What Others Have Learned about Community-Based Monitoring

We reviewed and summarized reports and articles published in scientific journals related to the effectiveness and success of programs involving community members in environmental monitoring activities. We decided to use the term Community-Based Monitoring (CBM) as an "umbrella term" for the purpose of this workshop to encompass on-going monitoring activities that have also been called citizen science, observing networks, public participation in scientific research, community-based research, and community-based participatory research.What all of these activities share is a collaboration between professional scientists and non-scientist stakeholders from recognizable, but diverse, communities.

While CBM is an umbrella term, it is also a sub-set of the other, broader terms because they encompass all types of research, particularly research that is hypothesis-driven, while CBM focuses on monitoring to detect significant environmental changes.

The degree of involvement of community members in CBM activities varies along a spectrum from solely the collection of data and information to involvement in every aspect of program initiation, planning, implementation, and evaluation. The degree to which scientists or communities drive CBM programs, however, affects the quality of community participation.

In Alaska, the communities engaged in CBM are particularly diverse, and include subsistence hunters, K-12 teachers and students, political entities (e.g., villages, towns, cities, etc.), people who live in the same geographic area, and people who have common interests (e.g., birding, commercial fishing) or common concerns (e.g., clean water, the status of fish and wildlife populations or species).

CBM programs have already made substantial contributions to ecological understanding and many programs have incorporated local and/or traditional knowledge, particularly in the Arctic. CBM has the potential for beneficial outcomes at multiple levels: individual participants, communities, including the scientific community; natural resource management systems; and the social-ecological systems in which human and their institutions are recognized as playing an integral role.

Successful CBM programs begin with a clearly-articulated purpose shared by all participants, clear and measurable objectives, the results and outcomes desired, and a recognition of what will constitute success.

Implementation of the project required standardized or documented methods for collecting data or gathering observations and other types of information, recruiting and training (and often re-training) community participants, and evaluating success. Participating scientists require reliable, useful, and well-managed scientific data, observations, and other types of information. Traditional and local observations, gathered and managed in culturally-appropriate ways, also contribute to the desired understanding.

Sustaining CBM programs is a challenge, especially for those that rely on volunteers and/or require on-going funding. Scientist and community participants in CBM often have different objectives, motivations, and rewards; and this difference must be recognized and addressed to sustain participation. Observation networks usually depend on paid observers. Other strategies to sustain participation by community monitors or observers include ongoing feedback to community participants, recognition of individual efforts, and appreciation and acknowledgment of community contributions.

The need to establish and maintain two-way communication that is frequent and timely throughout program planning and implementation was stressed as critical to program success, and to building relationships and establishing trust. This communcationhas often been accomplished effectively by combining “state of the art” electronic communication technology and with other means appropriate to the community.

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The full summary and list of references reviewed is available at

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