

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
Fisheries TWC Meeting**

August 22, 2013

Final KDM 09-18-13

ATTENDEES:

Bill Marshall (SCDNR)
Milton Quattlebaum (SCANA)
Gerrit Jobsis (American Rivers)
Shane Boring (Kleinschmidt)
Dick Christie (SCDNR)
Kelly Miller (Kleinschmidt)
Byron Hamstead (USFWS)
Vivianne Vejdani (SCDNR)

Bill Argentieri (SCE&G)
Hal Beard (SCDNR)
Steve Summer (SCANA)
Alan Stuart (Kleinschmidt)
Pace Wilber (NOAA)
Tom McCoy (USFWS)
Chad Altman (SCDHEC)

These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alan opens the meeting by reviewing the agenda and asking if everyone had a chance to review the Fisheries Report that was distributed prior to the meeting. Everyone had reviewed the report, so Alan opens the floor for comments. Ron Ahle with SCDNR was not able to attend the meeting, but sent in his edits and comments via email. Kelly will distribute these comments to the entire Fisheries TWC.

Dick reiterates Ron's point that information on the fish passage at Columbia Dam, including species composition, should be added to the report. He asks if Jason Bettinger has studied the downstream area also, and if so, says this information should be added to the report as well. Tom and Byron ask if the tributaries were studied, because they believe some fish species that should have been identified in the report were missing, such as the Carolina Darter. Shane says he will check on this and add information to the report as needed. Tom also mentions that the pie charts in the report are a bit confusing and the map on Page 2 is difficult to read. Shane says that he will try to rework this if possible. Shane tells the group that a paragraph will be added to the report that mentions target species and restoration efforts for these species.

The group discusses Ron's comment on white perch and how it relates to the report. Hal says the report states that a change of fish population in the lake was due to the presence of white perch, which Ron and Hal believe is unsubstantiated. Alan says this sentence can be removed from the report, since it was not the intent of the statement to claim that white perch have replaced other species.

Alan asks about the validity of Ron's statement that the smallmouth bass population in the river was supported by the hatchery. Hal says this statement is partially true, as the smallmouth bass

population was supported by the hatchery, but that this was discontinued about two years ago. Hal says the fish have done well throughout the Broad River and are surviving on their own now.

Shane will also include a sentence in the report describing how the abundant fish community provides host fish for mussels.

Alan asks the group if, after the discussed edits have been made, this report adequately describes the fish community for the project. Everyone says yes. Alan says we will make the edits, give the group until September 6th to make any further comments, and then finalize the report.

The group then begins discussion on the proposed study plans. Alan asks the group if they see a need in a separate Robust Redhorse study, since the species will also be included in the IFIM study. Gerrit says he would like to see a separate study, to determine if and where spawning is occurring. Hal mentions that a lot of effort has been put into restoring the Robust Redhorse and that a study would be helpful to determine the results of this effort. Dick says they don't have much information on the species yet and Milton says he will find out what information has been collected so far. He also says he will talk with the Robust Redhorse committee to find out what has been studied and what still needs to be studied. Alan asks if the group wants to just collect eggs by doing drift net sampling, or collect and document spawning females. Dick and Tom suggest the group talk with the Robust Redhorse committee and Ron Ahle to help determine the details of the study. Dick says he will call Scott Lamprecht and put him in touch with Shane to discuss the study. It is also mentioned that the mesohabitat study that will be conducted this fall will yield some information that might help in developing the Robust Redhorse study.

The group then focuses on the study plan for the American Shad. Alan asks if SCDNR is collecting juveniles to see if they are natural or from stocking efforts. Dick says we need to talk to Ron about this study, since a lot of the interest is coming from him. Shane will talk with Ron to develop a study plan for discussion at the next Fisheries TWC meeting. Dick says that if this study moves forward, funding might be made available through the Accord.

Alan moves the group toward discussing the eel abundance study. He asks the group what they would like to see in the study. Dick says he would like to see a study similar to the one conducted at Saluda. The group agrees to tweak the plan from Saluda for this study. Gerrit asks if this study needs to be coupled with a study on fish passage. Dick says there is definitely going to be some interest in eel passage at Parr. Dick asks if there is a location at the project where traps can be placed that operators will have easy access. Milton says he would have access to the traps. Dick says if a long term eel study were put into place, it would be ideal if operators could check the traps. Alan asks what the timing of the study should be. Tom says he will look it up and get back with everyone. Pace mentions that at Roanoke Rapids the eels peak during the spring and fall, with the spring peak being much larger than the fall peak. The group looks at Jason Bettinger's presentation of his eel study from 2012. Based on his results, the groups notices that electrofishing should be included in the study, along with the eel ramps. Dick mentions that there isn't much passage and that there had been discussion on stopping eel studies until the passage issue had been addressed. He says the studies associated with the Accord have been pushed out further until there is better passage for the eels. (Note: According to Al Crosby and Bill Post with SCDNR, 7,094 American eels have passed at St. Stephens as of August 21, 2013.)

The group then begins to discuss the Zone of Influence study, which Gerrit suggests be called the Reservoir Fluctuation Study. This study will just include Parr Reservoir, upstream of the dam. Alan says he thought that existing LIDAR data could be used to map out the acreages of affected areas. Gerrit says we need to have a bathymetry component to the study. Currently the group does not know of any bathymetry data on Parr Reservoir. Dick asks if we used LIDAR to do the study on Lake Murray and Alan answers yes. Dick then asks why the study doesn't include Lake Monticello also. He believes it needs to be included but that the sub-impoundment doesn't, since it doesn't fluctuate very much. Alan asks if there is any bathymetry data on Lake Monticello and Steve answers no. The group looks at a contour map of Lake Monticello and determines it has 10 foot contours, which may not be enough. Gerrit asks how fine the fluctuations should be measured. He believes the maximum increment should be one foot, but it could be finer. Bill M says if the purpose of the study is just to inventory the zone, one foot should be plenty. But if the purpose of the study is to determine the fluctuations affect on spawning, a finer increment may be needed. Alan says that from an operations standpoint, sometimes keeping the water level within a 6 inch band is not possible. Alan speaks with Jennifer Austin and determines that LIDAR data from Newberry and Fairfield counties does exist from 2008. Bill A says he would like to use this existing data to do this study. Gerrit mentions that this information can also be included with the recreation study, since one aspect of the recreation study was to examine the fluctuations and determine how they affected recreation.

Alan then turns the discussion to the entrainment and mortality study. Alan says that SCE&G plans to perform a desktop entrainment study at Parr. Pace asks what a desktop entrainment study is. Alan explains that Kleinschmidt has compiled a database of entrainment studies at FERC projects throughout the country. Projects that are similar to Parr are chosen to use as a basis for the desktop study. An entrainment rate is developed, broken up by seasonal components and sometimes species or families. An entrainment estimate is determined. Then turbine types are matched with projects where mortality studies have been completed. Mortality estimates are developed based on fish shape or family. Gerrit mentions that since this project has a pumpback component, this needs to be considered in the study. He says we need to discuss how to estimate American shad passage for the future, which may be something to examine post-license. Alan mentions that desktop entrainment and mortality studies have been done at Columbia and Lockhart, so the database for comparison to Parr is well developed. Alan asks if everyone agrees to a conventional desktop entrainment/mortality study for Parr Development. Everyone says yes.

For the study conducted at Fairfield, Alan says that mortality studies are examined, then adjusted for the lower efficiency of the pumpback. Alan explains that when the system is pumping, the mortality rates are higher, due to the lower efficiency of the units. A study plan for the Fairfield entrainment/mortality study will be created to include in the PAD, which will contain two phases. The first phase will be a white paper and the second phase will describe the actual development of the entrainment rates and mortality study. Pace asks if phase one and two can both be completed soon. Alan explains that there is information still being gathered that might be crucial to phase two that won't be available until later.

Gerrit expresses concern over the likelihood of fish being pumped into Lake Monticello versus travelling upriver. He says that a large effort has been made to create passage for fish and he doesn't want to see that effort go to waste. Fish may be likely to pass downstream only to be entrained at Fairfield. Alan says that after the entrainment/mortality study, the group will determine what can be done to mitigate any project effects. The group discusses whether Section 18 applies to

Fairfield. Alan says a section may be added to the study plan that discusses a mitigation or effectiveness evaluation to reduce entrainment of diadromous fish. Pace says that a mitigation alternatives study for resident and diadromous fish can be developed together and just tweaked for the different types of fish. It can be implemented if need be, or shelved for use in the future. Mitigation alternatives will be determined by the TWC and a statement about this will be added to the study plan.

At the end of the meeting, Tom shared information he received from Mark Cantrell regarding American eels. The optimum temperature for sampling eels is 15-18°C, during the months of March and April.

Kleinschmidt and SCE&G will begin to develop the study plans discussed at the meeting and will distribute to the group for comments. The TWC will then meet again to discuss the study plans. Action items stemming from this meeting are included below.

ACTION ITEMS:

- Shane will incorporate edits to the Fisheries Report and send out for further comments and finalization. Kelly will distribute the final Fisheries report to the entire TWC.
- Kelly will distribute Ron's comments on the Fisheries Report to the entire Fisheries TWC.
- Shane will talk with Scott Lamprecht and Ron Ahle to discuss Robust Redhorse and American Shad and develop study plans.
- Tom will talk with Mark Cantrell and find out when the peak season for sampling American eels is and report back to the group. – Completed by end of meeting
- Milton will talk with the Robust Redhorse committee to find out what has been studied, the data collected and what still needs to be studied.

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Fisheries Report:

Add section on species composition from Columbia Fish Passage.

Add Broad River Survey by Jason Bettinger – funded by Broad River Mitigation Program

Confusing the way pie charts were laid out

Page 2 map could not be viewed very clearly

Page 19 statement on documentation of some species – State vs federal listed

All comments should be received by September 6.

Robust Redhorse Spawning Study:

Draft after Robust Redhorse Committee Meeting on October 1 – 3, 2013 and possible mesohabitat survey the fall of 2013

Shane to talk with Scott Lamprecht regarding this issue

American shad Spawning Study:

Need more information

Shane to discuss with Ron regarding his interest

American Eel Abundance Study:

Look for elvers at dam

Look for areas of potential eel passage

Include Electrofishing in vicinity of dam as part of sampling methods

When is best time to sample for eels? Tom M

15 – 18 degree C – optimal temperature

March through April optimal time

Zone of Influence (Reservoir Fluctuation) Study:

Littoral habitat of Parr Reservoir and Monticello Reservoir

Existing LIDAR data – acreages of effected area

Bathymetry of reservoir down to elevation 256/257'

Look at Old USGS quad maps showing contour lines for Monticello Reservoir

Study not needed for sub-impoundment

Potential spawning habitat analysis – 1 foot increments tentatively for now

Potential tie with affects of fluctuation on recreation – study requested in recreation TWC

Quantify impact of fluctuation

Entrainment Mortality Study:

Parr Hydro Development

Conventional Desktop entrainment study – compiled various data from around the country and though literature search

Order of magnitude result

Resident species are evaluated

Fairfield Pumped Storage Development

Desktop numbers and mortality results

Threadfin shad & BBH

Turbine strikes

Maybe include a correction factor for less efficiency operation of pumpback vs conventional turbines

Two phase process:

First step – compile available data to determine next step – white paper

Second step – development entrainment rates and mortality study results

Develop mitigation alternatives for residence species

Include future options for diadromous species or cover this under Section 18