MINUTES OF PEE DEE RIVER BASIN COUNCIL (RBC) MEETING (HYBRID FORMAT) HELD ON NOVEMBER 15th, 2022, AT CLEMSON PEE DEE RESEARCH AND EDUCATION CENTER, CLASSROOM #240 2200 POCKET ROAD DARLINGTON SC.

RBC Members Present: Buddy Richardson, Cricket Adams, Everett Allen, Doug Newton, John Crutchfield, Bob Perry, Cara Schildtknecht, Cliff Chamblee, Bill Wiegand, Jason Gamble, Walt Beard, Megan Hyman, Lindsay Privette, Hughes Page, Michael Hemingway, John Rivers, Eric Krueger, Jeff Parkey, Cynthia Walters, and Jeff Steinmetz

Absent: Frances McClary, Brandon Durant, Michael Bankert

Planning Team Present: JD Solomon, Scott Harder, Brooke Czwartacki, Andy Wachob, Leigh Anne Monroe, Pam Miller, Thomas Walker, Jeff Allen & Chikezie Isiguzo.

Total Attendance: 42

1. CALL TO ORDER AND WELCOME

J. D Solomon (the Facilitator) called the meeting to order at 9:02 AM and welcomed members to the sixth Pee Dee RBC meeting. He highlighted the main items on the agenda and the election of the RBC Chair and Vice-Chair to follow immediately after.

REVIEW OF THE MEETING OBJECTIVES AND APPROVAL OF THE AGENDA

The agenda was unanimously approved. Bob Perry made a motion to approve minutes and summary documents which was seconded by Jeff Steinmetz and unanimously approved.

2. PUBLIC COMMENTS

There were no public comments. Faith Truesdale, SC Farm Bureau, sitting in on the meeting.

3. **AQUATIC FRESHWATER RESOURCES OF THE PEE DEE BASIN** – (Kevin Marsik - SCDNR)

Kevin Marsik (Freshwater Fisheries Biologist, SCDNR) presented an overview of the Aquatic Resources of the Pee Dee basin. He explained that the Pee Dee basin hosts 112 of the 159 freshwater fish species in South Carolina. The basin also has 6 diadromous species, of which 2 are endangered. Guided by the Pee Dee River Fish Community Study 2008/2009, Kevin described the Striped bass study. The study found no unique Pee Dee ancestry strain as the fish featured mixed ancestry (Cape Fear, Roanoke, and Santee Cooper, and 20%-40% of the fish are cultured and have immigrated into the Pee Dee River). He also described in detail the methods used for the study. The study also covered fish migration. Kevin also described the results of the Robust Redhorse (RRH) Restoration. The species was lost to science for over 100 years and was rediscovered in Georgia in 1991. Sampling began in Pee Dee in the late 1990s, showing an

increase in yearly captures per effort hour between 2000 and 2022. He noted that the fish observed in the basin looked healthy, in active spawning conditions in their natural habitat. However, the recruitment of wild-spawned fish is critically low, and the reason is unclear. Kevin highlighted other unanswered questions, including how contaminants affect RRH and the scale of mortality due to invasive species and human factors.

Kevin discussed diadromous fishes, the anadromous fish that migrate from the sea to fresh water for spawning, and the catadromous, which migrate from fresh water to the sea for spawning. He presented the Multi-State Sturgeon study that sought to address the distribution and migration range of sturgeon species, identify critical habitat for Atlantic sturgeon and Shortnose sturgeon, and document the degree of inter-basin transfer occurring for both species.

QUESTION: Where do the sturgeons spawn? Is anything getting above the dams?

Kevin explained that the fish spawn on the gravel bars and stay in the main channel. They do not go above the dam.

Kevin presented the Stream Conservation Planning Tool, a model of biological conditions across watersheds used to forecast response to human activity. He also discussed the 2016-2020 Small River Assessment study, which sampled the biota, habitat, and water quality and developed the Biotic Index for Assessing Stream Integrity.

4. AQUATIC SALTWATER RESOURCES OF THE PEE DEE (Joseph Ballenger, SCDNR)

Joseph Ballenger introduced the mission of SCDNR Marine Resources Research Institute, which is to "conduct research and monitoring programs to assess the condition of coastal resources and provide data required to address policy and management issues related to those resources." He discussed the Estuarine Finfish research section focusing on species monitoring (inshore fisheries) - Trammel Net Survey, Electrofishing Survey, Adult Red Drum and Shark longline survey, Cooperative Atlantic States Shark Pupping and Nursery Survey (COASTPAN), and Estuarine Trawl Survey. He also discussed the Stock Enhancement (Mariculture) – Impacts of Tropical Systems. In the Crustacean and Mollusk Research section, he discussed the Oyster Demographics Project, and in the Environmental Research Section, he explained the South Caroline Estuarine and Coastal Assessment Program (SECAP). Joseph mentioned the methods used in collecting and processing fish for the study and discussed some of the different species studied. He noted the abundance of data useful for looking at the relationship between estuarine communities and environmental variables. Going further on the Marine Stock Enhancement research, which began in South Carolina in 1988 with Red Drum to investigate alternatives, Joseph explained the opportunity to use cultured animals to answer questions about wild populations and hatchery fish identified from wild fish using genetic markers. He also presented some environmental factors and their effects on marine stock, emphasizing climatic change and increased tropical activity in the Western Atlantic.

Joseph invited members of the RBC to direct their questions to the subject matter experts listed in his presentation.

5. FLOW-ECOLOGY RELATIONSHIPS PART I & II (Luke Bower, USGS)

Luke Bower discussed "Using Aquatic Organisms to Learn about River Health". Part one of the flow-ecology presentations focused on bio-assessment which uses aquatic organisms to learn about river health. The approach was broken down into four stages: 1. identify which environmental attribute you want to evaluate, 2. hypothesize relationships between organisms and environmental attributes, 3. identify key relationships between organisms and environment, and 4. use those results to inform management. After introducing bio-assessment, Luke presented the second part of the presentations which focused on quantifying the relationships between key flow metrics and biotic response to better inform water flow standards throughout SC and to provide an additional tool in the water management toolbelt in SC. Luke introduced the Ecological Limits of Hydrologic Alteration (ELOHA) approach which guided the research and allowed the research team to: 1. build a hydrologic foundation of streamflow and biological data, 2. classify natural river types, 3. determine flow-ecology relationships associated within each river type, and 4. recommend water flow standards to achieve river condition goals.

6. APPLICATION OF FLOW-ECOLOGY RELATIONSHIPS IN PEE DEE BASIN (Eric Krueger, The Nature Conservancy)

Other river basin councils have requested basin-specific information using the flow-ecology study. Eric used the Edisto River example to frame the proposal for the Pee Dee River Basin. The team incorporated four flow-ecology metrics as performance measures of the Edisto River water use scenario which were mean daily flow, base flow, duration of low flow, and timing of low flow. Those were chosen based on relevance to water withdrawal and drought management, strength of relationship, distribution: all stream classes and basin area represented, and it is readily calculable in SWAM. There will be more to come related to flow-ecology and the RBC will decide whether or not to include this information into the decision-making process.

7. WATER DEMAND PROJECTION METHODOLOGY (Alex Pellet, SCDNR)

Alex introduced the concept of projecting water demand 50 years into the future. Primarily projections are an extrapolation of a trend, are based on hypothetical scenarios, the timeline can extend beyond the limits of effective forecasting, and aims to be informative. Alex guided the RBC through the methodology development from 2016-2018 and the related published reports. Highlights of the first presentation included: equations to define the terms, mass balance illustration, detailed model, statistical modeling and projections, and drivers of water demand associated with each water use sector.

8. DRAFT WATER PROJECTION METHODOLOGY (Alex Pellet, SCDNR)

Alex then presented a few draft examples of water demand projections in the Pee Dee River Basin: mining, golf, public supply, and then comments regarding manufacturing, agricultural irrigation, and thermoelectric water demand projections which were forthcoming. There will be more to come related to water demand projections in upcoming meetings.

9. DISCUSSION OF CHAIR AND VICE CHAIR SELECTION

JD Solomon discussing the election of the Pee Dee RBC Chair and Vice Chair positions. Current nominees for Pee Dee RBC Chair (and Vice Chair) entering the meeting were (alphabetical): Bob Perry, Buddy Richardson, and Cara Schildtknecht. Bob Perry removed his name from consideration based on other professional commitments. The two candidates for Chair were Buddy Richardson and Cara Schildtknecht. After brief comments regarding their interest in serving in these roles, a vote was held, and Buddy Richardson was elected Chair of the Pee Dee RBC by a margin of 13-2. After the election of the Chair position, there was a nomination for Vice Chair in addition to Cara Schildtknecht, Walt Beard. Walt Beard was nominated by Jason Gamble and Bill Wiegand. A vote was held to elect the Vice Chair position and Cara Schildtknecht was elected Vice Chair by a margin of 8-7.

10. UPCOMNG MEETING AND SCHEDULE

The next meeting will be held on December 13th, 2022, at 220 Pocket Road Darlington SC. RBC members are encouraged to select an alternate and provide that information to the planning team.

Minutes by: Chikezie Isiguzo and Tom Walker

Approved: 12/13/2022

RBC Chat:

09:31:09 From Hughes Page - PDLT To Everyone:

What mussels are pictured here?

10:08:35 From Thomas Walker To Everyone:

break

10:37:36 From Bill Post To Everyone:

Link to paper https://usgs-cru-individual-data.s3.amazonaws.com/lbower/intellcont/1-s2.0-S0048969721047963-main-1.pdf

10:38:12 From Thomas Walker To Everyone:

thanks Bill, i'll include that with the minutes

11:23:32 From Thomas Walker To Everyone:

break

12:29:57 From Thomas Walker To Everyone:

break to grab lunch then chair and VC discussion

12:50:10 From Thomas Walker To Everyone:

so Jeff and Cynthia we will be voting for Chair, select either Buddy or Cara in a private message to me

12:54:23 From Thomas Walker To Everyone:

we are now electing VC - between Walt B and Cara S

13:02:16 From Thomas Walker To Everyone:

thanks all