


"Teaming with Life: Investing in Science to Understand and Use America's Living Capital"

An interview with Meredith Lane

By Miriam Kritzer Van Zant

"Teaming with Life" is the March, 1998 Report by the President's Committee of Advisors on Science and Technology (PCAST) Panel on Biodiversity and Ecosystems. This interview is concerned with the Report and its expected impact on biodiversity and ecosystems research in the 2000 and 2001 federal budgets (see below link).

Ethnobotanical Leaflets is fortunate to have had the opportunity to interview Dr. Meredith Lane, Professor in the Department of Ecology and Evolutionary Biology and Curator in the Natural History Museum at the University of Kansas, to obtain her unique perspective as Study Executive Director to the PCAST Panel that produced the "Teaming with Life" Report. She was extremely generous with her time and went beyond the norm in patiently giving personal insight with great intelligence, warmth and kindness. We would also like to thank Dr. Peter Raven, Director of Missouri Botanical Garden, member of PCAST and chair of the PCAST Biodiversity and Ecosystems Panel that produced "Teaming with Life" for asking Dr. Lane to answer questions on the Report for Ethnobotanical Leaflets.

"The Economic Value of Biodiversity and Ecosystems," a section within the Report, briefly discusses the general economic contribution of the following areas: Agriculture; Fisheries; Forest goods; Pharmaceuticals; Medical research tools; Nature, travel, horticulture and pets; Pollination; Seed dispersal; Grazing; Removal and storage of atmospheric carbon dioxide; and Flood control. A sub-section entitled "Values of species diversity" is limited to examples from research on rice, corn and wheat, the only plant species in the Report for which dollar amounts are specified. This may be an area which economic botanists would both benefit and benefit from if they would take Dr. Lane's advice to offer opinion in the form of testimony to federal agencies working on these issues. According to Dr. Lane, the panel sees these major economic crops as a starting place to raise agency sensitivity to the importance of biodiversity. It may be possible to expand that vision from this point on.

The interview is long, but it seemed important to allow viewers to choose how much background

information they want and/or need to know on this topic. It also seemed important to keep the context of the answers intact. Readers can scan the questions and focus on what is most useful to them. At the end of the interview are links to web sites of interest, especially a link to the plain text of the Report itself. Once inside "Teaming with Life", pull down the Find button and type in a dollar sign ($) to go to all the places where specific recommendations are made for the budget. There are also instructions on how to get a hard copy of the Report.

In hopes of whetting the viewer's appetite, here are a page of quotes from the introduction to the Report, specifying dollar expenditures (the body of the Report has many more budget suggestions) and some comments on topics of particular interest to economic and ethno-botanists. Square brackets within these quotes contain comments added for clarification by EBL.

"The biological, economic, and information science research, and the support for education, recommended in this Report will require the addition of up to $200 million annually to current Federal expenditures in these areas."

"The Report recommends that total yearly expenditures for discovery of species and their genetic attributes be raised to a minimum of $130 million (compared to current annual expenditures of $74 million) phased in over three years."

"Investments in these sites [the Report lists, "National Forest Research Labs, Long-Term Ecological Research Sites, some National Parks, etc."] and their research-support facilities [the National Biological Information Infrastructure especially] should be increased by approximately $55 million over the current $300 million per year." [Much of this for what the Report calls, "theoretical work on fundamental ecological principles."]

"The Panel recommends that the National Science Foundation take the lead in an interagency granting program to make approximately $24 million per year available for these highly interdisciplinary, extremely important, but currently unfunded areas." [Specified in the Report as, "interdisciplinary economic sociological, and ecological research on the relationship between the market economy and natural capital, between society and the biosphere," though the terms ethnobotany and economic botany are not actually used.]

"The Federal government should enable development of the 'next generation NBII [National Biological Information Infrastructure]' by investing a minimum of $40 million per year for five years (and reasonable maintenance thereafter)..."

"The recommended increase (of about $15 million to the current $72 million per year) in informal education opportunities will strengthen the environmental literacy of the American public, and initiate a mechanism for development of scientifically sound curricula and teaching materials that would improve the environmental component of science education in the Nation's schools."

"The Panel's recommendations call for specific investment increases that total less than $200 million per year (phased in over three years) for research, education, management, and the information infrastructure to support them all. Current Federal expenditures for biodiversity and ecosystems research and monitoring (which total approximately $460 million per year) are too low..."

With that said, please enjoy the **Interview with Meredith Lane**.

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EBL POLICY CORNER

Restoration Ecology and Economic Botany
Common Ground for Problem Solving

An Editorial By

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Management and repair of wild lands would greatly benefit from a combination of data and techniques developed in two subdisciplines in biology, economic botany and restoration ecology. These combined disciplines offer a pool of information and ideas for a practical approach to conservation. Utilized simultaneously, they provide additional opportunities for protection of biodiversity through sustainable agriculture in districts adjacent to protected sites. Additionally, the combined legacy of these disciplines has strong potential for enhancing local economies in rural areas.

Modern marketing techniques, applied with careful consideration for protection of biodiversity and long term production, can further enhance these gains for society. Traditional crafts based on sustainable harvests can provide value added cottage industries that further aid economic development. In certain areas new technologies even open the door for development of larger scale industries, as evidenced by the potential for sustainable systems with the recent development of agri-board, currently made from wheat straw (see EBL Agriboard Page).

Traditional societies abound with working examples on a smaller scale, such as utilization of medicinal plants (Austin and Bourne, 1992) and cultivation of local strains of sweet potatoes (Austin 1991, Contreras, et al. 1995). In addition, wild varieties have been commercialized for sale as ornamentals. Thousands of pounds of the seeds of a relatively inconspicious member of the morning glory family is sold yearly as a ground cover by California seed companies in both national and international markets (Austin 1998).

Although the scale is limited by sustainable yields for any type of product grown in wild or semi-wild

systems, these kinds of industries could improve economic stability and quality of lifestyle for people in all nations, including the United States. We urge policy makers, economists, and land managers at all levels to take into consideration this pool of information when looking at issues of development on both public and private lands, and in finding long-term solutions to economic problems.

About the Authors:

Daniel F. Austin is a professor at Florida Atlantic University who also heads their interdisciplinary Environmental Sciences Program. He is well known for his research on the systematics, ecology and ethnobotany of *Ipomoea*, the genus that includes sweet potatoes and morning glories. He has been a council member for the Society for Economic Botany and currently is their Book Review editor.

Miriam Kritzer Van Zant is a Ph.D student in the Department of Plant Biology at Southern Illinois University in Carbondale, Illinois. Her recently completed masters thesis, "An ethnobotanical study of the plants of the Shawnee Hills of southern Illinois," explores the potential for using native and naturalized plants of documented economic value in ways to increase acreage of wild and semi-wild land. Both are members of the Society for Economic Botany and Miriam is a member of the Society for Restoration Ecology.

Literature Cited:

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Contreras, J., D.F. Austin, F. de la Puente and J. Diaz. 1995. Biodiversity of sweet potato (*Ipomoea batatas*, Convolvulaceae) in southern Mexico. Economic Botany 49(3):286-296.

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