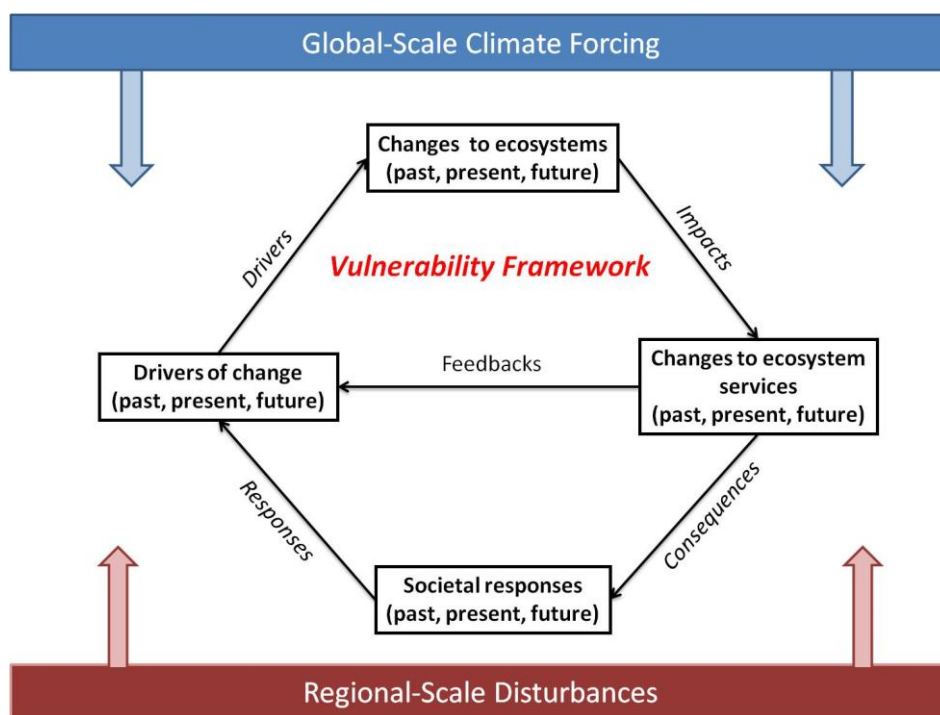


## A proposed “process” for the ABoVE SDT

### *The Research Framework*

Based on the discussions during and since the La Jolla meeting, the SDT has agreed upon the “vulnerability” conceptual diagram as the framework for ABoVE research (**Figure 1**). The vulnerability framework provides a way to think of the science questions in an integrated framework that clearly links the research being conducted during ABoVE to its consequences on society. As such, the framework aids in developing the compelling rationale for ABoVE research.

Note that we have changed the Vulnerability Framework by reformatting the material in each box from a question to a statement. We did this because we think we need to develop a relatively small set of research questions for ABoVE that are integrative in nature.



**Figure 1.** The vulnerability framework for the science questions to be addressed by ABoVE.

We are using this framework to develop Chapters 1 and 2 of the CEP, the introduction and the overall science question that will be addressed by ABoVE. Dan and I plan to have the first draft of these two chapters done shortly, and will send it out for review by the SDT.

### A strategy for moving forward

We suggest that results of this discussion provide the foundation needed to develop inputs for the rest of the CEP, and that during the 2nd ABoVE SDT Meeting in Fairbanks, the SDT focus on Chapter 3 ABoVE Concise Experiment Plan, specifically:

- (a) Identify the key science questions that would be addressed during ABoVE.
- (b) Identify the types of research needed to address each question.

While activity (a) may appear to be straightforward, the ABoVE Scoping Study Report (which identified areas of research very close to those identified by the SDT) contains 49 different science questions – we are hoping to have fewer questions in the SDT. *So, one of the first things the SDT has to decide is how many research questions are needed, and then to develop the questions to be addressed during ABoVE.*

Our suggestion is that we start this process by thinking about the types of broad, top-tier research questions that we want to develop. Based on the vulnerability framework, the research questions for ABoVE need to address: (a) changes to ecosystems; (b) the drivers of these changes; and (c) the consequences of the ecosystem changes on society (including questions on both effects on ecosystem services and responses of society). While it may be easy to develop a question that includes 2 out of these three areas, developing a single question that involves all three may be challenging. For example, a question that includes areas (a) and (b)

How will vegetation in the ABR respond to the combined impacts of changes to climate, disturbance regimes and surface hydrology over the next 50 to 100 years?

An example question related to areas (a) and (c) might be:

What changes to terrestrial ecosystems in the ABR are most likely to impact fish and wildlife populations and subsistence over the next 50 to 100 years?

An example question that relates areas (a), (b) and (c)

How do human activities, climate, hydrological processes, and changes to ecosystems interact to control disturbance regimes?

Dan and I suggest that we organize the Fairbanks SDT meeting in the following way (see attached strawman agenda).

On Tuesday (July 9), the SDT would focus on identifying a set of top tier science questions. We would break the SDT into 5 groups for this initial discussion: vegetation, soil carbon, permafrost, hydrology, and societal consequences. We would spend the morning in breakout

groups developing questions, and then the afternoon discussing the questions as a whole. At the end of the day, we would have our initial slate of questions.

On Wednesday (July 10), the SDT would focus on discussing the types of research needed to address the questions, again working in breakout groups initially and then discussing the research needs as a whole.

On Thursday (July 11), the SDT would discuss the steps necessary to complete its missions, including: (a) discussing the nominal report outline for the Concise Experiment Plan; and modifying as needed; and (b) identifying the steps needed to develop inputs for the report; (c) discussing the timing for the last 2 SDT meetings; and (d) developing action items for the SDT to develop inputs for the Concise Experiment Plan.