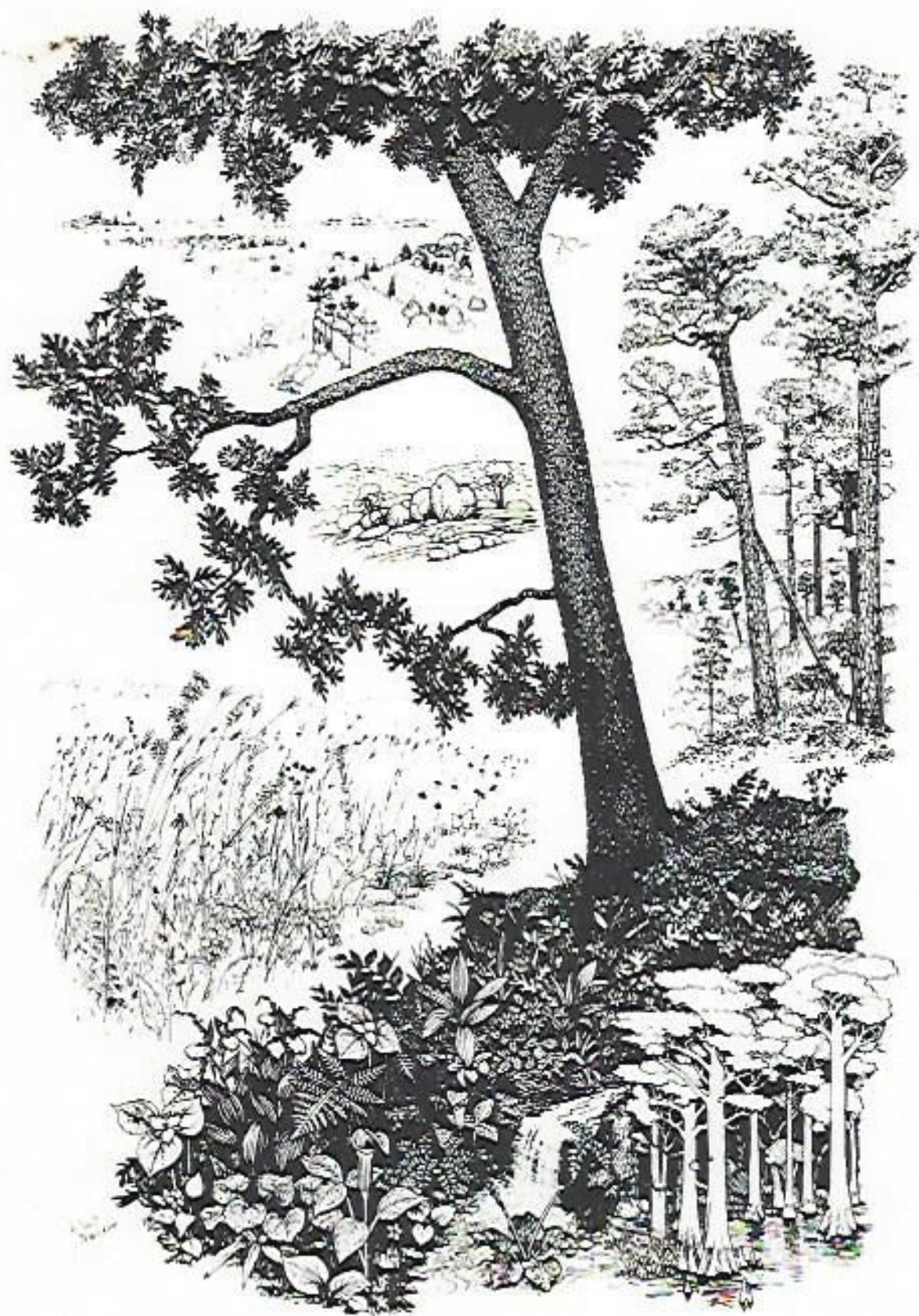


ABSTRACTS

13TH ANNUAL NATURAL AREAS CONFERENCE



October 21-24, 1986

YMCA of the Ozarks, Potosi, Missouri

Ackelson, Mark C.

THE ROLE OF LOCAL AND REGIONAL LAND CONSERVANCIES

The role of regional non-profit land conservation organizations in protecting natural areas will be reviewed. Special emphasis will be on: (1) land stewardship and preservation; (2) public education and awareness; and (3) long-range planning and research. Cooperative efforts between public and private sectors will also be discussed.

Aldon, Earl F.

AN OVERVIEW OF NATURAL AREAS PROTECTION IN THE SOUTHWEST

An overview of Research Natural Areas (RNA) in the Southwest will be given, along with a step by step explanation of how twenty-eight additional RNA's were proposed for inclusion in National Forest Management Plans in the Southwest.

Anderson, John M.

NATIONAL AUDUBON SOCIETY

A brief history of the start-up of the Audubon Society in the early 1900's; early experiences in bird protection and legislation; followed by a narrated slide show depicting about fifteen wildlife sanctuaries illustrating habitat management techniques and tools.

Chapman, Kim

A COMMUNITY CLASSIFICATION SYSTEM FOR THE MIDWEST

Community classes developed by Midwest state heritage programs are tools--"coarse filters"--for inventory and conservation planning. There is overlap between state community classifications, but not one-to-one correspondence between community classes. Each state has developed its own community names and unique concepts of variability within each community class. The objective of this project was to develop, in six months, a classification framework--a crosswalk classification--which groups similar community types used by the ten Midwest state natural heritage programs. The approach used creates a framework at a higher level than state natural heritage program community classes, fits the state community types into it, and arrives at consensus among state heritage ecologists that such a framework has correctly grouped similar state community types at a coarse level of classification. About 120 regional community classes were created to contain 590 terrestrial and palustrine state community types. About 90 of these regional community classes occur mostly in the Midwest; the other 30 represent communities that barely enter the Midwest from neighboring regions. Setting priorities among the regional classes will aid future work in conservation planning and community classification. Similar work has begun on aquatic and subterranean systems (lakes, streams, springs, and caves).

Durham, Daryl and Hamel, Paul

BOTTOMLAND HARDWOODS: TRACKING A VANISHING RESOURCE

Primary interest in forested wetlands in recent years has involved melancholy documentation of the decline in these resources. To that extent, these habitats have been passively "monitored". More valuable, from both scientific and natural area perspectives, is an active monitoring effort. Such a stewardship program involves, first, systematic investigation designed to identify issues in biology, management, and restoration of bottomland habitats; and, second, vigorous application of research results in decision-making processes concerning these lands. We present our thoughts on an integrated monitoring program for bottomland hardwood resources. We use examples of past, current, and proposed monitoring schemes at national, regional and site scales to illustrate approaches available to managers and scientists.

Emory, Benjamin R.

THE ROLE OF LOCAL AND REGIONAL LAND CONSERVANCIES

The talk will present a national overview of land trust activity, especially land trusts' work in preserving unique ecological areas. Also discussed will be what the Land Trust Exchange does to help existing trusts and how it can help people trying to start new ones.

Holst, Sue

UNDERSTANDING AND PROMOTING USE OF NATURAL AREAS

Many of Missouri's natural areas are located in its state parks, which offer a somewhat unique opportunity for interpretation and promotion. Natural areas are promoted as special parts of the state park system and are included in many types of information: slide shows, brochures, self-guiding trail booklets, and interpretive signs and displays. The Missouri Department of Natural Resources believes that if people understand the significance of natural areas, they will appreciate them more.

Humke, John W.

ESTABLISHING RESEARCH NATURAL AREAS IN THE FOREST SERVICE'S EASTERN REGION

Over the past 30+ years, the U.S. Forest Service has established twelve Research Natural Areas in the fourteen National Forests in the USFS Eastern Region. State Natural Heritage Programs, state agencies and others have compiled information on outstanding natural areas worthy of consideration as RNAs within National Forests. Using the National Forest Planning process, The Nature Conservancy has developed a cooperative relationship and program with the Forest Service, Heritage Programs and state agencies to propose for establishment up to 150 new RNAs.

Hunzeker, June

PROMOTING YOUR PROGRAM THROUGH PUBLICATIONS

Use of various types of publications to build public support for natural area programs will be discussed. Information presented will be useful both to those with limited staff and budget and to those with greater staff and budget resources.

Hutchison, Max D.

REMOVING SENSING TECHNIQUES -- THE STATE OF THE ART

A brief review of the coastal plain, its natural communities and landscape character will be presented. Specific application of remote sensing techniques along with various types of imagery and maps will be discussed. Procedures for remote sensing work will be covered including preparation, interpretive techniques, and follow-up.

Johnson, Janet L.

REVIEW OF NATURAL AREA PROTECTION STRATEGIES IN THE PACIFIC NORTHWEST

A review of natural area protection strategies in the Pacific Northwest involves four states - Washington, Oregon, Idaho, and Montana - and a diverse group of federal, state, and private organizations. The federal agencies have had a lead role in the development of natural area programs because of the dominance of public land ownership in the region and recently mandated planning directives. Since the initiation of the natural area designation by the Forest Service in 1927, the total number of established federal, state, and private natural areas in the Pacific Northwest has increased to over 200 sites. There exists an almost equal number of proposed natural areas which have been identified in federal land use plans. The success of each state's natural area program varies because of the efforts of key individuals and the degree of cooperation (or lack of) between agencies and organizations.

Knoop, Jeff

LANDOWNER CONTACT-RECOMMENDATIONS FOR A PRACTICAL APPROACH

Private land registry programs have become a widespread and effective means for natural areas protection. In many cases, the registry person is the first contact that landowners have with natural areas managers. Strengths and weaknesses of different contact initiatives will be discussed. Developing landowner relationships and meeting the landowners desires will also be discussed. Registry on a case by case basis: when is it appropriate and how it can be molded to fit different situations. Tips on convincing the private landowner of management needs will also be discussed.

Marita, Floyd J.

NATURAL AREAS IN EASTERN NATIONAL FORESTS - ACCOMPLISHMENTS AND CHALLENGES

Since the first Research Natural Area in 1927 to the present, the Forest Service has made progress in establishing examples of important forest and range land ecosystems for long-term study. In the Eastern Region, Forest Plans being developed under the National Forest Management Act recognize important natural areas that should be preserved. Significant progress has been made with the help of The Nature Conservancy, states, and other conservation organizations in identifying candidate Research Natural Areas.

The challenge is to establish a comprehensive system of Research Natural Areas, and to initiate baseline data for long-term monitoring. It is essential that this be a coordinated effort.

Martin, Mark and Matthiae, Paul

WISCONSIN'S NATURAL AREAS RESEARCH PROGRAM

In Wisconsin, 200 state natural areas are available for scientific research. Permits approved by the Department of Natural Resources - Bureau of Endangered Resources, must be secured before work begins. In 1986, a use survey of property managers and educators was conducted to document additional research and educational use. Currently, there are 37 research projects on 40 state natural areas. The Lois Almon Small Grants Research Program administered by the Wisconsin Academy of Science, Arts, and Letters with funding provided by the program, The Nature Conservancy, and the Bureau of Endangered Species - Tax Checkoff Program offers grant money to researchers.

Martin, Paul

MANAGEMENT OF LIMESTONE PRAIRIE GLADES, A UNIQUE SOUTHWEST MISSOURI COMMUNITY

The White River glades region of southwest Missouri covers approximately 500,000 acres; over 400,000 acres is located on private land. These prairie glades typically occur on the Gasconade soil series characterized by soil depths of 4-25 inches over dolomitic limestone. The soils have high pH and exchange cation levels with high amounts of organic material, a good nitrogen source.

This prairie-forest transition zone was produced by the combined effects of climate, soil, mycorrhizae, drainage, and fire. Reduced occurrence of wild fire during the last 50 years on these bluestem grasslands have led to woody plant encroachment, decreasing forage quality and quantity, and changing species composition and habitat types. Reintroduction of fire is necessary for the re-establishment and maintenance of this ecosystem.

Proper execution of a prescribed fire will release nutrients bound in the organic layer without volatilization of mineral soil nitrogen. Fire stimulates growth and increases flowering of native warm season grasses and legumes, as well as removing the accumulation of standing, dead and ungrazed biomass. This results in a higher quality, more evenly grazed forage and better live stock gains. Frequent fire intervals (2-5 years) result in vegetative composition most similar to pre-settlement estimates and thus maintains the habitat favoring indigenous wildlife species.

Mayerfeld, Diane

MANAGEMENT OF NATURAL AREAS IN NEW ENGLAND

A New England wide natural areas inventory began in 1969 provided a starting point for the natural area programs in all six New England states. Today, biological inventories consistent with The Nature Conservancy's natural heritage format have been established in all New England states, providing a regionally consistent data base for setting protection priorities.

The actual management programs in the states differ widely, however, reflecting differences in prevailing land use, threats to natural areas, federal and private land protection, and philosophy of state government among the New England states. Although the state natural area tradition in the Northeast lags behind that of the Midwest, growing cooperation between state governments and private conservation organizations is resulting in strengthened state natural area programs throughout New England.

Moull, Tom

LANDOWNER CONTACT-RECOMMENDATIONS FOR A PRACTICAL APPROACH

Rather than dwell on the theoretical background or statistical results of the Natural Heritage Stewardship Program, it is hoped that more discussion will be generated in this workshop by presenting the following subject matter on what works for us and identifying the major problems that we run into: (1) the value of a comprehensive training program for Landowner Contact representatives; (2) the Landowner Contact process; (3) concurrent involvement and coordination with several agencies involved in the protection and management of Ontario's natural heritage; (4) disposition of Landowner Contact information and existing landowner incentive mechanisms; (5) future directions of the Natural Heritage Stewardship Program - future direction based on what has been learned over the past three years.

Noss, Reed F.

MEGA-PRESERVES AND NETWORKS: A LANDSCAPE-LEVEL APPROACH TO NATURAL AREAS PROTECTION

Natural areas are usually selected for protection according to the unique elements contained within them. But focusing on content alone is not sufficient to protect these elements

in perpetuity, because the structure and land-use of the surrounding landscape will determine whether a "protected area" functions as such. A focus on landscape context includes not only a consideration of external threats, but also how each individual natural area combines with other landscape elements to create diversity at regional and ultimately global scales.

Although few remaining natural areas are large enough to contain natural disturbance regimes and habitat mosaics within their boundaries, or to meet the needs of wide-ranging animals, an integrated system (network) of protected areas and buffer zones of low-intensity land-use may approximate the natural pattern. Restoration of wilderness ecosystems in human-dominated landscapes is a particularly challenging task, but must be attempted if the full range of natural diversity is to be maintained in the long term. Examples are presented of mega-preserves and networks proposed for Florida and Ohio.

Nyboer, Randy W.

USING SMALL MAMMALS AS POLLUTANT INDICATORS ON NATURAL AREAS

Ayers Sand Prairie, an Illinois Nature Preserve, was contaminated by lead particulate matter from a battery reclamation plant in 1980 and 1981. Small mammals indigenous to the site were snap trapped and necropsied for lead. Deer mice (Peromyscus maniculatus) were the primary species caught and tested. The analysis of liver, kidney, and bone tissues were found to have elevated lead levels in a 400M radius of the 1000M sample area of the prairie. The combination of the animal tissues, soil, herbaceous plant and lichen samples effectively determined the concentration and distribution of the lead contamination within the preserve.

Parker, George

HARDWOOD FOREST REGION--IMPLICATIONS FOR MANAGEMENT

Long-term trends in tree species population change are examined for several old-growth forests in Indiana. There is an expansion of late seral species such as Acer saccharum and a general decline in mid seral species such as Quercus alba. These changes are examined in relation to past disturbances for the region and needs for management.

Reese, Gary

NATURAL COMMUNITIES IN THE CENTRAL MIDWEST

Techniques for off-site (i.e. remote) identification and evaluation of natural communities indigenous to the Central Midwest will be reviewed. Emphasis will be on use of various aerial photography resources, including both current and historical black/white, color, and infrared imagery. Examples based on Missouri field work but having a wide geographical scope, will be presented. Topics of special

interest will include: a) the use of historical contrast of imagery to evaluate disturbance history, b) defection of unique community "signatures" as an aide in natural community identification, c) use of land resources data (e.g., geology maps and soil surveys) in community identification, and d) aircraft survey methods and special applications.

Solecki, Mary Kay

VEGETATIONAL COMPOSITION OF THREE MISSOURI TALLGRASS PRAIRIES
WITH REFERENCE TO PAST MANAGEMENT

Missouri's public prairies have been managed by burning, haying, and grazing for over 20 years, yet the effects of these management treatments on the vegetational composition have not been documented. This study is the first stage of a long term project to determine the effects of various tallgrass prairies. The vegetation of 12 different management units at 3 prairies was described and compared. The importance value of numerous species varied with past management. In general, management units that received the same type of past management had the greatest similarity. The highest species richness at one prairie with 8 management units occurred in grazed units, rather than hayed or hayed and burned units. This may be attributed partially to the relatively high percentage of non-native species (4.3 to 8.6% introduced species) at the grazed units. Seasonal variation was apparent, as the frequency of 19 common species often differed significantly in spring, summer, and fall. The greatest average species richness occurred in summer, and the lowest average richness occurred in fall.

Tuhy, Joel S.

NATURAL AREAS PROTECTION IN THE ROCKY MOUNTAIN AND INTERMOUNTAIN
AREAS

The majority of land in the Rocky Mountain and Intermountain areas is federally owned. Many of the remaining natural areas occur on these federal lands. People or organizations that pursue natural area protection must work with the various government agencies that administer the federal land. Methods include identification of potential natural areas, site analysis, preparation of necessary reports, and involvement in the agencies' planning processes. Of the four states in this general region, only Colorado has a state-based natural areas program. In Utah, Nevada, and Wyoming, natural area protection work has been spearheaded by private organizations or individuals. The structure and success of federal-private (UT, NV, WY) and federal-state (CO) relationships for natural area protection vary considerably, depending mainly on the people involved. There have been some encouraging results to date.

Unkel, Chris

IMPLEMENTING THE NATIONAL FOREST MANAGEMENT ACT'S DIVERSITY
MANDATE IN THE WEST

California's Significant Natural Areas project ("SNAP"), a program of the California Department of Fish and Game, serves as the functional hub of public land natural areas

protection efforts in the state. Supported by information provided by the California Natural Diversity Data Base, SNAP has systematically analyzed the locations of rare plants, animals, and natural communities, and set to the task of protecting the more threatened and rare habitats of the state. Fortunately, The Nature Conservancy is also particularly active in California. TNC's effectiveness in private land protection has permitted SNAP's small staff to concentrate primarily on habitats found on public lands. Such an arrangement is appropriate since 1) there are a number of other state and federal agencies involved independently in natural area protection and 2) the legal charter for SNAP emphasizes its role in intergovernmental coordination. Hence, SNAP protection strategies have ranged from organizing an interagency natural areas coordinating committee to participating as a member of the Forest Service Region 5 Research Natural Areas Committee. These activities and programs of cooperating agencies are discussed. Direct protection actions, especially those utilizing the resources of the Department of Fish and Game, are also reviewed. The latter included the coordination of comments on Forest Service forest management plans, serving on grazing allotment review committees, and helping to direct funding to natural area management and restoration projects. Expanding the scope of SNAP's efforts to encompass unprotected centers of species richness is presently being considered.

Vance, Joel M.

WORKING WITH THE PRESS

The necessity for a professional approach to agency news production, along with practical tips on how to serve the news media, will be discussed.

Ward, James

A BOTANICAL GARDEN'S ROLE IN BUILDING PUBLIC SUPPORT FOR NATURAL AREAS

Botanical gardens are well-established centers of plant information and display and therefore can assist, and in some cases lead the way, in building public support for natural areas.

As an agency whose focus is the conservation of the native regional flora, the North Carolina Botanical Garden is in an especially good position to be an effective advocate for natural areas. Through a variety of approaches the garden educates and involves the general public.

At the garden's visitor center, located in piedmont North Carolina, the public can walk through small habitat displays ranging from a fire-maintained long-leaf pine savanna of the coastal plain to a mountain sphagnum bog. The garden also owns and/or manages several satellite preserves (5-30 acre natural areas) statewide which make excellent outdoor classrooms for the study of a wide range of plant communities.

volunteer involvement is vital to the garden's effort to extend its public outreach. Opportunities encouraging a personal commitment increase the number of advocates for natural area protection.

This multifaceted approach to the interpretation of plant displays combined with a corps of dedicated volunteers enables the North Carolina Botanical Garden to build public support for natural areas.

West, K. Andrew

MANAGEMENT AND CONTRAL OF EXOTIC PLANT SPECIES IN NATURAL AREAS

Exotic plant species constitute a serious threat to the integrity of natural ecosystem areas. When these non-native components invade natural communities, drastic environmental changes can occur: native plants or animals may be displaced, as the more aggressive exotics dominate the ground cover. The very character of a natural community can change because of the invasion and spread of exotic plants. The term (and concept) "naturalized" to describe an exotic which has flora is rejected, since an exotic plant population is as much of a distraction from the quality of natural areas as a physical disturbance. Exotic species entered our environments indirectly, by the interference of humankind, and must be removed by human actions - these aggressive invaders cannot be ignored nor can they be effectively controlled by natural events. Exotic species management programs must be applied to our natural areas before it is too late: cutting and physical removal, herbicides, or prescribed burning are usual means of control.

White, John

DEVELOPMENT OF A NATIONAL COMMUNITY CLASSIFICATION SYSTEM

State Natural Heritage Programs and The Nature Conservancy are developing a nationwide classification system for biological communities. The system's main use will be in setting priorities for selecting preserves. Most kinds of communities occur in several states, but at present the communities are usually classified and named differently in each state. A national system will aid comparisons among states.

Here are some of the issues being resolved: What is the entity being classified (what are the on-site boundaries of a stand)? What is the appropriate range of geographic variation for a community-type (what is the overall distribution of the community)? What sort of hierarchical classification framework is needed? What information is needed to classify communities, and how is it analyzed?

Wilcove, David

FROM FRAGMENTATION TO EXTINCTION

Restricted to small areas and surrounded by a modified, even alien environment, fragmented habitats can suffer a loss of biological diversity, most noticeably through the extinction of species. The extinction process that occurs within fragments can be divided into four categories: (1) the loss of species that were excluded from the fragment at the outset; (2) the loss of species that no longer find the fragment to be acceptable habitat; (3) the loss of species that can reproduce successfully within the fragment, but which occur as small populations; and (4) the loss of species due to ecological imbalances within the fragments. I discuss these categories in the context of designing and managing nature reserves.

Windus, Jennifer

OHIO'S SMALL GRANTS PROGRAM

The Natural Areas Research Grants Program was initiated in Ohio in 1985 with funds generated by the recently enacted State Income Tax Refund Checkoff Program. The primary goal of the grants program is to encourage research that can be used for managing, monitoring, and inventorying natural areas, scenic rivers, and rare species in Ohio. Priority is given to those proposals involving endangered or threatened species and to those conducted on state nature preserves or scenic rivers. The mini-grants which are funded at approximately \$3,000 each, cover a wide range of research topics including rare plants and animals, chemical and hydrologic characteristics of wetlands, community studies, water quality assessments, and natural area inventories.