Upper Savannah River Basin Council

November 8, 2023 Meeting Minutes

RBC Members Present: John Hains, Scott Willett, Harry Shelley, Mark Warner, Daniel Milam, Mack Beaty, Reagan Osbon, Billy Owens, Melisa Ramey, Will Williams, Dan Murph, Chuck Connolly, Carl Price, Cheryl Daniels, Katie Hottel, Jill Miller, Jeff Phillips, Alan Stuart, Jon Batson, Tonya Bonitatibus, & Cole Rogers

RBC Members Absent: Tonya Winbush (Sundra Broom, alternate, present), Tim Hall, & Charles Turner

Planning Team Present: John Boyer, Tom Walker, Scott Harder, Joe Koon, Leigh Anne Monroe, Hannah Hartley, Alexis Modzelesky, Andy Wachob, & Joe Gellici

Total Present: 48

1. Call the Meeting to Order (John Boyer, Facilitator) 10:00–10:10
    a. Review of Meeting Objectives
    b. Approval of Agenda
        - Agenda approved – Dan Murph – 1st and Carl Price – 2nd
    c. Approval of October 11th Minutes and Summary
        - Minutes and summary approved – Harry Shelley – 1st and Carl Price – 2nd
    d. Housekeeping Items
        - Alan Stewart online, a couple of alternates in attendance
        - Identify an alternate if not done already. Alternate has same voting rights. Send alternate info to John, Tom, or Ashley

2. Public Comment (John Boyer) 10:10–10:15
    a. Public Comment Period
        - No public comments
    b. Agency Comment Period
        - Alex: water use survey. Sharing a copy, open to improvements

3. October RBC Meeting Review 10:15–10:20
(John Boyer)
        - US land use, demographics, ag data
        - Surface water resources
        - Surface water withdrawals
        - Climatology
        - Drought management
4. Selection of RBC Chair and Vice Chair 10:20–10:35
(John Boyer)
    - 1 nomination for Chair, 1 for Vice Chair
    - No other nominations for Chair
    - No other nominations for VC
    - Jill Miller (At-Large Water Interest) nominated by Scott for Chair

    - Motion for Jill Miller to be Chair of the USRBC – 1st – Scott Willett and 2nd – Harry Shelley - unanimous
- Jeff Phillips (water and sewer) nominated by Melisa for VC
    - Motion for Jeff Phillips to be Vice Chair of the USRBC – 1st – Dan Murph and 2nd – Carl Price

5. USGS Streamflow Monitoring in the Upper Savannah River Basin 10:35–11:05 (Toby Feaster, USGS)
    - USGS history
        - 1st USGS streamgage on Rio Grande
    - USGS South Atlantic Water Science Center
        - GA, SC, NC. 8 field offices
        - Operates 1100 gaging stations
    - USGS national water dashboard
    - USGS in SC
        - 216 surface water stations, 62 rain gages, 63 water quality stations, 21 water stations
    - Streamgage basics
        - Streamgage is a structure installed beside a stream that measures water level
        - Streamflow computed
        - Types of gages
            - Stilling well
            - Bubble/ pressure sensor
            - Non-contact/ radar
            - Index velocity
        - Rating curve: water level on y axis, stream flow on x axis
    - USGS data uses
    - Low flow statistics in SC
        - 2007-2014, USGS/ DHEC updated low flow statistics
        - Published 6 reports
            - Annual minimum average flows with year recurrence interval
            - Daily flow durations for different percentiles
        - Low flow characterization of SC streams
            - April 2022, beginning of study to update stats and estimate stats at ungagged locations
        - 7Q10
            - Average minimum 7-day average flow with 10-year recurrence interval
            - Why 7? Unknown – Cornell Professor – flood frequency techniques – Low Flows for a week – 7 days and have drought once every 10 years
            - 1/10 probability that the annual minimum 7-day average flow will be less than or equal to the estimated 7Q10
            - Adopted as minimum flow for applying water quality criteria in SC in 1967

        - Used for water quality standards, source water quality
        - How calculated?
            - 10 climate years
            - Minimum 7-day flow per year
            - Logged Pearson regression
            - Use value for 10% probability
    - The reason we need long-term records is because we have short-term memories
    - Questions
        - Best rendition on how to do a 7Q10 I've ever seen
        - Upstream withdrawals and discharges right?
        - Do a trend analysis to update stats – if there's a change in the record we'll break the record and use what has been consistent. Earlier period is indicative of more natural conditions.
        - Is there a stat that shows how long during a particular climate year it was below a 7Q10?
            - Not a stat, but use 7Q10 on the flow duration curve
        - Savannah River basin has the ability to mitigate 7 days lows
        - Looking at the Savannah river basin with reservoirs. What happens if it goes to 90 days – duration of a low flow event?
        - Use 7Q10 for phase 2 – will revisit in 3-4 months
        - Could you use long-term records to predict short-term records for other rivers?
            - Yes, regression equations and analysis gives more weight to longer records
        - How long can you do this/until it all breaks down?
            - Shifting the value less than 50%

Break *11:05–11:15*

6. Aquatic Resources and SCDNR Fisheries Management 11:15–11:35
(Amy Chastain, SCDNR)
    - Trout management
        - Savannah is one of the major trout fisheries in the state
        - Collab with GA DNR, Clemson
        - Looking for population dynamics
        - Make sure there's no disease
        - Genetic testing
    - Brook Trout management
        - Pig Pen Branch Restoration
        - Monitor past restoration population
        - Genetic sampling
        - Wild brook trout spawning success
    - Trout stocking
        - Approx. 500,000 trout annually

        - US: Chattooga, Chauga, Eastatoee rivers, mountain lakes, Lake Hartwell Tailrace
        - Helicopter stocking
    - Black Bass population management
        - Population sweep
        - **Don't move fish**
    - Black Crappie population management
    - Fish habitat enhancement projects
    - SCDNR hatchery assistance and striped bass stocking
        - Work with GA DNR
    - Creel surveys
        - Listed upcoming creels. Last creel on Hartwell was in 2017.
        - It's expensive to do a creel
        - Few and far between
        - Are economic numbers higher or lower without spotted bass?
            - People love them.
            - Seems like no effect
            - Covid caused higher numbers because people could go outside
        - Pressures from native/ nonnative species?
            - Don't have historical data
            - Have seen what happened with redeye bass. They're interbreeding and take over
        - Do they stock bait fish?
            - Don't stock in reservoirs but in Columbia they do stock bait fish in state lakes.
    - Other activities
    - Questions
        - Do you make people register green lights on docks?
            - Not them but law enforcement does
        - Presentation on navigation markers?
            - Maybe, we can talk to DNR law enforcement or the USACE
7. Ecological Flow Relationships (Drs. Luke Bower, Joe Mruzek, and Brandon Peoples, USGS and Clemson) 11:35–12:00
    - This is introduction, will be revisited
    - High fish diversity
    - Diversity being affected
    - Monitoring very important, too much water (for people) to effectively monitor
        - Organisms can monitor
    - Bioassessment
    - Flow ecology relationships
    - Samples of fish and macroinvertebrates for data
        - Biotic index: number of species, number of tolerant/ intolerant species
        - Lots of metrics
    - Purpose

    - Provide insight on response of organisms to alternate water withdrawal scenarios
- Framework
    - Ecological limits of hydrologic alteration
- Biological data
    - 492 fish sites
    - 530 aquatic insect sites
- Hydrologic data
- waterfall model
    - rainfall-runoff model, 30 yrs
- relevance of flow regime components
    - magnitude
    - duration
    - timing
- found >180 informative relationships across SC
- lost species?
    - Totally eliminated species
- 3 steps
    - Biological data and hydrological data used to model relationships
    - Determine which relationships are the most relevant to US
    - Take results from SWAM models and apply to relationships
- Questions
- Tributaries of the Savannah
- If all of the withdrawals are on the reservoirs, then is this relevant?
    - May be limited applicability – small streams are easier to sample
- What impact will this group have?
    - Get estimates for some surrounding parts and useful for some other withdrawals
- Is there a way to figure out a relationship between a small stream and the rest of it?
    - For a reservoir, focus on a specific species
- Greatest weakness of this approach?
    - inability to measure large reservoirs and large rivers
    - Some metrics have large amounts of uncertainty
    - give a report with confidence intervals showing uncertainty

8. *Lunch* and Overview of the Draft Broad River Basin Plan Findings and Recommendations (John Boyer) 12:00–12:35

- Broad RBC has wrapped up its plan
- Didn't have to do groundwater modeling
- Current water demands
- Only 52% of the permitted and registered surface water is currently being used
- Moderate v high-demand scenarios
- Current and future water availability assessment
- Surface water key findings
- Streamflow ecology relationships

- Surface water management strategies (supply/demand strategies)
- Planning process recommendations
- Technical and program recommendations
- Drought management recommendations
- Policy, legislative, and regulatory recommendations
- Implementation plan
- Download plan on DNR website
- How did they account for NC in demand projections?
    - Worked with them, they're a part of the model
- Are we going to engage with GA?
    - Yes, already doing that with demand projections and Ashley will talk about GA planning next time

9. Groundwater Resources of the Upper Savannah River Basin 12:35–12:55
(Joe Gellici, SCDNR)
    - Very limited
    - Less than 1% of withdrawals come from groundwater
    - Used for domestic supply
    - We're in Piedmont Province which is underlaid by impermeable rocks.
    - Coastal Plains underlaid by sand
    - Mostly withdrawn for golf course, irrigation and water supply
    - 2 layered system: saprolite and rock
    - 2 types of wells: bored and drilled
    - Well depths and yields by county
    - Groundwater monitoring network
    - Where's the Anderson high yield well?
        - Not sure – but I can get back to you
    - One used in US, could use to monitor?
        - Look for abandoned wells
        - Look for existing wells, would save money
        - A few monitoring wells missing from the slides
    - Major factors that raise levels
        - Mainly precipitation raises water levels
    - Filling of large reservoirs impacts water levels?
        - Not sure, suggests GW is feeding the lakes
10. Upcoming Meeting Schedule and Topics (John Boyer) 12:55–1:00
    - Meeting in morning, field trip after lunch
    - Wear hard hats, eye protection, closed toe shoes for field trips
    - 12/13 next meeting
    - Get someone from the Corps for January
    - Maybe joint meeting with LS?

Meeting adjourned at 1:21 pm.

Minutes: Taylor Le Moal and Tom Walker

Approved: 12/13/2023

RBC Chat:

11:00:59 From Thomas Walker to Everyone:

15 min break - 11:15

11:40:58 From Alan Stuart to Everyone:

Are Bartram's Bass populations, declining, or stable ?

11:44:06 From Thomas Walker to Everyone:

being hybridized with alabama bass according to amy

11:44:30 From Alan Stuart to Everyone:

yep, and extripated from Keowee if I heard correctly

11:44:40 From Thomas Walker to Everyone:

yes

11:44:50 From Alan Stuart to Everyone:

thank you

12:18:48 From Thomas Walker to Everyone:

break for lunch

12:19:07 From Thomas Walker to Everyone:

20 minutes or so until we start again

13:20:00 From Alan Stuart to Everyone:

To confirm, the date of the nextt meeting is Decmber13th, correct ?

13:20:29 From Thomas Walker to Everyone:

correct

13:20:39 From Thomas Walker to Everyone:

meeting adjourned

13:20:49 From Alan Stuart to Everyone:

perfect, I have reserved the World of Energy for that date

13:20:55 From Thomas Walker to Everyone:

thanks alan!

13:20:58 From Alan Stuart to Everyone:

thanks