Structural Decision Support (SDS) for CEBs

- General frameworks
- Structured Decision Support (SDS) for CEBs
- Natural Resource Damage Assessment (NRDA) in the United States

Fig. 1. Common Economic frameworks for conducting damage assessments.

Understanding Cultural Services

Cultural ecosystem services (CES) can be defined as the interactions between human cultures and environmental processes (Fig. 2). CES enable the cultivation of cultural ecosystem goods (CEGs), which are the measurable cultural benefits using traditional economic frameworks such as recreation and tourism, and cultural ecosystem benefits (CEBs), which are the non-measurable benefits using traditional economic frameworks. Typical NRDA measures change in the physical domain and, when appropriate, lost CEGs. The importance of CES linking the biophysical domain and its generation of CEB can vary among groups but is especially strong for Native Americans. NRDA regulations allow for restoration funding based on direct measurement of CEBs (43 CFR 11.71(I) and 15 CFR 990.52(b)). The SDS methodology outlined in the poster describes an alternative approach quantifying CEBs for restoration scaling under NRDA regulations.

Fig. 2. Conceptual model of relationships between cultural ecosystem services and the environment. (modified from Faiz et al. (2016)).

4. Ranking relative importance of injured cultural services. Not all impacts are created equal. Small impacts to important values may be more significant that moderate impact to lower importance values. Use multiple methods (e.g., scaled pairwise, point allocation, and swing weighting) to evaluate relative importance of CEBs. Rank CEV impact levels (0 to 10 scale) integrating relative importance rankings of CEBs relative to the most important CEV defined by the impacted party.

5. Identify primary and compensatory restoration alternatives. Using the Likert scale method in Step 3, a range of alternative actions and options are explored relative to the unweighted list CEVs including other stressors and their sources that affect baseline CEVs (Fig 5). This process involves facilitating narratives and structuring discussions, use of technical experts, and other tribe members, supported by best practices and field visits.

6. Proposing alternative compensation activities and scaling the type and amount of compensation activities. The objective of this step is to identify the least cost option to fully restore, replace, or compensate for lost CEVs.

SDS Process for NRDA Applications

The SDS method is a direct measurement of impacted cultural ecosystem benefit based upon service-to-service restoration, replacement, or compensation of cultural services. SDS does not attempt to put an economic value on CEBs derived from people. Costs for restoration, replacement, or equivalent compensation should be based on the present value of the costs to implement each restoration alternative rather than an effort to put an economic value on the non-material cultural service.

The types and level of impacts are determined by the impacted party since they are the individuals whose values and benefits have been affected. Technical experts facilitate the process through in-depth semi-structured interviews and data verification and value elicitation workshops in order to result in an objective damage assessment process. The level and analysis of each (e.g., quantitative or qualitative evaluation of CMVs) can be adjusted based on the value of information to all settlement parties. NRDA nexus

References