

**Intellectual Skepticism, Operational Optimism: Overcoming Barriers to Integrating Local Ecological Knowledge in a Multi-scale Assessment in the Tsimshian Territory**

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*Session 2.2*

In this paper we discuss our research and community-based experiences of overcoming barriers to integrating local ecological knowledge in large-scale scientific assessments. In particular, we identify operational solutions that we developed during the life of the two projects. Ultimately, we argue that science (as a social institution) has to learn how to accommodate itself to local knowledge. While we do not promise the final answer, we do suggest that our experiences are part of the answer to effecting such a change.

The theoretical barriers to integrating local ecological knowledge within global scientific assessments extend beyond simple matters of scale. The root barrier stems from epistemological differences that render the simple integration of the knowledge and wisdom of local resource users difficult to translate into abstract lines on maps or numbers in tables. A more pressing and problematic barrier stems from the institutional privileging of “science” over “folk”, “local”, or “traditional” knowledge. Combined with the lack of regard for research methods that attempt to learn from, rather than mine or dredge out ecological knowledge from local communities, these barriers to integration often reduce the integration of local knowledge to the status of an afterthought or a token addition late in the process. Yet we persist in trying, if for no other reason than our experience as members of resource dependent communities and anthropological researchers reveal the value of local knowledge in understanding the way ecosystems work.

This paper draws upon two community-based research projects being conducted within the territories of the Tsimshian First Nations of north coastal British Columbia (Forests for the Future: Integrating Local Ecological Knowledge with Natural Resource Management [www.ecoknow.ca](http://www.ecoknow.ca); Cultural and Social Spatial Analysis, supported by the BC Coast Information Team [www.citbc.org](http://www.citbc.org)). While these projects differ in terms of their methodology (the first is primarily interview based and the second involves mapping social and cultural values) taken together they offer important commentary on how to overcome the barriers to integrating local ecological knowledge within global assessments.

**A Multidisciplinary Multi-scale Framework for Assessing Vulnerability to Global Change**

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*Session 6.2*

Terrestrial ecosystems provide a number of vital services for people and society, e.g., biodiversity, food, fibre, water resources, carbon sequestration, and recreation. The future capability of ecosystems to provide these services is determined by changes in socio-economic characteristics, land use, biodiversity, atmospheric composition, and climate. Most published impact assessments do not address the vulnerability of ecosystems and ecosystem services under such environmental change. They cannot answer important multidisciplinary questions such as: Which are the main regions or sectors that are vulnerable to global change? How do the vulnerabilities of two regions compare? Which scenario is the least harmful for a sector?

This paper describes how the project ATEAM (Advanced Terrestrial Ecosystem Analysis and Modelling) uses a new approach to ecosystem assessment. Within ATEAM a full suite of ecosystem models, covering biodiversity, agriculture, forestry, hydrology, and carbon sequestration are fed with the same input data and are run with the same consistent SRES-based scenarios. Each model gives insights into specific ecosystems, as in traditional impact assessments. Moreover, by integrating the results in a Vulnerability Assessment, multidisciplinary questions, such as those listed above, can be answered as well. A statistically derived European environmental stratification forms a key element of the Vulnerability Assessment. By linking it to a global biome classification, comparisons can be made using data from different assessments and scales. The paper presents the first results of ATEAM’s Vulnerability Assessment, and illustrates how ATEAM’s multidisciplinary multi-scale vulnerability framework can be used at different scales.

**Interfacing Two Knowledge Systems: Local Knowledge and Science in Africa**

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*Session 10.3*

In this article, with reference to Ghana and Zimbabwe, I explore the traditional African worldview, life world, belief systems, and ways of thinking and