

Cape Fear Arch Conservation Collaboration:

Roger Welcome

Suzanne Request for feedback and recognition of JohnAnn, Scott Pohlman, Phil Prete, and Christine Ellis.

Roger, introduction of the August meeting:

November 13 meeting will be in SC in the Vareen Gardens in Little River

Introductions:

Taylor Ryan, St. James: Turtle Watch, oyster shell recycling and reef building. 7:30 pm on UNCW channel 4 please watch it with Troy Alphin and Ted Wilgis and a few other folks.

Pete Benjamin: US Fish and Wildlife Service. We had a Critical Habitat Area, public hearing for the loggerhead sea turtle. Also had a public meeting in Morehead City. I'm trying now to manage expectations. Folks are concerned that it will impact beach use. It will probably have very little impact, positive or negative. We are accepting written comments until Sept 16th and will make a final decision next summer. Will be here trying to educate people about what it does and does not do.

JohnAnn Sherer. I get to work with private landowners to do habitat restoration on their land and we have a focus area in the Arch. Dale Suiter, botanist at U.S. Fish and Wildlife office. We have brochure of native plants for Coastal NC; these were done through Nat Fish and Wildlife grant that was focused on beach vitex. It highlights 32 native beach species and 4 species we want to discourage. Trying to distribute these among beach communities.

Nancy Buckingham Cape Fear RC&D. We lost federal funding for the program. We are excited that we will be dedicating the Columbus county gas project, using their greenhouses using methane to heat the greenhouses. New Projects in Bladen Co. address flooding problems. In Brunswick Co. Dutchman Acres has a failing septic system. Working on the success of our maple Hill community water treatment. Pender Co. working with Topsail beach streetscape plan, helping with storm water. One of our main concerns is the redirection of the CWMTF funding--no longer funding sewer projects.

Andy Fairbanks with City of Wilmington City Parks and Recreation. Recently involved with the poaching of Venus flytraps. Working with Coastal Land Trust and CFCC to develop curriculum projects and field trips to see the park. We also started a prescribed burn at Halyburton and we have had three successful winter burns and are about to have a summer growing season burn. We are thankful for all the regional expertise.

Bill Walker, NC Forest Service Cape Fear Area. We try to protect long leaf if you need any help we are here for you.

Phil Prete: environmental planner City of Wilmington...talking later.

John Carpenter: Wildlife Biologist WRC in our second season banding birds, we have reached out to private land owners to get permission to use their land and some did respond and are enthusiastic about working with us.

Maria Dunn WRC: habitat Conservation program review permits for development. I'm stationed out of Washington NC--I now cover the southern part of our state too and that's why I'm here to make connections.

Judy Bradcliff--freshwater ecologist for the eastern part of the state.

Marci McKerny--retired biology teacher...volunteer at SPCA low cost spay and neuter facility in Leland'

Scott Pohlman-- Only initiative I want to talk about now is the prescribed fire meeting August 27 in Wilmington Hilton and field trip on the 28th in Brunswick Co.

Tom Charles USACE--public use is what I do. Manage Cape Fear Locks and Dams and have a focus on education and outreach. We have a partnership with the Cape Fear River Watch. In 2015 the 1st lock and dam with fish passages will be 100 years old. Would like all of you to be represented with a booth at our anniversary event. USACE doesn't have much funding for locks and dams so partnerships are key. Would like a commitment from agencies by next November for 2015--I'm looking at fall or spring. Show of hands supported a fall centennial event.

Tony Doster Resource Management Service--We are in the process of preparing 2014 harvest budgets and working with CLT to put in a mitigation factor. I don't know what we've done in terms of conservation other than moving 16,000 tons of wood each week and plant about 500 or 600 acres each year. We are an active forest management company. If there is anything of an operational nature involving heavy equipment we have the ability to do that. We have the resources at hand and are happy to help you.

Jim Sly NC forest service--forest management program for the Coastal Plain. Part of the long leaf initiative. In the forest service we are in the midst of implementing our strategic plan in our forest management and protection arena.

Rebecca Hendry--sustainability coordinator for UNCW. Area of my efforts is working with local farms to provide good water quality and food quality.

Jacob Varas works for the Cape Fear council of Gov't. Sustainable communities' grants--at the end we would like to have a regional plan

Tom Tewey--on board of CFRW excited about lock and dam #1 project. I've been volunteering and doing things with environmental organizations since 1969 since I built a nature trail. Still concerned that some people are losing touch with the past especially the minority communities. I'm excited that the New Hanover Co. arts council did a documentary about Sea Breeze and the folks that lived there. Would like to see more engagement with minority communities

Kay Lynn Plummer Education Specialist with Cape Fear River Watch - Lock and Dam project is our #1 education program. Soil and Water is developing a curriculum for 6th grader and 4th graders. We are also active with water quality monitoring.

Pris Endo--retired educator moved back here representing Sierra club which stays focused on national and state levels...ending coal campaign.

Ed Beck--sierra club on exec committee. Sierra is unique in that we partner with other clubs but we are also able to be active politically--backing candidates and at the polls.

John Taggart--UNCW faculty at EVS. Working state parks on the Onslow Bight Area, working on a contract with the forest service to monitor listed species. Working with NHC landfill extension, working with state park monitoring invasive species

Tom Osborne Cape Fear Museum--culture and history of the Cape Fear. We are in the middle of a reinterpretation of our space. Integrating conservation and it is scheduled to be completed in the next 3 years.

Casey Gamble--student here and part of some volunteer and intern project and I'm here to learn.

Christine Ellis focuses on Conservation efforts throughout Waccamaw River Watershed and is the Waccamaw River Keeper

Sarah Babin, TNC we started venus flytrap monitoring project to gauge the numbers and understand poaching. Also looking for monitoring on black river for alligator weed. We released beetles to eat the plant and have found that the beetles are still present.

Genevieve Joseph--philanthropy of TNC throughout the region. Happy to be here to listening and learn.

Christine Negos - Manage Neuse River basin and Lower Cape Fear if it's a state funded stream mitigation projects

Erin Carey--watershed coordinator speaking later

Sabrina Woffler--Coop Extension educator focus is water quality and implement best practices...retrofitting septic tanks on Oak Island. Also want to talk to neighborhoods with water quality information

Mike Giles—NCCF advocacy work: Wood pellet industry, storm water management, hardened shoreline and Titan.

Jim Lukin--Coastal Carolina university: work in the admin. Worked a lot on venus flytrap.

Jesica Blake with Coastal Land Trust. Right now the biggest thing we are dealing with is the end of the tax incentives for land donations. Trying to figure out how we are going to do land conservation with private landowners.

Jennifer Aversing CLT Stewardship preservation this is my first meeting.

Hope Sutton Southern sites manager...speaking later

Byron Toothman with the Coastal Reserve speaking later

Roger Shew: We might consider a meeting next year that's on the river to view our natural areas from a different perspective

Today we want to talk about some of our priority areas from our freshwater river to the sea. This year we've looked at the different meeting places throughout our region including from Burgaw/Watha in Feb to St. James in May, UNCW now and then Horry County SC in November. Before the Rivers to Sea Presentation I want to introduce you to UNCW. UNCW is a 640 acre campus with about 200 acres of long leaf pine forest. One of 3 areas in NHC with a sizable long leaf pine forest. Bluethenthal Preserve is a 10 acre hardwood forest preserve. We're in the Bradley creek watershed.

A storm water cooperative project with the city and Tidal creek is an effort to clean up and reduce our storm water that Erin will discuss in her presentation.

Highlight the yellow box--the original UNCW...in 1961 UNCW was built and had 3 buildings surrounded by longleaf forest. The original 640 acres was long leaf pine and since the 60s we've seen so many changes in plants and animals and even the hydrology. We are trying to look at ways to maintain the forest areas in UNCW. We set up a burn in 2011 and we are trying to do another one this coming year. It has really benefited the forest ecosystem and added to forest regeneration while also reducing the possibility for more catastrophic fires. We also own/manage Ev-Henwood preserve on Town Creek with a restoration project for longleaf and old field succession.

Today we wanted to talk about the Arch and the priority areas. Please check our web site for more details and access to the Conservation Priorities. The importance of the Cape Fear Arch--30 different communities across the state, 16 are located in the Arch.

We have a lot of variability within our arch area. Biotic and Abiotic variability in our area. After the last meeting Dan Ryan asked how the priority areas fit into my "natural wonders of the region." All of them do and some fit multiple natural areas.

The first one is the:

- Long leaf pine Savanna area in Big Island in the green swamp. 8 of our priority areas have long leaf pine Savannas.
- Carnivorous plants: 6 sites have these in them. I am appalled at the poaching event in Alderman but in our natural areas we are losing tens of thousands of our plants. Major threat and issues for the Arch.
- Carolina bays: the mystery is still there.
- Black water river,
- Bottomland hardwoods/freshwater wetlands,
- Salt marsh and tidal creeks, &
- Barrier islands.

Every one of our priority areas fit the natural wonders. The thing I wanted cover in this meeting was some of our priority areas and to show the variability I thought a rivers to sea approach might be appropriate. We'll look at the NE Cape Fear River and then down to Eagle's Island. We will then look at tidal creeks and then move to Masonboro and Zekes Islands.

What I like to say is that everybody talks about the negatives of the areas. In the Arch we need to focus on why we need to preserve the areas. All of the challenges that the areas face are balanced by the tremendous natural resources that are found in the priority areas.

The importance of Arch is part and parcel of the many conservation areas and initiatives. I mentioned the Priority Areas. Scott Pohlman and Dan Ryan are co-chairs of conservation planning committee.

Scott mentions that our plan is 5 years old and we need to revise and update it. We're going to convene all the original members of the committee and then any other interested people too and discuss threats and strategies for each region. That's the format of the plan. It also gets into broader issues . More emphasis of growing season prescribed fire for instance needs to get back into the plan. There are several other plans that need to be incorporated into this plan. Stay tuned for the September meeting. Any questions contact Scott or Dan.

Presentations: River to Sea

Mike Giles:

NE Cape Far River Camera Trapping Project. What does the NE Cape Fear River mean to this region.

We are exploring the economic potential in the river, there is much potential to do damage. What about doing some more positive things on the River? We got together with CFRW and applied for a \$35,000 grant from Stanback family. We want to document what is unique about the river corridor. This is the key connection between the Green Swamp and Holy Shelter. A collared Red Wolf has been documented outside of Alligator River so we need to know the distribution of our species.

Threatened ecosystems are disappearing or degrading. The NECFR area could be designated as an Aquatic area of National importance. We're talking about a large landscape area that is under threat from all kinds of development. It's a corridor and wildlife habitat where we've seen abundant beaver, bear, and bobcat. This is also an untapped resource for tourism, jobs, and resources.

Location, Location, Location. Titan is talking about stripping down the top and impacting groundwater and wetlands but what about the investment in conservation and the opportunities? CWMTF has spent over \$42,000,000 With many constituents over 111 million has been spent on this area. So we have a significant investment in conservation here.

With our grant we selected a wildlife camera that takes high quality pictures. We plan to have an opening, a show at WHQR studios and launch a public information program that shows the best photos. We have cameras from the Cape Fear River wetlands all the way up through the I-140 crossing and all along the river. With Jessica, Jen, & Camilla's help we were able to map areas. We accessed some only from boat.

What have we found? For 4 months we scouted for wildlife evidence. We checked cameras once a month. We have some documentation of questionable activity; 3 individuals in camo in one area. We don't get too many birds--they're too fast for the settings of the cameras.

We have great pictures of wild turkey...sometimes flocks of 20 to 30. The project is funded for one year and will hopefully get funded again.

Questions--can you do video? Yes but we haven't set up for that. Any photos of Nutria? Not yet no otters either. How many cameras and are they all mounted low? 24 cameras and yes they are low. When WHQR event? Late Fall.

Phil Prete Eagles island Coalition:

Eagles Island and the Eagles island Coalition. Group got its start modeled on the Arch's MOU. It was formalized in 2010. I want to talk about the place, history, opportunities and challenges.

As you saw in earlier maps Eagles island is #21 in the priority areas for the Cape Fear Arch. One part of the Brunswick and Cape Fear River marshes. This priority area is home to the largest extent of freshwater marsh anywhere in the state. 3000 acres

bordered by the Cape Fear and Brunswick Rivers. Species diversity include alligators, greater yellow legs, sturgeon, bald eagle, diamondback...

Past: Cultural history--it was home to rice plantations in the 1700 to 1800s. Rice, begun in the Charleston area using slaves that knew how to run rice plantations moved north into SENC. At the height of its production there were 9 million lbs. of rice produced here annually. There were three plantations on Eagles Island. Also home to Naval Stores--it was a focus point for this industry. Trees on rafts were brought up on Eagles Island and milled or turned into turpentine and pitch. You can still find some remnants of the equipment. At one point in the mid 1700 before the revolution it was considered the largest production of naval stores anywhere in the British Colonies. That's one of the reasons for the demise of our long leaf forest.

Also shipping: Eagles Island had active shipping and ship building. Brunswick River was home to 300 retired liberty ships. 250 of them built in the Wilmington Area. As a result of this activity there is a rich archeology around and along the shores of Eagles Island. 46 lost and abandoned vessels have been documented. In 1985 37 of the shipwrecks added as contributing properties to the Wilmington National Registries. All the debris that you see on the river walks is what's left of these wrecks, like tanks and steamer debris.

What is the Eagles Island coalition --much overlap with the Cape Fear Arch Partnership. There are some additional members affiliated with the water based tourism industry. The coalition's mission is to lead efforts to preserve the cultural and natural history of the area.

Most effort is focused on the Northern area of causeway. All properties have been put into conservation (except one). There is a superfund site on the area and some federal money has been put into a trust to purchase some additional high priority areas on Eagle's Island. It's a 19 acre property that we are very excited that we might get an option on that piece of property.

The Southern portion of the island is all dredge spoils and is actively used for dredge spoils. We are very interested in the long term goals of USACE. There has been an event where a dike breached and spoil spilled into the Brunswick River. That's one of today's concerns and especially with SLR change--with a 1 meter change it could impact the spill sites. What happens when you have tidal action along the walls of the dikes not to mention storms? Another issue is the widening of the channel across from the port area. It will impact a number of acres of marshland along the shore of Eagle's island...want to keep their mitigation local.

Outreach/Education. We've got a committee that's active. Eagle's island.org has an inventory of the natural history, cultural history, and human impacts. It is a really good piece of work. Also trying to work with documentary project that they could show in the Battleship museum.

We have an active Recreations and cultural resource committee too. You can go to the website to see opportunities for kayaking and working towards doing some education and interpretive information out there. Looking to develop an app for this. Trails have gotten through the CAMA permitting and sign materials donating.

Vision for the future: Maritime Museum and the cap fear river corridor plan.. using eagles island for public recreation. At Battleship Park we want to put in a natural and cultural resource visitor center that is low impact. Serves as a hub for the island including trail head and kayak trail head. We have a great partnership with the Battleship. They have included the trail network into their capital campaign project.

Questions: Are there any remnant rice fields there? There are, you can see straight line ditches those were the canals built by hand by slaves. Some remnant structures-- tide control valves and tide gates. Some paddle trails use these canals. When will you know about the foreclosed property? Probably in the next 2 months.

Erin Carey -- City of Wilmington: Heal our waterways.

The plan is based on voluntary installations of BMPs for the overall reduction of storm water into these creeks. With a storm around an area with high impervious areas you get a big pulse of volume and velocity of water into the creeks which leads to increased erosion, bacterial transfer from land to the water.

Impaired water for Bradley and Hewlett's creek: Both these watersheds are closed for shell fishing. It is eligible for TMDL or total maximum daily load calculation of the maximum amount of pollutant the water body can receive and still meet a standard. Once it is assigned to a water body. The City of government has very little leeway, they are locked into a timeline for compliance. It restricts development. Bradley creek is not in violation. It is not open for shellfish but mostly because there aren't that many in there and it's close to a marina. Improving water quality in Bradley creek will improve water quality in Banks Channel. First closed to shellfish in 1947.

Hewlett's Creek is the larger of the 2 watersheds. Waters could be opened to shellfish if it could be cleaned up. It is an area of intense development. Increase in impervious surface, which means an increase in storm water. This is correlated to an increase in bacterial counts in the watersheds.

How do we fix it? We developed a plan for Bradley and Hewlett's with stakeholders. Take home message, the plan is voluntary, not restrictions for development. Depends on Voluntary installation of BMPs. Like rain gardens and permeable pavement. Commercial retrofits can have a high impact. Remove a downspout that goes onto pavement and have it run into the landscaping. We need to keep as much storm water onsite as much as possible. The bulk of education is at the residents, rain gardens rain

barrels, and permeable pavement should be encouraged to let them know that small changes that they make on their property can have a cumulative effect. One tool that we use is the Creek Counter, which is a GIS that tracks BMP installations. Calculates the volume of storm water taken out for every BMP installation.

NERRS funded a grant to fund a neighborhood pilot program. Encourage BMP installation on private property. Second project in collaboration with UNCW is a bio retention cell installation on Oleander to treat runoff. This will impact the Hewlett's creek watershed also very visible and will help educate. What's next? Widespread introduction of Heal our Waterways will roll out in the next year or so.

Questions: Interested in being a volunteer does part of the \$\$ cover rain barrels and native plants. The grant will cover the pilot project but it won't be spread outside of that neighborhood. I saw you had a focus on runoff and bacteria, but its also forgotten that freshwater itself is a pollutant in the tidal saltwater environments. Not just as closures but as a fatal event. Plan itself is available at the city of Wilmington storm water site.

Hope Sutton: Impacts and management of invasive species on turtles by red fox

Red fox predation on turtle nests on Masonboro was not observed in 2000 but started in the mid 2000s. We started surveying for denning in 2007. The number of dens doesn't necessarily translate to the number of animals that you have but the number did increase over the years. Over 50% of the sea turtle nests had a predation event. So we decided to have some management. US fish and wildlife gave a grant to address this issue. We worked with wildlife removal specialists to do a control effort on the island. They took three animals with two weeks of efforts. Already this year we find that predation is limited to a small area at the north end. We were hopeful that we had removed a large proportion of the animals and it looks like we achieved that. We do have some funding to ensure that we can remove any additional foxes.

Byron Toothman Gracilaria Coastal Reserve and Ph.D. candidate.

Gracilaria is a recently appeared exotic red algae. The first record was observed around Masonboro around 2000. It looks similar to another Gracilaria that is native. The invasive is native to Asia--was originally found on the Pacific coast and now on the Atlantic coast. It has also made it over to Western Europe. Found on mudflats and shallow estuarine waters. Grows from thallus attached to hard structure. It is the only year round algae that we have. It is very hearty. It is outcompeting other algae and is a problem for SAVs. It forms a bed and attaches to holdfasts or any structure in the shallow water. It fragments and forms mats which are problematic. Can scour the bottom and increase turbidity. Can survive temperature and salinity swings. Dispersal through fragmentation, it acts like velcro and forms giant rafts. Birds and shipping and fishing gear have all transported it.

Impact on ecology is a mixed bag. Good for larval recruitment, however a decrease in species diversity and richness in larger invertebrates.

Algal mats impact--habitat modification, scouring the bottom, increased turbidity, decreased water movement and decreased light and anoxia.

Questions, is it just near shore--yes in just a meter or less. How is it traveling? Maybe through the intercoastal?

Roger:What's happening in Lake Waccamaw Christine with the invasives there? Flooding has helped to restrict the hydrilla. There's a task force that's been involved. We did get enough money for chemical treatment and it appears to be working. There's one more treatment due this month or next. This is a long term project at least 7 years. We're looking at a decade of treatment on Lake Waccamaw. Introduction was from boats. A group of us put in a proposal for NFWF for early detection and rapid response hoping to focus on new and upcoming invasive for Lake Waccamaw to get anything new at the earliest stages. The good news about hydrilla was that it was found quickly, last year and treatment started this year.

Pete, how does critical habitat interact with our ability to address invasive foxes. Pete Benjamin: Critical habitat and predator management don't really interact with one another. Increased management in areas with high turtle activity could result in predator management.

Thanks to our presenters. Please send comments to the executive committee, Suzanne is the head of that Committee. The last thing is the directions to the Arilie gardens. Thanks for attending.