



The Society for Applied Anthropology

ENVIRONMENTAL ANTHROPOLOGY

Restoring the Florida Everglades: Social Impacts

Ecological restoration is not simply an engineering feat. Restoration efforts require institutional rearrangements, which can have both beneficial and adverse effects on the lives and livelihoods of human populations. The National Environmental Policy Act (NEPA) recognizes the human dimensions of environmental restoration, requiring that social impacts be considered as part of an environmental assessment whenever major federal actions may affect the environment.

Impact assessments begin with a "scoping" analysis to determine the key issues to be examined. Determining which issues merit investigation reflects value judgment as much as fact. Social scientists are skilled in exploring value systems and judgement processes.

The key aims of social impact assessment (SIA) are to document changes expected to result from a proposed project or development program, and to determine how these effects are distributed geographically and socially. In other words, who wins and who loses?

Even where environment-disturbing projects receive wide support, serving national and regional interests, this public benefit is usually achieved at a price. Inevitably, even the best planned projects impose burdens on local communities. Social impact assessment provides tools to anticipate this tradeoff between public benefit and local burden, and to mitigate the most harmful local effects.

Social impact assessment also helps decision-makers determine appropriate points of policy intervention, accommodating environmental change or seeking to slow the rate of human-accelerated changes by rethinking fundamental institutional arrangements. In the case of the Florida Everglades, for example, it may help the ecological restoration efforts succeed if attention is directed simultaneously to curbing the urban sprawl and agricultural development that have disrupted the region's complicated hydrological regime.

Many research methods necessary to follow the guidelines of an SIA are not often in the regular repertoire of environmental scientists and project managers, who usually are trained in the physical or biological sciences and quantitative assessment methods. Assessments should take into account the issues that are really important to affected communities and not only those things that are easy to quantify. Environmental perceptions and values may be of critical importance to the identity of a community, but perceptions cannot be captured with numbers alone.

In order to assess impact equity SIA guidelines recommend involving a diverse public, including groups that, because of cultural, linguistic and economic barriers, do not routinely participate in government decision-making. Outreach strategies to such groups will be most effective if developed with an understanding of how these communities are organized, how community members perceive their relationship to the environment, and how they understand environmental programs that affect them.

Anthropologists and other social scientists have training in specific methods designed to help them characterize community values, organization, and practices. Effective use of this knowledge increases the potential for cooperation among the various parties involved in restoration efforts.

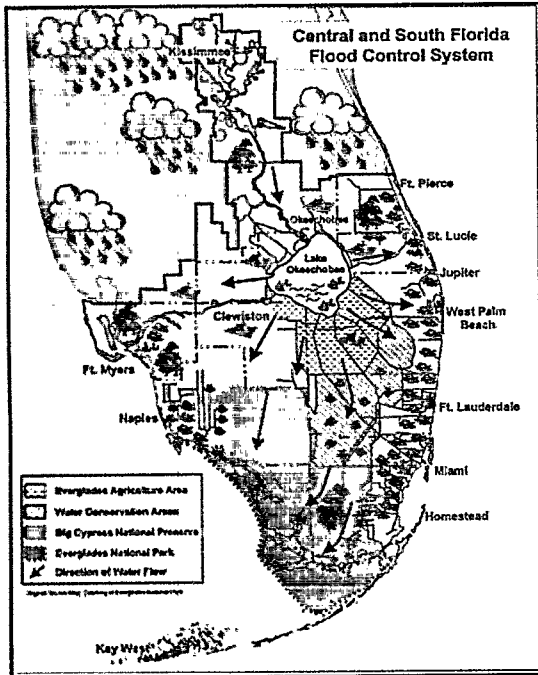
This Review highlights projects, sponsored by the Environmental Protection Agency (EPA) and the Society for Applied Anthropology (SfAA), aimed at more fully integrating the human dimension into the largest ecological restoration project ever attempted in the United States — the restoration of the Florida Everglades.

Florida Everglades Restoration

For thousands of years, humans lived as an integral part of the Florida Everglades — an ecosystem that produced an abundance of aquatic life, supported larger animals such as the Florida panther, and was large enough to recover repeatedly from the effects of hurricanes, fires, and other natural disturbances.

Things changed with 20th century development. Rapid population growth and agricultural expansion along the Florida coasts created strong public demands for drinking water, irrigation, and flood protection. In 1948, legislation created the Central and Southern Florida Project — a water management project authorized to provide flood protection and fresh water to South Florida. Today, this project encompasses 18,000 square miles in 16 counties, and includes 1,000 miles of canals, 720 miles of levees, and almost 200 water control structures. While the project achieved its mandate of providing more flood protection and water supply for agricultural and residential needs, it did so at tremendous ecological cost.

Today, the Everglades are half their original size, and water flowing through the system has been reduced by 70 percent. Since 1950 there has been a 90 to 95 percent reduction in wading bird populations; 68 plant and animal species are threatened or endangered. Over 1 million



Courtesy of the South Florida Water Management District
The Central and South Florida Flood Control System covers an enormous territory, relying a far-reaching network of collaborators from federal, tribal, state, and local government.

acres of the ecosystem are under health advisories for mercury contamination. Drinking water sources are threatened by saltwater intrusion. Water shortages and water restrictions are now a way of life in some parts of South Florida.

Concerned over the serious deterioration of the Everglades ecosystem, and recognizing the importance of a viable Everglades in Florida's society, economy, and environment, the U.S. Congress passed the Water Resources Development Acts of 1992 and 1996. These acts gave the U.S. Army Corps of Engineers the mandate to develop a comprehensive plan to restore and preserve south Florida's natural ecosystem, while enhancing water supplies and maintaining flood protection.

The Plan does not attempt to return the Everglades to their historic size. Instead, it aims to re-establish historical patterns of water storage and flow. But re-routing water affects farmers and other Everglades residents in varying ways. Some will gain and others will lose resources, livelihood, homes, and community.

Social Science Symposium

Given the social and economic consequences of engineering decisions, it makes sense to bring social and physical scientists together to discuss program strategy. With this goal in mind, Environmental Anthropology Project intern Laura Ogden garnered support for a Social Science Symposium while working with the South Florida Ecosystem Restoration Task Force "Working Group" and the Governor's Commission for a Sustainable South Florida.

The 3-day Symposium involved six groups of social scientists, who teamed up with other technical experts, many of them senior level project managers, to develop strategies that could better identify and address social impact, public participation, and related concerns. Participants evaluated projects and identified social science information or program needs they found lacking, and translated these information gaps into research recommendations or more programmatic recommendations (such as integrating a community involvement strategy in the project scoping phase).

Social scientists suggested various community assessment techniques to provide policy makers with a more comprehensive portrait of affected communities. Methods suggested included:

- participant observation
- life history research
- snowballing interviews
- structured and unstructured interviews with a stratified sample of group representatives
- surveys to elicit socio-cultural characteristics, group composition, views, interests and issues.

This expanded knowledge base could also be used to develop more effective community education and participation strategies.

Social Impact Assessment

Changes to the physical landscape accompanying ecological restoration may disturb or destroy cultural resources; involve wetlands or watersheds; and require the involuntary resettlement of families, neighborhoods, or communities. The National Environmental Policy Act (NEPA) requires that federally funded projects include social impact assessments as part of environmental assessments and environmental impact statements.

Social Impact Assessment offers tools for analyzing the effects of environmental disturbance on social systems. Based on this information, one can forecast how these may change if a proposed action or alternative is implemented, and develop ways to mitigate adverse effects on a particular population. Special attention must be paid to disproportionate and adverse impacts on the health and well-being of low-income and minority populations. For more information, see:

http://hydra.gsa.gov/pbs/pt/call-in/factsheet/1098b/10_98b_7.htm

Laurence R. Goldman, Editor, *Social Impact Analysis: An Applied Anthropology Manual* (2000, Berg Publishers).

The Social Science Symposium provided a valuable opportunity for social scientists and other technical experts, each drawing from his or her own specialized training, to discuss the impacts of restoration efforts on communities, labor forces, or economies, and the importance of understanding how restoration efforts may disturb or destroy cultural resources. The outcome was the *South Florida Action Plan for the Social Sciences*. The Plan has been used to brief Everglades restoration policy makers and to guide grant writing and develop projects associated with restoration plans. It helped shape the core element of a "socioeconomic and environmental justice" program plan, and a Critical Ecosystem Studies Initiative for Everglades restoration. For more information on Ogden's project see: <http://www.sfaa.net/eap/ogden2.html>

Restoration and Flooding in a Rural Community

The dual challenge of improving environmental quality while accommodating the potentially affected social groups is well illustrated by events concerning an 8.5-square mile region in the unincorporated area of Dade County. Restoration efforts raised the ground water table and caused flooding in this rural community, leaving roads nearly impassible and the land practically worthless. Home to about 1,000 people - generally low-income Spanish-speaking farmers - this economically disadvantaged area is at the center of a controversy that has simmered for almost 20 years, involving all levels of government, from local to state and federal agencies.



Photo: Madeleine Fortin

The 8.5-square mile area in rural Dade County has been subject to periodic flooding since Everglades restoration efforts raised the groundwater table. The lack of productive dialogue between residents and policy makers has been costly. Resident refusal to relocate has brought restoration efforts to a halt as agencies decide what is to be done.

Environmental Anthropology Project intern Madeleine Fortin conducted research in this 8.5-square mile area, collecting data on community life and local views of the restoration. She found that outreach efforts by restoration planners had been unsuccessful in engaging community members and had even increased community distrust of restoration efforts. Language used by agency staff at public meetings was too technical to help the audience understand the project or how they might work with planners to mitigate adverse impacts to their family and community.

Whenever local communities are asked to bear the burden for a regional benefit, it is especially important to anticipate possible conflict. Discussions with community groups about mitigation measures or alternatives should be conducted in the early stages of project planning, before groups with different interests become locked in confrontation.

For more information see: <http://www.sfaa.net/eap/fortin/fortin.html>

Brownfields and Ecological Restoration

Brownfield redevelopment efforts in South Florida represent the inversion of Everglades restoration. Water subsidies, urban sprawl and leap-frog development leave older industrial zones abandoned and untouchable for redevelopment purposes unless clean-up standards are relaxed, and new owners are not held fully responsible for eliminating all traces of the existing pollution. With the population expected to triple in the South Florida region in the next half century, brownfield redevelopment could decrease the pressure for the urban sprawl that undermines Everglades restoration.

Due to growing popular concern and legal battles associated with the potential influence of contaminants on the public health, the EPA and developers alike have become interested in involving local residents early in brownfield redevelopment. Located in northwestern Miami Dade County, the Poinciana community was selected to become a national pilot site under an EPA initiative that pays local governments to support the creation and implementation of participatory approaches to redevelopment.

Sponsored by an Environmental Anthropology Project fellowship in association with the Governor's Commission for a Sustainable South Florida, David Driscoll conducted qualitative research in the Poinciana community to develop a replicable strategy for identifying and involving community members in the redevelopment planning of urban brownfields. Driscoll used anthropological methods that have proven especially helpful in assessing and interpreting sociocultural factors that might affect the behavior of target groups. Ethnographic research methods used in rapid assessment procedures (RAP) showed that the Poinciana community was composed of three separate neighborhoods with very different ethnic and socioeconomic characteristics. Community behavior, organization, interest and concern also varied within and among the different neighborhoods.

About Brownfields

Brownfields are lightly contaminated urban sites that have good prospects for cleanup and re-use. The properties once operating on the Poinciana site included a pesticide manufacturing plant, several dry cleaners, industrial welding facilities, and a variety of auto repair and repainting shops.

For more information, please see <http://www.oecd.org/tds/bis/brownfields-chap1.htm>

Rapid Assessment

Anthropologists designed Rapid Assessment Procedures to gain a descriptive understanding of a situation in a limited timeframe that could aid the design and implementation of further research or social change. Generally speaking, RAP techniques involve three basic anthropological concepts: getting an *insider's perspective* of the important elements of the community, their relative importance, and how they relate to each other; *the triangulation of data* – i.e., the collection of data from individuals with differing backgrounds, and/or using different research methods to provide cross-checks, and thus improve the quality of the information gathered; and *iterative data collection and analysis* – using feedback from ongoing research to refine progressively the direction and scope of research questions as new information is gathered.

For more information, see James Beebe, *Rapid Assessment Process* (2001, Alta Mira Press).

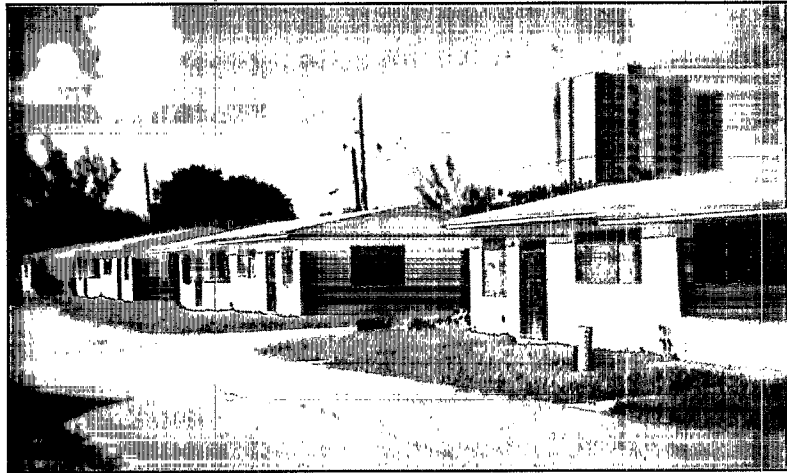


Photo: David Driscoll

To most people outside the Poinciana community, it might appear to be just one more pocket of concentrated poverty passed over in South Florida's phenomenal metropolitan expansion. But it really is made up of three distinctive neighborhoods, and public involvement efforts will be most effective in these and similar locales by recognizing these important social distinctions.

Information obtained through ethnographic methods guided the design of specific outreach messages about remediation options aimed at different segments of the population. One message focused on health ramifications, a second on the consequences for local jobs, and a third on potential changes in property values. The research findings also provided suggestions about where and how to target the outreach messages to increase the likelihood of resident response. Driscoll's work showed that a combination of rapid assessment procedures and social marketing techniques can be a quick, effective, and replicable way to elicit community involvement in environmental restoration efforts.

For more information on the South Florida Brownfields project see <http://www.sfaa.net/eap/driscoll/driscol.pdf>

For more information on Brownfields and curbing urban sprawl, see:
<http://www.epa.gov/region5/air/sue/sprawl.htm>
<http://www.oecd.org/tads/bis/brownfields-chap1.htm>
<http://web.aces.uiuc.edu/tabloid/SprawlAided.html>
<http://www.ci.houston.tx.us/departme/health/newnote5.htm>

Summing Up

One of the main challenges in ecosystem restoration is to understand the complex interactions between communities and landscapes. Environmental restoration plans often focus on the technical aspects of refashioning the physical landscape without adequate consideration for the place of humans in the ecosystem. This oversight can lead to project delays and rising expenses if restoration efforts are contested in court, or if there is a lack of political will to implement the project.

For the Everglades to be restored, fundamental changes in public attitudes, behavior, and institutional arrangements must occur through the meaningful involvement of affected communities. Well-grounded social science research can help environmental planners, managers, and policy makers by identifying the potential social impacts of the projects and developing strategies to elicit the participation of those whose lives will be most directly affected.

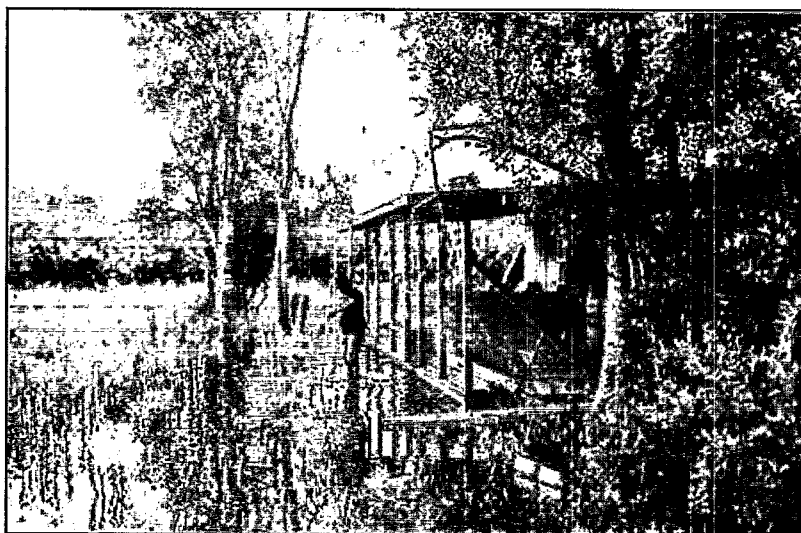


Photo Courtesy of the Miccosukee Tribe

This photo illustrates human induced flooding occurring on the Miccosukee Tribal Land that killed an estimated 85% of the deer population and damaged many of the tree islands.

Photo source: "Facing Up to Problems in Everglades Restoration," Minority Report from the South Florida Ecosystem Restoration Task Force by Dexter Lehtinen (General Counsel to the Miccosukee Tribe of Indians of Florida), April 1999. www.evergladesvillage.net/miccosukee/#progress

Additional Resources:

The Comprehensive Plan for Everglades Restoration. Information about the Comprehensive Plan to restore the Florida Everglades, and copies of their various plans and reports can be found at <http://www.evergladesplan.org/>

Everglades Information. For information about Everglades history and conditions, and to gain access to scientific and technical reports, natural history writings, educational and interpretive materials, datasets, maps, photos, and a directory of other Internet sites relating to the greater Everglades, see the Everglades Digital Library at <http://everglades.fiu.edu/library/index.html>

8.5 Mile Community Perspectives. For a transcript of the March 2000 testimony by 8.5 Square Mile Community residents to the Water Resource and Environment Congressional Subcommittee on Transportation and Infrastructure, see <http://www.house.gov/transportation/water/hearing/03-01-00/aquilera.html>

Miccosukee Perspectives. To review a copy of the Miccosukee Tribe comments on the South Florida Ecosystem Restoration Task Force Report for 1999, see "Facing Up to Problems in Everglades Restoration" Minority Report, by Dexter Lehtinen (General Counsel to the Miccosukee Tribe of Indians of Florida), April 1999. This report is published at <http://www.evergladesvillage.net/miccosukee/#progress>



Environmental Anthropology Projects focused on community-based approaches to environmental protection throughout the U.S.

Environmental anthropologists analyze and resolve human and ecological problems posed by energy extraction and use; agriculture, forestry, fisheries, mining, and other resource development; pesticide exposure, toxic waste disposal, and other environmental health issues; environmental restoration; tourism, public lands, and cultural resource management; the protection of traditional knowledge, values, and resource rights; and environmental education

The Society for Applied Anthropology was incorporated in 1941, with the mission of promoting the scientific investigation of "the principles controlling the relations of human beings to one another" and the wide application of those principles to practical problems."

In 1996 the Society established the Environmental Anthropology Project, funded through a five-year cooperative agreement with the U.S. Environmental Protection Agency. The aims of the project were to provide technical support for community-based approaches to environmental protection and to improve the understanding of how cultural values and social behavior affect environmental management decisions.

Theresa Trainor served as EPA's project officer from the project's inception. Barbara Rose Johnston directed the project for its first four years; Robert Winthrop served as director for the final year of the project. The Review series was produced by Barbara Rose Johnston, and Gabrielle O'Malley and Edward Liebow of the Environmental Health and Social Policy Center. The Reviews solely reflect the views of their authors, not those of the Environmental Protection Agency. Society officers (including Jean Schensul, John Young, Linda Bennett, and Noel Chrisman) and a project advisory group provided oversight during the course of the agreement. Many Society members served as mentors for the project's interns and fellows, and as reviewers for its reports and publications.

The Society for Applied Anthropology is grateful for the financial support and professional cooperation of the Environmental Protection Agency and its staff. For more information on the Society and the Environmental Anthropology Project, please see our web site: www.sfaa.net.

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