Cape Fear River Partnership

Spring 2022 Session

May 25, 2022; 9 am – 12 pm
Microsoft Teams Virtual Meeting

Agenda

9:00	Welcome and Introductions
9:15	Stream Crossing Assessments in the lower CFR – Kat Hoenke, SARP
9:45	2022 Electrofishing Survey Results – Kyle Rachels, NCWRC
10:15	Current Understanding of Atlantic sturgeon populations – Fred Scharf, UNCW
10:45	Atlantic sturgeon relocations off Cape Fear Inlet – Sam Marchisin, Moffatt & Nichol
11:00	Sustainable Rivers Program Update – Nathan Hall, UNC Chapel Hill
11:15	Kerr McGee Trustee Project Update – Krista McCraken, NOAA Restoration Center
11:30	Federal Funding Opportunities – Howard Schnabolk, NOAA Restoration Center
11:45	Long- term Sustainability of Partnership Coordinator Position – Dawn York, Moffatt & Nichol
12	Adjourn

Summary of meeting will be posted to the Cape Fear River Partnership website
www.capefearriverpartnership.com

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Partner Presentation Updates

Stream Crossing Assessments in the lower Cape Fear River- Kat Hoenke, Southeast Aquatic Resources Partnership

- WRC is conducting the dam reconnaissance feasibility study.
- Approximately 8,000 dams within the Cape Fear River basin
- Road crossings need to be determined whether they present as barrier to aquatic organisms
- Over 37,801 crossings have been assessed in the southeast – 46% are barriers
- SARP stream crossing survey developed a non-tidal and tidal protocol to assess barriers
- Black River study assessed 200 culverts with over 30 as moderate to severe barriers using the inland protocol
- NAACC tidal protocol focuses on constriction, tidal constriction, perch, tide gates, etc.
- Tidal protocol utilizes different parameters depending on the variables (i.e., types of habitats)
- NFWF NCRF funded to collect data using tidal protocol at 200 sites: including within lower Cape Fear River – approximately 150 sites in the NE CFR
- Utilize flood model data from TNC to predict constriction at crossing sites
- Prioritize sites to remediate flooding within Towns of Leland and Navassa
- Review of aquatic barrier prioritization tool and review of ability to download data
- Over 275 road crossing replacements completed or proposed
- How do you define connectivity? Stream mileage to be reconnected – fragmentation from dams, tide gates – other barriers that would disconnect a stream channel. Physical barriers.
- Link to the inland protocol: Southeast Aquatic Resources Partnership (SARP) (southeastaquatics.net); https://southeastaquatics.net/sarps-programs/southeast-aquatic-connectivity-assessment-program-seacap/culvert-assessments
- NCACT – led by American Rivers; quarterly calls to address high priority barriers, building capacity to fill in gaps, dam removal handbook, building community of practice
- If you want to be included in quarterly meeting updates for NCACT please send an email to victoria@southeastaquatics.net

2022 Electrofishing Survey Results- Kyle Rachels, NCWRC

- Electrofishing at LD1 began February 24, 2022, and surveyed all three locks and dams through May 5th.
- American shad – review of data at all three locks and dams
- Bill Post with SCDNR asked if WRC also plotted water temperature? For the spring 2022 season, when it reaches 21 degrees, American shad are at the highest abundance but also the highest mortality due to conditions. Temperature has been fluctuating and was warm early. High flow events will reduce water temperatures.
- WRC used sonar ahead of each electrofishing event and collected video to observe presence of anadromous fish.
- Deployed sonar upstream of lock chamber and gates and evaluated opportunity for fish to pass through gate valve opening
- Luther Aadland asked if velocities were measured to evaluate for gate valve locking; maximum flow through valve was 7'/sec which is critical swimming speed for American shad
- Julie DeMeester, TNC, confirmed there was a telemetry receiver installed in the lock chamber. Minimal success however, best chance to allow fish to move upstream aside from experimental flood pulses.
- 50% of striped bass collected at LD2 were from Jordan Lake – high flow events increase the chances for striped bass to move out of the reservoir. There is a one-year lag time for genetic sampling results to allow for understanding of fish origin.
- Highest pulse of striped bass in early April; very few fish at LD2 and LD3
- 2021 was pre-modification to LD1 and 2022 was post-modification, more striped bass below the rock rapids. Modifications did not immediately improve passage of striped bass.
- Cape Fear Striped Bass fisheries management plan – too early to tell on what changes will be made, no determination on future management of stripers in the river.
- Higher stream flows 7,500 cfs and higher, striped bass were collected in pools within the west and east banks – similar to historical surveys. Ability to move the boat in lower flows is constricted and could affect shocking effort.
- Mike Wicker asked if the fish are staging in the pools or are they spawning within the passage structure? Unknown at this time.
- 96% of collected striped bass are of hatchery origin of striped bass
- Joe Facendola, DMF has collected YOY, however these have all been in the NECF – none in the mainstem to date
- Sonar observed fish in pools, not able to define species through the sonar
- DMF – how have stocking contributions been documented? NCWRC – 50,000 Phase 1 fish to be released above Buckhorn Dam. Mainly surveyed fish at LD1 came from releases from above Buckhorn Dam
- Luther Aadland – documented study of stocked fish and their ability to return to natal spawning grounds; Jordan Lake received smaller stocked fish and it is unknown if these fish are imprinting
- Justin Dycus – contribution of Phase 1 fish genetics in the river – 25% or less; during higher flow there are reservoir stocked fish

- UNCW has looked at telemetry data, STB show repeated migratory behavior with fidelity yearly to the river branch as they migrate up. They do form behavioral contingents. Even as stocked fish.
- TNC/USACE is continuing to work on evaluating pulses – may not be able to do another pulse due to weather conditions. Will be transitioning to conducting water quality pulses.

Atlantic Sturgeon Relocations off the Cape Fear Inlet- Sam Marchisin, Moffatt & Nichol

- From February 19, 2022 to April 20, 2022, voluntary relocation trawling occurred for the Oak Island 2021/2022 Nourishment Project
- Jay Bird Shoals was the authorized offshore borrow area where trawling was conducted 24 hours a day from beginning to end of project
- Protected Species Observers onboard followed SARBO's Sturgeon handing, tagging and genetic sampling protocol when a sturgeon was caught
- Sturgeon were relocated 3 nautical miles from the borrow area
- 27 non-lethal Atlantic sturgeon were relocated over the span of 60 days
- Length ranged from 20.3 inches to 77.7 inches
- Unable to compare trawling efforts to other ongoing projects as relocation trawling was not implemented
- Bycatch was quantified and released immediately.
- Joe Facendola – new or old PIT tags?
- Bill Post – ODESS database – are the PIT tags provided to FWS repository to be provided to fisheries scientists? It was confirmed that PIT tags are being provided to the FWS repository.
- Emily Hughes – USACE – discussion of trawling during ongoing hopper dredging – Bald Head Reach 3 is being constructed and trawling currently – no reporting of relocated sturgeon

Sustainable Rivers Program Update- Nathan Hall, UNC Chapel Hill

- Madi Polera asked if data will be published and can be cited.
- Julie indicated that Nathan will be studying water temperature above Buckhorn and will add sondes into the water columns to study flows and water temperature combinations. If anyone is interested in getting involved, email Julie DeMeester (TNC) - julie.demeester@tnc.org.
- TNC is using an AUV and working in the Haw and Deep and confluence area to study flows and water temperatures to determine conditions.

- Discussion of the Sustainable Rivers Program and framework for flow prescriptions in the basin; now in adaptive management with the USACE to evaluate flow conditions with existing constraints. Will have a stakeholder meeting to review data and future needs. The program includes various phases and Cape Fear River is in the 2nd phase (test flow conditions).
- Cape Fear is being used as a learning river for other basins – share knowledge between rivers
- Julie is TNC lead, and Tony Young/Ashley Hatchell are leads for USACE

Current Understanding of Atlantic Sturgeon Populations- Fred Scharf, UNCW

- Tom Langford retired from UNCW and a candidate to replace that position is ongoing
- Section 10 permit was applied for by Fred Scharf – a lot of interest in the Cape Fear River; primary focus is Atlantic sturgeon
- Objective to identify spawning adults and habitat and aggregation areas
- Evaluate sub adult/juvenile movement – assume they are river resident – estimate abundance using mark-recapture and acoustic tagging
- Capture methods are with short soak gill nets
- 198 Atlantic sturgeon captured in 2021 sampling – 5 adults in spring – all males; 51 river-resident juveniles and 142 sub-adults
- Brunswick River and Northeast Cape Fear River are used by sub-adults and river resident juveniles
- Spring 2021 size distributions – river-resident juveniles (low 300 mm – between 400 – 500 mm) – natal to the Cape Fear River
- Transition to adult around 1300 mm – sub-adults show migration along coastal rivers
- Review of fall 2021 size distribution
- Recapture of sturgeon from other DPS (Distinct Population Segments) rivers including Waccamaw and Black River, SC and the Altamaha River, GA
- 11 adults were captured by Lock and Dam 1 in April 2022 – including a gravid female; 9 new adults; 2 of the 5 males tagged in 2021 were recaptured in 2022
- No adults were captured during fall 2021 sampling
- Future objectives include summer mark-recapture of river-resident juveniles during 2022 and 2023; acoustic tagging to quantify habitats, movements, and emigration of river-resident juveniles
- Extent of survey efforts in the NECFR; detections were between Castle Hayne and Rocky Point (Hwy 210 Bridge); no sturgeon were captured
- Based on catch rates in 2021 and 2022 there seems to be a vibrant population along with a resident population. Salinity levels in the river affect where certain fish populations are located.
- Data is provided to NMFS PRD on a regular basis and are shared with other DPS river basins.

- Teresa Young, USACE Wilmington District is tracking relocated sturgeon and would be best to coordinate PIT tag information.
- Julie DeMeester asked how Fred's data can be used to inform the Wilmington Harbor Deepening study.

Kerr McGee Trustee Project Update- Krista McCraken, NOAA Restoration Center

- Summary of Kerr McGee: Natural Resource Damage Assessment & Restoration (NRDAR)
- Review of 10 awarded projects
- $23M recovered for restoration of injured natural resources & services
- Project strategies include debris removal, wetland restoration, oyster restoration, shoreline stabilization, invasive species management, conservation, public access
- Alligator Creek goals to re-establish hydrology along Alligator Creek, restore marsh and public access. Fall 2023-Spring 2024 is anticipated construction
- "Living with Water" Battleship NC Restoration includes shoreline restoration, stormwater BMPs, education and outreach.
- Carolina Beach State Park Restoration includes creating benthic habitat, and restore hydraulic and ecological function to degraded marsh
- Indian Creek Restoration includes restore, enhancing, and conserve multiple habitat types
- Navassa Waterfront Park Restoration includes conserving tidal wetland along Sturgeon and Mills Creek and public access
- Moze Heritage Site Tidal Restoration goals include conserving riparian buffer forest, enhance, and preserve wetland habitat. Funding has not been awarded yet.
- The Wilmington Rail project can have impacts on the Alligator Creek restoration project.

Federal Funding Opportunities- Howard Schnabolk, NOAA Restoration Center

- Funding opportunities including NOAA funding that is imminent and coming out of the infrastructure jobs act
- How to use funding to support the Partnership Coordinator position – recommend getting a small group together to further discuss
- NOAA – Habitat restoration and resilience for coastal, estuarine, and riverine restoration – projects that check the habitat restoration box and resilience (ecological and community resilience to climate hazards)
- NOAA – fish passage and barrier removal – restoring stream channel and restore watershed health – includes funds for planning (E&D) – includes building capacity and could support Partnership efforts
- NOAA – fish passage on tribal properties – applicable to Cape Fear River basin?
- All funding sources highlight working with underserved communities and social justice
- America the Beautiful funding through NFWF - https://www.nfwf.org/programs/america-beautiful-challenge
- Discussion on land acquisition funding opportunities with Dylan McDonnell
- Julie discussed the process for property acquisition.

Meeting ended at 12:25 pm.