

## Commentary

# Research on Local Ecological Knowledge-A Plea for Parity: Critique on Local Ecological Knowledge (LEK) in Interdisciplinary Research and Application: a Critical Review (Ruddle and Davis 2013)

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While the ecological literature is replete with published papers assuming that local ecological knowledge (LEK) can and should be used in combination with conventional ecological science, there are relatively few that challenge or assess this assumption on theoretical, moral, or empirical grounds. Ruddle and Davis (2013) recently compiled a critical review of a small sample of literature on the application of LEK which provides some interesting insights into theory and practice of research that uses LEK. I fully agree that it is important to examine more closely the research that is using LEK and how it is evaluated and applied. Unfortunately, Ruddle and Davis (2013) conflate cautions raised about how to best use and evaluate LEK in comparison to ‘western’ or ‘expert-based’ science (e.g. Brook and McLachlan 2005) as suggesting that these cautions suggest that those individuals “simplistically claim that LEK is incontestably valid”. This reflects an ongoing simplistic dichotomy that suggests there is only a binary choice to fully support or fully oppose comparing LEK with science. What Ruddle and Davis (2013) fail to recognize or discuss in their review is that the comparisons between LEK and science are not just comparing two datasets, but are inevitably tied to critical issues of power and control. The assumption that concerns raised about how LEK should be collected and used are actually total opposition to comparing LEK with science are almost invariably wrong. More often, these discussions are actually a reflection that approaches to comparing LEK and science need improvement.

When Ruddle and Davis (2013) describe those researchers that raise concerns about issues of respect, appropriate methods, and power dynamics, they call them ‘resurgent irrationalism’. This is apparently meant to criticize the view that emphasizes engaging communities throughout the research process, particularly in the interpretation and dissemination of results, questioning the outcomes of scientific studies as “truth”, and even in advocating for using LEK research as a means of social change.

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In response to the obvious need for a more effective and accountable documentation and use of local knowledge in Canada, guidelines are being developed that facilitate working with communities respectfully and using their knowledge appropriately. The Tri-Council of federal funding agencies in Canada (Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, and Canadian Institutes of Health Research) has been actively developing guidelines that address this issue (CIHR, NSERC, SSHRC 2010; Martin-Hill and Soucy 2005; CIHR 2007). A key point made in the CIHR document was that:

*“An Aboriginal community should have an opportunity to participate in the interpretation of data and the review of conclusions drawn from the research to ensure accuracy and cultural sensitivity of interpretation. Research involving Aboriginal people is susceptible to misinterpretation or misrepresentation when information about the group is analyzed without sufficient consideration of other cultural characteristics that make the group distinct.”* (CIHR 2007).

Interestingly, the report which is meant to inform all publically funded scientific, social, and health research with Aboriginal communities in Canada further states that: *“research should be of benefit to the community as well as to the researcher”* (CIHR 2007). Although there are bound to be disparities between LEK and scientific data when both are incorporated in research, the ongoing exchange of ideas and trust that develops between researchers and communities are much more likely to resolve any differences than is the inherent “rightness” of either knowledge system. These independent recommendations were based on a comprehensive national consultation with Aboriginal communities, scientists, and institutions and I believe they reflect the future of LEK research.

It is unfortunate that Ruddle and Davis (2013) continue to misinterpret cautions regarding the power dynamics and process of collecting and evaluating LEK and expert-based science (e.g. Brook and McLachlan 2005) as simply meaning total opposition to comparing science and LEK. Examples from my own research that compare science and LEK (e.g. Brook and McLachlan 2009) reflect that indeed I fully agree that rigorous analysis and comparison are important and necessary. However, the fundamental issue raised by Brook and McLachlan (2005) was that comparing LEK and science requires concurrent recognition of 1) the limitations of scientific data and methods; 2) the limitations of LEK information *and* approaches when documented by (often non-Aboriginal) outsiders; and 3) the power dynamics and value judgments that are inevitably presented when the knowledge systems are combined in research. Furthermore, Brook and McLachlan 2008 identified important failures in much LEK research to use appropriate methods to collect and use LEK in ecological research. We clearly need to move beyond simply assuming that researchers are either ‘for or against’ comparing LEK and science and focus on more effective approaches.

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