



# Policy Board Meeting

## Albemarle-Pamlico National Estuary Partnership

10:00 am – 3:00 pm

April 30, 2013

NOAA Laboratory Auditorium  
101 Pivers Island Road  
Beaufort, NC 28516

### Draft Meeting Notes

**Members Present:** Tom Allen (ECU), Sara Benghauser (VA), Rhonda Evans (USEPA), Jennifer Everett (NCDENR, proxy for Brad Ives, Assistant Secretary), Wilson Laney (USFWS-Fisheries, STAC representative), Todd Miller (NCCF), and Willy Phillips.

**On Telephone:** Bill Cox (USEPA), Kirk Havens (VIMS, also STAC representative).

**Staff Present:** Dean Carpenter, Bill Crowell, Jim Hawhee, Jimmy Johnson and Lindsey Smart.

**Guests Present:** Marilyn Katz (USEPA), Troy Rice (Director, Indian River Lagoon NEP), Linda Pearsall.

#### **10:00 a.m. Call to Order**

**Todd Miller, Chair**

Todd called the meeting to order.

#### **10:05 a.m. Review/Approval of February Meeting Notes**

Todd asked for approval of the February meeting notes. Tom moved and Sara seconded approval. The motion passed unanimously.

#### **10:15 a.m. Welcome**

**David Johnson, Lab Director**

David noted that he is the director here, as well as at another lab in Alaska, but that is another story. David noted that the Albemarle Pamlico Sound has the greatest diversity of any estuary in the country. He noted that there are five marine laboratories located in the Beaufort/Morehead area, and the reason for that is because of the great biological diversity in the marine environment. It is a truly unique environment, even though that word is overly used at times, it is true in the present case. He welcomed us to the facility and indicated if we need assistance we should just ask.

Todd asked David how he would rank the health of this estuary, overall. David stated it depends on what parameter you pick, but the health of this one is much better than many of the urban systems. Of course, there is some impact from agricultural run-off and activities, but in general this system is much better off than many in the US. He asked Todd what he thought. Todd agreed and noted that the challenge is for us to keep it that way. David noted that there are constant challenges in terms of future

energy development and increasing human population. The reason people come here is in part for the amenities, and we are in danger of destroying it if we aren't careful.

Willy asked David what measure he is using for biodiversity. David stated it is simply just the total number of species present. The biodiversity is further manifested in the diversity and health of the fisheries present. He noted that when you go fishing in this area, there are as many as a hundred different species you can catch, depending on the time of year. People are attracted here for the resource, for the parks, and because it is an attractive retirement community. The attractiveness of the area is a takeoff on the extreme biological diversity of the area.

Todd noted that we were a bit ahead of schedule and asked that we do introductions. Everyone did so.

Bill Crowell noted that Timothy Baynes had advised that he would be absent, but he also had advised Bill that he needs to resign from the Policy Board. The Board will have to come up with some suggestions for his replacement. The Secretary made the initial appointment, but the Policy Board nominates the replacement. Bill stated that he has some candidates in mind, one of who would be Judy Hills from New Bern. Todd asked that anyone with suggestions send them to Bill within the next ten days.

**10:25 a.m. Public Comments**

**Todd Miller**

Todd noted that we had one member of the public present, but she didn't want to make any comments. Todd noted that we could open back up for public comments, if anyone else comes in.

**10:30 a.m. Director's Report**

**Dr. Bill Crowell**

Bill welcomed Lindsey to the program again and noted that the staff was very happy she is here. She is helping with contracts and also is proficient with GIS. She will be attending a Coastal Atlas meeting with Tom Allen next week along with some other folks. She also is developing a CCMP implementation tracking database to assist with tracking of ecosystem outcomes. Bill noted that he has a grand vision and so far hasn't told him that we can't do something.

Bill noted that he is spending a lot of time on performance review. We have a lot of reports to review this time, including the assessment report. The program review occurs every three years, and there is a specific set of questions which all the NEPs have to answer. Bill noted that they had completed all the answers and he anticipates the program will pass in all respects. He noted that we are moving into the implementation phase and so in some respects, the program is new. Bill noted that we are still getting used to the new administration. Bill noted that Sara had just driven in this morning. Brad is tied up in a legislative committee meeting.

**10:20 a.m. Implementation Committees Update**

**Jim Hawhee**

Jim noted that there are 58 identified actions in the CCMP. These are actions identified as needed for keeping our ecosystem healthy. They have grouped the actions and assigned them to various teams, which tend to be cross-functional across the CCMP, and contain related subject matter. Jim noted that 15 teams have been formed. He has been charged with working with four of the teams, and he named them (contaminants, infrastructure, two others). Each APNEP staff member will be leading and providing support for several teams. They will be looking for members with expertise in these areas and bringing them together to complete these tasks. Staff has taken on a bit of a lengthy exercise,

identifying potential members for these teams. Once they have lists, they will begin to look at expertise and finalize membership. Jim noted that we would hear from Kate Brogan later today about a social network analysis which was conducted for APNEP. That provided a rich dataset to supplement our institutional knowledge and has already been very useful for staff. Two of the teams are already up and running. One of those is the SAV Partnership, which Dean facilitates. Dean did a good job of tying in the CCMP objectives. Another group up and running is an oyster partnership, and Jimmy is covering that area. There are a couple of others, one of them being an Impact Development Group. Dean noted the Ecological Flows group is also up and running. There is an ecological flows advisory Board which reports to NCDENR. They are having issues with the coastal plain part of the ecosystem. At our last STAC meeting, Dr. Bob Christian asked that a group of volunteers get engaged in that group as well. Ecological flows is one action item in our CCMP. Dean, Wilson and possibly other STAC members will be involved in that effort, which is dealing with a very complex issue.

Jim noted that they hope to begin forming some of these committees, before the next PB meetings. Staff will serve as chairs or facilitators for these committees. Jim noted that they want to focus on how the components fit together and develop some EBM expertise. The Implementation Committee will have fifteen members, and two of them will come and sit on the PB.

Todd asked if the liaisons for the work groups had been run past the PB. No, not yet. Bill projected a table of the workgroups, and asked for expressions of interest from PB members. Bill noted that each work group has from 1-7 actions. Todd asked him to give some example actions. Bill noted that some of the actions may be grouped together and have a number of steps associated with them. Bill noted that there is a list of these. Some of the actions may be further along, than others. He noted that a variety of things could be needed. He noted that monitoring was something that wasn't being done too much now and is a need. Each of the Work Groups will chose a person to be on the Implementation Committee. That is the committee which will be brought back to the Policy Board in July for approval and forwarding to the Secretary. Beyond this, we need to consider the whole EBM picture. The Access Work Group needs to consider how their work fits into EBM. The same is true for the Restoration Work Group, for example they shouldn't be doing a project that just benefits ducks, it should also benefit water quality. Bill noted that some funding will be assigned to various workgroups.

Bill went through the various workgroups and noted the assigned Policy Board member.

Todd noted that we need volunteers for four of the work groups. There was some discussion of how to do these. Todd noted that they don't want to force volunteers; they want members who have some expertise in each arena. Bill concurred. He shared Dean's experience with the SAV Partnership. He noted the CCMP now provides some distinct focus for some of the work groups. He shared further about the oyster group. That group has been formed from a combination of three prior groups which were working in different parts of the coast.

Willy asked how much flexibility there is to change tracks. Bill noted that we want to be flexible. There is a fair amount of leeway in some of the actions, but ultimately, if there are funds to be expended, things have to come back to the PB.

Dean noted that the actions were formulated looking at the coming decade. The actions considered are the steps which had to be taken in the next 2-3 years.

Willy noted that he was largely thinking about the political climate and the need to be flexible.

Bill noted that if a grant becomes available, we should have the flexibility to apply.

Jim noted that his hope is if you get a core group of folks interested in the same issue, they will go after supplemental funding. Bill concurred. He noted that sometimes we can do things that don't require a lot of money. They may require more time. Bill noted that we recently put funding into a meeting in MD, where folks met to consider shoreline issues and permitting.

Willy noted that he was probably the most illiterate person in the room, with regard to following the actions, and asked that staff provide some sort of summary for future discussions.

Bill stated the staff has discussed providing a summary sheet, in the future, which has the work group and assigned tasks. Rhonda noted that the CCMP summary document helps a lot. Willy noted that he needs a cheat sheet. Rhonda agreed that it would be nice to have some summary sheet for each work group. Jim asked if Willy was looking for a one-pager. Yes, he is. Jim thought that was doable.

Bill noted that he also wants to do a sheet for each action, something at which we can glance to see where we are.

Rhonda noted that that EPA has three very active committees ongoing, and she named those. She indicated that she would like to be involved in those at a staff level.

Jim noted that they would welcome participation by EPA Regional Office staff, by telephone.

Rhonda noted that she would talk to several regional staff folks to determine their interest.

Bill turned to BMPs. Jim noted that a lot of the folks previously involved with that issue are interested in serving. Todd noted that there are some emerging issues with silviculture, which may bring highlight this one. Bill mentioned bridge mats, which could be built in as a BMP to reduce impacts.

Linda Pearsall noted that Wilson had mentioned that the USFWS National Wildlife Refuge System has new staff in their Inventory and Monitoring Program. Wendy Stanton, former Refuge Biologist at Pocosin Lakes NWR, has moved into the I&M Program.

Todd noted that he had some ideas about possibly combining some of these. He noted that we definitely need to discuss what the priority actions are. Bill noted that some of the "A" actions are tied to "B" actions and so forth.

Willy noted that Bill had alluded to several de facto work groups which are already functional, and Todd suggested some consolidation. Willy asked if there are other groups into which we may be able to tap. Yes, Bill and Dean noted that there is already, for example, a state ANS Panel into which we can tap. Todd noted that we definitely don't want to duplicate efforts. Bill noted that the existing flows group, for example, approached us. We will have to approach others about collaboration. Todd noted that many of these came from PB members.

Bill noted that later today we will hear from several of our interns who conducted various studies. One was a social network analysis and another focused on marine invasives. He noted that APNEP is trying to pull in students where we can.

Lindsey noted that she was going to review the completed projects first, then move to the ongoing ones. She noted that she has been here only two months, so asked that others chime in as needed.

Inventory of Significant Natural Areas: Tar and Roanoke river basins were targeted. The Roanoke River Basin was completed. APNEP is awaiting the final report for the Roanoke.

Enhancing Oyster Reefs in Tidal Creeks: The project targeted six tidal creeks, placed 40 concrete-coated crab pots and restored 1550 linear feet of habitat.

Jockey's Ridge State Park: 1,500 bushels of shell were placed and 725 feet of shoreline was planted with marsh grass.

Peatland Enhancement: Water control structures were placed at Great Dismal Swamp, two ditch plugs were placed at ARNWR, and groundwater level gauges were placed at Dismal Swamp.

Teacher Institute: 23 teachers from 6 different river basins in APNEP region came together for a 5-day summer institute.

Place-Based Education: This was one in several Hyde and Carteret County schools looking at blue crab habitat, monitoring and water quality measures. The project is focused at Lake Mattamuskeet and in the Newport River estuary.

Ongoing Projects:

Remote Sensing and SAV: NCDOT is acquiring and processing aerial imagery for 4 specified regions in the North Carolina sounds. A recent expansion in the scope of the agreement allows for delineation by NCDOT staff; the contribution supports the transition in FY 2013 to SAV monitoring using new technology.

Tree Planting at Dismal Swamp State Park: APNEP partnered with the park, Friends of the State Parks, the Lions Club of Elizabeth City and others to plant approximately 10,000 Atlantic White Cedars over a 43 acre parcel called "Bull North." The area received heavy damage from Hurricane Isabel and was then burned significantly by a forest fire. APNEP provided funds that covered the cost of the seedlings as well as staff time to help with the planting.

Jim noted that he can provide summaries of projects that provide more details for each of these grants. These are available upon request to PB members.

Lindsey showed a map of the 2012-2013 APNEP restoration projects. UNC-CH Institute of Marine Sciences is being funded for Bivalves and Seagrass: Improving Water Quality and Restoring Habitat. The project will restore a hectare of habitat in Pamlico Sound. The project will deploy 200,000 hard clams in two disturbed seagrass meadows in Back Sound (Oscar Shoal) and Pamlico Sound (near Lighthouse Bay).

Another 2013 project is Enhancing Oyster Populations in Tidal Creeks: UNC-CH IMS is also doing this one. The project employs a novel method for restoration of oysters. The method is partial burial of the oysters. It is believed that partial burial aids in stress reduction for subtidal oysters. The project will enhance oyster populations within five tidal creeks.

Water Quality Restoration of Alligator River, Long Shoal River and Pamlico Sound: The North Carolina Coastal Federation is the project sponsor. The project occurs on Mattamuskeet Drainage Association land in Hyde County, NC. The project is one high priority component of a comprehensive watershed restoration plan. Funds will be used to install one water control structure and support other project activities.

Hoggard Millpond Restoration: Mid-East RC&D proposes to restore a historical mill dam and install and manage fish passage through the reconstructed dam's stream blockage. It will protect habitat through the placement of a permanent conservation easement. The dam is being restored but passage is being provided.

Shad in the Classroom: This is a continuing project with the NC Museum of Natural Sciences. This project is designed to increase awareness of restocking efforts happening in NC rivers. It also develops a strong connection between schools and resource conservation agencies. Lindsey asked which hatcheries are involved. Wilson and Jim noted that the program involves both USFWS and NCWRC hatcheries in producing the eggs for use in the schools.

Bill noted that last year at this time, Melissa Dowland came and discussed this program with us. There are videos online which address the program. Bill noted that the program had received a nice note from one of the schools about how much they enjoyed the program. Bill noted that students not only learn about the life cycle of the shad but also have to monitor the water quality in the rearing tank.

Lindsey addressed other projects continued from previous years. These include: Basic Observation Buoy; a bookmark contest and USGS River Monitoring. Jim noted that the bookmark program had a lot of participation last year with 8,000 students participating and bookmarks provided to many libraries. Bill noted that they are having some problems with management of this project, but it still should occur. Jim noted that there was a winning bookmark, as well as district winners. APNEP is also supporting the maintenance of a continuous water quality monitoring gage on the Roanoke River. Bill noted that this is a collaborative project with other federal and state agencies. Bill noted that this is one topic the Water Quality Work Group needs to discuss. The gage in question is the Oak City gage on the Roanoke River.

Todd provided the PB with copies of a brochure on the Mattamuskeet Drainage Associate Watershed Restoration Plan.

Marilyn asked about the project cycle. Bill noted that right now the cycle is one year. He noted that there are some issues with the cycle and needed contract extensions. Fortunately in the last several years APNEP funds have come through in September so they have been able to grant extensions into October. It helps to get the award notice from EPA prior to October 1.

Rhonda noted that funding dates are based on when they receive their funds from headquarters, and it has been later and later each year during the past several years. Rhonda noted that the National Estuary Program grants are a priority. Bill noted that having wetlands work on the grants has really been helpful. Rhonda noted that they are very efficient getting out of their division, but once out grants

takes longer. If something is missing documents go to the bottom of their queue. A couple of years ago, a lot of changes were made in the process and it was a learning experience for them. The paperwork had to be changed and that caused some delays.

Bill noted that they are submitting this year using new forms which they were given last year. He will coordinate closely with Rhonda on submittal.

Rhonda noted they don't anticipate any major changes this year. It should be pretty much like last year.

Jim noted that having a mechanism to secure long term maintenance and monitoring is problematic. We can ensure that a BMP is built, but there is no effective way to insure that monitoring and maintenance are taking place. It is hard to fit it all into a one-year period.

Rhonda noted that once the funds are allocated they can do extensions. She noted a lot of the wetland grants are multi-year projects. A lot depends on how the state does their work. If Bill has problems, he should discuss them with USEPA.

Rhonda noted that they can do extensions on end dates. Bill noted that he has been asking for that for years. Marilyn noted that they can do that routinely. Rhonda noted that they can do extensions for up to seven years. Part of the issue is that it is administratively dependent to some extent on how the state manages the funds. The state can withdraw funds if an extension has been granted.

Bill noted that after our meeting today, we will have a field trip to North River Farms and visit the restoration project there.

**11:30 a.m. Working Lunch: Indian River Lagoon NEP**

**Troy Rice**

Troy noted that he was pleased to be here on the Program Review Team.

Troy gave us an overview of the Indian River Lagoon National Estuary Program (IRLNEP). The Indian River Lagoon stretches 156 miles from Ponce de Leon Inlet at New Smyrna Beach, to Jupiter Inlet near West Palm Beach in the south. They are also one of the most biologically diverse estuaries in the US. It supports over 4,000 species of plants and animals. It includes three water bodies and brings an annual economic benefit in excess of 3.7 billion to the five bordering counties. The values are in recreational expenditures, real estate value and jobs.

The program was established in 1990 and joined the National Estuary Program in 1991. They have 19 different federal and state agencies in their management conference including the US Fish and Wildlife Service, The Nature Conservancy, Natural Resources Conservation Service, Army Corps of Engineers, multiple counties and the Florida Fish and Wildlife Conservation Commission. They are housed with the St. Johns Water Management District. Their CCMP was approved in 1996 and updated in 2008. A lot of it is based on the Indian River SWIM Plan.

For them, seagrasses define the lagoon's ecology. They map seagrass annually. During the 1980's, 45 waste water treatment plants discharged over 39 mgd to the lagoon. As impervious surfaces increased in extent, more stormwater ran off into the lagoon. There have been efforts to remove the discharges from the lagoon. It was very expensive, but very worthwhile. The system is basically wind-driven with

little exchange so any deposited nutrients tend to remain there. Canals altered the natural watersheds. The canals were created by agricultural drainage districts. Freshwater discharged to the estuary has created a lot of the problems. Troy reviewed the impacts of stormwater on the lagoon's water quality. He reviewed the impacts of declining water quality: seagrass bed declines and declines in fish diversity. The issues are addressed via: district monitoring in water quality, seagrass coverage and overall health of the lagoon; cost-sharing infrastructure retrofits and BMPs such as stormwater treatment structures and facilities and partnering on habitat rehabilitation projects involving thousands of community volunteers.

Troy reviewed the TMDL required reductions for the three components of the lagoon. The reductions are pretty significant. If seagrasses recover and thrive, the total amount of the TMDL may not be needed.

Jennifer asked about seagrass planting. Troy indicated he would address that shortly.

They have implemented over \$80 million in projects to improve water quality in the lagoon including 70 construction projects, 25 planning projects and 20 environmental education projects. They have also funded a grant writer which has contributed to their success.

Troy reviewed the IRLNEP spending in 2011-2012.

They have installed a number of "baffleboxes" which are structures containing a series of sediment settling chambers separated by partitions that slow the flow of water and allow particulates to settle out. They have a fairly high maintenance requirement.

They have created stormwater parks in the watershed. He showed an aerial photo of a 166-acre park in Sebastian which use a treatment train approach to capture nutrients prior to release into the lagoon.

Another aspect of the project is the Upper St. Johns River Basin Project. It benefits the lagoon by restoring the historic flood plain. This greatly reduces the frequency and duration of discharges out of the C-54 Canal into the lagoon. Most of the drainage flows into the St. Johns River.

Troy reviewed the infrastructure improvements done in collaboration with multiple partners. This component entails a system of pumps and canals to route water back to the west into the St. Johns watershed. Treatment occurs in cells prior to delivery to the St. Johns. Ultimately, about 43 percent of the historic drainage will be restored.

Another improvement is muck removal from the lagoon. They have removed muck from some of the tributary creeks. The St. Sebastian River dredging project removed 2 million cubic yards of muck over three years. They plan further such projects, one on the Eau Gallie River. Todd asked how long it takes to dewater muck. Troy indicated it takes two to three years. The muck has to be stored in dredged material containment areas.

Willy asked what you are left with after the muck is dewatered. Is it like clay. Troy advised that it is hard and doesn't lend itself to much use although they have used it as a firing range backstop and for building berms. It is hard to get rid of. Jennifer asked about beneficial use studies being done by universities. Troy noted that they are looking for beneficial uses. Wilson asked about the recolonization of areas, once the muck has been removed. They have done some studies in collaboration with the



Smithsonian and find that both the benthos and fishery community do recover. The projects also benefit navigation as well. Todd asked about the size of the creeks in which they are doing these projects. They are mostly larger streambeds. Todd noted that we have lots of smaller creeks in NC with muck but it is hard to get equipment into them.

Troy reviewed the wetland restoration projects which they have done. More than 31,000 acres of formerly isolated wetlands impounded for mosquito control have been reconnected. A lot of this work has been done collaboratively with the USFWS. A lot of habitat has been restored over the years.

Another project is oyster restoration in Mosquito Lagoon. A public participation program has restored over 50 dead or damaged oyster reefs in southern Mosquito Lagoon. The project is labor-intensive, but has been very successful. Todd asked if the oyster mats have been documented in publications. Yes, by Dr. Linda Walters. They used to have oysters in the entire system but they are presently limited to the northern and southern portions of the system.

Other habitat restoration and protection projects have been done. Bird Island Protection was done in Martin County using oyster shell. They did a similar project on Pelican Island. They did another project at St. Lucie County SL-E Spoil Island Exotics Removal and Hydrologic restoration of an isolated wetland.

They have many education centers along the lagoon which promote the NEP and spread the message. Troy reviewed some of their specific education programs. One of their collaborators is the Smithsonian Marine Station at Ft. Pierce near the center of the system.

They also have an Indian River Lagoon license plate. Purchases directly fund projects that restore and protect the lagoon. They have raised around six million dollars through sale of the plates. None of the funds are used for salary or research. Eighty percent goes toward restoration, and the remainder for education and all is spent in the county from which the funds were generated.

They had a 2011 superbloom of algae which resulted in the loss of a lot of seagrass from the IRL. The causes of the superbloom were uncertain. Several factors may have caused the bloom: long-term drought conditions with increased salinities; extreme winters with macroalgae affected by low water temperatures; possible internal nutrient loadings in the IRL Ecosystem; and the lagoon may have reached a tipping point in terms of nutrient concentrations.

Seagrass was dramatically affected in the areas with the bloom, with up to 45 percent loss. In 2012, they had a brown tide bloom, which also had some impacts on seagrasses and clams.

Troy addressed invasives such as the lionfish. They are working with FL FWCC to organize some lionfish removal efforts.

Willy asked if they had considered changing indicator species since the seagrass die-off. Troy noted that the seagrass in some areas was rebounding. He noted that the recovery may depend on whether they have another bloom this summer. They do have a project funded to look at the cause of the blooms. They are also exploring seagrass planting but results Troy has seen haven't been that successful. Willy agreed it is quite a challenge.

Marilyn asked about human health impacts from the blooms. Troy indicated there haven't been any documented but they have lost many manatees. What is killing them has not been determined but may

be related to change of diet due to seagrass loss. Initial deaths in July revealed that the manatees had a lot of macroalgae in their guts. The animals died very quickly through drowning. Some bottlenose dolphins also have died but not as many. A couple of hundred pelicans also have died and those were very emaciated. They haven't seen any unusual water quality results which would explain the die-offs. Wilson noted that there had been a large horseshoe crab die-off a number of years ago and asked if they had ever determined the cause. No, they had not. Troy noted that there had been some horseshoe crab die-offs all along the east coast.

Jennifer asked if their fiscal analysis was available on the web site. Yes, it is. Jennifer asked what happens to the TMDL now that the indicator species has been lost. Troy noted that is an issue. He noted that during the second iteration of the plans it will be interesting to see what FL Department of Environmental Protection requires since the seagrass is gone. He noted he is unsure whether they will go to some numeric level or hope that the seagrass returns.

Todd asked if there was any indication that this sort of die-off occurred in the past. No. Troy indicated that they have never seen a die-off like this before in the IRL.

Dean noted that the APNEP staff has had some discussions about conducting an economic evaluation. He noted that the work groups will make some estimates of cost of CCMP implementation and he noted that it would be useful to have some idea of the economic benefits on the other side of the equation. He asked Troy about the benefits of doing such a study. Troy noted that they use the number a lot for media presentations. They have the number broken down into components as well. He noted that he had brought copies of IRL publications and asked members to please take them. He indicated that there has been value in having the numbers to back up the value of the lagoon's resources. They have also been able to calculate the economic losses due to the loss of the seagrass. Folks are very engaged and concerned about the impacts to the system. They are seeing more members of the public come to their meetings, than ever before in the past, and they want to assist. They are considering making new inlets to help flush the system out or using pumps to move the water and flush the system. If they do something like that it will improve water quality and clarity but will affect biodiversity as well. They may lose some estuarine species and gain some marine species. Todd asked if they felt nutrients were a contributing factor. Yes; nutrient deposition in combination with other factors may have caused the system to reach a tipping point. Todd noted that happened despite nutrient input reductions.

**12:20 PM: Todd asked that we break until 12:40 PM.**

**12:48 p.m. Staff Presentation of FY 2014 Draft Work Plan**

**Bill Crowell**

Bill noted that we could review any part of the work plan that we wished but he would like to focus on the new part. APNEP has aligned all the actions with the appropriate section of the CCMP. The budget we have is for the same amount as applied for last year per the recommendation of the Regional Office. Bill noted that usually they get budget guidance in February or March, but due to the sequester this year we still don't have any budget guidance. They are anticipating a 5 percent cut, which would be a \$30,000 reduction from the \$567,308 allocated for each NEP. Troy shared some additional information about the extent of the proposed cut. Marilyn advised that information was not yet official since it had not yet gone to Congress for approval. Marilyn noted that her office has not had any involvement in this. Nothing is yet official. There is a lot of uncertainty at present. Bill noted that they were told 8% percent, initially. Rhonda indicated that they can go forward for a lower amount, but if there is a

greater amount they will have to do more paperwork. Rhonda noted that they can make changes fairly quickly if needed. Rhonda indicated she would move forward with something in the range discussed. Bill noted that he knows where the cuts would be made, if the cut is in the 5-8% percent range. If it is greater, more discussion would be needed.

Bill reviewed the proposed budget amounts. He tries to keep Administration to about half of the amount. Willy asked what "longevity" was. Bill and Linda Pearsall explained. Bill indicated that both he and Dean qualify this year. Bill reviewed each line item of the budget and provided details of the proposed expenditures. Another APNEP symposium is planned for New Bern in the fall of the year. Bill noted that there were a lot of sessions last time and there were some complaints from participants. Citizen Science and Monitoring: they would like to integrate monitoring and public engagement, and make it broader. They want to acquire data to help monitor identified components of the CCMP. They want to find a contractor or a partner to run that program for us. They want to monitor a wider variety of things and/or pull data from other sources. There are existing monitoring programs from which we can pull data and we had an entire STAC meeting on these. We would like to have the data pulled and reported back to us. Willy asked if there was any flexibility in this. He noted that he had been opposed to Citizen Monitoring, since the beginning. He suggested that he would like to see these funds moved more to developing economic information. Bill stated that he would be okay with putting this off for another year to consider alternatives. Willy noted that he felt that we would find out quickly that we will need to access these funds. Bill noted that the Nature Research Center has recently hired a Citizen Science Advisor and he had hoped to meet with her prior to this meeting. Bill felt that having more time on this item would be beneficial to us. Bill asked if Todd wanted to spend more time discussing this now.

Todd indicated that we can be flexible. He suggested that we wait until the end of Bill's presentation for more discussion.

Bill stated that for Implementation Projects they would depend on recommendations from the Implementation Committee.

They plan to partner again this year with the UNC Institute for the Environment on the Teacher Institute.

The Shad in the Classroom project is worthwhile but they have budgeted half the amount from last year. The Museum can work with the \$20,000 but they can really use the extra funds.

For SAV monitoring, we have an ongoing contract with NCDOT and that will continue.

Indirect costs are negotiated between NCDENR and USEPA. The rate of 13.3 percent this year is higher than in previous years. The indirect costs do have benefits for the program, and Bill gave us an example in that the layout of the CCMP was done by NCDENR staff.

Todd noted that 13.3 percent was actually pretty low and asked if we had any idea what the actual costs were. Linda Pearsall noted that the Department recently lost two Divisions, Forest Resources and Soil and Water, so the costs did need to go up. Linda indicated that she would ask if there was a better estimate of the actual costs. Linda thinks that the overhead just covers personnel costs. Bill noted that it has also covered some costs of other items such as paper.

Todd and Bill noted that there are other aspects to the costs. He noted that staff will be able to keep plenty busy even under budget reductions. Staff also may need to spend time looking for other funds.

Todd asked for the top four or five priorities for this next year. Bill stated, getting the Implementation Committee and Work Groups up and running and determining targets are all priorities. Once we have the targets, then we can put efforts toward them. We need to have the targets and the indicators. Todd clarified that each of the Work Groups would have to develop priorities as well. Bill concurred.

Todd asked if there was any more background before we discuss things further.

Bill stated that he needs to spend some more time considering ways to lump implementation.

Todd asked how much more funding Shad in the Classroom needs. Bill indicated we could probably go up to \$30,000. Jim noted that the museum has contracted with a videographer, Art Howard, to do some work and have paid for part of that amount. Jim noted that they have indicated that they can make do with \$20,000 if they have to do so. At \$30,000, they could probably keep all the schools participating.

Wilson noted that we could also consider using other species, such as American eels, for example. The advantage over shad is that we wouldn't have to worry about genetics, since eels are a panmictic population and could be released anywhere. There would be some costs associated with developing a new curriculum. Bill had talked to others who use eels and noted the students like them, but the teachers don't.

Bill and Jim have discussed with NCDOT the potential for getting some APNEP signs for posting on highways within the state. The initial target would be Interstate highways. Bill noted that he and Brad have discussed the costs and they are getting varying estimates. Willy Phillips noted that he has to pay an annual costs for his signs.

Todd noted that Willy had brought up some good points. Todd noted that we should be able to throw some gas on the fire if we are able to partner with existing groups. One thing we have to consider is the timetable, by which the funds need to be obligated. Bill stated they hope all the work groups will be set up by July. If the funds are received in October, we should be able to consider funding requests by the November meeting.

Willy noted that the budget is a moving target and there may be a few bumps in the road between now and then. He urged getting the Implementation Committee together as soon as possible, and maintaining as much flexibility in the budget as possible. He suggested combining the \$70,000 from Citizen Monitoring, with the \$120,000 of Implementation Projects, and maybe giving Shad in the Schools the extra \$10,000. Jim noted that we need to consider how we need to tackle something on the scale of a citizens monitoring network. We would need members of the Monitoring Work Group and the Education and Outreach Work Group, to collaborate on that one. Bill noted that we still have a lot of uncertainty in regard to the funding.

Rhonda stated that we should keep the bottom line amount the same, for now. Bill asked if there is any advantage to going ahead and applying for \$600,000. Rhonda noted that was only an additional \$3,000 or so. Bill asked if there was any advantage to being able to say that there was an impact on the NEPs. Marilyn noted that the cut for the agencies would this year consist of the sequester, a rescission, and a

“tap.” The combination of those is as yet unknown. She was hoping that there might be some increase for the NEPs. That is as yet unknown. She really doesn’t know at this point.

Marilyn noted that one thing she recommends is to really prioritize for this coming year. The President’s budget for next year asks for \$600,000 for each NEP. They have been told that the sequester will carry over into next year. Their staff levels have been reduced to 1991 levels. The commitment to avoid staff reductions doesn’t hold any more. She again stressed the need to really focus and prioritize major areas of emphasis from the APNEP perspective.

Rhonda stated that moving the Citizens Science and Monitoring into the Implementation Projects was a good move to maintain flexibility.

Todd noted that not all of the work groups would necessarily come up with good projects.

Marilyn suggested that we should also consider ways to best demonstrate on-the-ground results. Also, APNEP is an accountable program, so the on-the-ground focus and accomplishments should be highlighted. Leverage will make the program stronger. APNEP has terrific science as its foundation and is building partnerships. Marilyn suggested that we should go with these general principles and build on them.

Troy suggested that in the APNEP cover letter they should identify where cuts will be taken, so Morgan (EPA staff person) can make those quickly and submit the paperwork quickly. Marilyn agreed that there needs to be an analytic, systematic approach. It should not be arbitrary, given what you have and what you know your agenda is, going forward.

Bill noted that he can do that for Morgan.

Todd indicated that we are moving the \$70,000 to the Implementation Projects and moving \$10,000 to the Shad in Schools. Bill noted that any cuts would therefore come from the Implementation Projects. Willy moved and Tom seconded the motion to make those changes. The motion passed.

Todd noted the question about the Citizen Monitoring was a really big one. He suggested that we may want to convene some groups that are most interested in that aspect of work. He suggested that we take this one head on and see where it goes with the discussion. Bill stated again that they want to meet with the Museum staff to discuss this with them.

Bill indicated that they would work to set something up on this. They will invite some outside folks as well as anyone else who is interested. Todd noted that we want to make sure that we have some success. Bill noted that some citizen monitoring programs have worked well. Some groups got really involved but some of the programs would be difficult for our region. His view is if it isn’t meaningful and doesn’t contribute to the greater knowledge of the CCMP it isn’t useful.

**1:00 p.m.      Discussion of Draft FY 2014 Work Plan (Action Item)      Todd Miller**

**1:36 p.m.      Social Network Analysis of APNEP      Katherine Brogan, Duke University**

Jim Hawhee introduced Kate to us. She is finishing her Masters in Environmental Management at Duke. She did a project which was designed to be done by four or five people. She took a conceptual idea and

really fleshed out and developed a very useful product for us. She is highly motivated and well-spoken, and has taken a position with the National Estuarine Research Reserve program here in Beaufort.

Kate gave us her presentation on Social Network Analysis of APNEP. Kate briefly reviewed the program. There are multiple issues: implementing communication directives; need for partnerships; better understanding of regional environmental network; and improving capacity to reach target audience and partners. She noted that having a better understanding of the network in the region can really benefit APNEP in identifying new partnership opportunities. She noted the benefits of using social network analysis: understanding how information from APNEP travels through the stakeholder network, identifying isolated organization or geographic areas, and informing management strategies.

Kate explained Social Network Analysis concepts. Nodes are individuals in the APNEP region. Edges are connections between nodes. She defined Key Players as well.

Kate administered a number of surveys. She began with a list of 182 individuals, and employed a snowball sampling method. Responses formed nodes and edges. She analyzed the results with SNA package of R software. She received 121 responses.

Kate reviewed the sector-level trends. Virginia and NC often occupy separate clusters in the network. NGOs and government agencies tend to be isolated from each other, so that is an area for improvement. Academic institutions are also somewhat isolated in their own sectors.

Kate also looked at network components. There were some isolated institutions which also could be better integrated into the program.

Kate also looked at betweenness. The biggest dots in her network were from APNEP staff, the UNC Coastal Studies Institute, and NC Sea Grant. Degree centrality was also assessed. This assesses individuals and their connections to others.

Kate also looked at the geography of the connections. Activity centers identified were Raleigh, Coastal NC, Virginia Beach and Norfolk, VA, and Silver Spring, MD and Charleston, SC.

Kate identified her challenges. The network is incomplete, i.e., Kate is pretty certain that her survey didn't include everyone involved in the program. The reach and response rate of the survey was only about 20 percent. Initially, there was a limit of 8 contacts, so this imposed a limit on the results.

Finally, Kate gave some recommendations to the program. These were: evaluate available software programs; expand the network; develop appropriate metrics for implementation; and consider future student projects. Kate stated that an expanded project would make a good Master's thesis, and also it could serve as a baseline for assessing change.

Bill noted that the other students are presenting their projects here next week in the Duke auditorium. There are two other students who were APNEP interns as well. Bill noted that it was a real pleasure to work with Kate.

There were a number of questions for clarified some of the points she had made.

Jim noted that there are probably over a thousand individuals who are involved in one way or another in APNEP. One area on which he wants to focus is getting local officials more involved.

Wilson noted that there are some entities that are benefitting APNEP, but aren't really integrated into the program. Jim and Kate noted that there are some components of the analysis who are very far away, in the western US, and/or overseas. Jim noted that he would like to find a way to do such an analysis every few years. Jim noted that there are names associated with these points, but they weren't publicized.

## **2:00 p.m. NEP Program Evaluation & Site Visit**

**Marilyn Katz, US EPA**

Marilyn greeted everyone and thanked everyone for their hospitality. She noted that she was going to give us a brief description of the evaluation process and then describe verbally what some of their conclusions are.

The impetus for the Program Evaluation came about in the mid-1990's. There were about 11 other programs which came into being around the same time as APNEP. The PE goals are: determine the CCMP implementation progress and determine eligibility for EPA funding. It employs a logic model framework. It evaluates major elements of CCMP implementation, including program management practices and ecosystem status and trends work plan core elements. It is self-reporting and employs an EPA PE Team review. The Review Team includes a representative from headquarters (Marilyn), the coordinator from the Region (Rhonda), and an independent, ex-officio reviewer (Troy in this case). Team members bring: NEP-specific knowledge, Region-specific knowledge of ecosystem and policy issues; experience, technical knowledge, insight of another NEP Director; and knowledge of EPA national policy issues, and perspective about NEP-wide CCMP implementation.

Marilyn reviewed the PE benefits and uses of the PE. They summarize how the program has done on challenges identified from the previous review (in this case, done in 2009). The PE's highlight the environmental results of NEP efforts and demonstrate how NEP actions contribute to improvements in water quality and the condition of living resources. The PE fosters an in-depth dialogue between EPA and the NEP about progress made and about challenges that need to be addressed. The PE provides an opportunity for stakeholders and partners to show EPA their on-the-ground projects which support CCMP implementation. Information from PE reviews about lessons learned is transferred to other NEPs and other watershed programs and informs EPA strategies for advancing Clean Water Act goals.

It is possible that during a PE an issue is identified that indicates an NEP is not meeting the terms of its cooperative agreement and could thereby serve as a basis for withholding annual funding from a Program.

Marilyn noted that there has been heightened interest in HQ during the last several years. They have been able to provide a lot of information which has come out of the reviews. The reviews are also an opportunity for the NEP to learn more about EPA, as well as EPA to learn more about the program.

Marilyn indicated that she wanted to briefly summarize the preliminary findings from their review. They have some preliminary conclusions and some questions for staff. They will discuss these during the next 1.5 days. They also have talked to Dean and Bill. They think the program has made strong progress since 2009 and in fact looks like a different program. This has been done without a lot of turnover in program staff. The staff has really turned things on their heads and is moving the program in the right

direction. This is in part due to the strong science which is on paper, including the ecosystem assessment now on paper. They really like the ecosystem-based management approach which is the underpinning of the documents and how the program will proceed. Marilyn noted that they are very taken with the social media strategy, and are not aware of any other program which has taken that approach. It represents an entrepreneurial spirit and appeals to the younger generation of people. That is a positive and unexpected development which they haven't foreseen. Marilyn noted that another NEP director had said she was afraid of social media because she was concerned about crank comments and the need to respond to them. The partnerships seem really strong as well, even though there are also other opportunities for further partnerships. APNEP also has a very dedicated and committed group of stakeholders. There is a lot of commitment and dedication in the documents and the way people interact with the staff.

Marilyn noted that Bill had identified the major challenge of translating the new CCMP into action and you are on the way, by taking the approach to the formation of the Implementation Committee and work groups. They will see more of that during the next review. Rhonda will be reviewing the Annual Work Plan. She believes the work with local officials and efforts to reach out should continue. Another challenge is to get the assurance from major partners of their commitment and dedication to continue in the program. The more support major partners can provide, the better off the region will be.

Marilyn noted that if any of her team partners have anything to say, she wants to turn the microphone to them. She noted they appreciated the opportunity to learn more about the program.

Rhonda noted that she has been working with the program for about a year and a half now. This one is different in terms of its large size and its nature. She noted that she hoped she will be able to contribute more as the program moves into implementation. She would like to get as involved as she can, given the travel limitations. She noted that she can get creative with travel and keep costs really low, and she does have a cousin in Raleigh now. She noted that she would be supporting Bill Cox and hoped that we would take advantage of his knowledge and skills. She noted that the Water Division would be very willing to help coordinate with other EPA divisions.

Troy noted that he would like to echo what Marilyn said. The assessment is a very readable and useful document, as is the CCMP. The SAV mapping assessment which has started in the last three years is also very impressive. They plan to employ some of the same indicators which APNEP has adopted as well.

Dean noted to Troy that he would like to talk to him about setting up some interim monitoring sites which are boat-based.

Bill noted that they are glad the EPA staff will be with them tomorrow as well and will be meeting with others here and back in Raleigh tomorrow. Bill noted that they are only seeing one of the river basins.

Bill noted that they had provided a map of the APNEP projects, which highlights the fact that they are spreading them around the geography. Bill noted that he was glad they could hear Kate's presentation as well. Bill noted that her results were very affirming, in that they can see the connections being made, and they hope to do this again. Bill noted that Sara has the lead for the Virginia part of the watershed.

Marilyn noted that she hated that Sara had to leave early, and she will make sure that the point is made about the need to have full commitment from all the partners.



Bill noted that with the new CCMP, and assessment, it is just like staring over again. There is a need for a lot of assessment, and a lot of steps. There are a lot of actions which are needed to make sure it all happens.

Marilyn noted that she has worked on a number of NEPs. One went through a complete change and had to be reauthorized by the resident state, and completely re-doing the CCMP. The program decided to cut itself off from its past history. It wasn't to their advantage to do this in terms of getting buy-in from stakeholders. She noted that she was glad to see that APNEP wasn't cutting itself off from its history and she viewed this as a positive.

Marilyn noted that the transition to the new CCMP had been managed quite nicely.

Bill noted that the program has had good relationships with the EPA Regional Office especially with Bill Cox.

Marilyn noted that she had mentioned yesterday, or this morning, the question of whether they would have an onsite review. The national office was in favor of it, but it also had to be affirmed by the Regional Office, in view of the sequester. Bill Cox was contacted. There were two other reviews in Region 4, this year, so this one was a question. Bill Cox was very strongly supportive of doing the full review and having it onsite. The NEPs in Region 4 are some of the strongest programs, given the habitat which gets protected and the water quality benefits. Bill is a very strong advocate of the NEP.

Bill noted that he wanted to make sure that Marilyn reports that USFWS and NOAA have been very instrumental partners in the NEP. Don Field of NOAA and Wilson Laney from USFWS, and others have been very supportive. They have also made contacts with a number of the NWRs. Also, they are building the relationship with the USDOD.

Marilyn noted also the partnership with the NERR as well.

Todd noted that he looks forward to the final report and hopes that there will be nothing dramatically different.

Linda Pearsall noted that it was a lot of work to get the CCMP and the assessment done. She is hearing from others in the Department that they find the reports amazing and there are plans to use them as models for other programs. Linda noted that Bill has not shown up with many bruises, either.

Todd asked for other questions.

**2:30 p.m. Old & New Business**

**Todd Miller**

Todd noted that he wanted to take a few moments to discuss the Living Shoreline Workshop and note how it plays into the program. He noted he also had a good photo of Jimmy in his presentation. Todd noted that the workshop was sponsored by a number of partners. There is an interagency workgroup which includes a number of federal partners, USFWS, USACOE, etc., which deal with coastal wetland issues around the country. One issue which popped up was the living shoreline issue. This has been discussed for twenty years. Todd's presentation was "Living Shorelines=Living Coast." Todd noted that he had summarized this at a meeting in Camp Lejeune last week. The Corps Wilmington District has made living shorelines a priority.

Todd summarized some of the findings for us. He noted that these are from his perspective representing the North Carolina Coastal Federation and have not been proposed or endorsed by other partners. About 45 people attended the workshop, many from the headquarters of federal agencies. The idea was to look at what is happening in various states, and determine if more consistency can be generated. They also wanted to make sure they were complying with the provisions of the Clean Water Act. Todd's findings: estuarine shorelines are among the world's most ecologically and economically valuable natural habitats; both ecological, and economic values are high; laws and programs have not been able to protect the habitat; bulkheads give the illusion of providing long-term protection to property but are not as reliable as other more natural means of shoreline stabilization; selection of best methods of shoreline stabilization should be based on site conditions, landowner needs, and what is practical to do; bulkheads are seldom the preferred environmental option and they cause long-term environmental damage; programs for estuarine shorelines vary greatly from state to state, but are evolving in an attempt to promote the preferred environmental alternative; there is a need to develop more standardized management methods, designs, cost, permit standards, and institutional structures for management purposes; privately funded shoreline management projects need to rely on proven technology; leadership and guidance from policy makers are critical to provide agency staff that design and permit shoreline management with adequate institutional support; sea level rise, heightened storm damage and on-going waterfront development are not going to make things easier. Recommendations: need to reaffirm that it is a national imperative to make management of these areas a priority; national principles for estuarine shoreline management that are consistent with the Clean Water Act and other key federal environmental laws; estuarine shoreline management should be based upon a hierarchy of options; large public landowners such as DOD should consider instituting such a hierarchy on shorelines they manage; a national repository of information needs to be developed; formal training opportunities for agency managers, contractors, and other stakeholders need to be routinely offered; management impediments to environmentally sound shoreline management need to be eliminated, and institutional capacity to manage shorelines enhanced.

Todd noted that it was gratifying to him that APNEP has offered support, sent Jimmy to the meeting, and supported N.C. Coastal Management representatives to attend. One of the big issues is coordination between the state and the Army Corps of Engineers with regard to how to regulate these. The Colonel is willing to help promote living shorelines in the southeastern U.S. Todd noted that just a little bit of funding makes a big difference.

Jimmy noted that after the presentation at SERPASS, the conversation continued the next day at the Onslow Bight meeting. Several military staff members were interested in applying living shoreline principles to military property. Linda Pearsall noted that Camp Lejeune also has some extensive shoreline as well.

Todd noted that some of the regulatory questions need to be addressed as well.

Jimmy noted that one thing that came out of the Edgewater meeting, with regard to MD and VA, is that in both those states less than 20 percent of projects use living shorelines. Jimmy noted that the presentations were excellent.

Todd agreed and noted that the Smithsonian gave a presentation on a big project in Chesapeake Bay. They showed that where shoreline stabilization has been done, the ecosystem is less functional.

Wilson asked Jimmy if anyone from the ASMFC Habitat Committee was present at the workshop. No, they weren't. Wilson suggested that he and Jimmy could carry the word to the habitat committee and get the information distributed widely in the 15 Atlantic coastal states.

**2:55 p.m.      Notice of Next Meeting**

Bill noted that the next Policy Board meeting will be in Greenville. Various Policy Board members will be contacted about the Implementation Committee.

**3:00 p.m.      Adjourn**