

**Science and Technical Advisory Committee  
Fall Meeting  
Albemarle-Pamlico National Estuary Partnership  
November 30, 2017**

STAC Members: Burrell Montz, Rua Mordecai, Jacob Hochard, Pete Kalla, Michelle Moorman, Bo Dame, Greg Taylor, Jud Kenworthy, Lee Bodkin, Timothy Goodale, Kirk Havens, Wilson Laney.

Guests: Rick Savage (Carolina Wetlands Association), Christy Gianopulos (NC Division of Water Resources, Rachel Hart (USEPA Region 4)

APNEP Staff: Bill Crowell, Dean Carpenter, Jimmy Johnson, Stacey Feken, Tim Ellis, Kelsey Ellis

**Call to Order – Dr. Burrell Montz (STAC Co-chair) | Welcome and Introductions | Approval of Winter (February) 2017 meeting notes | Meeting objectives**

- Burrell Montz welcomes new and old STAC members. STAC is up to full membership now and 10 of 11 members who had terms that were up re-enrolled.
- Approval of Feb 2017 meeting notes – notes approved.
- STAC in-person meetings are generally held semi-annually, used to be held quarterly but changed with recognition of action team and monitoring & assessment team (MAT) participation of STAC members
- Agenda today – staff/STAC exchange in morning, then selected topics and presentations by guests and STAC members with discussion and emphasis on possible actions. MAT representatives will provide updates on their status.

**APNEP Staff Update and Member Reports – Dr. Dean Carpenter, APNEP**

- Dean Carpenter – thanks everyone for coming. Looking for exchange of viewpoints, STAC is an independent advisory committee. Very little overlap between this meeting’s members and previous meetings, may be some repetition.
- Diagram of EBM cycle – learning by doing. Reminder that APNEP’s adaptive management cycle is simple, four steps – assess, plan, manage, monitor. Planning function was CCMP that was produced in 2012. Articulated goals and desired outcomes; touched on indicators and showed some candidate measures but never decided on what those measures would be. This is the immediate charge for our monitoring and assessment teams – deciding on indicators. STAC members are assigned to at least one MAT.
- Showing all MATs and calendar of meetings. In 2017 APNEP kicked off four of the seven teams; we anticipate the remaining two teams to meet in Jan/Feb 2018.
- MATs are helping derive indicators and do assessments – started the process with the 2012 APNEP Ecosystem Assessment. Once we identify core indicators for respective MATs, teams will say what we can say about that measurement now and how we can better measure it going forward.

- 2012 Ecosystem Assessment – interim regional ecosystem assessment. No focus on what is good/bad, what is changing. Phase 2 is beginning to think about diagnosis, phase 3 is forecasting what will happen.
- DPSEr Modeling – generic estuarine system model. MATs are helping APNEP develop this model with regard to their particular ecosystem outcomes. Want to eventually bring this model into one that incorporates socioeconomic parameters, etc.
- Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico – example of effective monitoring strategies that we are looking at.
- Dean: any questions? No questions.
- Role of action teams – implementing CCMP. Actions are not too prescriptive or specific; they were created by an EBM Transition Team that included staff and other representatives. Idea was that action teams would delve into the topic in more detail and help APNEP decide where to put resources in the near term.
- Chart of action teams and CCMP outcomes/actions assigned to them. Another timeline/chart of action teams, staff leads, and meeting timelines. Action teams are key mechanisms to implement strategic plan.
- STAC documents 2017-2018 – Action Plan for 2016-2018, bylaws, review protocol. Bylaws are posted on APNEP website, *others Dean will send out to STAC members*. Notion of technical issue papers as a vehicle to bring the science to managers and stakeholders. Talked about this at the February 2017 meeting – STAC developed issue papers in 2008-2009, we talked about updating them (posted on APNEP website). They advocate for a change in the status quo. APNEP is still interested in STAC developing more content and if members have some ideas right now...last meeting we talked about examples – harmful algal blooms, riparian buffers. APNEP is also thinking about doing an RFP on four themes – would be for some team to do an intense literature synthesis about things going on in the region, would be peer-reviewed.
- Dean: any questions? Burrell – any timeline for completion of goals by MATs and action teams? Dean: yes, near-term objective for MATs is to select five to ten indicators respectively of which each team feels comfortable committing to long-term track and monitor. That is their charge near-term. APNEP as an NEP gets periodically reviewed as part of a program evaluation – spring 2018 will be APNEP's next review. Last review was 2013, one of the challenges was to accelerate the development of indicators. Feel disappointed that APNEP hasn't gotten to that point yet; charge right now is to get that done. That's one of APNEP's main elements in learning by doing – are we making a difference in the environment and why. During the upcoming program evaluation, it's desirable that we can state each team's core starting suite of indicators.
- Michelle Moorman: Are there going to be overlapping indicators and how will that be handled? Dean: Priorities will be communicated to relevant teams, it's incumbent on the STAC to make sure that communication happens.
- Jud Kenworthy: It's possible some MATs will identify indicators that are important but not currently monitored. How will that be addressed in the assessment of where the indicators are next year? Dean: MATs have been instructed not to be bound by what data is already available. This goes to the importance of working with managers and policymakers, we basically must show how indicators map to APNEP outcomes. In the

CCMP there are goals, under those are more specific outcomes, under those outcomes are our indicators. We just educate managers/policymakers.

- Jud: So they'll appreciate the feedback that this is important. Dean: Yes, and MATs will start to develop thresholds, what population size/water quality parameter/etc. is desirable for a healthy system. Then APNEP can say that the scientific community suggests this is our objective and during the next decade they suggest a feasible advancement toward that objective.
- Rua Mordecai: If a MAT is pursuing something that isn't currently being monitored, should they choose a backup that is available and doable now? Dean: You have experience with this, it's a constant challenge, MATs should consider that approach. Rua: It might be good to have that mindset, so that if the MAT comes up with indicators that aren't measurable, would be good to complement that with things that we can measure currently. Bill Crowell: While it's important for APNEP to list what we desire as our indicators, if APNEP isn't monitoring it we can't give an assessment. So there is a need to have surrogates, where we can state that this is what we'd like to be monitoring but we're monitoring this instead.
- Dean: Continuing with APNEP staff briefings for now, then MAT leaders will provide updates.
- Bill Crowell: Welcomes STAC members and Rachel Hart from the EPA. Busy fall for us, November 1 was the APNEP ecosystem symposium, about 200 participants. Feedback has been really positive – only negative feedback is that people wish they could have attended more of the sessions. Trying to do this every two years, hoping that next year APNEP can have a more focused workshop on things the STAC is doing. At symposium we signed a memorandum of understanding (MOU) with North Carolina Department of Environmental Quality (DEQ), Department of Natural & Cultural Resources (DNCR), and Virginia Secretary of Natural Resources. APNEP wishes to utilize this MOU – we're talking about doing a wetlands inventory of shared basins, identifying fish passage issues, data sharing activities. MOU is on the APNEP website home page. If you have any ideas for ways to be involved...
- Kirk Havens: While the Virginia governor is changing there remains many of the same staff, working on a structure where there are people identified within each agency to work on this, will help track implementation of actions. First meeting hopefully will take place before the holidays. That group will work with APNEP and counterparts to implement shared actions on these waterways. Feeling positive about it, I think we'll see some partnerships. Also trying to coordinate activities with Regions 3 and 4 of EPA.
- Bill: In addition, there's the Roanoke River Bi-State Commission. Been struggling for a number of years and we're hoping this will help give them something to push them forward.
- Bill: Also, on November 9 Governor Roy Cooper signed a new Executive Order for APNEP. Since 1994 APNEP has had an executive order authorizing us under our host organization. Policy Board will change title to Leadership Council, including a few new members: at-large member from Virginia, reaffirming Policy Board members who want to serve on Leadership Council. The STAC's name remains the same, STAC members will get an email seeking their affirmation that they wish to continue serving. In the coming

year, STAC will reaffirm bylaws. APNEP will also get to move forward with establishing an Implementation Advisory Committee – new process for getting members to that. Action Teams, MATs, and from those teams we'll be recruiting for the Implementation Advisory Committee. The IAC will work with members of action teams to take projects their team has chosen and determine which get funded and if they can work with other partners to get things funded.

- Michelle Moorman: How many projects does APNEP fund annually? Bill: not sure, recently APNEP has funded more smaller projects, you can see funded projects on our website, a few line items like Shad in the Classroom, Teacher Institute, everything else falls into implementation projects. The idea was estimating about \$20,000 per action team initially – APNEP might actually post a request for proposals (RFP) for focused projects because the partnership has some extra money. APNEP's Ecological Flows action team has project underway. An estimate of 10-12 projects across APNEP currently.
- Bo Dame: Are other projects multi-year? Bill: APNEP has always had a project expiration date of one year – get the money in October and must spend it by the end of September. Very difficult to do with RFPs. A product of the last cooperative agreement with EPA, they're running it out through five years which is really helping project management . Staff can budget/contract beyond the end of the federal fiscal year.
- Bill: We plan to start moving forward with MATs in 2018. Also have program evaluation, will submit a packet of information up to EPA headquarters. We will take EPA evaluation team on a tour, show them the region, have them meet with partners. A reoccurring issue for APNEP is lack of autonomy – DEQ right now has been very supportive, new executive order places us within the secretary's office. Deputy secretary has told staff that they will move to secretary's office. Being independent of any particular division within the department is really helpful. This administration seems to better understand that we're not DEQ, we're APNEP.
- Bill: Getting ready to start risk-based vulnerability assessment of CCMP. Will be using MATs and action teams as pool of partners to give feedback. We'll be bringing in outside facilitator to team meetings to discuss actions assigned to that team and how climate change will affect those actions. Need to go through formal documentation process. In theory APNEP is midway through CCMP implementation so we need to evaluate that document anyway. Climate change is throughout our CCMP – we consider it to be one of the stressors.
- Stacey Feken: We have been running a “Sound Reflections” feature throughout 2017, this year being APNEP's 30<sup>th</sup> anniversary. In addition to the Soundings blog, staff want to do more featuring of what our partners are doing, particularly on technical issues, want to feature STAC members more. *If members have anything you want us to share on social media, if members have anything you want us to write about, just let staff know – reach out to Stacey/Kelsey or tag us in a post.* Dean and Bill both mentioned the action teams – although two action teams, Restoration and Policy/Economics, haven't kicked off yet, staff is discussing the focal issues and we'd like member input – *look at actions assigned under each team on APNEP website, think about issues/potential*

*projects/existing projects/resources in the region – let us know thoughts and feedback.*  
Any questions? No questions.

- Bill Crowell: The NCDEQ deputy secretary has taken an interest that APNEP has a STAC – there are a number of issues for coastal North Carolina that DEQ leadership is interested in receiving scientific input. The state’s Scientific Advisory Board is dealing with GenX issues on the Cape Fear, but there are other issues in which they are interested such as fisheries and nutrient strategies.
- Rachel Hart: Upcoming program evaluation, vulnerability assessment. There is a national NEP/EPA meeting in early 2018. At one point we had talked about getting APNEP on the agenda about some National Aquatic Resources Survey (NARS) monitoring, but we can talk more about that later. Meeting is in Washington, DC.
- Dean: National Coastal Condition Assessment – APNEP did a lot of monitoring for this in 2015, staff recently received permission to access the data. EPA’s core objectives were to say something about the nation and multi-state region with a high level of certainty. APNEP staff did an intensification to get the same level of certainty for the Albemarle-Pamlico Estuarine System. Data is becoming available and will do analysis – how did the intensification help APNEP? We anticipate a lot of those parameters being used by the MATs as well.
- Michelle Moorman: Who will be in charge of crunching the data/writing the report?
- Dean: Tim Ellis and I will be involved. Potential to do this on an annual basis rather than tackling all every five years. Merit to breaking it up and doing it a bit at a time. Lead agency for collecting the core survey data in North Carolina was Division of Water Resources staff.
- Rua: Is this extra data going to be merged with the NARS data on the website or is it going to be a separate package? Bill: That’s my understanding, will be packaged with NARS data. Rua: Would like to acquire that data for the South Atlantic Landscape Conservation Cooperative (SALCC).
- Michelle Moorman: Is the data in the water quality portal? Peter Kalia: No, you access it through the NARS web pages. It’s just for the partners, it isn’t fully accessible to the public yet. Once the partners look at it, it can go out to the public. Dean: There’s also a discussion of rolling out data for individual parameters as they finalize data quality checks rather than holding it all back.

#### **APNEP Priority Indicators Update – Dean Carpenter**

- Dean Carpenter: This is a good opportunity to share what everyone is doing in their world, that’s what you received at 5pm yesterday because of my last-minute appeal. Highlights just provided for STAC members, not on website. Overview of meetings and activities since last meeting. Questions? No questions. Overview of upcoming meetings. Dean: Still worth doing? Pete: Yes!
- Dean: Staff will meet with STAC executive board in December or January – will focus on developing an indicator evaluation workshop. May require a two-day exercise. Will evaluate indicators chosen by all MATs together. Then it will go to Leadership Council and managers to evaluate. We also evaluated the indicators through the policy/management process in Phase 1 (Pre-2010). Then we’ll design a monitoring

strategy, set up ambient monitoring system to track if we're making a difference in the environment.

- Michelle Moorman: There are indicators we'd choose where the data is available through partners, realistically though, is there a need to kind of bin things? If we come up with 5-10 indicators, should we bin them into those that we can already monitor or maybe need a little extra monitoring. Out of the 5-10, how many should we already have data for and how many are aspirational? Dean: 5-10 were just to get started. At SALCC, they have three. Five isn't a ceiling, just a starting point. Then figure out monitoring strategy for those, data gathering, assessment strategies. Michelle: Would it be useful if we prioritized indicators? Dean: Those 5 are the priority in the near term. Ideally what I was envisioning the five are the priorities / challenge team to work with network
- Rua: nothing stops a MAT from saying that their focus is on a few, not five or even one, it's just a boundary for the group/Pete made point not a lot of funding available for monitoring / Bill: should be part of discussion of what is realistic / also consider citizen science, will citizen program provide an answer with which we are comfortable?
- Bill: Would like at least one we can go to now whether actual or surrogate. / Burrell: As MATs identify, what is a priority for one may be secondary for another, think useful to identify aspirational
- *Michelle: As MAT team leaders should try to finalize indicators / try to have by the next STAC meeting? Action item? YES*
- Tim Ellis has been working on formatting master list
- Dean: STAC co-chairs will be completing their second terms in mid-2018, bylaws state that is the maximum, hence the need for new leadership  
Talk with exec board of STAC to recruit new co-chairs/Wilson and Dean recruit new nominees - will send out email, would like to identify earlier in year so there is a time for a smooth transition. Leadership is co-chairs plus exec board / 2018-2020 serve / Thanks to those STAC members who presented at APNEP Ecosystem Symposium : Sid, Michelle, Jud /staff will distribute a survey for feedback
- Sid Mitra: Concurrent sessions? Time constraints? Way around? Challenge to select because with interesting sessions / hard to do if not have multi-day symposium Bill: Less tracks than previous no keynote / unique multi-disciplinary
- Sid suggests that instead of choosing a theme, nesting within, a science, educational, within each session have interdisciplinary within each session structure that way. Bill: explained staff tried didn't always work out that way.
- Dean: A reminder there is an action team addressing emerging contaminants, any other member interested would be welcome. Sid convinced Burrell to get involved.
- Bill: North Carolina has set up a contaminants workgroup / ChemX in Cape Fear basin / Sid plan on approaching people that there may be concerns in other watersheds.
- Feedback from technical leads of MATs:
- Rick led the Wetlands MAT last February- good meeting, made good progress/ charged with set of preliminary indicators, not work very well, people forget over time even with reminders. Try to meet again in January, try concentrate on 5-10 indicators and go for



it. Tough, everyone have favorite indicators. Members have experience, need to get past.

- Jud: SAV MAT: provided team with action items, Jud hasn't seen composite from Dean, need to do aerial survey with NCDOT every five years, footprint has shrunk, third cycle (2018) will be smaller because of issues with water clarity in Currituck Sound. Areas can detect / inside OBX / also working on setting up sentinel monitoring network within estuarine system / side scan sonar/ quadrats. Probability sample / Jud: understand other coastal program use SAV as indicator, integrates several features impact environment, should we go next step monitor those variables or let SAV tell story? Not have monitoring / optical water quality model Chesapeake Bay / is considerable interest in developing something like that in Albemarle Sound.
- Bo: low visibility / drones? Is that Reide Corbett? Dean: Reide's is a relatively new project with Heidi Wadman / USACE in Currituck. Current work on sentinel network is with Joe Luczkovich at ECU. Dean reached out to Reide to see their protocols.
- Bill: SAV has MAT and action team / will be sending out survey based on feedback from members that are on both more efficient to meet together/ split into morning and afternoon sessions.
- Jud: accomplishments over past few years: statewide rapid assessment survey completed / low salinity systems SAV protocol. Extremely dynamic subject to climate / precipitation runoff / river flows / all lead to water quality especially optical water quality / next step understand optimum signature period apply indicators / terms of time of year.
- Michelle: Water Resources MAT met in June / fun icebreaker / identify things we value about water / threats to the system. Left meeting with list of candidate indicators that Dean and Tim will compile / team revisit. Sid: incremental progress forward / doesn't happen often at meeting. Cool word cloud from intern Jasmine. Suggest fun ice-breaker.
- Wilson: Aquatic Fauna MAT met in Rocky Mount during October, good meeting. Good attendance. Brian Boutin (TNC), Chad Boyce (VA-DGIF), Larry Eaton (retired DWR) / expertise on estuarine IBI (Index of Biotic Integrity). Todd Ewing (NC-WRC) / will be assistant chief of inland fisheries for division will have representation from aquatic biodiversity group. Erick Fleek (NC-DWR)/ estuarine biomonitoring/overlap but with MATs and STAC as integrator. Jason Rock (NC-DMF). STAC members Jesse Fischer, Erin Fleckenstein, Joel Fodrie did not attend, nor Judy Ratcliffe (NC-NHP). Looked at original list of indicators from 2008 meeting, reality check. Tim Ellis: all teams 250 indicators on table / 2017 down to a list of 100 plus associated metrics which leads to 200. Reduce potential candidate indicators by about half. Wilson: Example: Striped Bass: iconic species whole coast / Maine-NC / subregional indicator / may work with Virginia in Chowan River Watershed. Current monitoring only in Roanoke. Spawning / strong recreational fish American shad. Reinitiate sampling in tributaries. Tim next week in Virginia serving on the Alosine Task Force, he will participate, issue of shared monitoring in two watersheds topic for that meeting. Optimistic but hard to link aquatic fauna to causal factors. For example, commercial landings respond to other

things besides environmental factors. Still optimistic go through suite of indicators come up with right list to monitor.

- Dean: have to plan upfront / collective efforts of all partners in basin reflective of outcomes trying to make change / difficult relationship shouldn't kick out an indicator / still beneficial to try and track and show collective stressors. Burrell: can at least show trends / falls in aspirational category. Not just an ecological issue also human issue, human dimensions.

### **STAC Participations on APNEP Action Teams and Monitoring and Assessment Teams – Burrell Montz**

- Reminder to all members of the importance of participating on APNEP action teams and MATs.

### **Waters of the United States (WOTUS) Rulings Past and Future: Impacts on AP Wetland Resources Vulnerability (working lunch) – Rick Savage, Carolina Wetlands**

- Started with Rapanos Decision in early 2000's – wetlands weren't under WOTUS since they weren't connected to navigable waters
- 4-4-1 Supreme Court decision – 3 opinions written – Kennedy's opinion was that what determined whether wetlands were associated was if some "significant nexus" was established – some connection has to be made
- So it was up to the EPA and Corps of Engineers to determine what that meant
- NC quickly came up with rules to protect wetlands and passed them – for the state, isolated wetlands were still jurisdictional
- In 2015, EPA decided they needed to make things clearer – wouldn't make a difference to NC because we were already doing all that
- Outgoing NC DEQ Secretary Van de Vaart praised planned repeal of the rule
- Planned rollback to Scalia opinion – minority opinion
- For NC – nothing will happen anytime soon, but what will permittees do in the meantime?
- Scalia was looking for visible evidence of the navigable waters – but wetlands can be dry for part of the year. Headwater wetlands provide spawning habitat, but physical connection isn't always physically obvious. = fewer wetlands would be protected.
- Isolated wetlands are critical habitats for amphibians, fears that more species will be added to endangered/threatened species list as a part of this
- Wetlands affected: headwater forested wetlands, pine flats, small slope wetlands/seeps, intermittent streams, depressional wetlands, pocosins, bottomland hardwood forests, wetlands that don't have permanent connections
- It was going to be hard to tell in the growing season where the water ends and land begins = you're going to lose a lot of wetlands
- What can we do? – continue pushing hard to get the public to understand the value of wetlands. Language biases us against wetlands – getting swamped, bogged down.
- March – National Wetlands Month



**Assessing Amphibian Diversity in Isolated Wetlands of AP Coastal Plain – Dr. Jeffery Humphries, NC Wildlife Resources Commission**

- Presented by Kristie Gianopulos
- How does amphibian diversity compare between different wetland types? Natural open canopy, natural closed canopy, restoration, and mitigation wetlands
- NC ranks among the top in amphibian diversity; many species have declined dramatically and continue to decline
- Restoration of open canopy wetlands by NC-WRC
- Mitigation wetlands are meant to replace lost wetlands due to development, but are often very large, not necessarily replacing the small wetlands that are lost to development
- Open wetlands created by frequent fires, long hydroperiod
- Amphibian diversity was highest in open-canopy and enhancement sites; community quality was lowest in re-establishment/mitigation sites
- Specialist species were more tied to open-canopy natural wetlands
- Re-establishment/mitigation wetlands were large and always had fish, and planted with trees, and do not replace what was lost from smaller, isolated wetlands
- Restoring small wetlands can, over time, play a major part in creating metapopulations

**An Evaluation of Aquatic Macroinvertebrates in North Carolina's Natural and Restored Wetlands – Kristie Gianopulos, NC Division of Water Resources**

- Macroinvertebrates provide the food source for many animals; they also can be good indicators of pollution or stress on the system
- How do different restoration techniques impact/affect aquatic biota?
- Wetland species tend to be generalists because conditions change so much from year to year – hard for specialists to survive
- Recommendation – mitigation that somehow incorporates pockets that are able to dry out. Amphibians really rely on fish-free, seasonal wetlands. Mosaic – amphibians need undeveloped upland areas. Uplands tend to be a liability because they don't earn any credits. Mitigation design needs to be revamped a little bit.
- What's good for macroinvertebrates is not necessarily good for amphibians and vice versa. Because of that, emphasizing that we need a mosaic of hydroperiod, wetland, etc.

**Reflections on Wetland Presentations – Dr. Wilson Laney, USFWS**

- Mitigation in the way we have defined it and constructed it is a myth – makes us feel good
- Earlier presentations show that there are ways through restoration to increase value of wetlands for amphibians and other species
- Still, because of things that are administratively expedient for agencies – big blocks replacing little wetlands – are losing biodiversity/species richness on a local level
- SALCC Conservation Blueprint needs to be implemented
- We're still losing wetlands – worst loss was in the Southeast coastal area
- Thoughts as STAC members? Tools at our disposal – white papers, recommendations to Leadership Council, etc.

- Rua: questions of extent, structure, arrangement...opens up some interesting technical questions about are there arrangements between smaller isolated wetlands and the surrounding area...ecosystem services – maybe smaller wetlands help lower flooding risk more than larger blocks?
- Wilson: I agree, lots of ecosystem services to consider.
- Bill: As a federally funded agency, if we're going to use wetland extent as an indicator, what are we going to call wetlands?
- Peter: Call them by an ecological definition, not a jurisdictional definition.
- Rick: There are jurisdictional wetlands and wetlands – our concern is wetlands. For policymakers and developers, they're concerned with jurisdictional wetlands.
- Wilson: Gets us back to ecosystem-based management...I agree, we should use an ecological definition.
- *Action item: continuing discussion of wetlands issues and how they relate to APNEP*

### **Introduction and Update to NRCS – Coastal Zone Soil Survey – Greg Taylor, NRCS Soils Division**

- Submerged soils
- The same pedogenic process that occur subaerially also occur subaqueously
- Coastal zone soil survey – why? If USDA is going to serve the taxpayer, let's provide information where the taxpayer lives – along the coast
- Connect FEMA map to NRCS soil surveys – will it flood? Will it subside?
- Restoration stability, where does the sand go, change due to sea level rise
- Acid sulfate soil mapping, blue carbon sequestration – what soils and where have the greatest storage/potential?
- Need to fix flood risk maps – start with bathymetry – mapping subaqueous soils
- Remote sensing, side-scan sonar, etc.
- Result – where you once had water mapped on a soil survey, you now have soils mapped under the water
- Swan Quarter – first area to be mapped in the Albemarle-Pamlico region – have topo/bathy. It will allow us to have “growing pains” before expanding our survey area
- First phase – going to make parts that have been already mapped more accurate. Second phase – focus on subaqueous areas formally mapped as water. These areas will require boats equipped with vibracores as well as cool storage for cores.

### **Public Comments and Action Items – Dr. Burrell Montz**

- Burrell Montz – any final comments? Action items: members of STAC continuing MAT/action team participation, discussion of wetlands gets us thinking about where we need to move with that, any other comments or questions?
- Dean Carpenter – *will get Doodle (scheduling) poll out soon, meeting in early March timeframe, focus will be finalizing technical evaluation of suite of indicators*
- Michelle Moorman – does that mean that all MATs should meet before the next meeting or do we need to get everything done virtually? Can we push the STAC meeting later?

- Dean: That depends on what your team thinks. Bill: Needs to be completed before program evaluation in March
- Stacey: Wetlands discussion is a good example of the kind of thing STAC can give guidance to action teams in terms of what to focus on and how to act.

**Adjourn**