

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
INSTREAM FLOW/AQUATIC HABITAT
TECHNICAL WORKING COMMITTEE**

SCE&G Offices at Carolina Research Park

Final 6/23/2006

June 14, 2006

ATTENDEES:

Bill Argentieri, SCE&G

Alan Stuart, Kleinschmidt Associates

Jeni Summerlin, Kleinschmidt Associates

Dick Christie, SCDNR

Amanda Hill, USFWS

Scott Harder, SCDNR

Anthony Green, SCDNR

Randy Mahan, SCANA Services

Tom Eppink, SCANA Services

Kelly Miller, Kleinschmidt Associates

Ron Ahle, SCDNR

Gerrit Jobsis, Am. Rivers

Wade Bales, SCDNR

ACTION ITEMS:

- Contact Bud Bader with SCDNR to obtain possible inundation studies for the Congaree and/or LSR

Scott Harder

- Continue the search for Congaree River floodplain/inundation studies from NPS and other sources

Shane Boring

- Quantify habitat types in Lake Murray

Dick Christie/Amanda Hill

- Contact Brandon Kulik to determine his availability and set potential instream flow workshop dates

Alan Stuart

DATE OF NEXT MEETING:

TBA

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MEETING NOTES:

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 Stuart opened the meeting at approximately 9:30 AM and new attendees introduced themselves. Alan noted that the focus of the meeting would be to discuss: (1) the 1989-1990 IFIM study and its relevance in the current relicensing project, (2) available inundation studies, (3) possibilities for a comprehensive habitat assessment for Lake Murray, and (4) establishment of an initial framework for addressing the potential self-sustaining trout fishery in the lower Saluda River (LSR).

Alan S. noted that the purpose of the Instream Flow Technical Working Committee (TWC) is to assess how project operations affect stream flows, and to evaluate which flow regimes would best meet the needs of the biota. Alan briefly reviewed action items from the May 11th Instream Flow TWC meeting and noted that Jeff Duncan from the National Park Service (NPS) is in the process of developing a strawman for the Ecologically Sustainable Water Management (ESWM) process on Congaree River.

Presentation on the 1989-1990 IFIM Study

Gerrit Jobsis presented Instream Flow Requirements for the Fishes of the Lower Saluda River that he, Jeff Isely, and Steve Gilbert conducted in 1989-1990¹. Gerrit J. opened by discussing locations sampled on the lower Saluda River. He noted that the river was divided into three segments for the study: (1) dam to the base of Corley Island, (2) Corley Island to I-20 bridge, and (3) I-20 bridge to Mill Race Rapids. Gerrit then briefly discussed the habitat classifications used in the study and summarized the percentages of each present in each of the above segments under various flow conditions. Gerrit continued by explaining the target species (striped bass, rainbow trout, redbreast sunfish, margined madtom, Northern hogsucker, brown trout) and life stages (adult, spawning and fish passage) that were chosen for the study.

In summarizing the study results, Gerrit noted that flows in the Saluda ranged between 100 and 18,000 cfs during the study period. He explained that the flow range was modeled from 50 cfs to 10,000 cfs and added that analyzing WUA at flows above 6,000 cfs were less reliable. He added that, from the results, the recommended flow range of 300-1,000 cfs was developed for the Lower Saluda River. Gerrit pointed out that fish passage through Mill Race Rapids was limited but found that a flow of 1,326 cfs provided adequate passage for fish species. In closing, Gerrit added that he

¹Copies of the study were distributed to attendees by Jeni Summerlin before the meeting began.

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felt this was a sound study and that it provided the best information that technology would allow for the time.

The group began discussing possibilities of using the 1989-1990 IFIM Study for the Saluda Relicensing Project. Gerrit noted that he believes the sampling methods in this study are sound. He mentioned that there may be a problem with the velocity data, as it was collected at low flows. It was noted that most of the data files for this study are not available.

Ron Ahle noted that replicating this study may be difficult because the Saluda River may have changed overtime, such as the aquatic life present and sediment input. He also pointed out that it would be difficult to find the original transects that were used in the study. Gerrit noted that rebar was used to mark each transects throughout the course of the study.

Ron A. then presented a list of fish species that should be considered in the IFIM Study (attachment A). Ron A. explained that he used a guild approach to determine fish species of importance. He then listed potential stand alone species, which were broken down into three categories: diadromous fish, resident fish and other aquatic species.

Alan S. suggested, and the group agreed, to craft a strawman to evaluate specific factors using the 1989-1990 IFIM Study and Water Resource Report (attachment B). Alan S. noted that he would send the strawman and outline to Brandon Kulik, Kleinschmidt's instream flow expert, to determine if these factors can be analyzed with the data available. Alan also suggested and the group agreed to schedule a two or three day workshop with Brandon K. to explain the analysis of the IFIM data.

Distribution of Congaree Flood Plain Studies/Data

Copies of a study entitled *Hydrologic Variation of the Congaree River Near Congaree National Park, South Carolina* (Plewa and Grag 2005) was distributed to the group. Alan noted that Shane Boring is in the process of compiling existing inundation/floodplain studies from the National Park Service (NPS) and other sources that my help to determine any effects of project operations on the flood plains. Scott Harder noted that he would contact Bud Bader from SCDNR about available inundation studies. It was specifically noted that the studies should include frequency, duration, magnitude and timing of project operations.

Comprehensive Habitat Assessment Discussion

Dick Christie noted that he and Amanda Hill are in the process of identifying the habitat types their agencies would like to see mapped around Lake Murray. He noted that he would like to quantify these habitats using a GIS map or table. He explained that GIS maps and/or tables will show the

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percentages of habitats at different elevations. Dick C. noted that the list should be complete within four weeks, upon which time he will distribute the information for everyone to review before the next meeting.

Discussions on Initial Framework of White Paper Assessing Potential for Self-Sustaining Trout Fishery in LSR

Dick C. suggested that the group approach the trout fishery issues by first examining how to improve the habitat in the LSR, rather than trying to develop a self-sustaining trout population. Dick C. mentioned that, even if the habitat improves, the reproduction success of trout would be limited primarily by the warmwater predators found within the system. The group developed a strawman outlining issues that should to be considered for the LSR trout fishery (attachment C)

Date/Location of Next Meeting

Alan S. noted that he would contact Brandon K. about his availability and would schedule a potential IFIM workshop in August sometime. The meeting adjourned at approximately 2:00pm.

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Attachment A

**Recommended Target Species for Lower Saluda River IFIM Studies
(Source: SCDNR)**

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**SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
Division of Wildlife and Freshwater Fisheries
Environmental Programs Office**

Guild Approach

- 1) Shallow Slow Guild (<2 ft, <1 ft/sec); redbreast sunfish spawning
- 2) Shallow Fast Guild (<2 ft, >1 ft/sec); margined madtom, Saluda darter
- 3) Deep Slow Guild (>2 ft, <1 ft/sec); redbreast sunfish adult
- 4) Deep Fast Guild (>2 ft, >1 ft/sec); shorthead redhorse

Potential Stand Alone Species

- 1) Diadromous Fish
 - a. American shad
 - b. Blueback herring
 - c. Striped bass
 - d. Shortnose sturgeon
 - e. American eel
 - 2) Resident Fish
 - a. Robust redhorse
 - b. Highfin carpsucker
 - c. Northern hogsucker
 - d. Spotted sucker
 - e. Brown trout
 - f. Rainbow trout
 - 3) Others
 - a. Native mussels
 - b. Benthic macro-invertebrates
 - c. Spider lily
-

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Attachment B

Framework for Evaluating Existing Lower Saluda River IFIM Study

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Framework for Evaluating Existing Lower Saluda River IFIM Study

If possible, the group would like to evaluate each of the following using the 1995 IFIM Report and Water Resources Report (velocity data collected at 200 cfs).

- Effects of high discharges / Mitigation
- Base flow regime
- Thermal influences / longitudinal variation
- Seasonal variations
- Cover analyses
- Effects of Broad River on the confluence (confluence is defined as Shandon Rapids downstream to Senate Street).
- Scope of project influences (Saluda vs. confluence)
- Types of species to model
- Use the 1989 IFIM report using a wetted perimeter analysis to normalize the USGS gage records. Then run it through an IHA / RVA analysis
- Dissolved oxygen component of the IFIM

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Attachment C

**Draft Framework for Evaluating the Potential for a Reproducing Trout Fishery in the Lower
Saluda River Trout Fishery**

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**Draft Framework for Evaluating the Potential for a Reproducing Trout Fishery in the
Lower Saluda River Trout Fishery**

1. Species / Requirements / Needs
2. Current Habitat / Management Strategy
 - a. Water Quality
 - b. Substrate
 - c. Food Preferences
 - d. Flow Regime
3. Feasibility
 - a. Trout predators (striped bass / other warm water species)
 - b. Water quality limitations (metals dissolved oxygen)
 - c. Flow regimes
 - d. Harvesting of adult trout
 - e. Available spawning habitat
4. Potential for success self-sustaining trout population with no augmentation
5. Potential for success self-reproducing trout population