

## 2NC Nutrient Criteria Development Plan – Criteria Implementation Committee (meeting #2) 9/25/2015

### Attendees

#### CIC members in attendance:

- Anne Coan
- Bill Kreuzberger
- TJ Lynch
- Douglas Durbin
- Andy McDaniel
- Douglas Wakeman
- John Fear
- Dawn Padgett (Alternate)

#### CIC members attending by phone:

- Carla Seiwert

#### Guest speaker:

- Rich Batiuk, (Associate Director for Science, Chesapeake Bay Program, US EPA)

#### CIC meeting facilitator:

- Andy Sachs

#### NCDENR NCDP Team members in attendance:

- Steve Kroeger
- Carrie Ruhlman
- Pam Behm
- Mike Templeton
- Jim Hawhee
- Jing Lin
- Connie Brower
- Christopher Ventaloro
- Rich Gannon
- Jeff Manning
- Jennifer Schmitz

#### Other NCDENR staff in attendance:

- Jucilene Hoffman
- Gary Kreiser

### Meeting notes

\*\*\*All questions, comments and answers are paraphrased\*\*\*

1. **Convene** (Andy Sachs)
  - a. Andy asks for CIC members for approval of the ground rules governing the CIC.
    - i. All CIC members approve.
  - b. Andy asks if CIC members have any comments on the meeting notes from the first CIC meeting on 8/5/2015.
    - i. Pam B. comments that DWR staff has included additional information in the notes to provide more in-depth answers to questions posed during the previous meeting.

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- ii. Anne C. states that it should be understood that any DWR staff comments appearing in the meeting notes do not necessarily reflect the opinion of the CIC members. DWR staff and CIC members agree on this.
2. **Update on the Science Advisory Council (SAC) and Related Topics** (Steve Kroeger and Carrie Ruhlman)
- a. High Rock Lake (HRL).
    - i. The Science Advisory Council is continuing to discuss the development of criteria recommendations for HRL.
      1. The timeline of completion for HRL, as developed by DWR staff, goes through September of 2016. The SAC is currently at the “brainstorming” stage in the timeline. See the timeline [here](#).
      2. The fourth and fifth SAC meetings are scheduled and will be held on:
        - a. SAC # 4 - October 14, 2015
        - b. SAC # 5 - December 9, 2015
      3. The ultimate goal of the work the SAC is doing on HRL is to produce a technical document containing recommendations for nutrient criteria for the lake.
        - a. The role that DWR will play in the development of this technical document has not been decided. DWR may write the document and ask the SAC to review or some other direction may be taken.
      4. During the third SAC meeting (8/18/2015), SAC members developed a water quality goal for HRL and began brainstorming possible nutrient criteria. The water quality goal for HRL, as defined by the SAC, is:

*“To provide for the protection of designated uses in the HRL reservoir by defining and proposing the appropriate level of algal related indicators for each of the following uses:*

        - *Aquatic Life*
        - *Fishing*
        - *Fish Consumption*
        - *Wildlife*
        - *Secondary Recreation (e.g. wading, boating)*
        - *Agricultural uses (e.g. irrigation)*
        - *Water Supply*
        - *Lower lake: Primary Recreation – full human body contact (e.g. swimming, water skiing)”*

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1. The HRL nutrient criteria development process is being funded by N-STEPS. N-STEPS was created by EPA to serve as a technical and scientific resource for state and tribe numeric nutrient criteria development efforts. See <http://nsteps.org> for more information.
  2. DWR will be submitting a request for funding to support the CIC and stakeholder process for HRL.
  3. Previous funding provided by N-STEPS has been used to complete a nutrient data review for NC lakes and reservoirs and to support an ongoing data review for Albemarle Sound.
- b. Related topics.
- i. EPA has released health advisories for algal toxins in drinking water. For more information, see the fact sheet [here](#).
  - ii. Chowan river basin algal blooms have been persistent in 2015. The presence of Microcystin in some of these blooms has been confirmed through testing completed by NC Department of Health and Human Services.
- c. Questions/comments:
- i. Concerning the HRL timeline:
    1. The timeline has the nutrient criteria development process being completed by late 2016. Is this realistic?
      - a. Carrie R. answers: The timeline was meant to provide some structure for this process, but is not set in stone. It can be modified if needed.
    2. How long will the previously submitted N-STEPS proposal fund the work the SAC is doing for HRL?
      - a. Carrie R. answers: The SAC effort for HRL is funded for two years.
    3. Douglas D. comments: The CIC should get involved once the SAC has established potential nutrient indicators.
    4. John F. comments: The CIC should attend the December SAC meeting.
3. **Nutrient Criteria Implementation and Management Ideas**
- a. **The Chesapeake Bay – Using Science to Convince 18 Million People to Go (and Stay) on a Pollution Diet** (Rich Batiuk)
    - i. See the presentation slides [here](#).
    - ii. Some questions/comments:
      1. Anne C. asks: How was legacy nitrogen dealt with?
        - a. Rich B. answers: The system model did not take into account legacy sources of nitrogen. The next system will have a groundwater lag component and the partnership is working on incorporating this in the future on a state-by-state basis.
      2. Andy M. asks: Criteria were established for responses such as clarity and DO. Why not for N and P?

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- a. Rich B. answers: It did not make sense to establish criteria for N and P as any such criteria would be too complex due to it needing to account for various seasonal shifts (P-limited, N-limited, light-limited). In addition, the model employed could use response measurements to determine loads. Also, N and P criteria would be more difficult for the general public to understand and embrace.
  3. Doug D. asks: What is the connection between watershed compliance and bay TMDLs?
    - a. Rich B. answers: Maryland is using modeling tools to determine what factors are driving water quality. In this way they are able to establish criteria for smaller local waters that will also serve to decrease loading to the bay.
  4. Dawn P. asks: Who is doing the monitoring?
    - a. Rich B. answers: There is a partnership network. Funding is provided by EPA, states and USDA. Monitoring is performed by USGS, coalitions, universities and states. All laboratories follow established standard operating procedures.
  5. Bill K. asks: Was an assessment of the usefulness of a chlorophyll-a criteria conducted?
    - a. Rich B. answers: Establishing relationships between nutrient loads and chlorophyll-a measurements were challenging as were attempts to discern the relationship between chlorophyll-a and harmful algal blooms. Virginia has been working on this more recently.
- b. **Florida's Numeric Nutrient Criteria Background and Implementation** (Douglas Durbin)
- i. See the presentation slides [here](#).
  - ii. Some questions/comments:
    1. Rich G. asks: Can you comment on the spatial aspect for lakes?
      - a. Doug D. answers: Rivers are divided into section and these are averaged together.
    2. Pam B. asks: Are lakes sampled year-round?
      - a. Doug D. answers: Yes, but FL has so many natural lakes that many are never sampled or are sampled irregularly.
    3. Rich G. asks: Has FL increases resources to accommodate the intensive biological survey requirements?
      - a. Doug D. answers: FL prioritizes where resources are spent. Focus on the big problem areas. Also, local governments and private contractors are responsible for the smaller streams based on need.
    4. Jen S. asks: How do they prioritize the study list?
      - a. Doug D. answers: They use a ranking system based on the importance of the water body biology.
    5. Are there other groups that do monitoring?

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- a. Doug D. answers: Yes. Coalitions, river keepers, lake watch groups though some of the data from these groups cannot be used as they do not follow the same SOP's.
- c. **Nutrient Criteria Implementation in North Carolina – Work in Progress** (Rich Gannon)
  - i. See the presentation slides [here](#).
  - ii. Some questions/comments:
    1. Andy M. comments on slide #2 - "NC Nutrient Strategies Scorecard slide". Surprised that success is shown as yes/no. There is an opportunity to have some flexibility here with regard to adaptive management strategies. It is important to show what successes have occurred. Maybe have a tiered system to rate success?
      - a. Doug D. adds to this: Watersheds of different sizes may also require different measures of success. It would also be good to show the reason(s) why success has or has not been met.
      - b. Anne C. adds to this: Also need to account for legacy. Success may not be met for some time in the future due to continued input from legacy loads.
    2. Bill K. asks: Is there data to show that management strategies for variables other than chlorophyll-a are working?
      - a. Rich G. answers: Not sure if there are data that show this.
    3. Rich G. discusses staff limitations due to vacancies and how that limits strategy implementation.
    4. John F. comments: Some things to take away from what we've heard and discussed today:
      - a. From the Chesapeake: It is important to understand the underlying factors at work.
      - b. From Florida: There can be some flexibility in what criteria mean.
      - c. Lag time effects: don't exaggerate or over-promise results as it may take a long time to accomplish them.
4. **Implications for CIC's Work**
  - a. Discussion related to presentations:
    - i. Anne C. comments that much of this work is model driven and that finding the financial resources to accommodate this can be challenging.
      1. Doug D. adds that having sound science in addition to agreement from stakeholders can make it easier to find the necessary funding.
    - ii. Andy M. comments that it is interesting that it was determined that establishing numeric criteria for N and P for the Chesapeake Bay was not the best direction to go.
      1. Doug D. comments that even though N and P criteria were not specifically developed, the efforts in the Chesapeake are still nutrient driven.

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2. Another comment was made that the different EPA regions also vary in their outlook on how necessary it is to establish N and P numeric criteria.
  - iii. Bill K. comments on adaptive management strategies:
    1. What are the first steps to be taken?
    2. What questions can be included over time?
  - iv. Anne C. comments that it is interesting and startling how easily third party lawsuits can hijack this process.
  - v. Doug W. comments that increasing flexibility creates leads to complexity which increases the opportunity for a breakdown of the system. Also, the idea that “biology trumps chemistry” is interesting, but not sure how this would work for a system such as Jordan Lake.
  - vi. Carrie R. comments that third party lawsuits are out of our hands, but the fact that the efforts in the Chesapeake were highly transparent and made sense to the public may be helpful for preventing this from occurring.
    1. Doug D. adds that making sure that any criteria introduced are well thought out also would be beneficial.
- b. Discussion related to the future work of the CIC
- i. Bill K. comments that the CIC should begin considering implementation once the SAC puts together a final list of criteria.
  - ii. Anne C. comments that we should seek to strike a balance between the cost (modeling costs, etc...) and the chosen criteria.
    1. Doug D. adds that we should focus on using existing resources to reduce costs.
  - iii. Anne C. comments that it would be interesting to know how other states handle the costs of implementation.

### 5. Attachments

- a.  HRL\_NCDP\_Flowchart.pdf
- b.  EPA\_cyanotoxins-2015.pdf
- c.  Chesapeake Bay\_Batiuk.pdf

- d.  Florida\_Durbin.pdf
- e.  NC-Strategies\_Gannon.pdf