

**MEETING NOTES**

**SOUTH CAROLINA ELECTRIC & GAS COMPANY**  
***Instream Flows TWC Meeting***

***May 7, 2013***

Final KDM 05-31-13

**ATTENDEES:**

Bill Marshall (SCDNR)  
Ron Ahle (SCDNR)  
Gerrit Jobsis (American Rivers)  
Shane Boring (Kleinschmidt)  
Alan Stuart (Kleinschmidt)  
Kelly Miller (Kleinschmidt)  
Bill Stangler (Congaree Riverkeeper)  
Ray Ammarell (SCE&G)  
Vivianne Vejdani (SCDNR)

Bill Argentieri (SCE&G)  
Milton Quattlebaum (SCANA)  
Steve Summer (SCANA)  
Randy Mahan (SCANA)  
Dick Christie (SCDNR)  
Tom McCoy (USFWS) via conference call  
Prescott Brownell (NOAA)  
Kerry Castle (SCDNR)

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*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 briefly going over the agenda, then gives the group an overview of the float trip taken on March 19<sup>th</sup> and 20<sup>th</sup>. During this review, the group looks at the Project Area on a map, which sparks a discussion on the habitat just below the Parr Dam.

Ron explains how he is concerned about the separation in the habitat along the first mile of the Broad River, just below the Parr Dam. He says this is a highly utilized area of the river by fish species, and the side of the river along the west bank can grow stagnate during periods of low flow. Shane asks if a critical habitat study should be performed in this area. Ron says there are several critical habitats that need to be studied before the rest of the river is characterized. Prescott and Ron both mention they would like to have a habitat map made for as far down river as possible. Ron says that a habitat map should at least be made for the area immediately below the Parr Dam.

Gerrit tells the group he would also like to look at access along the river, since there are several areas that aren't accessible. Prescott mentions that he is interested in studying the tributaries along the river. Ron mentions that there is a good amount of data already available on the tributaries, collected by the DNR Stream Team.

Alan refers the group to a study on the Broad River, completed by Jason Bettinger (referred to throughout these notes as the Bettinger Study), as a possible starting point for the Parr Project's Mesohabitat Assessment and Instream Flow Study. The group notes that the Parr Project area was not included in this study, as the area in the Bettinger Study begins at Neal Shoals and extends upstream. However, the methodology used in the paper might still be utilized by the group.

After discussion on various needs for the Mesohabitat Assessment and Instream Flow Study, Gerrit focuses the group back on the agenda by beginning to list the goals and objectives for the study. Through much discussion the group agrees on four goals with corresponding objectives, as well as additional studies that need to be completed. These goals, objectives, and studies are included as an attachment at the end of these notes.

Steve and Ron then discuss the habitat issues at the west bank area. Ron says he believes that the decrease in DO and increase in temperature along the west bank area is related to the operating of the Fairfield Pumped Storage Project. Steve asks Bill if he has a copy of some aerial photos that were taken prior to Project construction since the west bank features are the result of natural topography, of which Bill answers he is not sure. Steve says he will try to find the photos, since they might show how river flow was distributed between the east and west bank area before the Project was built. Steve says that the issue will be getting water into that west channel during low flow situations. Gerrit says that Duke Energy is building a separate dam to help control flows at one of its projects. He believes the group needs to focus first on deciding what the flow needs for the area are, by seeing the area during higher flow situations. This will allow the group to evaluate how flows might be manipulated to create an even distribution over the area during low flow situations. Steve adds that LIDAR information will also be helpful, and that baseline data on temperature and DO in the west bank area will be needed to feed into the module. Ron mentions that spring through fall data needs to be collected, since he hasn't studied the area except during the summer. Kerry asks if turbidity will need to be examined along with the temperature and DO. The group considers this but decides that turbidity data is not necessary.

While looking at a photo of the dam, the group notes that there is a bit of leakage, which could be beneficial to the seemingly flow deprived west bank area. Ron agrees, but points out that during the summer, any benefits of the slight leakage at the dam may be diminished by the time they reach the central rocky location in the west channel.

The group then focuses their attention towards defining the geographic scope of the Mesohabitat Assessment and Instream Flow Study. The next hydro on the Broad River, downstream of the Parr Fairfield Project, is the Columbia Hydro Project. The upper reach of the PBL for the Columbia Hydro is noted as being at a Rocky Shoals Spider Lily population located just above the upper tip of Boatright Island. The group discusses whether or not this should mark the end of the scope for the Mesohabitat Assessment. It is decided that the scope for the Mesohabitat Assessment will stretch from Parr Dam downstream to the lower end of Bookman Island. Bill S. points out that there is a tributary on the lower end of Bookman Island, named Big Cedar Creek, and the scope should include this as well.

After deciding the scope, the group begins discussion on which definitions to use for the various mesohabitats. Two slightly varying sets of definitions are considered, including one used during the Saluda Hydro Relicensing Project, and one used in the Bettinger Study. Alan points out that using the definitions from the Bettinger study will be good for consistency, however, the group seems to prefer the definitions used during the Saluda Relicensing. Shane points out that there are several other commonly accepted definitions for the various mesohabitats and so the group decides to consider these options also. This issue is left undecided for now.

The group agrees to stay with the methodology that was used in the Bettinger Study. The group then discusses what the ideal flow would be when conducting the study. Ron says that lower flows

make it easier to delineate the habitats, while Shane says the flow should be near the mean annual flow when mapping. Ron suggests a flow that is below 2,000 cfs would be best for conducting the study, and everyone agrees.

The focus then turns to identifying target and driver species for the various Habitat Use Guilds. Ron offers his personal list of fish species he has observed in the Broad River to be used as a starting point. The group decides on a list of driver species including:

- Smallmouth Bass
- American Shad
- Brassy Jumprock
- Whitefin Shiner
- Robust Redhorse
- Santee Chub
- Striped Bass
- Piedmont Darter
- Snail Bullhead
- Redbreast Sunfish
- Channel Catfish

Although the list is longer than is customary, Alan says that it can be included in the study plan with a caveat that says some of these species will later be grouped into guilds. Alan makes the point that the species which have HSI curves need to be identified, and suggests that Shane and Brandon Kulik work together on this task. Shane and Brandon will also recommend surrogates for the group to consider that can be used for the species that do not have HSI curves and work on guild classifications.

The group then focuses on establishing general transect locations for the study. Dick mentions that in the Bettinger Study a majority of the river was categorized as being glides, pools and shoals, and that these will be areas to look for when deciding on transect locations. Ron specifies that he would like at least one transect to be established right below the Parr Dam, in the area he has identified as a critical habitat. The group launches into a heavy discussion on where the transects should go and how many are needed. Eventually everyone agrees to four general areas for the study to implement the IFIM technique. These include an area immediately below Parr Dam, upstream of Haltiwanger Island, along the Coleman property, and at Haltiwanger Island. Additionally, two other sites were identified for studying wetted perimeter/staged discharge relationships, at Huffman Island and Bookman Island. These locations are included in Figure 1. With these sites agreed upon, the group decides to schedule a field trip to identify the specific locations for transects. Group members interested in participating in this trip are Ron Ahle, Shane Boring, Gerrit Jobsis, Bill Stangler, Bill Marshall, Alan Stuart, Vivianne Vejdani, Milton Quattlebaum, Tom McCoy, Prescott Brownell, Steve Summer, Ray Ammarell and/or Bill Argentieri.

To close the meeting, the group discusses scheduling, keeping in mind that the final study plan needs to be developed by early 2014 to be included in the PAD, which is due late 2014/early 2015. The actual IFIM study will be started during the summer of 2015. The group plans to meet again during the July-August timeframe to discuss the draft study plan and HSI curves. With this, the meeting adjourns. Action items stemming from this meeting are listed below, along with an attachment that includes all decisions made during the meeting.

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*ACTION ITEMS:*

- Shane Boring will contact Brandon Kulik to work together on identifying relevant HSI curves and surrogates for the study. Shane will also ask Brandon to make guild recommendations.
- Shane Boring will research other options for mesohabitat definitions to be used in the study.
- Kelly will schedule the “Transect Identification Recon Trip” with the interested parties for June 18<sup>th</sup> and 19<sup>th</sup>.
- Kelly will schedule a follow-up meeting/conference call during the July-August timeframe for the discussion of HSI curves and study plan development.

## **Goals and Objectives of Mesohabitat Assessment and Instream Flow Study**

Goal 1: Characterize the flow/habitat relationships for aquatic species present in the lower Broad River below Parr Dam

Objective A: Classify and quantify/map (characterize/define) Mesohabitats occurring within study area

Objective B: Establish target species/guilds

Objective C: Identify study methodology (recommended IFIM)

Objective D: Identify tributaries and study areas (reaches) on the lower Broad River of interest for the study

Goal 2: Determine effects of Parr and FFPS operations on flows of the lower Broad River below Parr Dam

Objective A: Identify operational ranges/constraints of two facilities

Objective B: Evaluate effects of Project operations on Parr Dam releases at various inflow ranges into Project

Goal 3: Develop recommendations for Parr Hydro Project operations to enhance flows for aquatic resources in the Congaree River (this does not include a transect study)

Objective A: Influence on diadromous fish (includes striped bass, sturgeon)

Objective B: Influence on other resident aquatic species (including RT&E)

Objective C: Influence on Congaree National Park

Objective D: Consideration of Saluda operations consistent with goals of the Santee Basin Accord

Goal 4: Develop flow recommendations for lower Broad River below Parr Dam

Objective A: Evaluate baseline habitat

Objective B: Evaluate high and low flows

Objective C: Seasonal and inter-annual variations of flow recommendations

Objective D: Evaluate low flow protocol recommendations

Additional studies:

Temperature and DO in the west channel below Parr Dam (three monitoring locations)

Recreation flows – operation of Parr

Navigation flows – operation of Parr

Water Quality – operation of Parr

## **Define Geographic scopes of Mesohabitat Assessment and Instream Flow Study /**

### **Discuss Mesohabitat Assessment (including methodologies)**

Geographic Boundary - Parr Dam to downstream end (lower extent) of Bookman Island, just below the confluence of Big Cedar Creek

Methodologies –

Mesohabitat unit definitions for visual assessment. (NOTE: May be modified by use of Saluda descriptions)

<u>Habitat</u>	<u>Type Description</u>
Riffle	Relatively shallow (<0.5m), swift flowing section of river where water surface is broken.
Glide	Relatively shallow (<1m); with visible flow but mostly laminar in nature; minimal observable turbulence; relatively featureless bottom.
Run	Deep (>1m), swift flowing sections with turbulent flow; surface generally not broken.
Pool	Deep (>1m) slow moving sections.
Shoals	Shoal area; which may contain a variety of habitat complexes.

Use same methods Jason Bettinger used for his study in the upper Broad River, such as GPS for start and end of each classification.

**Mesohabitat study should be conducted below 2,000 CFS**

## **Define Species of Interest for Instream Flow Study**

Summary of Habitat Use Guilds

### Driver Species:

American shad  
Brassy jumprock  
Channel catfish  
Piedmont darter  
Redbreast sunfish  
Robust Redhorse  
Santee chub  
Small mouth bass  
Snail bullhead  
Striped bass  
Whitefin shiner

**Discuss Methodology (including HSI curves, number and location of transects, areas of specific interests)**

**Look for HSI curves that exist for driver species and make recommendations for surrogates and guilds**

**Methodology (number and location of transects, areas of specific interests):**

**IFIM above Huffman Island, wetted perimeter for Huffman and Bookman islands.**



Figure 1

General Transect Locations

