CIG Strategic Questions

A. Impacts

1. What are the critical interactions among resources (and resource management) that will shape regional impacts of climate variability and change?
   - How do regional climate, hydrology, and water management affect the response of fish and forests to climate variability and change?
   - How are choices about forest management likely to affect water availability and quality under conditions of CV & CC?
   - How will the loss of snowpack affect mountain ecosystems?
   - We want to add estuarine ecology, human health, and agriculture.

2. How can instruments best be deployed to identify key changes in the region’s climate and natural resources and how can the data most effectively be interpreted into real time forecasts?

3. What are the relationships between intraseasonal tropical climate variations and intraseasonal climate events in the PNW?
   - Can methods for skillful weather/climate predictions be developed at timescales of 10-60 days?

4. What are the net impacts of climate variability on the region and what are the likely impacts of climate change, combined with regional trends in population growth and technological development?

5. Where are there thresholds? Which thresholds constitute potential tipping points for increasing vulnerability in ecosystems and human social systems?
   - How will climate change affect extreme events?

6. What are the greatest uncertainties in quantifying the effects of climate variability and change on ecosystems and human social systems in the region? Which uncertainties are most crucial for improving predictions?
   - What are the effects of climate change on ground water – and how does ground water influence surface resources (including ecosystems and human social systems)?
   - Quantify stock-specific sensitivities to climate, and determine the interactions of ocean, estuary, and freshwater portions.

B. Policy

1. How could cross-sectoral management improve adaptive capacity by exploiting the critical interactions across sectors and resources?

2. What adaptation strategies are most likely to be effective over the next 50 years?
   - Define characteristics of resilient socioeconomic systems, and strategies for increasing resilience
   - Evaluate policy efficacy, i.e., the path from policy adoption back through the physical, biological, socioeconomic structures.
   - Watershed level investigations are key
   - Identify the most powerful entry points for policy recommendations at different space scales (management purview, decision making processes and calendars, etc.)
   - What are the space-time relationships between the regional wind climate and regional hydrology? Can these relationships be exploited to increase the reliability of the region’s
energy production system through some optimal balance between wind and hydropower?
3. How can resource management operationally include advances in knowledge about climate variability and change without requiring formal policy changes?
   - What do managers want to know?
   - What do managers need to know?
   - Can we develop systems such that we do not have to distinguish between “want” and “need” to know?
   - How can we systematically bring to bear the contributions of decision analysis to maximize our effectiveness in communicating risks to managers and the public?

SEQUENCING/PRIORITIES

Criteria:
1. Issues of great practical importance to decision-makers;
2. Issues of major scientific interest.

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<tr>
<td>1. Critical Interactions; monitoring system⇒real-time forecasts; Intraseasonal Tropical Variations⇒10-60 day forecasts; Thresholds.</td>
<td>1. Adaptation strategies next 50 years.</td>
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<td>5. Uncertainties</td>
<td>2. Infusion of operational innovations.</td>
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