

NY Conference Focuses on Long-term Research

By David Parsons

A group of about 40 distinguished scientists met from May 10-14 at the New York Botanical Garden's Institute for Ecosystem Studies (IES) in Millbrook, NY to discuss ways of improving support for long-term ecological research and monitoring. Organized by IES Director Gene Likens, the 1987 Cary Conference on Long-Term Studies in Ecology: Approaches and Alternatives, analyzed the importance of long-term data sets in understanding natural ecosystem processes,

discussed alternative approaches to carrying out long term research and explored ways of improving communication regarding the importance and utility of long-term data sets in natural resource decision making.

The meeting consisted primarily of small group discussions structured around six keynote addresses. Jerry Franklin (U WA and USFS) presented an overview of the importance of long-term ecological re-

search for identifying and understanding long-term trends, cyclic, and episodic processes, and for generating and testing ecological theory. He emphasized the need for a more systematic approach to long term studies in order to address major regional and global environmental issues.

L. Roy Taylor (Harpenden, England) spoke on the Rothamsted experience of over 100 years of collecting data on plant and insect communities. Margaret Davis (U. Minnesota and president of the Ecological Society of America) reviewed the use of retrospective studies (including sediments and tree rings) for reconstructing baseline data on environmental change and certain ecological processes. While such studies are primarily of value on a regional scale they can provide valuable insight to long-term studies.

Ways in which microcosms and simulation models can augment long-term ecological studies were discussed by Herman Shugart (U. Virginia). He gave special attention to the use of models in developing theory and testing protocols. Steward Pickett (IES) addressed the benefits and shortcomings of substituting space for time as an alternative to long-term studies. The common practice of inferring a temporal trend from the study of different aged sites makes critical assumptions that spatial and temporal variation are equivalent and should be used only with this in mind. Finally, David Tilman (U Minn.) discussed the value of experiments in ecological research but cautioned against basing conclusions on short-term data. He warned that the immediate response to an experiment may not be indicative of the eventual effect of the manipulation.

The discussion groups addressed such questions as identification of the key phenomena or questions that require long-term study, how best to integrate various approaches and techniques, the adequacy of available statistical methods to analyze long-term data sets (they concluded techniques are adequate although they are generally not taught in graduate biometry classes), the trade-offs between the immediacy of management needs and the longer process of scientific discovery and how to improve the image of long-term studies (how to convince peers, legislators, funding bodies, resource managers and the public that they consist of more than purposeless monitoring).

In summarizing the discussion groups Bill Reiners (Wyoming) emphasized the importance of well thought out questions or hypotheses as the basis for all long-term studies and the importance of fully considering temporal and spatial scales.

In the concluding session Gene Likens proposed a resolution as drafted by the discussion group under Lee Talbot's (World Resources Institute) direction, calling for a new commitment for the scientific community to work more closely with resource managers in assuring maximum application of research findings. A final version of this resolution, along with conference papers and discussion group highlights will be published by the Institute for Ecosystem Studies.

David Parsons, the NPS representative at the Conference, was encouraged by the groups' interest in the value of National Parks and other protected areas as sites for carrying out and implementing the findings of long-term research and monitoring. There was considerable interest in developing such a statement to be issued, perhaps, by the ESA. Such support could prove extremely valuable to current efforts to develop an inventory and monitoring program within the NPS.

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