MAINE CLIMATE COUNCIL
Science and Technical Subcommittee (STS)
7th Meeting (Zoom) – April 8, 2020
1 - 4 PM

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AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00</td>
<td>Welcome and Introductions</td>
</tr>
<tr>
<td>1:15</td>
<td>1:45 ERG Vulnerability Maps and Schedule</td>
</tr>
<tr>
<td>1:45</td>
<td>Chapter/Section Leads for Phase II Report – Status Checks [Sean, Pam, Linda, Andy, Steve, Susie, Nichole, Amanda, Aaron, Glen, Rebecca, Michelle, Jonathan]</td>
</tr>
<tr>
<td>2:30</td>
<td>Other Chapters? (Uncertainty, Data sharing?)</td>
</tr>
<tr>
<td>2:30</td>
<td>3:30 Discussion – Information Needs Component Phase II Report</td>
</tr>
<tr>
<td>3:30</td>
<td>3:40 Legislative Responsibilities</td>
</tr>
<tr>
<td>3:40</td>
<td>3:50 WGs Public Meetings Update</td>
</tr>
<tr>
<td>3:50</td>
<td>4:00 Wrap Up and Planning for May 13 STS Meeting</td>
</tr>
</tbody>
</table>

Enclosures:
1. Draft Phase II Report Outline
2. Information Needs Draft Template
3. Legislative Responsibilities
4. ERG Economic Analysis Schedule


Welcome & Introductions by Bob and Ivan

- Bob took a roll call of those on virtual meeting and welcomed everyone
- Announcements
o STS will continue to use virtual meetings, getting more proficient with zoom and will go ahead with this format for the foreseeable future
o The working groups are making a lot of headway on developing strategies, and moreover on top of handling the logistical changes with COVID-19
o ERG representatives are available to share more on their progress, hand over to them for presentation and discussion

ERG Vulnerability Maps and Schedule

Charles Goodhue and Eliza Berry from Eastern Research Group reviewed the slides (which can be downloaded from the [MCC website](https://www.mccmaine.org) and answered questions from STS members about the methods and data sources involved in the analysis. The feedback from the discussion and follow-up conversations will be used to improve the vulnerability mapping analysis.

- Have made a lot of headway on the vulnerability analysis producing Climate Vulnerability Maps
- Received a lot of data input from STS and from others engaged in the MCC process, and have been using suggestions to improve their analysis.
- Social and economic maps have also been presented to working groups. Some data gaps have been filled, and some remain to discuss.

Next steps
- ERG near term will continue to look at cost of no action (baseline)
  - They will need to fill data gaps and may have some specific data requests
- ERG will be informing the working groups what can be analyzed for their strategies. This will be done in the next week or two with all the working groups.
- ERG will be following up with specific people on data needs
  - E.g. Lyme disease already a known need

Chapter/Section Leads for Phase II Report – Status Checks [Sean, Pam, Linda, Andy, Steve, Susie, Nichole, Amanda, Aaron, Glen, Rebecca, Michelle, Jonathan]

- Ivan and Bob introduced the discussion by reviewing work from the STS up to this point and describing the remaining timeline.
  - [Phase I working document](https://www.mccmaine.org) is now complete, continued focus is on phase II and ultimate goal of having a report completed by June 17 for the next Maine Climate Council meeting. May not be completely finalized by then, but a final draft of content is expected at that time.
- Final document subject to work on figures and consistency through the reporting
- Each Phase II Report subgroup lead then discussed plans for continued work on the STS report during Phase II and remaining needs.
- Climate - Sean Birkel
  - Have some additional analysis of snow season changes that can be incorporated. Will also be helpful to inform projections into the future. MGS/USGS has some data to also contribute that is not in this dataset to add.
    - Important for many reasons, but for example southern Maine could be receiving less snowfall, but northern/mountains could still be having a lot of snowfall and ‘great’ winter.
- Hydrology - Pam Lombard
  - Pam/USGS has also sent data re: snow to ERG and can touch base with Climate group.
  - Still looking to have discussion on overall data and monitoring needs
- Freshwater Quality - Linda Bacon
Still want to incorporate the riverine and fresh water quality info into the report
Linda/DEP can follow up with Pam on what needs to be incorporated that hasn’t already. There was quite a bit of info on this already gathered for the Phase I to incorporate.

- Marine -Andy Pershing, Steve Dickson, Susie Arnold, Nichole Price
  - SST (Andy) - Nothing new at this time.
  - SLR/Storm Surge/Nuisance Flooding (Steve) – quite a bit of info that could be put into the appendix, and also some maps could be added. Also, will want to look at consistency across the whole section/doc to make sure there isn’t duplication. Welcome feedback on the section, ways to display information, etc.
  - Ocean Acidification (Susie) – Considering a few updates around regional projections of future acidification, OA impacts on base of food web, potential positive impacts on macrophytes.
    - If anyone wants to see a species mentioned specifically in that section, let her know. Currently focusing on commercially important species, hope to expand a bit in Phase II.
  - Marine Ecosystem Services (Nichole) - Waiting on some feedback, wanted to take another look on discussing uncertainty and keeping a close eye on recently published literature.
    - Trying to make sure there are linkages across chapters with this chapter

- Biodiversity -Amanda and Sally. Planned work includes:
  - Tried to be fairly comprehensive in Phase II, put together a table of needs
  - Greater review by other agency staff (IF&W) and other partners in the works
  - Taking plant and habitat sections and putting in text, removing redundancies
  - Adding more coastal examples
  - Adding info in tabular format
  - Adding info on spatially explicit mapped areas of species/habitat vulnerability, fleshing out habitat connectivity

- Forestry, Aaron Weiskittel
  - Amanda and Sally worked on this as well
  - Could do deeper dive into more specific topics, including:
    - Effects of invasive species (exotic and endemic to N America)
    - Forest health
    - Carbon issues
    - Forest monitoring beyond USFS annual estimates

- Agriculture, Glen Koehler
  - Looking into soil sequestration, biochar, anaerobic digestion
  - New data from DEP about agriculture emissions
  - Looking into using weather for real-time adaptation
  - Formatting and text changes, add graphics

- Heath, Rebecca Lincoln
  - Updating air pollution, ozone particulate matter, and pollen
  - Polishing and adding references as needed otherwise
  - Adding more needs language

- Economy, Jonathan Rubin
  - ERG is doing BCA work, but we have a lot of colleagues across the state doing similar work
  - Planning on expanding on each of the sectors they started in Phase I, and want to align with other chapters in STS report in Phase II to be consistent.
  - Want to know what would be helpful from other STS members
Apple growing community, other ag producers also worried about direct farm sales. Jonathan felt this would be a good effort to write a grant for.

- Will use peer reviews to expand a bit

**Economic Analysis discussion with ERG**
- Steering Committee is providing information back on discount rates. And specifically, to coordinate across chairs that there is a consistent methodology.
  - E.g. cost of capital in buildings versus in transportation infrastructure is very different
  - E.g. cost of borrowing funds for one versus the other needs to be the same
- There is a political judgment to some extent on what to do here
- STS can be a resource for this and in terms of the steering committee
- Steering committee can determine, and STS can help provide guidance along with ERG.
- Follow up conversation on process and ways for STS to inform was identified as a need

**Other Potential Chapters? (Uncertainty, Data sharing?)**
- Bob and Ivan will write an intro to the report, and Cassy will be synthesizing the entire Phase II report to go into the Climate Action Plan
- Emissions, quantification and modelling boundaries chapter -based on discussion by STS members, they did not feel that a separate chapter was possible at this time
- Uncertainty chapter?
  - Based around process of making decisions
  - This might be better to include in all of the other chapters, that they address uncertainty in each because it varies greatly across different datasets.
  - Subgroup of STS will write draft text for a breakout box on uncertainty that likely will go with the Phase II report Introduction written by Bob and Ivan
- Transparency and data sharing
  - No mention for or against to retain for now, so will not incorporate at this time unless becomes/mentioned as interest again

**Discussion – Information Needs Component Phase II Report**
- Have the template (distributed ahead of this meeting) and will use same approach for references, use of appendices, etc. as previously done in Phase I and discussed.
- Sea level rise continues to be a high priority in terms of legislative responsibilities
- Aggregated introduction in the 2020 CAP, led by Cassy, and detailed reporting to be in appendices.
- **Timeline for Phase II reports is:**
  - Draft by May 13 (for next STS meeting)
    - to show together in a working draft, and then for sharing end of June with Climate Council. Would like to have well in advance of delivery
- GOPIF has gone through all strategies of all working groups
  - Some of the working groups are developing specific monitoring and surveillance needs
    - E.g. Coast/Marine and Public Health groups are both developing specific recommendations
  - STS may be able to help support these recommendations, through a closer review.
  - GOPIF can help with sharing that information on where commonalities are.
- **STS spreadsheet/matrix is to collate the ideas for information needs**
  - Request to STS members is to edit their section by April 17 (document in Teams Site)
    - Preference is to edit in teams
• If that is not working can download your own copy and then make edits and go back in to teams and add in edits or email file to Ivan/Bob/GOPIF.
  o At this stage add in a more comprehensive list of needs. And then following, and at the May STS meeting would have a critical review by STS members, based on the charge to the MCC and STS, and in context of other efforts/funding for those needs, to determine a prioritized, shorter, and specific list with a rationale behind them (for example something that the legislature can take up, and state federal or other partners could fund). Another focus to prioritization can be on how the prioritized needs also support the working group recommended strategies.

Legislative Responsibilities
• Review of STS legislative responsibilities document share at beginning of process and revisited
• Taking stock:
  o SLR projections to 2100 – on track
  o Maps for various flood hazards – to extent possible
    ▪ on track for coastal, but inland/rivers a lot of areas of state do not have that type of data available. At this point not going to be able to make associated maps. Extreme weather events are even more challenging to create because of their dynamic nature. Will likely need to also note limitations to fulfill this during timeframe. However, could share some of the maps from ERG.
  o Identify critical scientific information needs – with current matrix will be on track
  o Mitigation options for quantifying carbon emissions and sequestration – most of this is occurring within the working groups, with ERG, and STS is supporting in certain areas.
    ▪ Important for STS to consult with ERG and even arbitrate decisions related to emissions quantification. This related to the earlier questions of process such as boundaries and uncertainty
  o Adaptation methods to build resilience – same as for mitigation options…. most of this is occurring within the working groups, with ERG, and STS is supporting in certain areas.
• If members have recommendations on strategies, they should be in contact with the working groups on those (including examples we know of)
• if something is not covered by other working groups, then perhaps STS should be able to cover
  o e.g. species may not be receiving same depth across other groups
    ▪ Nathan to send quick review of language in statute regarding following the meeting to co-chairs

WG's Public Meetings Update -Cassy Rose
• In June, when working groups submit their recommendations to the Maine Climate Council they will qualify how and extent that public outreach was included.
• No broader stakeholder input would likely be given between now and MCC meeting in June.
• Currently plan to hold the MCC meeting in-person, but are discussing potential virtual ways to hold that meeting if needed
• Broader public outreach will take place after June 17 MCC meeting.
  o Doesn’t feel like the right moment to do this prior to June and given the COVID-19 crisis
  o Still is an important step to build enthusiasm, engage a broader cross-section of the public
  o Will provide input into the Council decision-making process
Wrap Up and Planning for May 13 STS Meeting

- Next meeting May 17, Zoom from 1 - 4 PM
  - Draft Phase II chapters
- Meeting major goal to synthesize priority information needs from spreadsheet input for Phase II report