

APNEP Education and Engagement Workgroup

Meeting Notes

December 12, 2014

NC Estuarium

223 E Water St.

Washington, NC 27889

Attendees: Jim Hawhee, APNEP; Marie English, APNEP; Liz Baird, N.C. Museum of Natural Sciences; Kendall Smith, U.S. Fish and Wildlife Service; Sean Higgins, N.C. State Parks; John McCord, UNC Coastal Studies Institute; Christin Brown, Jennette's Pier; Sara Hallas, N.C. Coastal Federation; Kathleen Gray, UNC Institute for the Environment; Lori Davis, N.C. Coastal Reserve; Amy Sauls, teacher; Karen Amspacher, Core Sound Waterfowl Museum; Gloria Putnam, N.C. Sea Grant; Dia Hitt, N.C. Aquarium on Roanoke Island; Terri Kirby Hathaway, N.C. Sea Grant; Joe Hawley, N.C. Parks; John Fullwood, N.C. Parks; Lisa Tolley, N.C. Office of Environmental Education; Tracy Weidert, N.C. Office of Environmental Education.

Jim Hawhee called the meeting to order at 10:05 am.

Tom gave an introduction to the Estuarium. It opened in 1998 and was part of the vision of the Pamlico-Tar River Foundation director. The Estuarium is now run by Partnership for the Sounds.

Jim asked each attendee to introduce themselves and their agencies.

Jim gave an introduction to APNEP. There are 28 national estuary programs across the nation. APNEP is hosted in NCDENR. It is a bi-state program using watershed, applied science, partnership, and ecosystem based management approaches. Workgroups are meant to improve the way we influence the system. The agenda and meeting notes are posted online at the workgroup website. What are the greatest challenges facing the APES? What actions do we want to take as an implementation group? There will be two new positions in APNEP: an educator and an ecosystem analyst. The STAC consists of 36 scientists; running since 2004. This PowerPoint presentation will be posted online.

The Implementation committee: individuals from workgroups sit on committees to consider funding proposals that come in through workgroups. Groups can also seek external funding, APNEP grant monies will be distributed by the implementation committee. If anyone is interested in serving on the implementation committee, please let me know. Once we have 8 or 9 workgroups up and running we will launch the implementation committee which will probably be around April.

Actions for Education and Engagement Implementation Group:

Action D1.1- Communicate the importance of stewardship and offer opportunities for volunteerism to further APNEP's mission.

Action D2.2- Provide EE training opportunities for educators in the region. This can be interpreted more broadly as helping support teacher development and coming up with ways we can improve capacity for teachers to teach about the sounds in their classrooms.

Action D2.3- Increase public understanding of the relationship between ecosystem health and human health advisories relating to water, fish, and game. Promote linkage between environmental health and human health.

The functions of the workgroups are to identify projects or initiatives related to the CCMP and to secure resources. APNEP monies can be quick and flexible, but groups should also seek external funding.

How often should we meet? Groups should meet not just to network but also to advance initiatives. We need to set some kind of metrics in order to track results. How do we broadly impact citizens in our region and can we see improvements over time with additional resources? It is also important to be able to articulate the impact of a loss in capacity.

Jim offered to sign attendees up for the workgroup listserv. It should be a way to communicate without a bottle neck and workgroup members were encouraged to use it to communicate amongst each other.

Currently the SAV, Contaminants, Education and Engagement, and Oysters workgroups are running. Ideally they will all be running in a year. The pace of filling open APNEP positions dictates how quickly these workgroups get up and running.

Summaries by agency:

Sean Higgins, NC State Parks

- Parks have capacity to train 5,000 teachers a year and have interest in taking advantage of this
- Opportunities to engage families and tourists are huge at the parks and environmental habits typically change at this family level
 - Oyster restoration with Coastal Federation has led to families wanting to incorporate a day for an environmental service project in their yearly family vacations

Kathleen Gray, UNC IE

- The teacher institute has been a partnership with APNEP for 6 years and was at the coast for several years at the Trinity Center, then at Botanical Gardens, and next year it will be back at Trinity Center
 - Focus on water quality
 - Some years there is a partnership with superfund research
 - The focus changes depending on funding
 - Attempts to draw teachers from APNEP region, starting with formal teachers and then reaching out to informal
 - Folks are invited to lead sessions and connect teachers with regional resources
 - This year's institute will be held during the last week in July

Sara Hallas, Coastal Federation

- Teacher Institute held at center for advancement of teaching
 - Weeklong and includes seminars
 - Connected to a living shorelines project on Ocracoke
 - Interest to connect to more digital resources
 - Desire to be able to teach about the coast with virtual field trips
 - Week of June 15-19th 2015

****If you have resources for either institute contact Sara or Kathleen. ****

Liz Baird, NCMNS

- Shad in the classroom and Roanoke River days.
 - 25-30 schools raising American shad
 - Part of restocking by WRC
 - It only takes 5 days to go from eggs to releasable fry
 - Restoration project keeps fish separate and release into Neuse and Roanoke
 - Trains teachers how to build nurseries and we take teachers canoe camping on Roanoke River
 - Do water quality sampling and macroinvertebrate stuff
 - Kids get the opportunity to count eggs, record data, maintain water quality, math, statistics, many grades participate
 - Watched the "its time" video
 - Videos are part of APNEP funding
 - "We are the River" was filmed for showing in the geodome
 - Teachers do extension on the project- including clean-ups and electroshocking.
 - Program is at max capacity in terms of availability to pick up and deliver eggs because you have to deliver to schools on same day
 - It is a project that could be replicated if another organization wanted to do it

- Application based, previous schools are given priority, but everyone has to attend training because some things change
- Other examples: salmon on the west coast, sturgeon in Florida, but the nice thing about Shad is the commission does the heavy lifting.

John McCord: Raised oysters at Cape Hatteras Secondary School and found that raising the right kind of food was the hardest part and 5 gallon buckets were effective.

Christin: Designed a polyculture system of raising fish, waste fed shrimp and marsh grass, etc. Received fry and raised oysters raised from eggs. Striped bass and pompano were the easiest and fastest growing. Interest in bass in the class.

Sean is interested in exhibiting the “We are the River” movie.

Jim showed a video project by Chesapeake Bay Program – A lot of potential for this kind of effort, engaging with people, done in a few days, turned around quickly. Engaging, great ending. APNEP has been encouraged by Policy Board to do more video. We have an interest to do this. Video link: http://www.chesapeakebay.net/videos/clip/chesapeake_unscripted_alexandria_va

APNEP wants an AmeriCorps member to be working on a shot-list.

Citizen science is also an area of interest for APNEP. APNEP historically hosted a Citizens Monitoring Network. At one point there were 70 monitors, but there has been significant attrition and APNEP is no longer actively soliciting volunteers.

The APNEP lesson plan database is searchable by grade, standards, etc.

Reconvened after lunch at 1:17pm

Jim encouraged the group to share new ideas/ initiatives that agencies are interested in pursuing as well as providing an overview of their ongoing estuarine initiatives.

Tracy Weidert, Office of Environmental Education

- AGOL, GIS for students to make connections with a river- turn into competitions between schools
- It would be cool to have students trace something from a river to an ocean like a drifter
 - NC State has special drifters
 - Deploy something trackable to show how watersheds work

Liz Baird, NCMNS

- Continue shad program and replicate it in other locations

- Could have shad tanks at State Parks, Estuarium, etc.
- The museum does lots of citizen science programs
- It is important for this group to identify who is the audience for this group- schools and teachers vs. the general public
- Internships- getting people in the field- teacher intern who hasn't had science background
- Meet the scientist live through video conferencing

Kendall Smith, USFWS

- Does mostly habitat restoration projects on private lands
 - Some reserved for school projects
- Involved in nature exploration classrooms
 - Consultants who help you design a play yard
 - Interest in being involved in more outdoor classrooms
- Placed blue bird boxes with video cameras at elementary schools 10 systems across the state- one is currently available if anyone has an idea in the eastern part of the state.

N.C. State School of Design has a natural learning initiative. Museum has nature play space at Prairie Ridge with many of those components.

Sean Higgins, NC State Parks

- Parks has a wealth of great facilities and land but not always enough time to focus on creating programs
- Society for Hispanic Professionals and Parks take middle school students to 8 state parks where they monitor water quality from Falls Lake to the estuary.
- Catch 'em cook 'em and eat 'em blue crab program- has lots of water quality and estuarine info sneaked into it
- With parks you need quick, interpretive ways to get people thinking
 - Example: Oysters bag tied to the dock to show that the water is loaded with critters

John McCord, Coastal Studies Institute

- Basic Observation Buoy (BOB) program has students learn about deploying them and collecting data to NOAA sponsored website.
 - Funding is needed to continue this program
- Interested in programs you can build on over time and over knowledge base. Fee based programs. Experiential teacher institutes? Strong programs that build by buy in from the teachers. Great teacher programs that are there, but with partnerships you can add to that.
- CSI is very interested in pursuing more teacher training, using research vessels to take teachers out
- Video is big, don't miss that opportunity and CSI has really nice equipment and abilities
 - CSI was able to monetize the video part of the education dept.

Christin Brown, Jennette's Pier

- Pier has been around 3 years, a lot of renewable technology programs
- Want to partner on more programs that incorporate different estuarine ecology
- Work with a lot of schools, want to do more lasting programs with students
- Interest in putting programming online in order to do virtual labs
 - <https://edpuzzle.com/> : powerpoint into video, make it interactive with classroom
 - <https://www.educrations.com/> : Online lectures
 - Learn how to build online virtual classrooms so that a program is lasting and can be used over and over

Sara Hallas, NC Coastal Federation

- Strives to connect people with restoration work driven by water quality
- Students visit restoration projects and do lessons leading up to this
- Field trip money is a must
- Desire to expand oyster programs and SAV program
- Continue oyster shell recycling program
 - DMF still is in charge of shell, need more funds.
- Florida group got big EPA grant and awarded Coastal fed \$5000 grant from mini grant from this
- Earth Fair OBX this year at Jennette's Pier hosted by N.C. Coastal Federation.

River City did LID program at Elizabeth City University with N.C. Coastal Federation.

Friends of State Parks have grants to get students to the park: YIP-EE grants.

Kathleen Gray, UNC Institute for the Environment

- Water quality teacher professional development
- Partnership with Goose Creek state park
 - Environmental education with 4th and 5th grade teachers to encourage them to get kids outside more has been really successful
- Is there a space or way to let each other know whats happening?
 - Office of EE – people sometimes don't have time to post to both their own websites and others, if you don't have time to post, send it to Lisa and she will post it. Good to use Office of EE website because they are connected with other states.
- Not as much professional development in coastal region as there used to be
- Subsets within big EE group to focus on certain areas?
- Minority students in outdoor education, grant opportunities for youth to better engage. Series by National Park Service about minorities connecting with resources.
 - EPA environmental justice grants.
 - Lack of minorities in environmental education.

- Outdoor Afro website- helping African Americans see each other in nature- Becky Brannigan at Duke is a good contact for this

Everyone applying for one grant could be clunky. Contaminants group broke into nutrients and metal standards/emerging contaminants. APNEP is willing to help facilitate these subgroups.

Lori Davis, NC Coastal Reserve

- Noted Estuary Live TV and potential applications for video outreach
- New citizen science possibilities for diamond back terrapin, bass in my class.
- Aquaculture is a 7 day week process. NOAA lab in Beaufort has aquaculture capabilities.

Amy Sauls, Teacher

- Workshops with Lori Davis
- Dr. Dan Rittschof project, provided teachers with field experience, had 4x number of teachers apply than the class could hold
- Lesson plans – if teachers don't know it, hard to justify doing it in classroom
 - Need a video to walk through activity
 - Demonstrations in a visual way for teachers
 - Success with Target to get field trip grants if you are a teacher. Doesn't matter if you live near a Target
- Teachers want to hear what scientists are doing, something to tell kids and take back to them.

Gloria Putnam, NC Sea Grant

- Adult education focus
- Engage citizens to monitor hydrilla, great data, great engagement
 - Want to expand this in Chowan basin and then into the Sounds
 - Used tablet with app.
- Watershed Stewardship Network, professionals that are trying to reach out to stewards, get people more engaged on that level
 - Coleen Karl wanted to get teachers and students involved with citizen monitoring. Retiring from Science House. Also engagement opportunities at Elizabeth City State University.

Dia Hitt, N.C. Aquarium on Roanoke Island

- 20 min program- focus on entertainment
- Sea to Sound program
 - Kids live on beach, but they haven't been to sound.
 - One school, one grade, want to expand that.

- Want to teach where the sound river comes from, work upstream in a river to sound to sea program.

Terri Kirby Hathaway, NC Sea Grant

- UNCG has Kathy Matthew's HERP Project which is an android app, they have tablets people go out and measure.
- Schools up north raise baby terrapins
- Maryland Sea Grant does teacher researcher program
 - Researchers have to hire teachers to do their research for the summer instead of a grad students
- David Sybert at CSI, Mano a Hermano literacy program with 3rd graders trains volunteers to work on language skills
 - Provides Flossie Flounder book in Spanish and English
- Seeds to shoreline program, EPA grant in SC
 - EPA money exists to expand program
 - Elementary students collect Spartina seeds, germinate them, year long
 - Terri will attend the training in February
- Teachers only use the activities that they did in Project Wet, Project Wild.
 - Really need a video tutorial for teachers, need the technical support when you may not be there.
- Scientific Research and Education Network (SciREN). Teachers can invite researchers to talk. Next one is Feb. 12th in Morehead City. A potential disconnect in SciREN, as most lessons are not field tested. For continuing education credits, teachers must follow- up with what they did, how they did it, have to do 3 lessons in order to get credit. Another potential way to get solid lesson plans is to have teachers write one lesson plan over a week long teacher institute.
- Family vacation service project, great idea, how do we market this?

Lisa Tolley, Office of Environmental Education

- Reported that Renee Strnad, Project Learning Tree and EENC, is very interested in community service projects and service learning.

State Parks publishes summer program brochures, which could include the family service projects in these and at visitor centers. A lot of agencies could market the family vacation projects together.

Joe Hawley, NC DPR, Goose Creek State Park

- Teacher workshop to show examples of wetlands we have in this area
- Programs on wetlands and naval stores
- Lots of school groups.
- Envirothon at Weyerhauser, teach at this
- A lot of opportunities available.

- Goose Creek has lots of longleaf restoration options, need help planting trees.

John Fullwood, NC DPR, Goose Creek State Park

- Host environmental field day every year
 - Different agencies come to Goose Creek
 - Every student in Beaufort County comes to park on this day
 - It would be great to have someone to represent the estuaries there.
- Start a watershed festival?
- 100th anniversary for parks= 100 volunteers to plant 100 longleaf.

Closing remarks from Jim:

- Does anyone have ideas for inviting folks?
 - Recommendations: Mike Campbell, Karen Clark, Pat Curly (EENC, CMAST), Jason Payner, National Parks- Cape Hatteras and Lookout, Division of Soil and Water Representative, Mickey Jo Sorrel, Troy Alphin (UNCW)
- Easiest way to get engaged is to sign up for list serv. Direct people to this on our workgroup webpage. Wanted to get a sense of what we are trying to do over the next few months.
 - What you want to engage in, who can support it
 - Jim wants to have a conversation about metrics and how to measure impact later.
 - Assess what general public might want and need and what teachers want and need.
 - What types of lesson plans are desirable?
 - Need a ranking system, a way for teachers to rate a lesson plan
- Value to being face to face. Pop-corning is easier face to face.
- Agreement that meeting 3 times a year is good and off season is preferable (spring, winter, fall)
- EPA models grant due date is Feb 2
 - Advice from Sara on EPA grants: you need one person to manage the EPA model grant, a lot of road blocks in administering mini-grants throughout different states, took a year to get contract signed. Talk to Florida about lessons learned.
- Concern of cross pollination of workgroups.
- Potential opportunities for National Estuaries Week.