A Community-Based Approach to Archaeological Site Preservation in a Changing Climate: A Proposed Risk Assessment Along the Lower Columbia

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A Community-Based Approach to Archaeological Site Preservation in a Changing Climate: A Proposed Risk Assessment Along the Lower Columbia

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**Climate Change: A Threat to Cultural Heritage**
- Erosion, sea-level rise, increased storm frequency and strength threaten cultural heritage worldwide.
- Archaeologists create risk assessments to assess these threats.
- Two types of risk assessment: Top-Down and Bottom-Up.

**Research Questions**
- Amount of Data
- Uniquity of Data
- Site Condition
- Excavation Costs

**Archaeological Value**

**Community Value**

**Priority Ranking**

**Preservation and management planning for agencies, tribes, and researchers**

**Top-Down Assessment**
- Ex: Anderson et al. 2017
- Typical archaeological/land management approach.
- Archaeological Values = Risk Factors.

**Pros**
1. Broadly applicable.
2. Regionally transferable.
3. Plug and play variables.
4. Cover large geographic areas.
5. Operates from data already collected.
6. Shorter timetable for project development.

**Cons**
1. Little to no interaction with stakeholders.
2. Little to no on-the-ground fieldwork.
3. Involves a local or site-specific assessment.

**Cons**

**Bottom-Up Assessment**
- Ex: Carnicelli et al. 2018.
- Community-based Participatory Research (CBPR 2012).
- Initiated by tribal partners.

**Pros**
1. Tight regional or local focus.
2. Significant interaction w/ input from stakeholders.
3. Often stakeholder initiated.
4. Expands the scope and value of the risk assessment.
5. Compatible with indigenous and public archaeology goals.

**Cultural Values of Indigenous Rangers, Northern Territory, Australia**

**Cons**
1. Longer timetable for project development.
2. Challenging to transfer beyond study area.
3. Tight regional or local focus.
4. Less common = fewer case studies.

**Cons**

**Why Does the Lower Columbia Matter?**
- Tribes w/ Lower Columbia interests
- Scientists w/ research questions
- Land managers balancing preservation goals, federal guidelines, and stakeholder partnerships.
- Ongoing and incoming impacts including:
  1. Predicted temperature rise of 0.5-1.2°F per decade.
  2. Predicted sea-level rise up to 1.5m by 2100.
  3. Salt-water inundation.
  4. Destruction of saltmarshes and plant communities leading to coastal erosion of increasing magnitude.

**Research Goals**
1. Identify the impacts of climate change on Lower Columbia cultural heritage.
2. Use a community-based approach to incorporate tribal knowledge into a risk assessment.
3. Prioritize Lower Columbia cultural locations for preservation in light of multiple values (tribal, scientific, impending climate impacts).

**Methods**
- Apply Indigenous Archaeological principles w/ a Community Based Participatory Research (CBPR) methodology.
- Partner with tribes to identify places the community prioritizes for preservation due to threats and significance.
- Identify interdisciplinary partners to assist in modeling Lower Columbia climate change impacts on landforms.
- Lay existing DAHP, SHPO, ethnobotanical data with locations of tribal and scientific significance.

**Next Steps**
- Identify tribal and interdisciplinary partners.
- Identify research scope and scale.
- Complete IRB application.
- Hold collaborative meetings.
- Identify places of community significance.
- Overlay cultural heritage data (SHPO, DAHP, ethnobotanical).
- Non-invasive site surveys.
- Prioritize resources for preservation.

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For references and questions, email pdaily@pdx.edu or see handout.