



**Albemarle-Pamlico National Estuary Partnership**  
**Wetland Resources Monitoring and Assessment Team**  
**Imperial Centre for the Arts & Sciences**  
**Rocky Mount, North Carolina**  
**10:00 am – 3:30 pm**  
**February 22, 2017**

**Meeting Notes**

**Attendees:** Rick Savage (Carolina Wetlands Association), Ginny Baker (NC-DWR), Melonie Allen (NC-DMS), Bo Dame (Chowan University), Mike Schafale (NC Natural Heritage Program), Travis Wilson (NC-WRC), Kirk Havens (VIMS), Michelle Henicheck (VA-DEQ), Brandon Puckett (NC Coastal Reserve/NERR), Kim Matthews (RTI), Dean Carpenter (APNEP), Stacey Feken (APNEP)

Rick Savage introduced himself and discussed his background and history with the former NC Department of Environment & Natural Resources wetlands team. He is now President of the Carolina Wetlands Association. The team then did roundtable introductions.

Dean Carpenter gave an introductory presentation entitled “APNEP’s Wetland Monitoring and Assessment Phase I (2008-2010) and Pre-Phase II (2011-2016)” [Copy of presentation available from APNEP Wetlands Monitoring & Assessment Team home page.]

Dean indicated that this is one of seven APNEP monitoring & assessment teams slated to begin Phase II, this being the first so it is the “guinea pig”. It’s been six years since the last round of meetings for Phase I. Rick, Mike, and Kirk were involved with Phase I.

Michelle asked about the utility of the wetland program plan for North Carolina. Does the plan answer the questions? Rick replied that he thinks the team should review the plan and see what can be accomplished. APNEP’s plan and that plan are not necessarily the same and we should make sure that goals are aligned.

Dean indicated that East Carolina University professor Dr. Mark Brinson (now deceased) led Phase I.

Rick discussed this team’s next steps, which are to review and refine the list of potential indicators. He provided an example of member expertise would be John Stanton’s (US FWS, not present) assistance with birds.

[working lunch]

Dean reviewed the spreadsheet of potential indicators that was previously distributed to the team. These wetland indicators were those thought to be the leading candidates by the

Phase 1 team in 2010. Ginny asked whether those with orange or yellow labels were a higher priority. Rick and Dean said they were the same.

Rick asked how the team wanted to proceed with establishing priorities?

Dean suggested that the team review the list of candidate indicators and see if the team is comfortable with the list. He stated that before final approval by APNEP, there is a need for a commitment by partners that an indicator will be monitored over the longer term.

Kirk Havens asked for clarification on whether Dean was asking the team to go through each group of taxa (e.g., mammals, herps, birds) and agree on whether the list captures indicators.

Dean clarified his proposal for the team is to go through the list for general agreement and then go through a prioritization in terms of when to roll the indicators out. What are the top five wetland indicators?

APNEP will be holding an ecosystem symposium in November and staff would like to roll out an updated ecosystem assessment at that time. As new indicator data become available, new assessments will be posted thereafter, rather than a report compilation every five years. The 2012 APNEP ecosystem assessment targeted the technically-inclined manager, thus it is of an intermediate level of detail (i.e., between an assessment for the general citizen and that of the scientific community). APNEP would like to expand the assessment's scope in 2017-2018, including the development of a citizen's report card. Stacey has been evaluating reports produced by other NEPs and Chesapeake Bay.

Kim showed an example from the Georgia coast.

Dean suggested that after indicator selection, identify which partners are the logical leads for particular metrics, get commitments for monitoring, etc.

For prioritization, which ones do the team want to do first? Develop a defense of that indicator.

Two-step process: 1) examine the list and come to agreement, 2) go through and recommend the top five indicators.

Rick led the team through the list, starting with mammals.

Travis was curious how mammals would be incorporated, as they are not typically included as indicator species. Dean clarified that while the mammal species are expected in wetlands they may be monitored by multiple teams. Kirk said Travis has a good point: do we think an increase in wetlands will have an impact on black bear populations, or their presence/absence? What about species that actually remain within wetlands, such as muskrat? Dean clarified that these mammal species were placeholders for things the team was considering in Phase I.

Mike wondered about other species such as bats, rather than habitat generalists. Are we comparing apples and apple seeds? Are the different levels of hierarchy okay? Could expand and become complex very quickly.

Kirk: whatever suite of indicators are picked, we should think about how populations will change if we restore wetlands. Dean: The indicators should be responsive to stressors.

Travis noted the differences between presence vs. indication of the health of the ecosystem.

Ginny asked if at this stage we are considering feasibility and cost, or will these aspects be considered during next stage? Dean said the latter. Are we concerned with wetland quality or just estuaries...e.g., riverine wetland and proximity to estuarine system vs. isolated wetlands further up in the system? Dean suggested that the team should either consider indicators for the entire basin at once or select subsets as pilots. Rick suggested that wetland type be set aside for now. Michelle asked if we were voting on which ones are important to have (e.g., mammal communities vs. salamanders that depend on vernal pools).

Mike asked for clarification about the logic of listing indicators under certain dimensions (for example, under Dimension 2A about species versus Dimension 2B about habitat).

Kirk asked if certain classes of wetland experts could be tapped...give them specific instructions. For example, tidal vs. non-tidal and what should be monitored to determine health of wetlands. Mike suggested that it depends on who has the data, and at some point we must consider costs.

Ginny...DOT...roads...mitigation...is that being incorporated? Dean said that through risk assessment, if we know of any area highly susceptible to stressors or change then we could start there first.

Rick suggested...Travis/WRC work with colleagues to whittle away at certain groups, Mike do same with vegetation and plant communities, Ginny for water quality. Landscape ecologist take wetland proximity issues. Need consistent structure.

Travis noted you take the chance of rewriting what was done in Phase I and potentially developing completely different indicators.

Dean explained that the format used for the 2012 ecosystem assessment included whether data were readily available. Also must consider how the indicator is being monitored? Kirk suggested also asking the experts to include what they think is a stressor now and indicate whether or not it is being covered. If no one is doing anything in a certain area, the APNEP Policy Board could step in and add funding to make sure a certain area is covered.

Kim asked if we want to prioritize before subgroups go back and evaluate.

Kirk asked if wetlands began degrading then which species would be the first to go? Mike suggested that this would be a good way to look at it.

Brandon asked how often this team would meet. Dean said once every six months but could meet via phone and exchange over email in the interim. The group agreed to take a few minutes to review the spreadsheet and identify any candidate indicators that can be removed.

Mammal community structure: Rick asked why river otters? Mike said that they were down on their luck and are probably fine leaving as an example under mammal community structure. Travis thinks the team should shop around to WRC biologists and see if any other mammals would be a better fit.

Birds: Bo asked if rails, piping plovers, etc. were sensitive? Dean believes that for USFWS those four listed were indicator species. Bo mentioned that wood ducks may be just as important for forested wetlands. Travis asked whether the use of data outside of APNEP program area is a limiting factor. For example, red knot (shorebird) is a species where something could be done in program area alone. Kirk said he ran across same issue in Chesapeake Bay program.

Herpetofauna: Mike, ephemeral pool breeders in A-P region. Mike thinks of saltmarsh snakes as rare species, etc.

Invertebrates: Target is wetland-oriented species. Ginny raised an index for herpteflora and to check with WRC for a list of indicator species. Travis said that there are two coordinators and biologists for this area for aquatic non-game species. Most of their work is on invertebrates.

Wetland mapping. Fine to keep, move to habitat dimension. Wetland plant condition index. Dean propose move "rare presences" indicators. Mike said need to have somewhere, maybe in stressor category.

Saltmarsh dieback? Are we seeing it here? Mike thinks that we do not have much, mostly needlerush. Bo has seen what could be marsh break up starting in oligohaline marsh. Hummocky topography...not call dieback yet. Questions of whether dieback or water level rising and sedimentation not keeping up.

Dean will make suggested changes.

Habitat management. Floristic quality or FQAI. Stay under habitat? Yes. Wetland community representation. Pocosin accreting sediment, elevation keeping up with sea level rise. Brandon: lot of surface elevation table infrastructure on coast, if being realistic use what is there.

Bo: example of what show to public....wetland loss through time...permitted or overall...due to erosion or other factors.

Invasive species: *Phragmites*, alligator weed. *Hydrilla* will be included in the SAV Monitoring & Assessment Team. A suggestion was made to generalize the list to include others. National Wetland Condition Assessment (NCWA) has a list. Need to crosswalk with the Invasives Action Team, their current focus was to come up with a list.

Nutrients/pathogens. Remove?

Kim asked if something missing?

Ginny said she saw a lot of wetland dieback during the NWCA survey...woody vegetation.

Rick suggested the team select the top five. Statistician....chi square test.

Kirk does not feel comfortable with narrowing the list until experts weigh in. Suggests the team picks class, birds, herps, etc. but not individual species.

Dean said integration team in Phase I did a two-class prioritization (yellow and orange).

Rick said we would need help and made team assignments to further refine categories.

Mike will take on any that have NC Natural Heritage Program has listed.

Rick assigned vegetation to Mike and Bo.

Travis: indicator type vs. specific species...e.g, mammals, herptofauna, aquatic macroinvertebrates. Before coordinating, focus on data that we know we have or data we're committed to funding and going to get.

Kirk: envision a conceptual model of what healthy wetland should be. Then identify what needs to be modeled, then what is being modeled, then identify gaps.

Mike thinks there is a need to add some guiding parameters, reign scientists in, make sure good ideas do not flounder.

Kirk: goals not sacred, may be unable to control any of it or even make a policy change, need to consider.

Wetland connectivity: Kim

Ginny: permitted wetland loss and restoration. Michelle help with Virginia data. Also impaired landward migration, there is a permit type.

Melonie: restoration

Ginny suggested the water resources data would be very important for estuaries and asked about other teams. She said it would be good to know what the other teams are doing. Need to touch base with team members not here and see how what they are doing fits in.

Mike suggested sending out a template for the responses. Dean suggested the monitoring strategy form. Dean will modify and send to the group.

Dean listed the other APNEP monitoring and assessment team and mentioned they would need to crosswalk.

Discussed checking in May to see what status is. Dean hoped to have a list to bring to policy board by July. Rick suggested using common sense.

The group discussed tentatively meeting sometime in summer, with perhaps a conference call or webinar in between.

### **Course Map (March to July 2017)**

- Team members will research assigned ecological indicators or indicator groups (e.g., taxa), including the identification of major stressors/factors influencing their dynamics.
- Team members unable to attend the February 2017 workshop will provide feedback on Phase I/pre-Phase II indicator classification (spreadsheet format).

Based on compiled team research, members will strive towards identifying the top five indicators to begin work on their assessment.