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NC Ecological Science Advisory Board Assessment
January 5, 2013- February 18, 2013
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Executive Summary

The NC Division of Water Resources (NC DWR) has engaged NC State University to facilitate meetings of the NC Ecological Flows Science Advisory Board (EFSAB). The Division established a Science Advisory Board to assist the Division in characterizing the natural ecology and identifying flow requirements. Since November of 2010, the EFSAB has participated in 16 meetings reviewing a number of studies and reports relevant to characterize the ecology of different river basins and identify flow requirements for maintenance of ecological integrity; this review has advanced their thinking about how to characterize the ecology and identify flow requirements. In 2013, the EFSAB will focus on providing recommendations to NC DWR as well as providing a report those documents those recommendations.

Purpose and Methodology

A brief assessment was conducted with the EFSAB during January, 2013. At time of writing, 23 members and alternates of the EFSAB (out of 26 possible) participated in the assessment via phone interviews, 2 others were contacted for scheduling but not reached, and 1 person declined to participate. The data gathered resulted in valuable responses that have been distilled into this summary document. The purpose of the assessment was to clarify issues and determine how to increase the likelihood that the EFSAB can generate recommendations that will advise the NC DWR on how to characterize the natural ecology and identify flow requirements. The assessment was also designed to assist the project team (DWR staff and the facilitators) with recommendations for structuring the 2013 process. Comments by EFSAB members were compiled, described, and summarized in this document. The categories are intended to reflect the various comments heard during the interviews, though some comments were paraphrased to reduce repetitions and improve clarity for the reader. If similar comments were made by multiple interviewees, the level of frequency was noted in parentheses following the comment. The main purpose of this document is to provide a descriptive overview of the EFSAB's recommendations for how to proceed in 2013; it is not to provide a quantitative analysis of the results. In addition to conducting interviews with the EFSAB members and alternates, the facilitation team reviewed the 16 meeting summaries to compile a chart of annotated meeting information supported by a meeting index cross reference (available as an MS Excel file).

Broader Goal of NC DWR

"Water Security" for NC: is robust, resilient water supplies adequate to support future population and economic growth and instream flows capable of supporting NC's diverse natural heritage (Tom Reeder presentation to ERC, 2012). Can the broader goal of NC DWR guide the work of the EFSAB and act as a general group vision statement?

Charge of the EFSAB

The EFSAB will advise DENR on approaches to characterize the aquatic ecology of different river basins and identify the flows necessary to maintain ecological integrity. The group will focus on methods of determining flows necessary to maintain ecological integrity.

Authority of the EFSAB

The EFSAB is charged with advising DENR in characterizing the natural ecology and identifying flow requirements, and reviewing reports or studies submitted to DENR for consideration that are relevant to characterizing the ecology of the different river basins and identifying flow requirements for maintenance of ecological integrity.

Themes Heard from Multiple Interviewees

1. Good educational framework has advanced scientific discussion and process around e-flows (met a portion of the EFSAB charge as a result)

2. EFSAB is a fantastic group –well intentioned and thoughtful; enjoyable to work with. People have been diligent; everyone has put their all in it and treated it with the seriousness needed. Project team (DWR and facilitators) has done a good job with a very difficult task.
3. Identify 2013 structure for providing recommendations: timeline, milestones, deliverables, and who will complete these tasks.
4. Utilize small group work within the large group meetings much more frequently and working groups between the meetings.
5. Provide scientific recommendations that can be implemented with practicality for the benefit of NC DWR and local planning organizations
6. In 2013, focus on convergent thinking, less on advancing the science. Hence move forward with what is known today; add additional data layers later when known.
7. Work to reach understanding among members and constituents about the purpose and use of e-flows, and develop better language for communicating it.
8. The work that the EFSAB has done has better positioned members to characterize the ecology.
9. NC DWR should provide guidance and direction on level of detail needed and options for moving forward (trial balloons).
10. Don't let perfect be the enemy of good
11. If the process stops, is shut down, or agreement in recommendations cannot be achieved - it has been worth the effort to advance the science and capture this information for future work, particularly with this group of people.

Areas of Concern

1. Members and constituents have different perceptions of the potential implications of Eflows
2. Revisiting Information that has been discussed happens frequently (though sometimes a refresher is great)
3. Capacity of NC DWR to provide project leadership given loss of critical staff
4. Some groups (outside the EFSAB), may not accept the science if they do not support the results (in spite of EFSAB being a mix of scientific perspectives to the process)
5. If the science is less than the best, a recommendation that potentially errs on the protective side may be needed for now.
6. The legislation itself does not make clear that the process is for planning purposes
7. How to manage for the best science and concerns about future water use (is it water use or knowing how to plan for water use?)
8. How to manage for implications of e-flows: if it's for planning purposes, are there benefits to both end users and natural ecology (rather than solely focusing on the downsides).
9. Calling it e-flows rather than a planning tool for e-flows or a planning threshold causes problems; gets into implications.
10. This process requires an intense body of knowledge; some are more knowledgeable than others as they live and breathe the science – others are figuring out how best to contribute to the process and have to become re-immersed in the discussions each time we meet. Since EFSAB members are in different stages of knowledge and understanding (and there is limited time to review the materials), a level of patience is required in working with and when testing assumptions with each other.

SUMMARY OF DATA GATHERED BY QUESTION

1. The EFSAB is charged with advising DENR on approaches to characterize the aquatic ecology of different river basins and to help identify the flows necessary to maintain ecological integrity. From your perspective:

a. Do you think you will be able to provide recommendations to DWR in 2013 about *APPROACHES THAT CHARACTERIZE THE AQUATIC ECOLOGY OF DIFFERENT RIVER BASINS?*

- 5 answered "yes" or "I think so"
- 5 answered "yes" with qualifications
- 3 answered "yes" but "not sure for all river basins" or "not sure for coastal plain"
- 4 answered "possibly", or "hope so", or "should be able to do so"
- 1 did not answer the question, but provided suggestions for getting there.
- 5 answered "unlikely", "not sure", "some concerns can't"
- 2 remain to be scheduled
- 1 declined to participate

APPROACHES SUGGESTED TO CHARACTERIZE THE ECOLOGY

What is Good Enough: Identify and agree to definitions about What is Good Enough

a) Recommendations can't be perfect; recognize the limitations of what can be done. (x8)

Distinguish Level of Detail Required

a) everyone has their own assumption of what level of detail is required: if there is no agreement on scale and depth required, difficult to determine "when in the weeds". Legislation not clear on level of detail required; some folks think we are talking policy (x6)

Characterize the Ecology by…

a. what Cuffney has done for macroinvertebrates (could have provided some characterization a year ago)
b. May need to get more into the bugs.

Levels of Alteration Approach

a) Determine what are the appropriate levels of alteration

Levels of Classification Approach

a) Use general words to describe classification: start with reaches and use common characteristics of streams
b) Characterizing the ecology is a means to an end, where the end is determining e-flows. All things being what they are, go with 1 or 3 or whatever number of classes to get to e-flows.
c) Reach agreement on descriptions of what adequately captures statistically significant description of waters—determine correct HUC or unit (right level of specificity), then show level of support [vote] to determine if this is a starting point for classification. Will the EFSAB be able to provide a classification or a "process for developing classification that should be XYZ".
d) Lack of knowledge and the variability may point to a targeted instream flow study.
e) Classify by geographic region – by coast, mountains, and piedmont.
f) Push for recommendations for coastal plain areas (consider capacity use areas)

Basin Level Approach (Scale of Approach)

a) At basin level there is probably some characterization that would apply to streams across the state.
b) Can refer to the basin wide plans, and WRC wildlife action plans may have sources of existing information.

Characterize by geomorphology

a) From a regional aspect and commonality by region they can be characterized—characterize by slope, drainage area

Characterize by Seasonal Approach

a) Look at seasonal basis for planning purpose

Additional Scientific Information Required

a) RTI-BEC project approach very important for classification but limited use in coastal plain (and not available until Aug) (x3)
   - limited in biological data available, while RTI make be working on it, need to move forward with what's available.
   - Thankful that EDF supported several studies to help achieve better results
b) Schedule discussions about species and bugs
   - Haven't talked much about the aquatic species; may need to get more into bugs
c) Schedule discussions about characterizing the ecology
   - Have not focused much on characterizing the ecology; could talk about each river basin

Clearly defined biological component/process for describing the ecology

a. Decide on what parameters to use to characterize-fish habitat or other
b. Have moved from fish guilds to microbiotic (a scattershot approach and more laborious than expected).
c. Help clarify why aquatic ecology is a driver in what an e-flow might be (protect the habitat) if these species have endured a wide range of alterations throughout time?
d. Limited discussion on aquatic species. Tackle aquatic species first or e-flows or work in parallel with "a" and "b"

Decision point on Scale and Scope

a. Lack of knowledge and the variability may point to a targeted in-stream flow study. There are major differences in lower and upper basins and differences in inter-basins.

Firm up a guiding principle of classification of ecology (temperature, flashy/riffle/pool, etc.)

NOTED CHALLENGES

a) Gridlock may ensue in describing the ecology
b) No clearly defined biological component

b.**Do you think you will be able to provide recommendations to DWR in 2013 that help *IDENTIFY THE FLOWS NECESSARY TO MAINTAIN ECOLOGICAL INTEGRITY?***

- 10 responded "Yes"
- 4 said "Yes", it "depends on"
- 8 who said "Yes" with "caveats":
  - But not in the coastal plain (2)
  - But not full consensus since not everyone is comfortable with a screening tool
  - Guidelines for determining the flows, (big picture) but not the flows themselves (3)
  - If generalizations on ecological variations can be accepted by members
  - Wrestle with flows for specific reaches

  - Focus converging from scattershot to more organized approach
  - Need to incorporate the diverse views to achieve good decisions
  - Identifying flows will be harder than characterizing ecology
  - Identifying ecology will be easier than identifying flows
- 1 said "Not Sure"
- 2 remain to be scheduled
- 1 declined to participate

APPROACHES SUGGESTED TO IDENTIFY FLOWS NECESSARY TO MAINTAIN ECOLOGICAL INTEGRITY

a) Determine specific items:
- level of detail needed.
- a threshold, and acceptable deviations from this based on current science
- if WaterFALL can be used to analyze sites without OASIS models
- # of classes needed and how to define.
- NC DWR clearly state whether specific # for flows are needed or not (early on – no flow #)
- Whether generalizations on ecological variations can be accepted by members
- E-Flows need to protect the resources but may not need to be as high (80% flow by).
- Instream flow is dependent on the species present
- Draw from other states methods - could have brought leading expert in. IFIM has been going on a long time.

b) Decide on specific items:
- family of strategies (such as % inflow or other)
- strategies not to use (such as 7Q10)
- how to treat coastal areas (are part of the charge)

c) Gather additional data
- Run additional IFIM
- Use RTI BEC results
- Review paper on impounded rivers by Jeffery Petts
- Need more data points- work with agencies to fund and collect data for future use
- Utilities have alot of flow agreements based on various hydropower projects and describe these flows to be released; much of this information is based on scientific data (how might this information contribute to the knowledge base).

d) Provide methods, not specific flow numbers, characterize ecology broadly.
- Provide methods, not flow numbers
- Recommend a process, not numbers or metrics (work on a best guess)
- Any recommendation is better than none
- Done a lot to advance the science
- Reaching consensus on upper and/or lower limits for flow withdrawals would be useful to users
- Instream flow: dependent on the species presence – some species prefer higher, some prefer the lower.
- Hope to hear more about the flow side. If we are going to use 7Q10 or some other higher flows, what impact does that have? To have consensus that flow withdrawal has to be in this or that upper or lower limit that is useful to users; they want to know how much water they can withdraw. What is the best educated guess? Time will tell effects.

e. Scope of decision making is broad and general (keep recommendations at large scale)

- Generate living, dynamic, fluid recommendations that can change, and help municipalities plan effectively
- Recognize what we do not know, identify gaps in the science, and make recommendations based on what we have
- We are a science board, keep in mind policy comes later and not from us
- Do a narrative and big picture view
- Don't let the perfect be the enemy of the good
- For planning purposes, okay to fall back on general guidelines
- Keep recommendations at a larger scale- keeping the planning purpose in mind (less detail needed)

f. Assumptions behind EFSAB Recommendations

- Eflows as a broad planning tool does not replace site-specific instream flow studies and recommendations for specific withdrawal proposals
- Clear understanding of what is off the table/on the table for decisions (provide parameters)
- Have met a portion of the charge by advancing the science, by conducting lit review
- We are a science board, keep in mind policy comes later from legislature and not from us
- May need to use a literature based approach (as opposed to a presumptive standard approach)
- Using recommendations develop should not negate the site specific study (there be a flow for planning purposes but a site specific study may be requested – instream flow study looking to withdraw from a certain site).

g. Hone in on Planning Component

- For planning not regulation
- May get at it qualitatively

h. Value and include a wide range of scientific opinions

- Be sure to include all scientific perspectives such as business, ag, environ, agency….

2 & 3: What meeting processes and/or structures would you suggest for 2013 to support your ability and that of your colleagues to provide recommendations? What additional comments, suggestions, or concerns do you have?

The major categories that resulted were:

a. Reactions to Past Two Years
b. Develop a visible Project Timeline
c. Establish Process Design to Accomplish 2013 Goals
d. EFSAB Report: Outline, Process for Compiling Data and Writing, Other Requirements
e. General Meeting Design
f. Recommendations for Process
g. Recommendations to the Project Team (DWR and Facilitators)
h. Post-EFSAB process concerns and suggestions (2014 and beyond)

Reactions to Past Two Years

a) Water under the bridge
- Wish the hydrological classification foundation piece had worked, or not been preloaded.
- Literature review and science based approach gone on too long; should have been compressed. Cannot improve or make this process better.
- Legislation is unclear

b) Has been fine; very optimistic; launching pad for a hard unified push to create a deliverable (x6).

c) It's a terrific group of people (x5)

Project Timeline

a) Path Forward with Descriptive Timeline (understand what has to occur) (x7)
   - Develop a visual project timeline, with timeline and milestones: What has to occur? And By When? What are the decision points? Revisit schedule to monitor progress
     - Index of meeting summaries will help
     - Agree on what we are going to provide and timeframe for doing this
   - Accept it will not be perfect: is dynamic; can be revisited in the future
   - Limit bringing in outside guests speakers/additional information; use face to face for meeting to craft our recommendations
   - Deliberate what the EFSAB currently knows not what is unknown

Establish Process Design to Accomplish 2013 Goals

a) Use meeting time to establish a Plan A, Plan B, [Plan C]– what can be lived with? Use summaries to test support or limits.
b) Use meeting time between now and receipt of the BEC study to nail down areas of agreement, such as agreeing there is a need for classes and then a description of each class.
c) Determine who is best to make the recommendation, and make a subgroup to do it, with a deadline. The EFSAB will have to make a decision whether to trust them to do it, to give them ownership, then review.
d) Review the Charge, the charter; have purpose and objectives set to reach at each meeting
e) What decisions need to be made, and how do we go about making them? Scenarios provided included:
   - Hone in on what we have gained already.
   - Ask people- what do you need to know in order to make a decision by July? What pieces do you need." Then identify the gaps.
   - In Feb, discuss what to do in the coastal plain and in the mountains--fall back on literature or PHABSIM.
   - Summarize what we have learned about aquatic ecology and what is known about flows to maintain and characterize aspects of those flows. Approach as a group basin by basin (characterizing aquatic ecology and flows), stream by stream, or by ecological processes; we have to step through them one by one (basin by basin may be way to go and break down into physiographic description). Separate basins in mountains or coastal plain; something DWR can work with.
   - Schedule out the next few months so DWR has time to review and test recommendations. Pick one of watersheds that is fully allocated, to see if any red flags show up. Does the model work like intended? Being able to do that depends on how fine scaled our recommendations are.
   - Keep discussions focus of needs of department; allow recommendation to be more generalized and applicable across the state. To ensure recommendations can be adopted and used requires a certain amount of simplicity in explanation. Currently, if you want to want to withdraw water, you pay for a study for site specific evaluation. This need remains. With generalized recommendations, think in a more general way. For people to be comfortable, may need to overestimate and create a safety range with built in cushion.
   - In talking about waterfall and oasis, from big picture recommendations may need to include both. Important that some recommendations should not include WaterFALL in case DWR is not able to purchase or validate the model. Maybe a few tiered recommendation (with and without WaterFALL). WaterFALL has a smaller level of detail and incorporates much more than OASIS (so it's useful). Develop criteria for recommendation first: one criteria may be to not have too specific details in the recommendations and another have very specific criteria.
   - Take the process in turns: a) decide on classification system; b) then what is appropriate e-flow for that classification? Break that up by going to 3 or 4 guiding principles and determine a recommendation.
   - While waiting for the results of the RTI work, hammer out other issues:

- *Ecological Change:* critical issue is deciding what degree of ecological change/impact is acceptable, based on data and scientific judgment. Is it 10% change, 20% change? This would bring out the gaps in thinking about how good is good enough and focus on information needed.
- Tenuous participation among some EFSAB members; appears very issue-dependent--whether high flows or low-flows, for example. If people came in with ideas for the endpoint, these will be evident.
- Determine where there are roadblocks to consensus then move on; some things we may not resolve and come down to a more general statement. We need to find out where we have common ground and not go further. Our recommendations may say that we don't have consensus: say what we do know and then leave it to DWR.
- As an exercise in February or March, pretend we have all the information we are going to have and ask, ""what would be our recommendation? Don't have classification; just arbitrarily say mountains, piedmont, and coastal plain. Acknowledge that we only have 9 PHabSim sites, summarize the literature and ask ""what would you be comfortable recommending today?"" Identify the places where we can get information to plug holes, get people thinking and bring out the thinking. We are the science board, not management or social needs board. We could say from a science standpoint, start with 20, 30, 50... or say that even though we only have 9 PHabSim sites, based on that, %inflow is what we are going to go with. Or say, PHabSim approach is good enough. Do more analysis (a minimum of 30sites) and if DWR can't finish that in time, just recommend the approach and DWR can run. Remind everyone that this is for planning. Use small groups with mix of varied expertise then reconvene and discuss further. Remind people that we would not be hammering out a final decision, but to identify what we need and what we can get done. Have floating resource people.

- *Stakeholders/Public Participation:* At what point will stakeholders have input into the process? How to get stakeholder input from people who will be impacted OR how can people gain comfort that the recommendations are ONLY going to be used for planning modeling. Tom Reeder & Jim Mead initially spoke of this group's determining the science, then a second board to consider policy implications. Is this format occurring?
- For others to understand how the decisions were made or the implications, keep it simple. Everyone can agree that as a planning tool this is very important. As a planning tool there should be a threshold at which DWR or potential users look in more detail.
- Endpoint to Meet Legislative Requirements
  - Instead of trying to find the empirical point, may get at it qualitatively.
  - May be more practical and less robust given constraints on time

EFSAB Report: Outline, Process for Compiling Data and Writing, Other Requirements

a) Develop Report Outline/Framework
   - A report outline is tangible to work with; it's a facilitation tool itself.
   - What does report need to contain
     - Leave blank what requires further analysis and deliberation (example: BEC project)
     - Look at other reports from other states like TX.
   - Divide report into writing team work groups; another group reviews/compiles the main sections
     - Work backwards from November 2013. Need a draft with real language in 2 months, two meetings to discuss draft, and a final meeting to finalize the draft. Flesh out guiding principles. Agree on concepts by June; use meeting time in July/August to write draft. Identify areas where need guiding principle, then have meeting on one and vote at end. In June, pull those together.
     - Start writing in small groups - compartmentalize the tasks, delegate according to strengths, interests.
     - Assign tasks, by general agreement; have a rapporteur (someone who listens, then takes first stab at draft, then send out to group; c) could divvy chapters (pro--folks invested; con--not having unified voice (some one person does the synthesis)).

- Determine Audience
  - Needs to be understandable by whoever will be using it.
  - Who is the audience (x4)?
  - Main report for general audience; can use appendices to write for specific audiences
- Could use single text/track changes – collaborative online tools to create discussion boards
- Other Questions/Comments:
  - requirement for signatures (not policy but advisory)
  - Who will present report to ERC?
  - Interim Report (note: legislator not expected to require report before end of year)
- Include in report section for other recommendations
  - Report the value of funding more gauges

b) Include NC DWR early rationale in report as to why NC wanted to explore other avenues than what other states provided regarding Eflows.

General Meeting Design

a) Meeting Preparations

- *Deliver Materials in Timely Manner/Review the Material that is Available in Timely Manner*
  - Project team
  - Facilitators
  - EFSAB members and working groups should review meeting materials regularly and overall (make use of meeting index and website)
  - EFSAB go back and read homework from Potomac and Susquehanna, Connecticut, Delaware, Texas – other states see where it falls on the scale of over recommendations of specificity and complexity, and how does it compare in NC. Provide examples from other states of their recommendations.

b) Meeting Structures/Time

- Extending meetings times helped move process forward (moved from 4 to 7 hours meetings).
- May need more than 10 meetings or work groups meetings to develop responses to straw proposals or proposals themselves.
- Can meet online.
- Lay out plan for what can be done early and then where we might need a 2day meeting.
- Hold meetings in one place for consistency: Stan Adams Center more comfortable and amenable to meetings

c) Meeting Process: Large Group, Small Break out Group, and Working Group

- *Large Group*
  - Discuss major ideas in large group
    - Make sure that people speaking during meetings speak loudly and clearly to facilitate online participation
    - Ask members to volunteer to provide a preface for each meeting then summaries of what was accomplished (x4)
    - Ensure responses are in reference to the topic to reinforce focus of the discussion: how does the response move towards identifying a flow requirement or characterizing the ecology? (If asked, people would focus their answers; easy to get off track and statements tend to generate questions.
  - Ensure everyone is contributing to the process.
    - Allow each other time to react to questions and discussions before the same people interject. Ensure others have opportunity to speak- use more small groups.
  - Preface (summary of what has been done, what has been ruled out) and summary of what was decided test for understanding) EFSAB members can help with and lead this effort (x5)

    - Keep on track, avoid duplications; appear to be rehashing old stuff.
  - Provide tasks to small groups at the meetings or to working groups that work between the meetings
  - *Small Break Out Groups*
    - Ensure responses are focused on task at hand
    - When discussions become circular, put to small group discussion to hash out (small groups can discuss the details, large groups the conceptual and major agreements)
    - Use frequent small group break outs during large group meeting time to continue to allow people to get to know each other, learn about their scientific expertise and concerns, and ensure time is created for everyone to participate (x8)
    - Draw upon small break out groups:
      - whether targeted groups of people with like expertise or range of expertise, where everyone can display their expertise
      - for more discussions and tasks to actively engage everyone and assign tasks
      - Important to have more people participate in the discussions other than 4-5 people. Poll everyone regularly to learn about level of support but more so, understanding.
  - *Working Groups*
    - Establish working groups between meetings (x7)
      - Can work online between EFSAB meetings, to get at multi-faceted pieces and speed up process.

d) Make Visible in the Room

- The Charge
- Chart of Decision made
- Constraints/boundaries of process
- Continuous record of accomplishments
- Next steps regarding discussed issues (what actions will be taken)
- Parking Lot: for items outside main discussions such as "beyond 2014"

Recommendations for Process

a) Shift from Advancing the Thinking to Deliberation and Recommendations

- When an issue arises – document the issue with next steps for consideration
- Educational meetings have been very productive; next step - move from substantive discussions to substantive recommendations
- Discussions have been great, advanced science and understanding of literature review and will yield useful results; time to converge on recommendations (x6)

b) Define….

- *Define "good enough" criteria* (if we cannot provide a level of scientific certainty--what's good enough?)
  - Have a conversation about scientific rigor (steer away from policy). Have DWR provide clear directive on expectations for scientific rigor; talk about level of certainty required (related to scientific rigor conversation--provide interpretation of science-based and address the sense of ""we can't provide that level of scientific certainty--what's good enough? Don't go down unnecessary rabbit holes.
- *Identify areas requiring guiding principles*
  - Identify area for guiding principles, then meet on each area and determine level of support
  - Begin to describe guiding principles (documenting level of support; principles serve as framework for recommendations)
  - Draft language in 2 months, hold 2 meetings to discuss draft, and get agreement on concepts by June
  - Work on refining draft in July/August (show draft to TR – does it meet his expectations for planning?)
  - Determine guiding principles and the level of detail we can get to in 6 months--take them in turn or altogether. .

- *Take process in turns*
  - Decide on classification system
  - What is the process for determining an appropriate e-flow for that classification?

c) Set Aside Political Concerns- Do the Best Science

- Advisory Policy Board discussed at first meeting- what is status
- Can we focus on best science to help local planning groups prepare for future water use
- Value and include a wide range of scientific opinions

d) Presentations (and literature review) Very Useful to Aid Decision-making

- Form literature review results (Plan C?)
- Have seen as many presentations as needed, unless specific to the job at hand. If Fred were to say the state of Virginia (example) or SC has a plan that we think is a good example of where we should be, and bring in the people to share the decision-making process to get there, that would be useful. I think we've done a heck of a lot but we need to be more focused on the job at hand, once we define what that is. Restrict presentations to those absolutely germane.

e) **Develop Consensus Principles for:**

- Achieving agreement on parameters - say to characterize fish habitat?
- Firming up a guiding principle of classification of ecology (temperature, flashy/riffle/pool, etc.)
- The need to characterize and focus on it, whether this is forming a subgroup or a plan.
- Honing in on a consensus recommendation by converging on what has already been presented.

Project Team

a) Facilitators Important to Process

- Facilitators integral to the process; have helped make sense of a large amount of data. Done a great job to keep things moving with good processes/structures (difficult without several facilitators) (x6)
- Encourage better focus during discussions to reduce repetition/duplicity.
- Provide directive facilitation – keep people on task.

b) DWR leads effort, EFSAB advises DWR – Leadership from DWR

- Appreciate all DWR is doing to pull off this difficult task. Gone well, kudos to all you do given the task on hand; done a fantastic job (x3)
- Provide timely feedback to incorporate into the deliverables
- Develop trial balloons for EFSAB to consider; provides structure for getting to the answer not provide the answer (what does DWR want advice on?) (x10). Present the level of complexity, the uncertainty, and examples of the tool to plan for withdrawals while maintaining water security and eco flows.
- Give DWR the wheel to drive: the EFSAB has not provided a substantial road map yet. If DWR can share their thinking about what they can do, provide a structure or framework, the EFSAB could ***advise*** DWR on filling the gaps or support them, and provide a rationale for where and why.
- Help the EFSAB consider the interests of the decision makers (ERC) by providing parameters; provide direction for how what is discussed connects to providing recommendations (help stay on track).
- Include in the orientation email – what can be expected for the next meeting; follow lead of Jim Mead of what the upcoming meeting will focus on, how it ties into the overall work
- Ensure DWR is coordinating the work of the SAB and decisions that need to be made, both internally and externally; and keep the ERC up to date. If change is expected in the legislation - what is and how does any new direction impact the EFSAB? Define roles of EMC and ERC with the EFSAB.
- Need DWR's active leadership to get to the endpoint especially given loss of DWR's critical staff

- Fred has presented a little more pointed and better articulated set of criteria of exactly what we need to accomplish (reference coastal presentation and planning tool, x3).

Post-EFSAB process concerns and suggestions (2014 and beyond)

a) How to educate and engage people who may be impacted by recommendations to assist in understanding the outcomes?
b) How do we clarify that this is a scientific effort and does not set up regulations?