

LAND USE HISTORY OF NORTH AMERICA:

An Emerging Project of the National Biological Service

By THOMAS D. SISK AND BARRY R. NOON

VALUE OF A LAND USE HISTORY

EFFORTS TO MANAGE THE NATION'S biological resources are hampered by the lack of a historical perspective on conditions prior to European settlement and subsequent changes in the North American landscape. Much of the impact that people have had on the environment can be viewed as a series of unplanned experiments, with particular perturbations generating measurable responses, in the form of contractions in the ranges of some species and expansions in the ranges of others. Within the context of these temporal dynamics, species extinctions and the spread of nonindigenous species may be seen as the extreme cases, where biological elements are lost or introduced. These experiments have been run, and environmental scientists are beginning to assemble the data needed to assess the results. The first task is to develop a clearer understanding of the historic changes in the distributions of plants and animals and their relation to human-induced changes to the landscape. Given this understanding, land managers will be able to review the effects of past perturbations and apply this information when attempting to evaluate the likely outcomes of future land changes.

Much of the data needed to construct such a retrospective view have already been collected; information on landscape change spans the period of human habitation of North America. Impressive regional efforts have been undertaken to synthesize the available information regarding land use change and its impact on ecological systems, but these projects have generally been limited to relatively small areas and short time lines. Large quantities of valuable biological and physical information remain unexplored, warehoused in different locations, and maintained by different organizations.

Consider the abundant information on prehistoric land cover and species distributions accumulated through the creative efforts of paleoecologists. Integration of

coarse-resolution data such as these with information derived from original land surveys of the country (e.g., data archived by the Bureau of Land Management), and the U.S. Forest Service data on the fire history of North America, for example, could make the characterization of historic landscape change quite tractable. When these data are combined with aerial photography from the extensive surveys started in the 1930s, and remotely sensed data from advanced satellite imagery, it will be possible to stitch together a continuous time line, from prehistoric times to the present. Catalyzing such an effort is the intent of the National Biological Service's Land Use History of North America project (LUHNA).

LAUNCHING THE PROJECT

This is an ambitious project, one that will require the collaboration of many different individuals and agencies, both within and outside government. In August, the National Biological Service convened a workshop to help define the scope and intent of the LUHNA effort, and to identify a strategy for fostering the multidisciplinary collaboration that it will require. Representatives from six government agencies, six universities, and three not-for-profit organizations established a framework for building a broader LUHNA effort. The National Biological Service will serve as the organizer and initial "home base" for the project, but the agency cannot possibly carry out such a large project alone or fund all the work that will be required. Instead, the NBS will provide a forum for discussion, communication, and scoping of the project and the initiative for developing the interdisciplinary relationships that LUHNA will require. We will also approach other organizations for cooperation and funding support.

Your comments are invited. The NBS headquarters in Washington has established an electronic mail account that will be used exclusively for the LUHNA project. Currently, we have limited staff assigned to this project, so several of us will be replying to

your messages as time allows. In the near future, we will move to a bulletin board format, permitting an open exchange of ideas among all collaborators and interested parties. The e-mail address is "luhna@ibis.mib.nbs.gov".

We will assemble a directory of individuals and organizations interested in LUHNA and a bibliography of important publications related to the LUHNA concept. We would appreciate your contributions, submitted in the following formats:

DIRECTORY:

Last name, First name MI (title)
Organization
Address
City, State Zip
Tel (xxx)xxx-xxxx; Fax (xxx)xxx-xxxx
e-mail address

BIBLIOGRAPHY:

Last name, First name MI, and First name MI Last name. Year. Title of article. Journal volume:pp-pp.

FOR BOOK CHAPTERS:

Last name, First name MI, and First name MI Last name. Year. Title of chapter. Pp-pp. in First name MI Last name (editor) BookTitle. Publisher, City, State, Country.

Submissions to both documents will be compiled and distributed electronically to all respondents, unless you request otherwise. If you wish to be on the mailing list but not in the directory, please indicate that on the line immediately above your name.

We look forward to your comments and our continuing interaction on this project.

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Thomas D. Sisk is an ecologist, and Barry R. Noon is Acting Chief Scientist. Both are with the National Biological Service, U.S. Department of the Interior, Washington, D.C.