

Cape Fear River Partnership
4th Annual Meeting
955 Old Wilmington Road, Fayetteville, NC 28302
Commentary and Notes



9:05 am Welcome and Introduction

USFWS and Cape Fear River Watch, thank you for funding.

Please introduce yourself, the organization you represent and share something that you're working on that applies to the Cape Fear River Partnership.

Dawn York (CFRP Coordinator, Coastal Biologist for Dial Cordy & Associates): CFRP website is in progress, GIS system for maps in the basin is complete, implementation plan working group over the past year with the first draft just released for comments and hopefully will be completed in June/July.

Katie Bradley (CFRW): Dam Removal Training over the past two days was extremely educational and the web-recon of the Cape Fear River Basin has been completed, which has helped identify about 200 projects for potential removal.

Frank Yelverton (CFRW): We've received funds to begin design on fish passage at Lock and Dam 2 and 3, an award at Lock and Dam 1 will allow us to reexamine the original rock arch rapid structure since new criteria at 2% was released by NOAA.

Danielle (Cape Fear RC&D): New executive director, here today to learn.

Marilyn Meares (Cape Fear RC&D) I'd like to be a project manager for dam removal, and we're currently assembling money for a drainage survey.

Howard Schnabolk (NOAA): Restoration projects in the Cape Fear Basin using the Kerr McGee Settlement.

Smithfield Packing Rep

Jodie LaPoint (TNC): CFRP Implementation Plan Facilitator

Madi Polera (WRC): 90 [page script to publish research on algal blooms in the Cape Fear coming soon.

Nathan Hall: Trends in water quality.

Larry Cahoon: I'm very interested in water quality.

Chuck (TNC): Excited about implementation plan.

Jeremy McCargo (Anadromous research coordinator, WRC): Shad studies.



Brena Jones (WRC) Research coordinator aquatic diversity non game fish: mussels, crayfish and snails, in the Cape Fear we're working on dam removal in the Rocky River for Cape Fear Shiner and mussels, the Houser Dam Removal

Cary (WRC): conduct social science research: socio-econ team interest.

Tom Thompson (Fisheries marine biologist with Duke Energy): Estuaries interest, 2015 resurrect fish monitoring since 120 program that DMF uses as a collaborative effort.

Julie DeMeester (TNC): TNC Statewide water program the Cape Fear River on the Sustainable Rivers Program number 9!

Sara Ward (FWS): Participated in the implementation plan working groups, trying to identify funding resources with NFWF.

Kary Mapes (UNCW) Earth and Ocean Sciences: GIS and aerial imagery to identify land use impacts on water quality, engaging the farming community in water quality, riparian buffer planting in the lower Cape Fear.

Jim Kapetsky (Eagles Island Coalition): Researcher for rice farming and tidewater's unique shellfish habitat

Nora Deaver (DWR):Cape Fear River Basin planner, clean up data over the last year for the basin plan we've promising since DWQ merged

Carol B. (USACE): Operations Manager Locks and Dams, we just wrapped up the fish lockages last week.

Dana Madix (USACE): Assistant for Locks and Dams, 1 2 and 3 fish passage

Bradley (Chapel Hill): Upstream nutrients water quality presentation

Chris Shank (Bald Head Island Conservation): Geochemistry for the lower Cape Fear River program, just moved from Texas, need some research partnerships, currently we're working with NC State.

Fred Tarver (DWR): ecological flows, round 4 of water allocations for Jordan lake, draft version of water availability study its in internal review right now

Casey Knight (DMF Wilmington Office): Coastal habitat restore plan

Joe Facendola (DMF): I work with shad, striped bass, sturgeon, we have funding and equipment for 3 more years, looking forward to that.

Fritz Rohde (NOAA): Last 8 years with NOAA working on hydropower and fish passage issues



Chris Steward (DMF): Telemetry work traditional tag data for striped bass

Anne Deaton (DMF Habitat person): Coastal habitat protection plan which pulls all the info that you have to utilize for recommendations, to help both programs move forward and get something accomplished, I'm excited for the funding at Lock and Dam 1

Mark Vanderborg: Algal blooms since 2009, more recently promotion coalition monitoring coordinator top to bottom of Cape Fear, my exciting news: equipment to analyze for cyanotoxins

Brian (DWR) Ecosystems Branch: Coordinating across the state's algal bloom program, coordinator of NC nutrient criteria development plan!

Darren (DWR): State funding to secure moving forward

Chad (PWC): Environmental and Compliance Manager, middle Cape Fear basin program involved since 1996

Andy Herndon (NOAA) Atlantic and Shortnose Sturgeon Coordinator: Establishing critical habitat, moving onto recovery planning

Ken Riley (NOAA) Beaufort Lab: Increasing number of habitat restoration projects

Clint Morgeson (WRC): Spawning stock assessment, and egg sampling

Kyle (WRC)

Eric Delam (Agriculture)

Angie Ackerman Div. of Mitigation Services – Kerr McGee, Implementation Plan

Troy (UNCW): Ecologist lower Cape Fear River Program technical committee

Melanie Harris with NOAA in Washington DC, helped kickstart the partnership in 2011 (on line 1)

[Overview of 2016 Partnership Efforts and Progress](#)

[Dawn York, Coordinator of Cape Fear River Partnership](#)

[Review of the Cape Fear River Partnership Implementation Plan](#)

[Jodie LaPoint, The Nature Conservancy](#)

[Dawn York, Coordinator of the Cape Fear River Partnership](#)

- 2012 action plan review, over 95 actions prepared.
- 2013 Cape Fear River Basin Action Plan for Migratory Fish
- want to streamline and focus



- the implementation plan will help us focus over the next 5 years as partners

Implementation Plan Timeline

- December 2016 Workshop: refined problems and target statements
- February 2017 Workshop: Identified a set of High level strategies designed to achieve targets
- April 2017 Workshop: Developed timeless and key actions, identified partners for implementation
- May 2017 Annual Meeting: Refine timelines, define partners roles and responsibilities, identify capacity and resources needed
- June-July 2017: Complete implementation plan

Implementation Plan Vocabulary

Problems: What are the issues that we want to address related to migratory fish in the CFRW basin?

Strategy: A broad course of action to address a problem, designed to achieve an outcome

Actions: The specific activities carried out in a certain order, undertaken as part of implementing a strategy

Targets: the outcomes or results we intend to achieve as a result of our strategies within the time frame of the plan

Goals: statements of what constitutes success in the long term

[Resource Committee Break-Out Session](#)

[Presentations/Full Group Discussion of Resource Committee Findings](#)

Fish Passage Committee, presented by Sara Ward

Habitat Committee - Flows:

Flows, presented by Fred Tarver

- Potentially adjusting flows within the cape fear

Habitat Committee - Habitat, presented by Julie DeMeester

- Collaborate data to prioritize habitat on the ground

- Refining data, ground truthing it, to capture data for habitat identification

Water Quality Committee, presented by Dr. Larry Cahoon

- What data do we have? What info do we have for these compounds that relay water quality implications?

Socio-Economic Committee, no one present. Dawn provided an update on Pete Shuman's grant to determine economic benefit of restoring the fishery. He is an economist and professor for UNCW.

[Update on Proposed Critical Habitat Designation for Atlantic sturgeon](#)

[Andy Herndon, NOAA Sturgeon Recovery Coordinator](#)



Critical Habitat Designation has been proposed, but not finalized. That's the most recent project I've been working on.

2012, 5 DPS (distinct population segments)

Each their own species, for management different population segments

We needed to identify critical habitat which was something we didn't have at the time of the T and E listing. Our team was answering questions:

- How do we recover an endangered species by protecting their habitat?
- What's a spawning river is or historically has been?

In the Southeast there are 17 units of critical habitat:

- Northeast Cape Fear River, Cape Fear River (above Lock and Dam 2)
- Designation only applies to federal projects, anything that the feds permit

Next: Recovery Plan

Partnership or individuals, to stay involved: public hearings, group meetings, comment of documents produced by recovery team, identify specific

Funding Opportunities

- ESA Section 6 Program (OPR) can provide money to states for research, monitoring, outreach, would require partnership with WRC
- Coastal Ecosystem Resiliency Grants Program (OCM)
- Coastal and Marine Habitat Restoration (HCD)
- DARRP Restoration Implementation Grants (HCD)

Andrew.Herndon@noaa.gov

Questions

Jeremy (WRC): Will there be one recovery plan, or DPS specific?

Andy: Working on it, most likely DPS specific information will be needed. There will be individually listed segments per identified habitat within the plan.

Dawn: From DMF's perspective, is there any chance in developing the section 6 permit application?

Andy: Yes

Jeremy: Currently we have section 6 with FWS, I don't think that DMF can have their own right now, but it's something we can talk about it.

Dawn: Joe has tags in his desk.

Andy: We can talk more about it offline, in regards to Section 10

Lunch



Environmental Management Commission Update

JD Soloman, CH2M Hill and Chairman of the Environmental Management Commission

- With a change of hands in government, period of uncertainty
- Communicating technical info to people, is the hardest to thing we do.

Environmental Management Commission is made up of 15 commissioners that are appointed by the governor and others to makes decisions on coastal resources, marine fisheries and state water infrastructure authority (SWIA), all of which were scientists of some kind before serving on the commission without being paid (expenses are reimbursed)

Subcommittees

1. Water Quality
2. Water Quantity
3. Ground and Wastewater Management
4. Air Quality

There are 5 two day meetings per year.

Current Activities

1. Rules re-adopt is in full force
2. Coal combustion rules
3. Round 4: Jordan Lake allocation
4. Interbasin transfers
5. Air quality (PM 2.5) EPA wins on that one
6. Dam safety rules
7. Regulatory reform is ongoing, but at a slower pace

Comprehensive Rules Re-adoption

- Stormwater (2H) Rules are refined
- Dam Safety Rules are finished and re-adopted
- Surface water quality rules
- 484 Rules
 - Will go to public hearings this summer
 - 3 hearings across the state

This summer: Air quality needs to be updated, mitigation services rules (financial pieces, fees are going up because in the CFRB there's not enough mitigation banking), water quality re-adoption



- Air Quality Rules
- Solid waste rules
- Groundwater rules

Activities Worth Noting

- Civil Remissions
- Variances on buffers and setbacks
- Declaratory rulings (if someone doesn't like the federal rules, you can come to the EMC, we have a trade secret, EMC decides if it's really a trade secret)
- Lawsuits – EMC usually names (EMC usually on the lawsuits since we issue the permits)
- Legislative reports
 - Buffer Rules, In-Situ Nutrient Treatment will be as transparent as possible
- Federal Issues
 - Waters of the US (wetlands and streams)
 - Clean Power Plan (energy use and carbon emissions)
 - State Water Quality Rules (triennial review)
- American Rivers: stormwater as a resource how green stormwater infrastructure turns multiple problems into multiple benefits

Questions

CCP do they involve adding Calcium Bromite for Mercury control?

JD: No, More about leachate, 2L list, mostly.

Has there been movement on the 1090 vs 1-3?

JD: I hope with the new admin there should be decision on that by the Fall.

Can you explain 1-3?

JD: To paraphrase if you get 1 exceedance out of 3 samples you're impaired period. Most people are collecting more data than that, we're arguing that a statistical approach is needed, ironically when the EPA pushed that there was less data collecting. We don't want to discourage scientists to collect less data.

What's important to Secretary Michael S. Regan NC-DEQ?

JD: Transparency on the scientific front for economic and natural benefit, he has a positive approach, he's a good leader.

State of Science in the Cape Fear River Basin

Facilitated by Dr. Larry Cahoon, UNCW and Water Quality Team Lead

Dr. Cahoon: Our intention here is to provoke thought and discussion.



NC's Nutrient Criteria Development Plan: A Summary and Status Update Brian Wrenn, NCDWR - Water Sciences Section

- Nutrient criteria implementation plan 2001, federal register notice: EPA strongly encourages all states to develop nutrient management plans, later on with commitment and timelines.
- NCIP 2014: public input, this needs to be done.
- Flexible nutrient criteria

Scientific Advisory Council (SAC)

Nutrient criteria for designated uses of the water quality:
fishable, swimmable, boatable, trout waters, public water supply, etc.

- Causal and response variables: chlorophyll a, etc.
- Either numeric criteria, or narrative form for concentration
- Lakes/reservoirs, rivers and streams, estuaries
- Species, flow requirements,
- Specific water bodies: high rock lake, central cape fear river, Albemarle sound
- Causal: nitrogen, phosphorous
- Response: c.a, phytoplankton (cyanotoxins), etc.

Criteria Implementation Committee (CIC)

- High Rock Lake, Yadkin-PeeDee River
- APNEP
- Draft monitoring plan by 2018
- TN/TP

A National Perspective on Nutrient Criteria Development Clifton Bell, PE, PG Brown and Caldwell

- Clean Water Act is written for toxins.
 - We don't have an equivalent for nutrients, and they're not writing one anytime soon.
- Total Maximum Daily Load (TMDL) more success
- Brown and Caldwell: Review of USEPA Methods
 - TMDL's emphasize response variables over
 - EPA's flagship program for TMDL's

Wishlist presented: basically not enough is being considered for these nutrients

In some cases cost wise it's more cost-effective to change the phosphorous level rather than nitrogen, considering discharges, treatments and stormwater runoff



Question: Is public investment and is it sustainable?

Focus on organic contaminants, Cape Fear River basin impacts on drinking water quality

1,4-dioxane Story and Other Emerging Contaminants in the Cape Fear River Basin

Detlef Knappe, NC State University

Haw and Cape fear River drinking water: Fayetteville, Pittsboro, Wilmington

Not dioxin highly potent, dioxane not as potent, but a likely human carcinogen

Used as dissolvent,

Industrial solvent: textile, paper

Manufacturing processes: PET, detergents, cosmetics involving

Very soluble in water, difficult to remove

UCMR3, 27 chemical constituents 1,4-dioxane was one of those

Cancer risk: consumption of drinking water containing:

- Lifetime risk, not acute
- .35ug/L = 1:1,000,000 excess cancer risk
- Disinfection by-products, also human carcinogens
- Bromodichloromethane: 0.6 ug/L = 1:1,000,000 risk
- 1,4 dioxane

Frank: are these risks additive?

Knappe: Impossible answer to the million dollar question, over 100,000 chemicals on the market that we know very little about.

Occurrence – EPA's 3rd Unregulated Contaminant Monitoring Rule (UCMR3)

Drinking waters above .35 ug/L

US: 23%, NC: 96% (all from the Cape Fear River)

Biggest surface water problem is in NC

Haw River at Bynum, drinking water intake for Pittsboro (small systems not recognized in study)

- 2014 16 ug/L
- 2015 17 ug/L
- 2016 8.6 ug/L

Efforts are being made to change.

Fayetteville Intake (P.O. Hoffer)

Wilmington has o-zone in their treatment, about 2/3 is oxidized in the process



Q: Any known to be endocrine disruptors?

A: 1,4-dioxane not sure

Dr. Cahoon: I didn't know the cost difference of phosphorous removal considering stormwater

Kerry Mapes (UNCW): slightly terrified, what should we do?

Reverse osmosis is the best for short term fix, expensive filter for \$200 on your sink.

Tertiary treatment has a wide definition. If it included ozone it would remove some constituents, a lot of the endocrine disruptors are hormones, like chlorine and uv compared.

Source control: GENX is the bad stuff

Q: Any efforts to control it?

A: Only just beginning

[Utilizing GIS and Remote Sensing Technology to Assess Land Use Impacts on Water Quality within the lower Cape Fear River Basin](#)

[Kerry Mapes, UNCW Graduate Student-Earth and Ocean Sciences Department](#)

- Land use impacts on water quality
- Aerial imaging, temperature drones
- Farmer's discussion and education

Q: How much of the poultry waste is being hauled off?

A: Unsure, lack of permitting process

[Restoring Historic Fish Passage Access at Lock and Dams 2 and 3](#)

[Johnny Martin, PE Moffatt and Nichol](#)

Project commenced in August of last year

We've utilized projects and surveys that USACE had done meeting with the core for Section 408

- Draft basis of design and alternative development and analysis, new criteria from NOAA: 2% slope
- Signed non-disclosure agreement with the USACE for the alternative plans
- Field visit 2 and 3

Lock and Dam 2

- Real estate approval for the field investigations, hydraulic calibrations, etc
- Sediment build up, scour hole 40-45 ft deep
- Expensive volume to add, driving discussion for alternatives
- Considering a bypass channel, 15 ft of land above land to make the channel work

Lock and Dam 3



- 15ft deep, downstream, there are logs just below the dam structure preventing collapse LD3 is high 20-25 feet for the bypass channel

Applying knowledge of LD1

- 3% slopes or less is new criteria, considering boulder weirs, pool velocities
- Alternative considering for LD2:
 - scour repair project,
 - dam removal,
 - bypass channel,
 - dam and lock removal, no action,
 - rock rapids within the current dam structure
- Alternative for 3, same.

Q: What's the distinction in the basis of design and the alternatives:

- Design criteria 3%,
- document formalizing the design,
- engineers apart of the independent review panel, permitting and regulatory side developing the purpose of need

Kerr McGee NRDAR Case Funding Update

Howard Schnabolk, NOAA Habitat Conservation Division

Sara Ward, USFWS

- In Navasa the contaminated site for wood treatment, a creosote treatment,
- the EPA is working on clean up
- NOAA documented ecological change from the site
- Litigation, settlement reached recently: \$23 MIL for the injury at the site, in terms of the benthic habitat at the site

Late 2015, public meetings, trustees are NOAA, FWS, State of NC

Scoping restoration project 20-25 total came in, closed to a restoration plan that documents those projects,

- Draft for public comment soon, administration change at the state, been on hold since late last year, next week meeting with new state reps to get the process up and going again. Discuss terms and projects up until this point. Categories of restoration: fish passage, habitat restoration, there's a lot of priorities for identifying projects in these groups

Sara: Until we put the plan out, we are not at liberty to talk about those individual project applications, the whole process is supposed to be open, feel free to call Howard or I, Howard is the lead Trustee on the Council, Angie has been representing the state.



Once the restoration plan goes out for feedback, there's a 30 day comment phase.

[Remnants of Tidewater Rice Farming as Important and Unique Fish and Shellfish Habitat in the Lower Cape Fear](#)
Jim Kapetsky, PhD Research Scientist, Eagles Island Coalition

2nd most important industry

Comments:

Ken: Interesting to see a return of rice farming in the Cape Fear, edge is important to note but overall degradation due to sea level rise in comparison to other salt marshes the habitat is disappearing.

[Progress of the River Basin Restoration Plan; Cape Fear River Basin as a Pilot Study](#)
Angie Ackerman, NC Division of Mitigation Services
Update on watershed planning model
Watershed Functional Prioritization Tool

[Sustainable Rivers Program, A National Opportunity](#)
Julie DeMeester, The Nature Conservancy

The Sustainable Rivers Program

WE: USACE and TNC

The Cape Fear is Number 9 added to the sustainable rivers program, I just got confirmation last night!

What we hope to do: apply for grants and access environmental flows

216 study is used to review the operations of projects that the USACE did

2016-2020 8 rivers added to the program.

Introduce the news (up and down the Cape Fear) to gather stakeholders, draft 1-3 years of project opportunities ready to go for USACE funding availability.

Frank: Did Ashley contact you and how much?

Julie: Less than \$10,000 in this year, came from USACE Coordinator, enough for news and stakeholders

Dawn: You could use the stakeholder engagement of the CFRP's framework.

Mick: Will you use management releases from Jordan Lake to solve downstream problems?

Julie: We have to figure out if the flows are a problem. Starting there, and so on, seeing what the needs are in the entire basin.

[Review of Priority Action Items for 2017-2018 and Strategies for Implementation](#)



Wrap Up Discussion and Feedback

Julie: Dawn do you envision all the teams meeting in one place? Or do you think the committees will break out and start meeting separately?

Jodie: This came up in the Fall.

Dawn: I can imagine dam removal subgroup moving forward with their strategy

Julie: Website?

Dawn: I wanted to showcase that today, but there wasn't time, we will continue to work on that. My goal is to host a partnership website for all this data, user-friendly for all the partners

Mick: Maybe looking at what everyone is doing before launching into—hard to see how the whole big picture feeds together

Dawn: Tom (Duke Energy), do you think there has been progress since you last stepped in?

Tom: I certainly do, good conversation with Fritz on fish passage.