

**Engagement and Stewardship Action Team**  
Albemarle-Pamlico National Estuary Partnership  
10:00am – 3:00pm  
December 11, 2017

*Museum of Natural Sciences Nature Research Center  
4<sup>th</sup> Floor Conference Room, 121 West Jones St., Raleigh NC*

**DRAFT Meeting Notes**  
[Meeting Materials](#)

**Welcome and Quick Introductions – Stacey Feken**

- Roll call and introductions:
- Via phone: Holly White, Town of Nags Head; Lori Davis, NERR/NCCR; Dia Hitt, NC Aquarium on Roanoke Island; Kendall Smith, USFWS
- In person: Melissa Dowland, Coordinator of Teacher education at NC Museum of Natural Sciences; Lisa Tolley, NC Office of Environmental Education; Lauren Daniel, State Coordinator for Project WET; Pat Curley, Director of Science House at CMAST; John McCord, UNC Coastal Studies Institute; Sarah Yelton, UNC Institute for the Environment; Dana Gillooly, NC Museum of Natural Sciences; George Matthis, River Guardian Foundation; Gloria Putnam, NC Sea Grant; Lilibeth-Serrano, USFWS; Jimmy Johnson, APNEP; Kelsey Ellis, APNEP; Coley Cordeiro, APNEP; Bill Crowell, APNEP; Jen Schmitz, Triangle J Council of Government
  
- Melissa Dowland: Quick show of hands, how many meetings have people been to before? Ranging from 1<sup>st</sup> meeting to 4+ meetings; trying to gauge group's level of knowledge about the team.
- Stacey Feken introduces Melissa Dowland as Team Chair, thanks APNEP staff for help with meeting
- SF: Quick overview of program initiatives
  - o APNEP Program Initiatives Update
    - New NC Governor's Executive Order, MOU with Virginia, APNEP Symposium, Action Team roll outs, Monitoring and Assessment Teams and indicator development

**Meeting Goals and Objectives: What do team members expect? – Melissa Dowland**

- MD: Meeting goals. What are we all hoping to accomplish today?
  - o To make sure everyone understands APNEP's work and the team's role within APNEP's larger mission
  - o What does APNEP look like on a bigger scale and how do we fit into that picture?
  - o Spending a little more time working collaboratively in groups – look at what's going on in this region, what are gaps we can fill?
  - o Start the process of figuring out ideas that can be some specific projects to help fulfill goals for the region
  - o Anything else that you all are hoping we can move on today? Anything to add to that list?
    - Lisa Tolley: NC DEQ is looking for EE – lost EE when NC DNCR split. Have lost a significant amount of EE because of that transition. Now looking at possibly some new initiatives tied to schools, focused on water quality, water quality testing, looking at Project WET. Maybe there are ways to promote/utilize other programs? What are APNEP's needs and how can we tie into a new initiative? River Basin program has been very popular with teachers. Looking to revamp/repackage this program, provide water quality testing kits to schools, promote project-based learning. Ideas that coincide with that, new funding sources that could support that.
    - Pat Curley: At CMAST, one of the challenges in eastern NC is he's focused a lot of work/effort is providing professional development for teachers, funding for professional development is drying up – focusing on how to make those workshops more effective – have to give them a lot of bang for their buck. Have become a GLOBE partner on the coast, partnering with Lauren for Project WET/GLOBE combined workshops. More partnerships, more ways to collaborate/coordinate what we're doing to make them really effective for teachers. Expanding algal water quality program.

- Bill Crowell: What do you mean by money drying up? PC: Not as much as there used to be, teachers are being very careful with how they spend that money. Onslow Co. won't let teachers go to any professional development, have to bring it to them afterschool/on weekends. Getting great response from nonprofit org, etc. Girl Scout Academy, Boys and Girls Club. Bill Crowell: decisions being made at principal level? PC: Superintendent level.
- Gloria Putnam: My audience is not educators. Want to see how we can bridge that gap a little more. Also getting involved with NOAA-Sea Grant focus groups, one is citizen science focused. Has been working on shoreline issues.
- George Matthis – NC Aquatic Data Hub effort. Bringing citizen science to water quality monitoring – putting out standards that everyone can use. Different tiers of effort that can be used in different ways. More emphasis on this now than there has been bc funding has fallen off from the state, so citizen science groups are stepping in to pick up the slack. Huge educational component associated with that, folks are collecting data as an educational opportunity. Going to be training in the spring – train the trainer. Lisa Tolley – Is there a need for NC DEQ to spearhead a branding of the water quality citizen science program, combines NC Aquatic Data Hub and Gloria's interest in reaching non-educators. Is that needed? GM: Think it is needed. John McCord: APNEP program, buoy program from a few years ago. Education-grad buoys funded for a couple years. Finding synergies with parallel projects is important. Finding opportunities to work together so we're not working in concert.
- Lilibeth Serrano: Some aquatic species going through evaluation for protection at the federal level. Some way to combine human component with the science, what people can do to protect these species.
- PC: To add on, I don't know how familiar you are with project GLOBE. International monitoring program that is NASA-sponsored. Training and protocols are already in place, using international standard. Can access data being collected throughout the entire world. Online symposium for kids where they can submit data, create their own science fair project. Looking for something that can be used, would be nice to collaborate on a particular standard. Fits with NC Aquatic Data Hub. LD: Online modules to learn these protocols? PC: Yes, lots online so when they come to the workshop, it's all outside. Teachers aren't implementing things because they aren't comfortable with them.
- MD: Lots of interest around this standardized water quality monitoring, maybe it's a way we split up groups this afternoon.
- Bill Crowell: APNEP ran a water quality citizen's monitoring network for over a decade, collected an enormous amount of data. Focused on teachers, scout groups, civic groups, would ideally go out twice a week. Would get trained, would start out, and then quit. One of the big problems was that the state didn't want to use the data. We were using it to try and identify hot spots. Regulatory agencies didn't want to use data except for basinwide plans. Folks didn't like that – wanted their data to be useful. We tooled it more as an educational type thing, but defunded it 2-3 years ago. For APNEP and its whole citizen monitoring component, we have CCMP actions but we're also developing a suite of indicators for estuarine health. Dragonflies could be one, water quality parameters could be one. How can we engage citizen monitors to answer these questions? Don't want data to not be used. Also hope to use existing networks as mentioned. No need to set up something that already exists. Groups working on indicator development are asking about opportunities to add citizen science to what they do.
- Sarah Yelton: When will those groups know their indicators? BC: March 2 by 5pm. SY: Where is all the data? BC: We have a file, excel sheets. SF mentioned that there is a [map](#) of stations on APNEP's website.

### Identifying Gaps and Needs – Stacey Feken

- Stacey Feken: Going through rest of "About APNEP" quickly
  - o APNEP – one of 28 national estuary programs, locally based, stakeholder driven, non-regulatory programs

- Where we work: headwaters to the sea – ecosystem-based management approach. Work throughout the watersheds.
- How we work: our management structure. Established through the governor’s executive order. Take guidance from a policy board, Science and Technical Advisory Committee, Monitoring and Assessment Teams, you guys come in with the implementation and action teams – how are we going to implement our strategic plan? Implementation Advisory Committee is responsible for making funding decisions.
- Our guidance: APNEP Strategic Plan – Comprehensive Conservation and Management Plan. 58 Actions.
- Looking for opportunities to identify synergies, create collaborations.
- Implementation action teams – overview of teams. What does the EST do?
  - Stakeholder-driven – rely on feedback from partners to direct work
  - One of 13 action teams
  - Each team works to carry out CCMP “Actions” related to their subject area
- What actions will the Engagement and Stewardship Team Implement? Review 4 primary actions/
- How can this team integrate their work with the goals of other APNEP Action Teams?
  - Opportunities to identify synergies with what the other teams are doing
  - Discussion of identifying gaps in the region
  - Example: Milburnie Dam coming down, opportunities for this team to work with Fish Passage Team to educate people on the importance of fish passage and reasons for dam removal
- APNEP Funding
  - Funded by the EPA through a grant to the NC Dept of Env Quality
  - Matching funds from DEQ via in-kind services...
  - Approximately \$20K for each action team
  - Implementation advisory committee decides how funds allocated
  - Leverage resources: applicants/partners: 1:1 match required
  - Partners include universities, non-profit organizations, etc.
  - Bill Crowell: Don’t think about APNEP as funding projects – APNEP wants to implement these actions, how do we go about doing that? Could be APNEP spending money from grant to do that, and that’s alright. Could also be a discussion of how to we gather funds from partners to implement a project, can we go out and apply for funds from other sources – grants, etc. We’ve found the more actively engaged partners you have in a project, the more likely you are to get your grant funded. There are a variety of things that can be done. If you see that there is something we don’t know about that is implementing these, let us know so we can count that/expand that. Example: Shad in the Classroom, Teacher Institute, etc. Could decide that this is enough for APNEP right now but don’t have to.
  - Pat Curley: I also work as a volunteer with Project Healing Waters fly fishing – veterans on the water. Working a lot with wounded/disabled veterans. Never looked at using veteran networks to go out and do things – citizen science. That might be something that could be considered when you look at opportunities for volunteers.

### **Review of Survey Results – Kelsey Ellis**

- Provided handouts of the survey results
- More data available than just this overview – just ask
- Where do you work and what is your primary role with your organization?
- Target audience?
- Funding splits over the past 5 years – some projects address multiple actions
- Responses to what is Important to the team seems to be inverse of how the money has been appropriated in the past
- Gloria – question regarding outdoor opportunity and how that is defined?
  - Could be any outdoor experience that connects a person to the A-P Region – Citizen Science may be included here.
- Examples of projects that meet criteria for multiple actions – Summer Teacher Institute, Mano al Hermano, Shad in the Classroom

- Shared more survey results – included in handouts – good to keep in mind for discussion later today; Q8, Q9 and Q10

### **Subgroup Discussion of Gaps and Needs in the APNEP Region – Melissa Dowland**

- Where are the gaps? What needs to be filled that we can pursue?
- Let's divide up based on 4 actions – wherever you think you'd like to participate
- Talk a bit about what is lacking – what needs to happen under those particular actions moving forward
- Your task will be to look at data in terms of previous projects, survey results, etc.
- Educator Training sub-group discussion (detailed notes were not taken for the other groups until the afternoon)
  - Making activities/training truly complementary to their work in the classroom – making it easy for them to do these trainings
  - How do we get teachers to attend trainings? \*\*
  - More pre-assessments going into the workshops to target/customize them – how to make teachers excited?
  - Figuring out how to balance needs of teachers/EE with needs of the organization (ie CCMP actions)
  - Making it relevant to teachers and students – for buoy program, made it education-grade because we wanted them to be able to do the problem-solving and take over the project themselves. It's more effective when it's something that relates to them directly
  - Getting teachers to implement/getting them excited – from the APNEP perspective, where is the meeting of the two? What else could we be doing in the region to help meet that gap?
  - Cam McNutt – talking about developing a system to address impaired waters on 303d list, identifying what those are, having communities be involved in addressing it, compiling everything into a database. Getting communities involved in the real problem so it's not only relevant but also satisfying.
  - That's why Shad in the Classroom has been successful – it's part of the restoration. That's one of those areas that could be addressed through EE and teachers.
  - 303d – list of impaired waters. We could have students name some of these streams.
  - Another thing to consider about how you take/fold in APNEP's priorities – is working with those schools to make those projects relevant and also expose them to current science – draw on a current research project that's happening in their own backyard. If we can make those connections between science in NC and projects/initiatives APNEP can support.
  - Data to support affective learning objectives – why do we care about things? Because you used to use it/experience it – having an experience outdoors – here is how we can incorporate outdoor education into these projects?
  - Informal educators get so many students to come through their centers – but only once. Asking how can we extend this visit? What can we give them to do pre/post to tie it back to what students can do in their backyard.
  - If they aren't in your backyard and there aren't funds, they aren't going to have those experiences. One-time experiences aren't as valuable as those that are repeated, in their backyard, etc.
  - Continuing to support teacher training institute is important because I got to see teachers that come to that – they're very invested, going to take their materials back and use them. Very worthwhile. Having that experience that connects them to the outdoors.
  - Somehow creating teacher networks to be a part of. To sustainably have these teachers feel connected to something that's bigger than their districts. The teachers that come to PD are the go-getters, agents of change, etc. Thinking of doing a facilitators network facebook page, etc. Can stay connected with people after the workshop.
  - Financial support is important – teachers are stretched thin.
  - Maybe something that is worthwhile funding – needs assessment from teachers
    - Literacy CEU's
    - Office of EE has done informal surveys of teachers in the past
    - PKS Aquarium Scholars Program – really good
    - But other organizations don't do that because they don't have a foundation
  - What do you need and who do you reach out to?

- We have enough lesson plans – more need professional development opportunities to get teachers outside, train them to implement lesson plans outside
  - Plug-and-play activities/materials
- What is the most effective strategy?
  - State and national standards – idea is meeting needs through hands-on, place-based, outdoor activities
  - Spiraled curriculum
- Thinking of projects
  - School-based field trips – focusing on stormwater, water quality, place-based education
  - How to facilitate teachers actually being able to go outside, actually feeling comfortable doing the outdoor lessons?
  - First time – PD for teachers, watching someone show students how to do the project/be outside so they can then do it themselves
  - Incorporating river basin education, incorporating project WET
  - NC Aquatic Data Hub, GLOBE
  - Coastal resiliency training
- Training/reaching out to administrators and principals – only works if administrators are well-respected – no one likes being told what to do
- Getting district-level science specialists onboard – Lisa says more doable

#### **Introduction to Action Team Generated Projects Discussion – APNEP Staff**

- What does a successful EST project look like? – Takes place in AP region, fulfills 1+ of the 4 primary actions, integration with other Action Team’s projects, involves, collaboration between multiple partners and leveraging funds, reaches underserved audiences, fills gaps/needs in the region, does not duplicate services/resources
- ExPLORE NC Summer Teacher Institute [see presentation slides]
- Shad in the Classroom [see presentation slides]
- Mano al Hermano [see presentation slides]

#### **Lunch Break**

#### **Guest Speaker: Clean Water Education Partnership – Jen Schmitz, Triangle J COG**

- What is a Council of Government? – all across the state and country, NC have several
- COG is a government entity, but do not have their own authority – work with all governments in a certain region
- Some COGs in the area have water resources departments, some do not. Some have staff, some have no staff. Just because there is a COG doesn’t mean that they do anything
- Almost like a private consultant that works for member governments
- CWEP – Clean Water Education Partnership
  - Filling gap – many governments don’t have water resource planning, work with governments outside of the Triangle J area – all the way to New Bern
- What is CWEP?
  - Cooperative effort between local governments, state agencies, and nonprofit organizations to protect water quality in the Tar-Pamlico, Neuse, and Cape Fear River Basins by changing behavior through public stormwater education and awareness
  - Administered by TJCOG, governed by a Steering Committee – everyone has an equitable voice in CWEP
  - Currently 37 partners
  - Helps local governments to develop education and outreach materials to reach goals
- Why do local governments join?
  - Small costs, big reward – small buy-in with incremental increase per capita
  - Gives them access to a big pot of money, they can equitably receive benefits
  - Smaller municipalities – access to opportunities beyond budgets, fill environmental/stormwater staff gap, advice/mentorship from larger municipalities
  - Larger municipalities – NPDES education requirement, annual reporting, redirect other funds for focused work knowing that general stormwater education requirement is covered

- New Bern example – focus on coastal environment, fecal coliform issue, etc. – their buy-in for CWEP is covering general stormwater requirements
- CWEP does video, social media, etc. across the entire state – cable and internet feeds will have CWEP ads
- What do partners get from CWEP?
  - Equitable voice – quarterly meetings
  - Annual workplan approval
  - 5-year strategy
  - Focused CWEP Campaign Themes – litter/trash, pet waste, lawn waste, pesticides/fertilizer, household waste, vehicle pollutants
  - Video campaign – focusing on pollutants that would be applicable for all regions, to all people – winter/spring cinema campaign, digital spectrum campaign, radio campaigns, social media, website – all free and downloadable, printed materials and brochures, giveaway items, stickers
  - All for public awareness – point is to increase public awareness of stormwater issues
  - Model could be useful for an organization looking to not reinvent the wheel and duplicate resources
  - 100% mass campaigning; hoping to combine with the Triad COG to do more outreach/education
  - other outreach methods: billboards, shopping cart ads, public transportation ads
  - Creek Week – local, regional, coordinated – would like to get more Creek Weeks going in different regions, coordinate them
- Overlap between what we've discussed and what CWEP can provide? Not reinventing the wheel, etc.
- Phased implementation scenario – talked to partners about ideas – coming up with 5-year strategy, starting a discussion about all the things that people want to do in the region. Worked out 5-year plan regionally, decided to start from the basics – promotional and print materials, hearing from everyone about what was the next most pressing, then the next most pressing, etc. – wanted to listen to partners as much as possible.
- Piedmont-Triad Regional Council – 100% in-person outreach largely in schools through the Stormwater SMART program / working together with them on ways to integrate efforts & share information

#### **Action Team Generated Projects Discussion – Melissa Dowland**

- MD: Hopefully what we've talked about so far gives us a picture of what APNEP is
- Will work in some smaller groups and then report out on some ideas that we have
- Scope can be small to big, shorter term to longer term
- Parallel some of the things going on right now, can address some of the needs we see – gaps in the region
- List of questions to consider as well – could be funded by APNEP and/or could be part of something larger
- What role could I have and who else could be at the table to make that happen?
- Needs assessment could be an outcome that we decide needs to be pursued
- Idea is to come to some conclusions and push the discussion forward
- Next 45-50 minutes – talking through ideas, thinking through questions, etc.

#### **Full Group Discussion:**

- Gloria Putnam: Having a hard time getting my head around a topic. Mentioned water quality being a major interest? What are the other big topics? Invasives, SAV, etc? Education and engagement is a big field.
- MD: That's exactly the question I was asking. That's where this bubble diagram came from, getting a bigger picture of what APNEP does. This is part of it...in terms of some of those priorities. Trying to pinpoint some of those areas of overlap between what the committee is looking at and/or what APNEP is looking at
- SF: Challenge is that we are all working in parallel – to the extent we can identify integration with other teams that would be great, but don't have to.
- BC: Stepping back just a little bit, each of the NEPs has to develop a CCMP. In here there's a table, has the ecosystem outcomes we're looking for. 3 goals, rest of the plan is filled with actions so we can reach those outcomes. All those actions lead to support those outcomes. Table tracks which actions support which outcomes. What we want you to do is to look at the 4 actions that are assigned to the group – we follow an adaptive management approach – a number of the teams have started with an assessment phase for some kind of action. SAV group example. Is there an assessment step that needs to be done? Or catalog and see what the gaps are? Or

continue implementing, or reevaluate programming. What you need to do is focus on those 4 actions. Other teams can/will reach out to EST for more information/recommendations.

- BC: Looking at the Actions in the CCMP beyond the bolded part is helpful. Reading CCMP actions and discussion of what that means. Has outcomes we support, best informed guess about what outputs we might expect.
- Lisa Tolley: Any sense for what is a need from teachers/educators?
- BC: Our best connection to those groups is through the office of EE.
- SF: Whittling gaps down into smaller, more manageable pieces
  - o Phased/incremental approach – short term and long term
  - o We can phase that approach, reevaluate and change it as we need to
- BC: the 4 items that are listed are not the easiest things to do – these are things that we have a high likelihood of success with, that other people are not doing. Trying to make connections for people, trying to connect people as part of the environment as opposed to apart from it.
- MD: How would you measure the success of a project?
- BC: Really important question. If we were to do an assessment of volunteer/stewardship opportunities, frame up the need, see if we've met the need over some kind of time frame. BC: Increase in citizen action to protect.
- MD: We're going to break out again, feel free to reshuffle or split up into smaller groups as needed.
- [Break out into small-group discussions]
- Teacher Education Group
  - o PC: Science House model that is successful – workshop for kids. Actually started out of our grant we got here. Kids apply and take action – 50-60 kids
    - NC Youth Ocean Conservation Summit - brings kids in, workshop for kids
    - Gloria Putnam: dock-keepers, dock-masters program, talking to people at the marina about environmental/recycling issues – talking to youth and seniors. That would be a way to reach everyone.
      - End goal: certified dock-keepers
      - Reaches stewardship goal as well
    - Lisa Tolley: Don't know of a summit for kids, Catawba College does a summit for high schoolers – could be good to
    - Expanding statewide – looking for potential partners to expand statewide, something they're going to do anyway
  - o MD: We need to ideally be looking at projects that are meeting CCMP objectives
  - o LBS: first objective D1.1 – workshops and materials with volunteer opportunities. Result is increase in citizen action to restore the albemarle-pamlico estuarine system.
    - First step – need to know baseline level of participation
  - o LT: D2.2 – activities for the public to become engaged in the AP ecosystem, increasing engagement and implementation of the CCMP.
  - o JM: provide ee training opportunities for educators in the region. Training for educators.
  - o PC: increase public understanding of relationship between ecosystem and human health –
  - o JM: Talked about issues facing teachers for a while. Funding a needs assessment to see what teachers need. Talking about field trips – field trip to your own school, what are some of the things that relate to the APNEP region where you can draw relationships to your own school? Carolina Vegetation Survey – all over the southeast, schools can do surveys like that there. Work with teachers to develop more effective teaching strategies in the process. Working with teachers on how to use the school grounds to teach – very basic but very effective. Could meet all 4 Actions. Some things about the UTOTES program could be applied to this idea
    - Do you train teachers to do this, or do you go and take teachers and their class out at the same time? Could provide that service to NE North Carolina, could also provide pre/post materials.
    - LT: like both students and teachers being there.
    - MD: What would it really take to make this happen?
      - GP: I am excited about it touching on landscaping – big meeting last week about landscaping. Talking about invasives, etc. A different audience? Landscaping initiative, looking to reach K-12 and all audiences, anyone who has land.

- LT: Mapping schoolgrounds is a great activity
  - PC: Rachel with Wake County Schools, organizing NC Schools BioBlitz.
  - MD: Barriers – teacher program is time, student program is getting to enough places to provide the program, landscaping is maintenance of the plants, etc. If schools could landscape better, use native plants better.
  - JM: if you bought them up with the staff and students it becomes an educational campaign for the school
    - GP: that’s why we need the landscapers involved. Just start with – this is a project idea on the table, come up with one pilot project.
  - PC: what about coming up with a program for administrators/principals? Although that’s difficult, hard to get people on board.
  - JM: could cover direct costs for the people going out to do programs. Instead, could have a network of partners and depending on where the school is, a different group could go out. If there was only one visit to the school and then a suite of materials/curriculum you could utilize, maybe that would have a more lasting effect.
  - PC: Project WET kits they could loan out to the teachers and would target a specific need
    - LD: would be happy to do that
  - JM: challenges – getting kits back, timing of getting it back, refurbishing it
  - LD: What if it’s in the form of a student portfolio instead?
  - PC: one of the ways to get away from mailing and getting things back, you have enough of them and they’re out in the community(?)
  - LT: on-site field trips – APNEP staff should talk to the arboretum staff, they’re doing a successful program where they go out to schools and give them a choice of pre-established citizen science projects to do. Very successful, North Carolina Arboretum in Asheville wants to expand that – wants to expand it statewide. Soft money funded?
  - DG: they’ve done the groundwork, the cost would be more educator time
    - Hitting 10 counties
  - JM: Would they be a good partner for APNEP? If they already have things set up, etc.
    - LT: called eco hotspots
  - LT: don’t have anything you have to manage, just give them a kit – it’s a nightmare.
  - LD: and then train trainers to go out and use it
  - PC: or not kits but fishing rods
  - MD: so to do this, involves developing curriculum/managing curriculum – any capability
    - JM: graduate assistantships are about \$5000, so partnering with an Ed school could be a good way to do this
  - LT: could ask teachers tomorrow
  - PC: seems like we have a lot of programs already, should we focus on evaluating what is already there and who is already doing school field trips and how can we as a group amplify/support that further?
- MD: Office of EE, do you have a sense of the programs in the AP region?
    - LT: could look into it, could help out – Office of EE is interested as well
  - MD: maybe that’s our idea, inventory of what is going on, what is needed
  - LBS: and explore what qualities/metrics/audiences – what other information do we need to know
  - LT: we have a GIS map with all the schools and EE centers – could go ahead and pull that out for the AP region
  - MD: if there’s somebody in one of the local universities, college of natural resource – Nils Peterson and Katherine .
    - JD: ECU has a center for STEM education, new STEM cohorts – John McCord could connect
  - LBS – and then make map GIS layer available for the public, available for EE people to use
  - GP: If you feel you need an assessment, do one – but do one quick and dirty – changes quickly. All agree – don’t turn it into a formal research project. LT has everything online already, Dana can layer science museums on top.



- DG: Maybe it's about, let's do that so we know what's going on and we can leverage partnerships. Lots of things happening across the state and we
- MD: that will hit north Carolina and not Virginia
- MD: field trip idea is still a need, summit idea is possibility, muddy sneakers for the APNEP region
- MD: expand Shad in the Classroom? That is low-hanging fruit, but is not cheap. We can't reach all of the schools that want to be a part of that. Want to reach a partner that has the resources to build a satellite version of that.
  - LT: Has WRC mentioned starting that? MD: They help, but not in the capacity of actually managing the program. GM: Where is it based? MD: Here in Raleigh. LBS: Do you deliver the fry down to the New Bern area? MD: Yes, we really need help with that.
- LT: Thinking about supporting Project WET with guides, resources, etc. Other smaller projects – funding guides, testing kits, river basin guides
  - LBS: Maybe there are a lot of projects that need sponsors, maybe could develop marketing materials to get those organizations funding. Marketing tactical products/materials to gather support from potential corporate/other sponsors?
  - DG: stuff like that is great, but participating organizations don't want to use it because then they're funding for someone else – that fits APNEP
    - Would require staff time for APNEP
- LT: Teacher Institute is great, could be expanded regionally
- Talk more about RFP process at next meeting
- GP: inventory and assessment? Inventory – survey of what is current extant, needs assessment is a step further; what is needed?
- LBS: existing volunteer opportunities database is still needed – current inventory would be good, but need to know existing volunteer opportunities
  - Start out with LT data – add other opportunities through google doc – through team expertise can add the missing pieces

### **Summary from break out groups/Action Items (by Kelsey Ellis):**

#### **Project Brainstorming Break-out Groups:**

- Group 1 (Action D2.3): Relationship between ecosystem/human health
  - CWEP is an interesting model for stormwater education
  - Can we identify common issues / themes? Chicken or egg question, need to know what partners are already doing. Some are wide ranging and applicable across the region (septic tank issues), whereas some may be more localized (Harmful Algal Blooms).
  - The CCMP outcome is improved water quality; need to tie efforts to a change in human behavior; developing some kind of citizen buy-in or action step. How can a citizen take action to improve water quality?
  - Research shows that people respond to things that affect them directly, the human health impacts resonate with a wider audience than ecosystem health, so use this in messaging (e.g., social media campaigns to show causality between water quality and human health or ecosystem protection; help people understand the connections
  - Issues discussed: sportfishing and relationship to water quality; septic tanks, climate change, flooding, and water quality impacts, beach nourishment, groundwater monitoring, citizen science, fish consumption advisories, algal blooms, etc.
  - Dare County branding “More Beach to Love; Nags Head Septic Health Initiative, Durham Best Practices / How to Guide
  - Get other stakeholders involved: Department of Health, local health dept., Agriculture Soil & Water Conservation Districts; identify government channels, non-profit organizations. Some team members representing these groups are working on these issues but not able to attend today.
  - Develop list of issues/map who's doing what and look at coverage for gaps / radius (called a buffer in GIS). Time to complete depends on level of detail, do you just want a map or do you want to be able to query

- the database.
  - The APNEP decision support tools team may be able to help/Coley may know of a NCSU student that can assist with GIS portion.
  - **SHORT TERM ACTIONS:**
    - 1) Identify the issues and network of existing partners working on education and outreach associated with issues, their target audiences, map by river basin, identify common themes; then see what floats to the top in terms of gaps that need to be filled and where.**
    - 2) Develop a map; show visually through GIS/AGOL; easier to see gaps in geography**
- Group 2 (Actions D1.1, D2.1, D2.2: Stewardship, Outdoor Opportunities, Teacher Education : **Long-term project ideas:**
  - At-school “field trips” to make it easier for teachers and to get kids comfortable with the nature in their own backyards/learning how to use school grounds to teach
  - could meet all 4 actions
  - some things about the NC Museums of Natural Science’s UTOTES program could be applied here
  - tackling issues (stormwater, water quality, invasives, etc) on school grounds/locally - place-based education
  - providing pre/post activities and information for teachers
  - taking teachers/students outside at the same time to facilitate activities/lesson and also show teacher how to use the “outdoor classroom”
  - helping teachers to be more comfortable teaching outdoors
  - PD for teachers, “field trip” for students
  - Potential tie ins: incorporating river basin education, Project WET, NC Aquatic Data Hub, GLOBE, Carolina Vegetation Survey
  - start out with pilot project and expand from there
  - NC Arboretum at Asheville has a similar program in the western part of the state - would be good to talk to them, maybe we can take their materials and apply them in the AP region - not duplicating resources/time/effort
  - could fund a graduate assistantship to pay the person doing the programming - about \$5000
  - Have enough lesson plans - not a priority - need more PD to get teachers outside, train them to implement lessons outside
- Other ideas:
  - NC Youth Ocean Conservation Summit
  - expanded Shad in the Classroom “satellite campus”
  - Creating marketing materials for AP region education/stewardship initiatives to help organizations apply for/ask for funding from sponsors – corporate?

**Short-term ideas:**

- supporting Project WET and similar programs by funding guides, resources, etc.
- Office of EE - funding river basin guides, testing kits, etc
- Continuing to support Teacher Institute and Shad in the Classroom

**WRAP UP/Group discussion:**

- MD: next step – disseminate that information to the group, use that information to further discussions within the group.
- SY: Knowing what is going on is helpful, but communication about what people have that is going on. Continuing communication amongst the group is important. Thinking about how we can help one another.
- PC: First step – development of a database? MD: Utilizing existing ones is important
- LD: Adding another layer to one that already exists?
- PC: Would be nice to solicit and develop awareness of other organizations that already exist
- LT: we can add to our database when/if you find we have gaps.

- SF: We've had these conversations from the beginning, have developed and shared initial lists at other meetings, now need to find ways to map...potential for APNEP decision support tools team to help.
- CC: The other side conversation to this, ArcGIS online is changing so quickly that it's hard to keep on top of everything going on in AGOL. Survey123 is already in place – similar to google forms. Pinpointing a spot on the map provides spatial resolution.
  - o SF: mapping out a scope of what we want so we can identify those boundaries and parameters, scoping some of that out, sending it back to group for feedback
  - o SF: was it a good idea to participate in more focused discussions? More progress in smaller groups? Can we revisit the idea of splitting and folks that want to be involved with both can? Could always convene the larger group to report on progress.
  - o MD: Turn to your neighbor – what did we do well, what can we do better?
    - PC: snacks
    - SY: focused time for subgroups was good, having specific goals for each group to come out of is good, need opportunities to move around within subgroups – afraid of being pigeonholed into a certain area

#### **APNEP Staff Action Items:**

- Team wants to talk more about RFP process and possibilities at next meeting
- Develop baseline inventory of volunteer opportunities - so we can know if there is an increase in citizen action as a result of APNEP's actions (D1.1)
  - o Team can add the opportunities they know of through a google doc, can then be added to Office of EE's database
- Develop inventory of current outdoor/EE programming and centers in the AP region - see if we can amplify/support those efforts further or if there is a gap we can fill. Do "quick and dirty" - don't take too much time, don't turn into a formal research project. **Team member action items:**
  - o Office of EE has information about schools and EE centers - can pull that out for the AP region
  - o Dana G. can get information about science museums in the area
  - o John McCord - has connection at ECU center for STEM education that could help us out/give us advice
    - Other option: NCSU College of Natural Resources - Nils Peterson and Katherine Stevenson
  - o Create GIS layer showing schools, EE centers, museums and share with EST and public. Housed on Office of EE website? New centers/opportunities/etc can be added to their database.
  - o Drawback - will only show NC, not VA
- Develop inventory and map of issues and initiatives related to public and ecosystem health.
- Develop/utilize existing team listserv for team members to share opportunities, ideas, with each other, not just communication regarding team meetings and activities. Some folks are on listserv and some are in an Outlook Distribution list. Link to sign up to listserv here: <https://lists.ncmail.net/mailman/listinfo/apnepeducation>