in the system when we are having a bona fide recovery. The people out there want us to do a measured, careful approach to this. A lesser stocking is exactly that.

Mr. McCord said it amazes him that for a number of 14,000 fish, we are talking about grossly overstocking the lake system. You are talking 8700 versus 14,000 fish. There is not that much difference in those two numbers. Mr. Perry noted that if you stock at that rate out to 2030, you are talking about the model plus 100 percent. Mr. McCord said he has no plan of how many fish to stock every year. It will be based on what vegetation does, not a number that we will stock annual for infinity. Mr. Perry said we shouldn't be talking about adaptive management. We should be talking about reactive management. Mr. McCord said it has to be management based on the vegetation on the system. Otherwise, you lose control of it. We have seen that in the past. You cannot just look at numbers of fish and throw out what is going on with vegetation. Indicator species of vegetation are also included in decisions on grass carp stocking. We are including them on some reservoirs, but not on the S-C system. Nobody is advocating controlling all the native vegetation in the system, but what is it that we are after? We are after hunting and fishing success. We are after biological success of the system. He asked if anyone here knows where we are in terms of fishing success. He talks to a lot of hunters and fishermen, too. We had one of the best years on the Santee Cooper Wildlife Refuge in terms of waterfowl. We are now rated as the number 2 bass fishing lake in the country in 2016, when we essentially had no *Hydrilla* in the system. We are also rated as the number 6 lake in the country on crappie fishing. He asked what our goal here is and what are we taking a chance on losing. We are trying to reduce the chance of letting *Hydrilla* get back out of control, because we have not done that twice before. We are trying not to do that this time and err on the side of trying to remain where we are because we see all this recovery of vegetation you are talking about and an increase in *Hydrilla*. We are trying to maintain that level because that is the level that is indicated by the plant growth on the system.

Mr. Perry said a stocking of 8700 fish will keep us well above the level needed to control *Hydrilla*. Ms. Eidson said that when we agreed on the stocking number, we did not project out into the future. She likes this graph because it gives her a visual of what would happen if we do not go up and down but are consistent. It also says in the plan that if the acreage goes above 300, the Council has the right to modify this stocking. She sees that if we stock between 8700 and 10,000 fish for the next five years, and if we do not see a marked change in vegetation, you make adjustments. She sees this as a consistent approach to stocking that can be adjusted by the Council. Mr. Perry said it will provide a robust age structure. Mr. McCord asked what the plan will be if the acreage jumps way above 300 acres. Ms. Eidson said we will adjust the stocking numbers. Mr. McCord wanted to know what *Hydrilla* does once it gets much above 300 acres, and it keeps going up like we have had happen in the past. He asked if she thought we would be

able to keep putting small adjustments in and keep that from getting out of control. Ms. Eidson said she thinks the variation in age classes from stocking consistently, particularly at the level of 10,000 fish Mr. Page is advocating, will make that situation unlikely. Mr. McCord respects her opinion, but he thinks we will have that problem. The difference in the number of fish we are talking about is such a small number, he does not understand how that worries people. The difference between 10,000 and 13,000 fish is only 3000 fish over a 160,000 acre lake system.

Ms. Eidson noted at the last meeting, we did not extend the proposed stocking rate out to 2030, so we were not looking at the ratios and where the fish levels would be over the next few years. The total fish numbers, after including the mortality rate, are significantly higher when you stock at the proposed rate versus the 10,000 or 9000 rates. Mr. Page said stocking at the proposed rate would settle out at about 43,000 total fish if you kept stocking at that rate. Mr. McCord thinks that is exactly where we need to be. At 43,000 is where we are right now, and we are seeing an increase in growth.

Mr. Perry asked the Chairman if he could approach the graph and approval was granted. If an 8700 fish per year protocol over five years helps us to level out at 30,000 fish, we are still above the 1:6 ratio. We don't want the 1:8 ratio or lower, and we all know that because it has happened twice. For five years, we will be much higher than that and we will have a big cushion and we can watch this very carefully. In the mid-2000s, when the *Hydrilla* levels was moving from 200 to 400 to 594 acres, we were not doing anything, and we had a dangerously low number of carp. We know not to do that ever again. We will have a significant comfort margin by staying above 30,000 fish. Mr. Page noted the fish levels at that stocking rate would only stay above 30,000 until the year 2022. Mr. Perry was focused on 5 years out.

Mr. McCord agreed that the large stocking events are the biggest concern. It is a concern for all of us because of the financial expense of paying for the grass carp and the physical expense to the system when you have to put that many fish in. That does not include the amount of native vegetation that *Hydrilla* is going to displace when it moves back into those areas. Every bit of *Hydrilla* that expands is an area where native vegetation will not be growing. We are getting too focused on these numbers. We need to find the number of carp in the system that will control *Hydrilla* while allowing native vegetation to grow. That should be what we are all trying to do. What we were seeing on the system, at about 63,000 fish the year before, was native vegetation starting to come back. Now we are down to 43,000 fish and we are seeing native vegetation continue to grow, but also *Hydrilla* start to come back. We do not want to get to the point where *Hydrilla* is shading out and out-competing the native vegetation. That would require us to put large numbers of carp in the system. We can come up with a plan that calls for a certain number of fish every year, but that is going to have to vary based on what we see on the system. He reminded everyone that we are making these decisions as if we have concerns about the amount of native vegetation on the lake. The amount of native vegetation on the system right

now is wonderful. The system is great for all purposes. It could be more. Could it be less and still provide all the benefits we want to take advantage of? Yes, but we are sitting in this room looking at graphs and only a few of us have been out on the system to know what is out there. Yet, we argue about what beneficial vegetation is on the lake.

Ms. Eidson went back to Mr. Perry's question about how much *Hydrilla* is out there and the fact that we do not know. Mr. McCord said we do not know, but there is definitely more than there was last year. He noted that the 237 acre figure from last year's surveys is a low number because we were only able to survey one side of the lake system. We cannot say how much in on the other side. It may be 200, or it may be 500. We have not started our survey work this year, and he is unaware of any surveying by DNR, to see what is out there right now. If he could, he thinks it would make everyone feel a lot better about trying to maintain the number of fish that are out there right now. It is really hard for him to understand why we are going so ballistic over a few thousand fish in a system the size of S-C, which is so different from any of the systems that we do not discuss. It is not going to create a tremendous negative reaction to native vegetation, but it may allow us to keep *Hydrilla* from continuing to take over and thereby causing problems. He noted that the suggested stocking number may not control the *Hydrilla* that is out there. It is his best guess at the number of fish we need in the system, based on what we are seeing on the system in regard to both native and non-native vegetation.

Mr. Page went back to the carp versus *Hydrilla* graph. He pointed out that back in the early 2000s, when the carp numbers were around 26,000 and the *Hydrilla* started to increase after the carp numbers were decreasing. We do not know what would have happened if we had started stocking regularly and kept the carp numbers at the 26,000 level. We might have been good for 4-5 years. We waited until we crossed over, which was not right. Once we crossed over, we thought we could catch up with it by stocking to get back ahead of it. Mr. Perry said we did not stock the following year. Mr. McCord noted that one of the years we did not stock because the water was so low that we could not get to it to stock, so you do not want to make any decisions based on that little portion of the graph. Mr. Page said that section of the graph is irrelevant because we started chasing our tail. We did not get exponential growth until 2010-2011. We all know that the *Hydrilla* growth rate can take off like a rocket. Even with the number of fish we had in the system, we stayed below 26,000.

Mr. Page said that what we are trying to do with the different stocking levels is to have a baseline stocking number but have a caveat that we can adjust or adapt that based on more information we have. His biggest purpose is to change the curve. He does not want to see the spikes in *Hydrilla* or carp numbers. He wants to slow the curve down, which will give us more time to react. We do not have to do as much to catch up. We need to keep the carp numbers up well above the 1:8 ratio of 20,000. There is no doubt in my mind that is not a good number, but I do not know what the magic number is.

Ms. Eidson likes the fact that Mr. Perry's proposal is to stock a set amount for 5 years, no matter what is going on in the system. Mr. McCord does not disagree. He noted that the number that was discussed in the last meeting, there was also the plan to continue stocking to maintain a certain number of fish that would control *Hydrilla* while allowing the native vegetation to flourish as best it can. Ms. Eidson said we did not specify what level that was. Mr. McCord said we did specify that we thought 43,000 fish in the system was the target level. That was where the 13,000 came from. That was the target we were looking at, as opposed to the 20,000 target, which we know is not appropriate for the S-C system. Mr. Page noted that part of the problem, and it has always been an issue, is where to put the mortality in the models.

Mr. McCord said the bigger issue is not being able to follow a plan that allows you to continue stocking. That is where we have skewed the system on S-C. We just talked about Lake Murray. You have a system that you follow, and nobody is concerned about it. On this system, even when we see evidence on the lake that *Hydrilla* is beginning to expand along with the native vegetation, you still cannot come to a conclusion that we are pretty close to the level where we need to be. DNR is pushing to err on the side of fewer fish, rather than err on the side of control of *Hydrilla*. He is just pushing for one time in the history of the S-C system to not err on the side of not enough fish, because we know the consequences of that. He does not believe, based on what we are seeing on the system, that there are any negative consequences to staying at the level of fish we have in the system. We are on the system looking, and we see what is out there. We know what is coming back and we certainly cannot say that there are too many grass carp in the system. If there were, we would not see some of this vegetation and we certainly would not be seeing *Hydrilla* starting to come back. That is a very good indicator to him that we are very close to the right number. We are talking about reducing that number down to about 30,000 fish if we stock at the 8700 annual rate for 5 years. That is about 13,000 less fish than what he feels like we need to have in the system to maintain the system as it is today. Everyone has said that is very good in terms of native vegetation and not out of control in terms of *Hydrilla*.

Mr. Perry said that would be 50 percent over the Phil Kirk model. Mr. McCord is not talking about the model. He is talking about what is on the system. Models are used just for that purpose, but you have to adjust models based on what is happening in reality. We are not adjusting for reality. We are looking at the models and manipulating the number to make people feel good. Mr. Wannamaker noted that in the changes we made in the first draft, we struck out the word manage and changed it to control for *Hydrilla*, water hyacinth, and crested floating heart. We struck that because we need to control things better.

Mr. McCord found it interesting that one of the comments against the S-C section of the plan is from one of the DNR advisory board members. They were actually looking at numbers

much less than what has been discussed here. He just wonders how this plays into it. If you look at the information that is used as a guide, the data is all over the place. It is based on information that has been discussed in these meetings in the past but is taken somewhat out of context. He is still trying to understand why we are going downhill in our stocking numbers compared to what we talked about last time, because only one person on this Council expressed any concern with the 13,000+ number. Now, because we have seen models of what the numbers do, which are not based on the reaction on the lake, we are looking at dropping the numbers down to something that is a lot closer to what is coming from the advisory committee.

Mr. Glover asked for an explanation of the condition factor that was included in the letter from the DNR advisory board. Mr. McCord provided an explanation. He also noted that there is no way that the average age of the fish in the system are 5 years old. The youngest fish in the system are 5 years old and the rest are older.

Mr. McCord still is not clear on where we are coming up with the lower numbers that we need to target, and what everyone's concern is about how the lake system is going to react to that. Mr. Page said how the lake system reacts is crucial to everything. He wants to slow the curve down and to look at the long term goals, but we need time to do the balance. We do not want to stay too high, but he definitely does not want to go too low. He is never going to suggest that we go to 20,000 fish. His suggestion is that we never drop below the 26,666, 1:6 ratio. Based on the historic data, that number had *Hydrilla* under control. Mr. McCord said it may under certain environmental conditions, that may be the case, but the conditions on the system are different every year and that has to be factored in.

Mr. Page said we are trying to slow the curve. All of the models do that. There is no doubt that this is still an adaptive management plan. If we slow the curve and we see more problems, we will have more time to stock fish. If we see less problems, we will have more time to say we might not need that many fish. He does not want to start at the high end and work his way down. I would like to start somewhere toward the middle and work down. We have seen on the ratio in the past, prior to 2003, the old data shows you that once we get down to the 25-26 thousand range, we are starting to get in the danger zone. Anything can change that system and topple it at that point. That is too low. Mr. McCord thinks that number is still a guess. We do not know for sure that number is the toppling point. He thinks it is considerably higher than that. He thinks it is close to where we are now. That is based on all the modeling we have done over 30 years with these fish and on over 35 years of experience on the system watching and attempting to maintain *Hydrilla* along with all the other vegetation.

Mr. Page suggested we pick a number in the middle, say 9000 fish. If we committed to stocking 9000 fish per year, and that number could be modified yearly based on what we see, we would have to pull out all the way to 2020 before the total number of fish in the system would

drop below 32,000. That is pretty close to the 8700 but is a nice round number. Mr. Perry made a motion to propose to stock 8700 sterile grass carp this year and continue to stock at that level for 5 years while closely monitoring *Hydrilla*. Mr. Page asked for a second. Mr. Marshall seconded the motion. Mr. Page asked if there was any discussion.

Ms. Eidson spoke to the members of the public regarding why there was so much discussion on the S-C lakes over the other lakes. They are the first and third largest lakes, with Lake Murray being second, so they have a huge impact. Turning back to the Council, she said during the last meeting, Mr. McCord proposed trying to keep the total carp numbers at 43,000. She did not have a good feel for the ratios at that time. The graph provided today provides a better idea of what might happen long term. She did not second the 8700 stocking number because the Council has not discussed the other options of 9000 or 10,000, which she thinks is not what either Mr. Perry or Mr. McCord wants, but would be a compromise. She suggested that the Council consider reaching a compromise. She agrees with Mr. Perry on the aspect that we should err on the side of being conservative. If we keep stocking, there will be fish in the system. Stocking a consistent number of fish over the next five years will allow us to see what Mother Nature does with those fish instead of us going up and down due to condition changes in the system. There will also be a varied age population in the system. As Mr. Page said, it will not take us long to recover if we see *Hydrilla* growing. She would like to be conservative in the stocking number.

Mr. Cozart, member of the Goat Island Boat Club, asked if there were numbers in the plan that was sent out for review. Mr. Page confirmed that the 13,843 stocking rate was included. Mr. Cozart said you were asking for our comments on that plan and whether we would support it. You see all the comments. Then you come in here and immediately change it. He does not know why you sent out a plan with numbers in it. It is like you already had a plan and now you are coming back after getting comments, which are by far in favor of the plan as written. Now you are going to change it. It makes him feel like it is the same government we have up in Washington, DC.

Mr. Taylor, a member of the public, said he has had comments from the other end of the spectrum numbering over 200, and was told at Council meetings that it is not a popularity contest. They take our comments into account, but the Council cannot be swayed by them.

Mr. Page noted that it is a draft plan. Sometimes we put numbers in for expediency sake, because we cannot put a plan out saying we are still discussing it. Nothing in the draft plan is really set in stone until the final vote. Even then, the way the Council is set up by law, a two-thirds vote of the Council members present are required to approve the plan. If we do not get a two-thirds vote, it defers back to the DNR, which is me and the agency director. The comments are important to us. We see the support or lack of support on certain issues. If he's not

mistaken, you all stated that you support what S-C is trying to do on the lake, but no one said they support that specific number. It is not that we are sending numbers out and then telling you we are not going to do it. We are trying to get your input on the whole plan, and S-C is about the only lake we get comments on. There was additional discussion regarding whether the numbers had changed between the draft and the final in the past.

Mr. McCord said he agreed with 99 percent of the comments Ms. Eidson made to the visitors from the public. At no point were the S-C lakes completely devoid of aquatic vegetation. The submersed vegetation, which most people are interested in from a fishing and waterfowl hunted perspective, was gone after the grass carp cleaned out the *Hydrilla*. He went into detail about why that happened and noted that there has never been less than 10,000 acres of emersed and submersed native vegetation on the lakes. The statements that grass carp wiped out the native vegetation and they got out of control are why people often look negatively at grass carp stocking. There were records set at bass fishing tournaments during that time. The moratorium we had on stocking carp went on for a 10 year period. It should have been 5 years. If we had started stocking based on what we were seeing on the lake, like we are talking about now, we probably would not gotten into the situation we did in 2011 and 2012. He is trying to avoid seeing that happen again. He does not think anyone in this room can come up with any negative impacts to the system due to the current number of grass carp in the lakes.

Mr. Page said he has a motion on the floor that we need to put to a vote. Mr. McCord said he agrees with Ms. Eidson that we need to make a compromise, and he is willing to consider that. Ms. Eidson noted that it is easy to put grass carp in a lake and have them clear out all the vegetation within 3 years. It takes a lot longer for Mother Nature to restore that vegetation loss than it does for the carp to get rid of it. Mr. McCord said that if you do not keep *Hydrilla* at a level where it is under control, the resulting growth causes you to stock too many fish. Mr. Wanamaker said that due to all of the expertise at S-C, he would go with what they recommend.

Mr. Page said there would be no more discussion and called the motion to a vote. The motion was to stock 8700 sterile grass carp this year and continue to stock at that level for 5 years while closely monitoring *Hydrilla*. There were 3 ayes, 3 nays, and two abstain. The motion is not carried.

Mr. McCord proposed to compromise and target 10,000 fish, which would put us closer to where we would like to be. He made a motion to stock 10,000 sterile grass carp this year and continue to stock at that level for 5 years while closely monitoring *Hydrilla*. Ms. Eidson seconded the motion. Mr. Page asked for discussion. Mr. Perry noted that the total number of carp would not get down to 30,000 fish until the distant future. Mr. McCord said he was not targeting 30,000 fish. Mr. Page said that stocking rate, if continued, levels off at about 32,000 fish. Mr. McCord said he does not think 30,000 fish is the right number now or in the future.

Mr. Thompson asked if there is anything that says we cannot modify this stocking rate in the future. Mr. Page said that we can make modifications. S-C provides us with yearly data on vegetation, both invasive and beneficial. They do aerial hyperspectral photography to determine those acreage numbers, and then field truth it. Also, an annual mortality study on carp is done by Mr. Lamprecht, a DNR fisheries biologist. This stocking rate is not set in stone but is a set backdrop number to be adaptively managed as we see fluctuations in the system. We need to be able to react to those increases in *Hydrilla* or decreases in native vegetation. It will give us more time to do that. It is also important to get age classes in the system. This will be the starting point each year. Hopefully, we will not have to change it much from year to year, but we can do so based on conditions in the lake system. Mr. McCord said that is what makes it an adaptive plan, because you adapt to conditions. He does agree with the 5 year plan. Mr. Page said we need to see how it cycles out. Being able to put fish in there to straighten that curve gives us the ability to do true adaptive management. Mr. McCord said after the five years, we may stay at that level or adjust it up or down based on conditions. The system is too diverse to not do that. Mr. Page said it would be ideal to stay at that number for 5 years and see what happens. Mr. McCord would like that, because it is easy to budget for. Mr. Thompson understands the reasons behind staying at a set level for a period of time and seeing what happens. He thinks we are moving in the right direction.

Mr. Page asked if there was any more discussion. Mr. Marshall said he heard Mr. McCord talk about his interest in the 5 year path. He was not hearing that before, but he is glad to hear it. He like that path, too. In regard to the comments on the phone, adaptive management should be done over longer periods of time, not annually. He asked if we were talking about 5 year adaptations. Mr. Perry said that you must have relative stability before you can have adaptive management. Otherwise, you are reacting every year. Mr. Marshall likes that idea. It makes sense to him.

Mr. McCord noted that after the initial large stocking, there was a maintenance stocking plan in place to control *Hydrilla*, but due to various reasons, we threw that out the window. Just because we have a five year plan in there does not mean some of those same things might not happen again and we need to throw this out the window, too. He thinks the best we can hope to do is follow this 5 year plan to some extent, but because of the influences on this Council from outside, it is not always our decision to make. He hopes it will be, but who knows what is going to happen moving forward. He thinks the best we can do is to have an adaptive management plan in place. Hopefully, we can make those small changes as we need to and extend that further out as time moves forward. Mr. Page said it will definitely give us more time to react, see things happening, and we will not have such a steep curve. Ms. Eidson encouraged the Council, if you do see an increase in *Hydrilla* and are still doing the same stocking, to wait it out a year to see what happens. Do not just automatically jump the stocking rate up and avoid the knee-jerk reactions.

Mr. McCord does not disagree, but it will be dependent on what that increase in vegetation is. You still have to come back to the fact that S-C has to pay all this, and we want to keep it reasonable. Ms. Eidson noted that during a previous meeting, Mr. McCord said that “cost is not that important.” Ms. Holling said that context is important, because that statement was in reference to the potential cost-share money available from DNR. Mr. Perry said the stocking rate of 10,000 will level out at about 32,000 fish in 2030, if we stick with that. He feels that is way too many fish for this. We should be using science to guide our decisions. Unfortunately, he feels we are being guided more by fear. Mr. McCord said to the contrary, your opinion is guided by fear. His opinion is guided by science. Mr. Perry said his decision is guided by habitat. We make habitat decisions at DNR. Every single day, we are guided by habitat. You made reference to our advisory board making an even more conservative recommendation, and he thought you might be alluding to the fact that we might be influenced by that. Deputy Director Cope can tell you that it is not unusual for our staff and the advisory committee to differ in opinion. He thinks that it is clear that DNR is very concerned about both *Hydrilla* and habitat.

Mr. Page noted that the stocking rate of 8700 would settle out at about 27,000 fish, the 1:6 ratio, while the stocking rate of 10,000 would settle out at about 32,000 fish. Either one of those are better than settling in at 43,000, which is where the 13,843 stocking rate would settle at. Ms. Hurley noted that we are planning at this for 5 years, and then looking at possibly making a change. Mr. McCrary, in the audience, asked if this 5 year plan means that you will stock that number every year and not consider moving from that. 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. If we see *Hydrilla* sprout up to 500 acres, we will probably stock a few more. If we see some negative impact of carp, we will stock less. Options will be there for the Council to consider. This is just a plan moving forward.

Mr. Perry said that if we jump around every year, it is not adaptive, it is reactive. Mr. McCord said we cannot take reactive completely out of the picture, because sometimes you have to react to a biological change on the system. DNR is no more concerned with the habitat on the lake system than S-C is. It is our job to maintain and monitor that habitat. We are very much aware of what is going on on the lake system now. We are interested in keeping it where it is now or improving it in terms of native vegetation. Mr. Page said he would rather have the opportunity to react on a long-term basis than have to react yearly. Mr. McCord would, too, but we have seen in the past that a couple years can make a tremendous difference in the amount of *Hydrilla* that has taken over native vegetation. Ms. Eidson said the difference here is that we are continuing stocking.

Mr. McCrary asked where Mr. McCord has seen *Hydrilla* displace native vegetation, because he has never seen that happen. Mr. McCord can show him lots of places it has happened in the past. He cannot show Mr. McCrary where it is happening now, because the *Hydrilla* is not

out there. Mr. McCrary asked where Mr. McCord has seen it in the past, where it might be seen in the future. Mr. McCord said practically everywhere in the lake where *Hydrilla* grows. *Hydrilla* grows faster than the native vegetation, grows to the surface and creates a canopy, which shades out the other vegetation. It does not matter what the native is, *Hydrilla* will displace it within a couple of years of getting established. There was some additional discussion between the two men.

Mr. Page asked if there was any more discussion on the motion before we take a vote. Mr. Marshall asked Mr. Page if he was inclined to support the 10,000, which seemed the case when he was going over the chart. Mr. Page said he likes any number that flattens out above that 1:6 ratio, which could be 8700, 9,000, or 10,000. He likes all of those options. He does not want the 6700, which was the original stocking we did two years ago. That would level off closer to 20,000, which he is not comfortable with. He is supporting a number that will put us in the 27,000 to 32,000 range. He does not think the system needs to maintain 40,000 fish in it. He may be wrong, but that is based on all the information we have. Mr. Perry said we will be at 45,000 for the next two years. Mr. Page said he was talking about the S-C recommendation, which would level off just below 45,000. We will be over 40,000 no matter what we stock, unless it is 6700.

Mr. McCord said if we are stocking less fish than the annual mortality rate, we are not going to go up in the number of total number of fish for any appreciable period of time. It will be a very short time where you will go above the current standing stock of fish. Mr. Page said the model puts the S-C recommendation leveling out at about 43,000 fish. The other stocking level models level out between 27,000 and 32,000.

Mr. Page said we have a motion on the table to stock 10,000 sterile grass carp this year and continue to stock at that level for a total of 5 years while closely monitoring *Hydrilla*. Ms. Eidson encourages the Council to do the due diligence to stay at that stocking rate, and really talk about it before you decide to alter that rate. Mr. Page called for a vote. There were 6 ayes, 1 nay, and 1 abstain. The motion passed.

Mr. McCord said there is a line in the S-C portion of the plan about the size of grass carp to be stocked. In the general lake portion, it says 10-12", and then when you get into the impoundments, it says 12". He proposed that we use the same numbers for the whole system, because the impoundments are part of the system and some of those are not completely impounded any more. He would recommend 10-12", based on the history of stocking and expected herbivory, as well as availability and price. When you jump from 10-12" to 12", it can have a tremendous impact on the price and availability. He proposed that it be 10-12" throughout the S-C system. Mr. Page noted that the other sections of the plan say 12" minimum, with no fish to exceed 14". Mr. McCord said the other waterbodies have much smaller stocking

numbers, so that might stand to reason. Mr. Page noted the plan states a minimum of 10-12” fish, and the numbers in the impoundments will be changed to that as well.

Mr. McCord made a motion to accept the S-C portion of the plan with amendments. Ms. Eidson seconded the motion. Mr. Page asked for any discussion. He called for a vote. There were 6 ayes, 1 nay, and 1 abstain. The motion carried.

Mr. Page asked if there were any additional items for Council action. He said we need to plan a field trip to the S-C lakes. Mr. McCord said he would like to do so and thinks the sooner the better. It is a very good time to get out there because of the temperature and more airboats are currently available. Within the next month would be ideal. Perhaps we could have a tour set up at the S-C facility and we could approve the minutes from the last meeting at the same time. We could possibly approve the minutes from this meeting.

Mr. Marshall made a motion to adjourn. Mr. McCord seconded the motion. Mr. Page called for a vote, which was unanimously passed. The meeting adjourned at 12:57pm.