Mobile Bay National Estuary Program
Science Advisory Committee Meeting

February 8, 2012
10:00-12:00 Noon

Dauphin Island Sea Lab, Shelby Center

Agenda

1. Welcome, Introductions, Call to order

2. Review/Approval: Minutes 10-28-11

3. Review/Discussion: Results of Compiled Matrix and Overview of Next Steps

4. Other

5. Next Meeting

6. Adjourn

Minutes of the Meeting of the MBNEP Science Advisory Committee (SAC)
Shelby Center Meeting Room, Dauphin Island Sea Lab
Friday, February 7, 2012

In attendance: Dr. Ruth Carmichael (DISL), Dr. Just Cebrian (DISL), Mike Dardeau (DISL), Steve Heath (ADCNR-MRD), Ken Heck (DISL), Steve Jones (GSA), Roberta Swann (MBNEP), and Tom Herder (MBNEP) – via Webex: Maury Estes (Earth System Science Program), Tim Thibault (Barry Vittor and Associates), and Dr. Rusty Wright (Auburn University)

With ongoing technical difficulties with the telephone service, the meeting got underway at 10:10 a.m. Dr. Wright called the meeting to order and asked if there were any concerns or additions to the minutes of the October 28 SAC meeting. Hearing none, the minutes were approved.

Roberta Swann reported receiving 26 responses, with some compiled collaboratively, so the current spreadsheet reflects the responses of about 30 scientists. The spreadsheet does not include the submission by The Nature Conservancy, since their submission requires some manipulation prior to importing.

She stated that the goal for today was to look at values for stressors by habitat and ecosystem services, identify anomalies, and then go about planning a workshop at which groups assembled by specialty could "scrub" and interpret data. She projected the spreadsheet which displayed average values for stressors with standard deviations for responses (which were not included on the projected spreadsheet).

Ms. Swann demonstrated how averaged stressor responses could be filtered by setting a threshold, which she applied at 2.5 out of a possible 3, which indicated the greatest stress. She asked participants if they felt that 2.5 was an appropriate place to "put the bar," or if 2.0 might be more appropriate. Mike Dardeau suggested started at 2.5 and adjusting down if necessary. Dr. Ruth Carmichael asked whether a zero value meant Not Applicable or No Impact. Dr. Just Cebrian responded that zero mean no impact and that a blank cell reflected Not Applicable, but he asked whether the stressor values represented averages of responses. Ms. Swann answered affirmatively. Dr. Cebrian suggested that since an average might represent only two or three responses, we should display standard deviations in a column adjacent to the average response with the number of responses provided in a third column. He felt that these data would provide an indication of the level of confidence for an average response. Dr. Wright agreed that this would provide a sense of variability, which Ms. Swann said standard deviation would capture. All agreed that number of responses would provide additional degree of confidence.

She then asked whether the responses for **Dredging and Filling** withstand quick scrutiny or do anomalies emerge. Drs. Carmichael and Wright suggested dropping the threshold to 2.3 or 2.4 to see if more was revealed. Ms. Swann dropped the threshold filter to 2.3.

This added services to the list, but participants felt that the overall message remained the same.

No anomalies were identified for **Fire Suppression**.

For **Fragmentation**, Ms. Swann questioned the high stressor related to riparian buffers. Dr. Wright felt that these ratings might be related to development/land use change. The threshold was dropped to 2.2, and as a consequence the ecosystem service Biodiversity emerged under several different habitat types.

Dr. Cebrian felt that more information might be derived if we looked at the distribution of responses for each stressor. A high occurrence of 2s would be valuable in interpretation of moderate stress. Dr. Wright agreed that frequency distribution rated discussion, but Ms. Swann responded that this type of statistical analysis would require additional help. Dr. Carmichael said that while this only represented "massaging data," we will need some help with graphical representations. Dr. Wright asked whether looking at distributions of scores will we focus on the most extreme responses or a consensus of moderate to moderately strong impacts. He asked whether we are still capturing the most extreme stresses first. Ms. Swann asked whether we should raise the threshold to 2.6 or higher. Dr. Wright responded, "No," said that anything over 2.0 is significant, and stated that he did not have a problem with using 2.3 as a threshold.

Many different habitat/ecosystem combinations were included for the stressor **Land Use Change**. Dr. Wright speculated that there is a "gut response" to Land Use Change by respondents.

With surprisingly little valuation of **Nutrient Enrichment** as a stressor, Dr. Cebrian commented on the importance of having various fields represented in the array of respondents. Dr. Carmichael displayed response frequency histograms, which provided acute graphic representations. Again, with **Pathogens** not drawing significant response, the question arose whether this in an area in which the SAC lacks expertise. Another question is why pathogens stress bird nesting in upland habitats (while everyone agreed upon the other suprathreshold average response about the impact on oyster reefs).

The lack of response to **Sedimentation** on SAV or Fisheries services was questioned by Ms. Swann. Mr. Dardeau suggested dropping the threshold to see if responses emerged. Dr. Wright noted that sedimentation is not always a stressor but also has positive connotations, and he wondered if that clouded the responses. Standard deviations for sedimentation responses fell between 0.8 and 1.2.

For **Sea Level Rise**, significant stress was noted for marshes and flats.

Respondents gave **Climate Change** suprathreshold values for mostly upland habitats.

Consideration of **Freshwater Discharge** and the lack of high value responses indicating stress to services in habitats led to further discussion over stressors (like sedimentation)

that also provide positive value to an ecosystem service or habitat. Dr. Cebrian was very surprised by the lack of stress value attributed to SAV, with both *Vallisneria* and milfoil being so salt sensitive.

Resource Extraction was noted as a stressor to pine savannahs, which evoked some discussion and a comment by Mr. Dardeau attributing the stress to over harvest pressure. Similarly, stress to oyster reefs was conjectured to be related to shell harvest.
At this point in the meeting, having reviewed all of the stressors, Ms. Swann noted that we have had a cursory look at the data, and the next step was to conduct a workshop with and for the respondents. She asked if anyone felt that we should reach out to more scientists or leave the data acquisition as it currently stands. Dr. Cebrian expressed the feeling that we need at least five respondents for each stressor on each ecosystem service/habitat to ensure adequate specificity.

Dr. Cebrian suggested paying a $50 stipend o each respondent. It was noted that Ms. Swann already proposed a stipend, which Steve Jones remembered as $20. Several participants commented that they would not have accepted a stipend, so Dr. Cebrian suggested an optional stipend.

Dr. Heck suggested looking at sample sizes to identify deficits, then targeting before doing some "arm twisting." Ms. Swann reiterated that we would add a column for sample size. She said that we will conduct a workshop and group scientists by expertise, similar to how, in the development of the Priority Habitat Planner, participants were grouped into salt water, fresh water, and upland groups.

Some discussion followed regarding data presentation for analyses, including color coding stressor values and generation of histograms. Mr. Jones felt that histograms were easier to evaluate than tabular data. Dr. Carmichael did not feel that data preparation for histogram presentation would take longer than a couple of hours. Ms. Swann sought guidance over who would be willing or able to manipulate the data for clearer graphical presentation. Dr. Cebrian suggested Lei Hu from the Sea Lab, and Dr. Heck agreed and felt that we could get her to help us. He offered to check into it.

The task was described at developing histograms of responses for each stressor to each ecosystem service/habitat. We need to agree upon a lower limit of responses, and if we do not have at least that many, we need to collect more.

Ms. Swann proposed holding a workshop, looking at data, breaking into groups to scrutinize trends, and then resolve anomalies. Dr. Cebrian recommended 1) looking at data to assure five response sample sizes and then 2) recruit Lei Hu to offer statistical guidance to the effort.

Ms. Swann said that she would give the report to Melissa Mills to determine response numbers. She said that the endpoint of this process should
1) guide revision of the CCMP
2) offer prioritization to the GERTF and others prioritizing action post DWH.

She said that response numbers should be available by next Wednesday (February 15). Dr. Cebrian suggested that following that benchmark we should recruit further respondents to completely develop the data set, then come back together with the SAC and Lei.

The process will allow us to find out what habitat is most threatened so that actions can be developed to head off problems. Mike Dardeau questioned the necessity of a workshop, feeling instead that the process Dr. Cebrian described would serve our purposes.

The meeting was adjourned at 11:35 a.m.