EMA Program Advances Land ethic Model
Use-Inspired Research, Data Dissemination and Public Outreach Focus of 2004 Activities

As 2004 draws to a close, the Ecological Monitoring & Assessment (EMA) Program is excited to announce significant progress in our efforts to evolve a new model for resource stewardship.

The EMA Program is designed to provide a framework for data collection and dissemination for the natural and social sciences. Our goal is to provide ranchers, land owners, public land managers, tribal governments, and conservation groups with science-based information to guide stewardship decisions for their lands and natural resources. EMA’s research landscape includes the Colorado Plateau. The Program receives guidance and oversight from the EMA Foundation.

Through integrated work with scientists, land managers and conservation agencies, 2004 initiatives have included:

- Development of the GIS-based Southwest Ecological Data System
- Creation of a land ownership map for northern Arizona
- Development of a student scholarship program
- Planning for the Wild Bill Ecological Center
- Formation of a Science Advisory Panel
- Facilitation of numerous and diverse research projects
- Development of the EMA website and other marketing materials.

We are very enthusiastic about the new relationships we’ve formed and our work with conservation and community organizations, researchers, and public and private land stewards who share a common interest in understanding and sustaining the lands of the Southwest.

We also have many programmatic and endowment activities underway to ensure a viable program and sustainable operations.

Science Advisory Panel to Convene

Renowned scientists from the Colorado Plateau and across the nation will begin serving on a Science Advisory Panel for the EMA Program and Foundation in January.

Through this advisory panel, scientists from diverse disciplines will provide perspective and direction on the ecological and social science components of the EMA Program. The Panel will contribute to thoughtful discussions on scientific issues and provide direction for research questions, scope, protocol and resources. Their guidance will help EMA address land stewards’ needs and advance land ethic research. They will also be a resource for sharing research findings with the global community.

The Science Advisory Panel will convene January 7 in conjunction with a meeting of the EMA Foundation Board of Directors. Panel members will be announced in the spring.

In early 2005, a Land Advisory Panel will be formed to help identify and prioritize the research needs of public and private resource managers.
Studies Detect Rare Flycatcher and Cuckoo

Through a collaboration between the USGS Colorado Plateau Research Station and the EMA Program, a survey of Southwestern Willow Flycatchers and Yellow-billed Cuckoos was conducted this year.

The study was commissioned by the Spur Land and Cattle Company on the 300 acre Hauser Farms along the Verde River. There were a total of five Yellow-billed Cuckoo detections within the property. The surveys detected one migrant Willow Flycatcher (subspecies unknown) and a Southwestern Willow Flycatcher territorial pair made one nesting attempt. Both the flycatcher and cuckoo detections occurred in mixed-native riparian habitat.

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a small passerine bird that was listed as endangered in 1995. It nests in dense, typically wet, riparian habitats on its North American breeding grounds. The population at breeding sites along the Verde River has declined since the late 1990s.

The Yellow-billed Cuckoo (*Coccyzus americanus*) is a neotropical migrant and a candidate for listing under the Endangered Species Act. This cuckoo has been detected periodically along the Verde River.

Research was conducted by Mark Sogge and Matt Johnson, USGS Colorado Plateau Research Station, Karan English, EMA Program, and volunteers Dave and Marcia Lampkin.

Wind Energy & Wildlife Impact Studies

An avian and biological baseline study is underway at the site of the proposed Sunshine Wind Park on Bar-T-Bar Ranch and Hopi lands 36 miles east of Flagstaff.

The study is designed to characterize avian, bat and other wildlife resources and their use of the site. While the study has a strong focus on migrant and wintering raptors and breeding birds, observations of other wildlife species such as pronghorn will be included. The purpose of the study is to gain a better understanding of the potential impacts the project may have on these species.

Research will be under the direction of Matt Johnson, USGS Colorado Plateau Research Station. The study protocol was developed in coordination with Western EcoSystem Technology Inc., and the EMA Program.

In October, EMA facilitated an outreach and education meeting to receive stakeholder input during the protocol development process. Participants included members of conservation agencies and organizations. EMA will coordinate another meeting at the end of the study to present findings.

In the Works

**Student Research Opportunities** - EMA is developing programs for applied research in biology, anthropology, hydrology and geology, as well as creative and technical writing, photography and other arts. A special emphasis will be placed upon the rich heritage and contributions made by Native Americans throughout the Colorado Plateau.

**Grasslands Conservation** - The EMA Program is partnering with The Nature Conservancy to highlight findings of the recent Colorado Plateau Eco-Region Conservation Study. We anticipate that our first project will focus on grasslands conservation on the Colorado Plateau.

**Wind Resource Assessment** - EMA is working with the NAU Sustainable Energy Solutions Group to provide coordination and outreach for wind resource assessment on several sites in northern Arizona.

**Wind Resource Maps** - Arizona’s wind resource maps will soon be available via the EMA website. These maps were developed through a partnership between NAU Sustainable Energy Solutions Group, the National Renewable Energy Lab, and Arizona’s utilities Tucson Electric Power, Salt River Project and Arizona Public Service. Tom Acker led the project for NAU.
Student Scholarship Program Launched

The newly formed EMA Scholarship will support undergraduate and graduate research and education projects. The program will provide students with the opportunity to explore concepts of sustainability and to address issues and formulate solutions to environmental problems.

Scholarships will be available for field research projects in interdisciplinary settings. Near-term research topics will include riparian and other wildlife ecosystems, vegetation and soil development, geology, hydrology, climate change, and renewable energy technology.

As the fund continues to grow, EMA will support students across the NAU campus, providing applied research opportunities in many disciplines – biology, history, anthropology, humanities and many more.

The scholarship program helps to facilitate the EMA goal of developing strategies in land ethic research, education and stewardship practices by advancing the understanding of social, economic and ecological factors affecting lands of the Southwest.

These scholarships will provide important opportunities for students to apply course work in the field, and to work side-by-side with scientists to support the needs of land stewards.

Data Information and GIS Mapping Projects

Providing land stewards with ready access to scientific data is a primary focus of the EMA Program.

This year the NAU Center for Data Insight and the U.S. Geological Survey developed a GIS-based file storage, retrieval and access system through the EMA Program.

Known as the Southwest Ecological Data System, this central data source provides ranchers, land owners, public managers, tribal governments, conservation groups and the general public with access to data for diverse natural and social sciences. Special thanks to Bern Carey and the Center for Data Insight Team for developing the system.

Access to the Southwest Ecological Data System is available at www.EMAprogram.com.

A land ownership map of northern Arizona was also developed through this innovative collaboration. This state-of-the-art mapping system was designed by Terry Arundel at USGS. The mapping system includes coordinates and other data to display dynamic maps of the Colorado Plateau with user-determined layers. Geographic coordinates will include land ownership, land use, and political boundaries. Future layers and related maps may include wind, vegetation, waterways, animal migration and other research data.

Wild Bill Ecological Center

The Wild Bill Ecological Center will be a living laboratory and gathering place for public and private landowners, ranchers, scientists, teachers, and students. The Center will serve as a research, education, demonstration, and training venue. Ecological issues will be the primary focus.

The design for this sustainable facility was done by The Ecosa Institute in coordination with Tom Rogers and the NAU Construction Management Program. The Center will be located on 24 acres of the Babbitt family’s historical Wild Bill Ranch.

The EMA Program formed a committee this year to create a business plan, develop program goals, and identify funding and other resources for the Wild Bill Ecological Center. Committee members include Allen Naille, Wayne Fox, Tom Rogers, Shelley Silbert and Karan English. A draft strategic plan will be presented at the January Board meeting of the EMA Foundation.

It is estimated that $2.2 million will be needed to develop and endow the Wild Bill Ecological Center. Funding will be used for construction, program activities and ongoing operations.
The EMA Program is a university based framework for use-inspired research, data collection and dissemination for the ecological, social, and economic factors affecting lands of the Southwest.

Our vision is to be the evolving model for land stewardship and to provide public and private land stewards with access to science-based information for decisions about their lands and other natural resources.

The EMA Program is guided by the EMA Foundation and advisory panels including land managers and renowned scientists.

Thank You for your interest in the EMA Program and Foundation.

William Cordasco  William Auberle  Karan English
EMA Foundation President  EMA Program Director  EMA Program Administration

Just Participate

The Ecological Monitoring and Assessment (EMA) Program invites you to help fulfill our mission to facilitate the science-based needs of public and private land owners for sound stewardship and conservation of their lands and natural resources.

There are many ways to participate.

- Donations to the EMA Foundation will be used to support student research scholarships, research and education programs, innovative technologies such as the Southwest Ecological Data System, and ongoing operations.

- Donations for the Wild Bill Ecological Center will be used for construction, programming and ongoing operations.

- Land managers can also participate by helping to define research needs and offering the opportunity for studies to be conducted on their lands.

Contact the EMA Program to learn how you can participate in this extraordinary program. You’ll be helping advance mankind’s understanding of how to sustain healthy ecosystems and minimize human impacts.