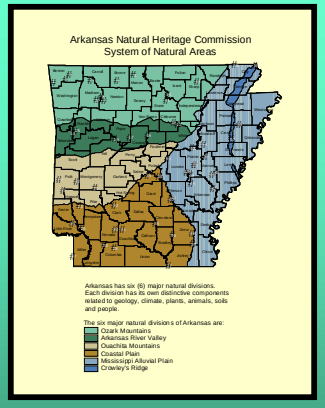
Arkansas Natural Heritage Commission/

NatureServe Overview



This Presentation

- Overview of ANHC
  - Who we are
  - What we do
  - How we do it
- Overview of Heritage Network and NatureServe
  - What is the network
- Discussion of Natural Heritage Data
  - What data do we collect
  - How they are shared
  - How they are used by AHTD

ANHC: Who we are

Department of Arkansas Heritage

- Arkansas Natural Heritage Commission
- Arkansas Historic Preservation Program
- Arkansas Arts Council
- Historic Arkansas Museum
- Old State House Museum
- Delta Cultural Center
- Mosaic Templars Cultural Center

Working to preserve Arkansas' Natural & Cultural Heritage

ANHC: What we do

The Arkansas Natural Heritage Commission was established as a state agency in 1973 with the mission of identifying and protecting natural areas in Arkansas.

ANHC: How We Do It

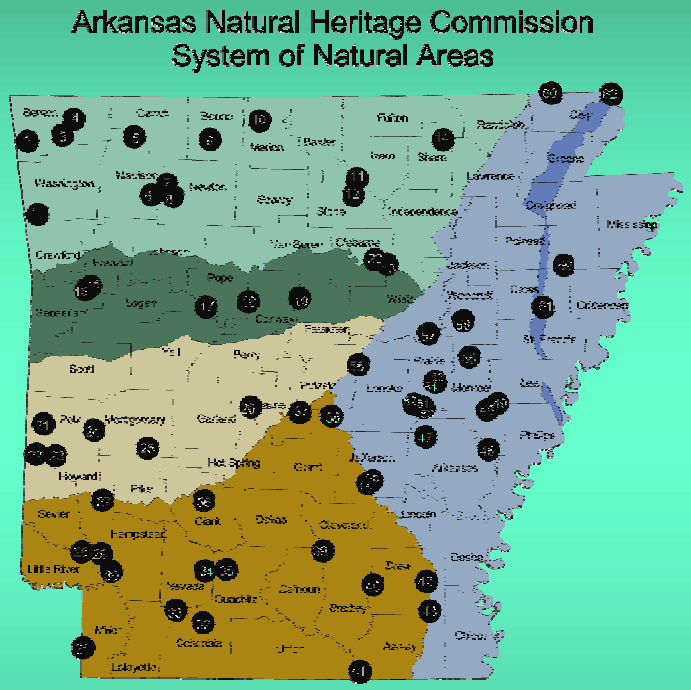
Arkansas Natural Heritage Commission

The Agency is divided into 5 Sections:

- Land Protection:
  - **Land Acquisition Section**
  - **Stewardship Section**
- Education:
  - **Information and Education Section**
- Inventory & Research:
- Environmental Review and Data Sharing:
  - **Research Section**
- Agency Business (budgeting, purchasing, personnel, etc.)
  - **Administration Section**

ANHC: How We Do It

- Land Protection
  - The ANHC currently holds fee title or conservation easements on 62 Natural Areas throughout Arkansas.
  - Natural areas are acquired and managed to protect significant natural features such as rare plants and animals, and high quality natural communities.
  - Many areas are co-owned/managed with other organizations such as the Arkansas Game & Fish Commission, Arkansas Department of Parks and Tourism, and The Nature Conservancy.

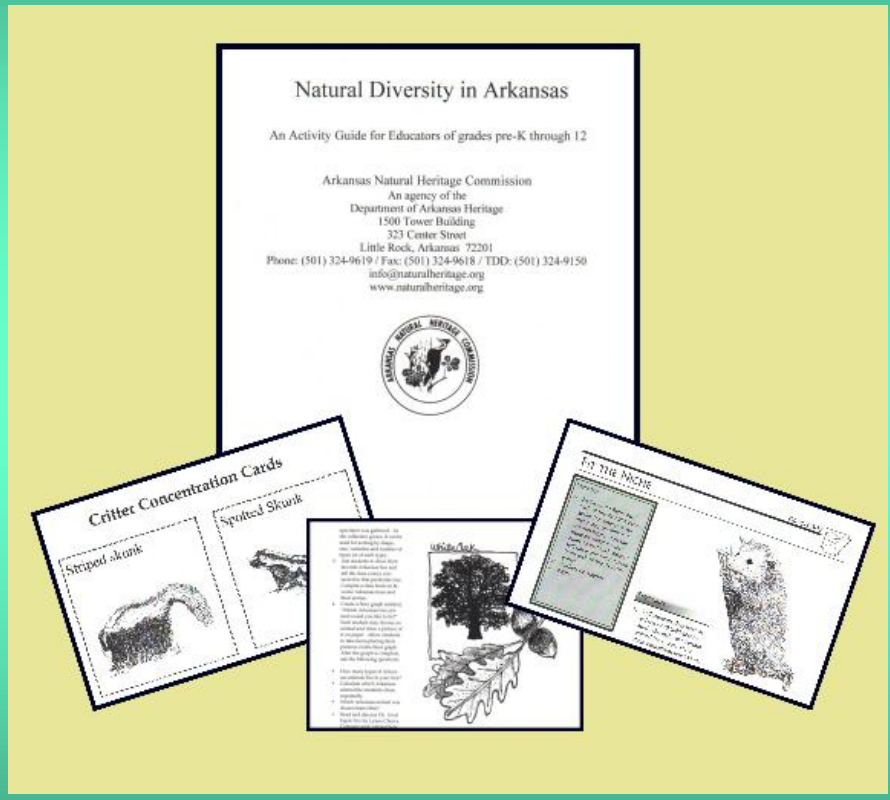


- Land Protection may also be accomplished through management agreements or wetland easements.

ANHC: How We Do It

- Education

- Biodiversity Curriculum Guide
- Programming for schools and other groups
- Public Outreach
- Web Page….

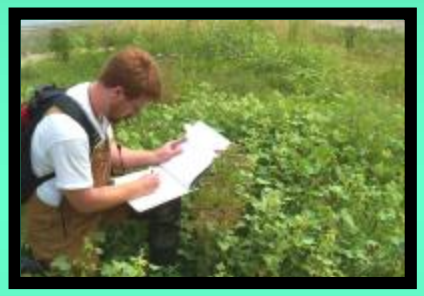


http://naturalheritage.com/

ANHC: How We Do It

- Research Section - Research and Inventory

Working to Gather information on Arkansas' Natural Diversity



Conducting field research

Reviewing literature

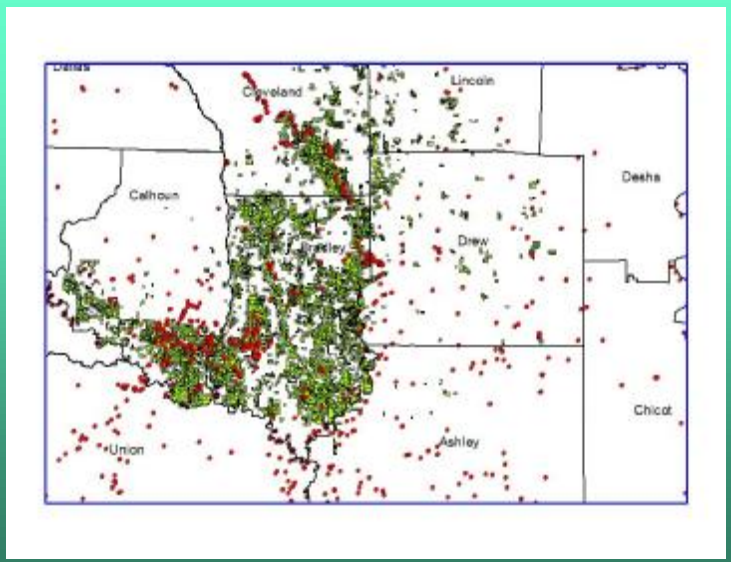
Gleaning information from museums, herbaria, and universities

Compiling information into a database

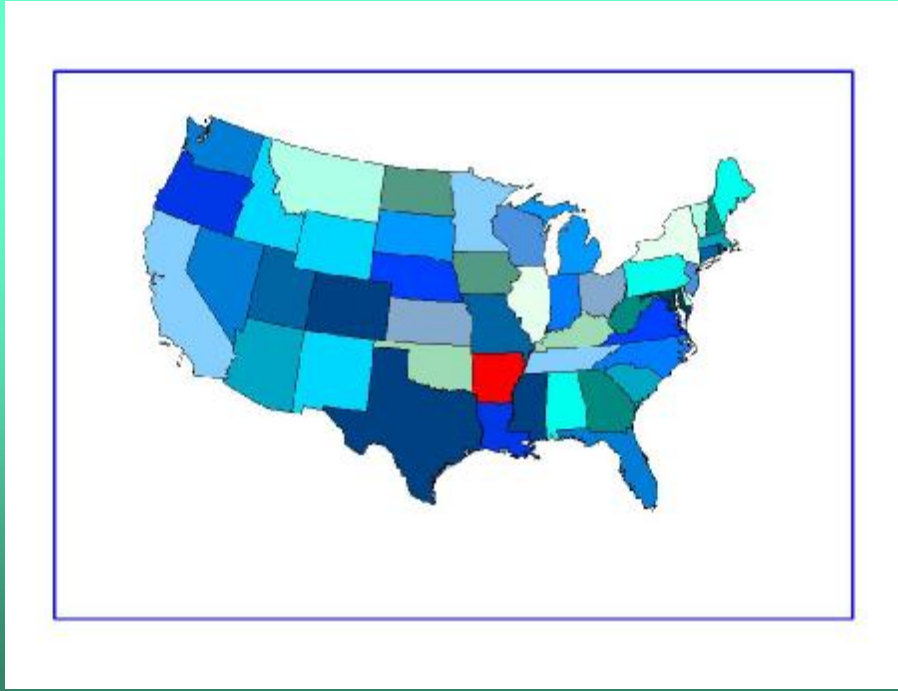
ANHC: How We Do It

- Research Section - Environmental Review and Information Sharing

The agency puts the data it collects to work by reviewing projects such as 404 applications and highway projects, and by sharing its data with outside users who utilize it to make land development and management decisions.



The ANHC Research Section is also the State Heritage Program for Arkansas

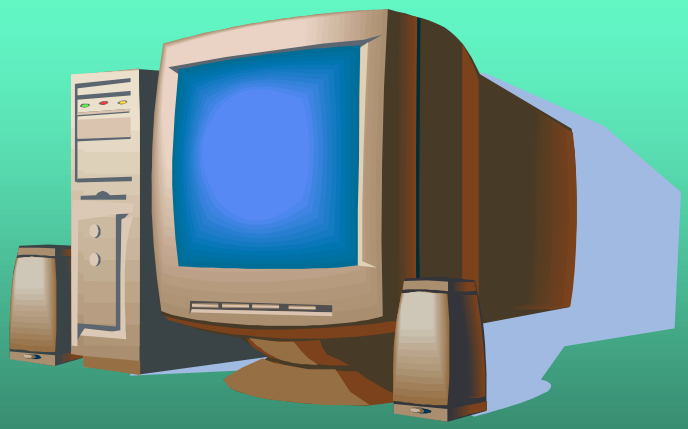


A Natural Heritage Program

- Natural Community Ecologist
- Botanist
- Zoologist
- Data Manager

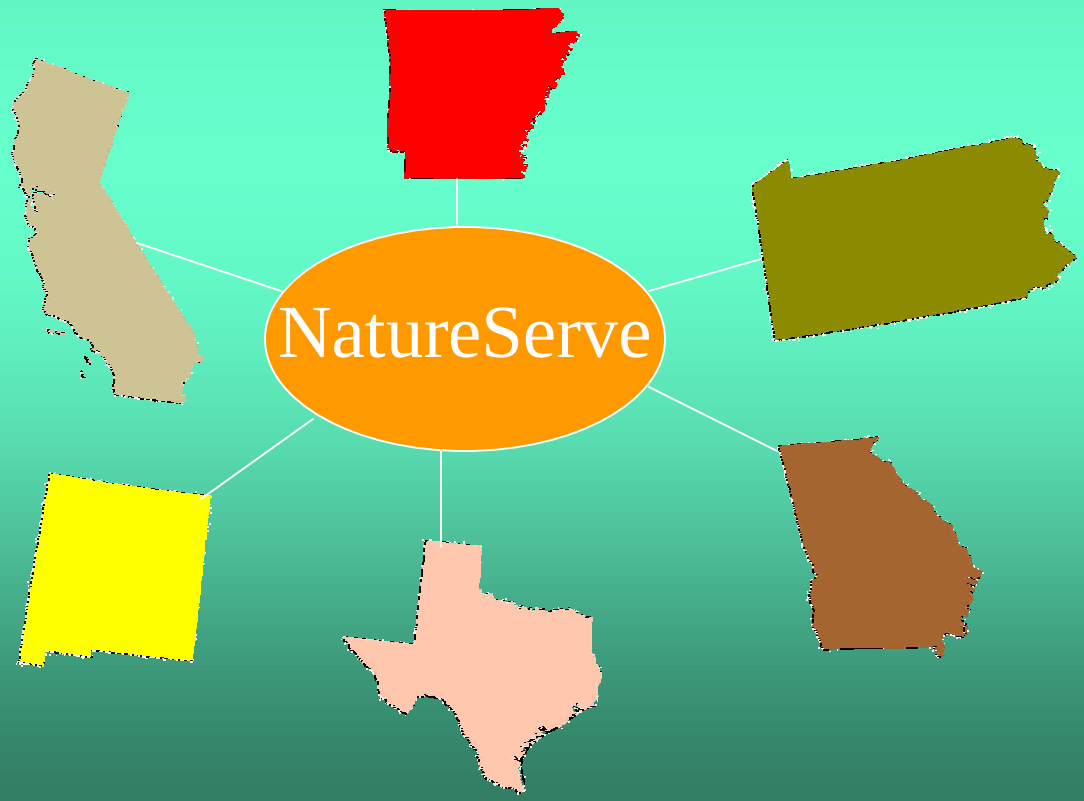
Mission

The mission of a state Heritage Program is to gather and compile information on a state's natural diversity into a standardized data management system that can be used to evaluate and establish conservation priorities both within and across political boundaries.



The Heritage Network

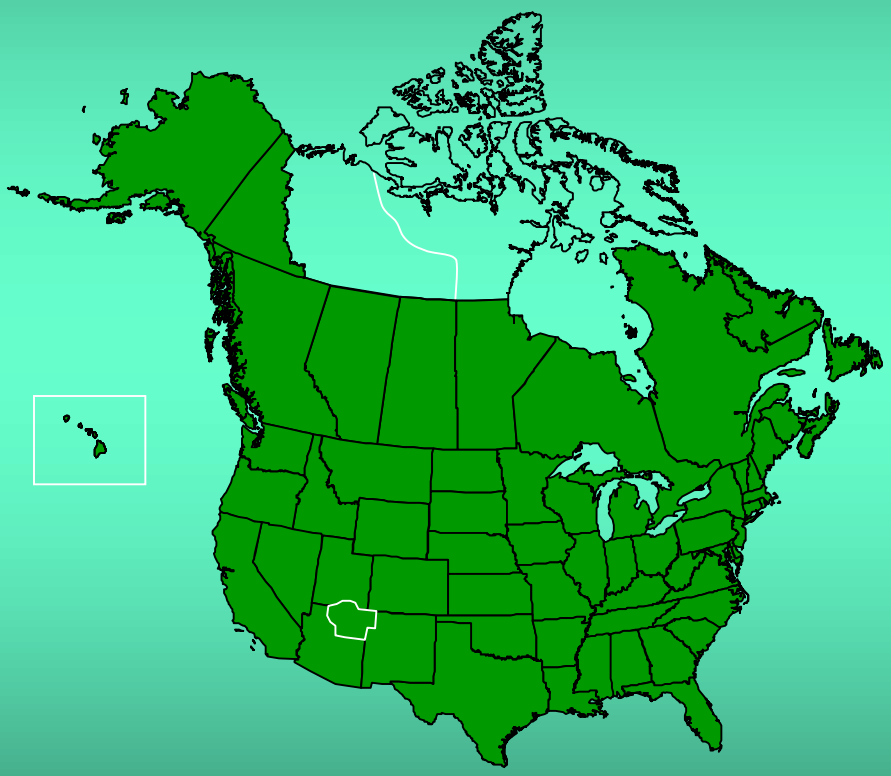
NatureServe serves as the hub of the network. With the input of heritage programs, they develop the data management methodology and specialized computer programs used by network members. They help establish data standards and work to develop multi-jurisdictional datasets and products.



The NatureServe Network

Nationwide and Beyond

80 inventory and monitoring programs with 800+ staff across the Western Hemisphere



Natural Heritage Programs

- Operate in every U.S. state, all Canadian provinces, and selected Latin America countries
- Collect, analyze and distribute detailed local biodiversity data
- Conduct environmental reviews, assessments and planning

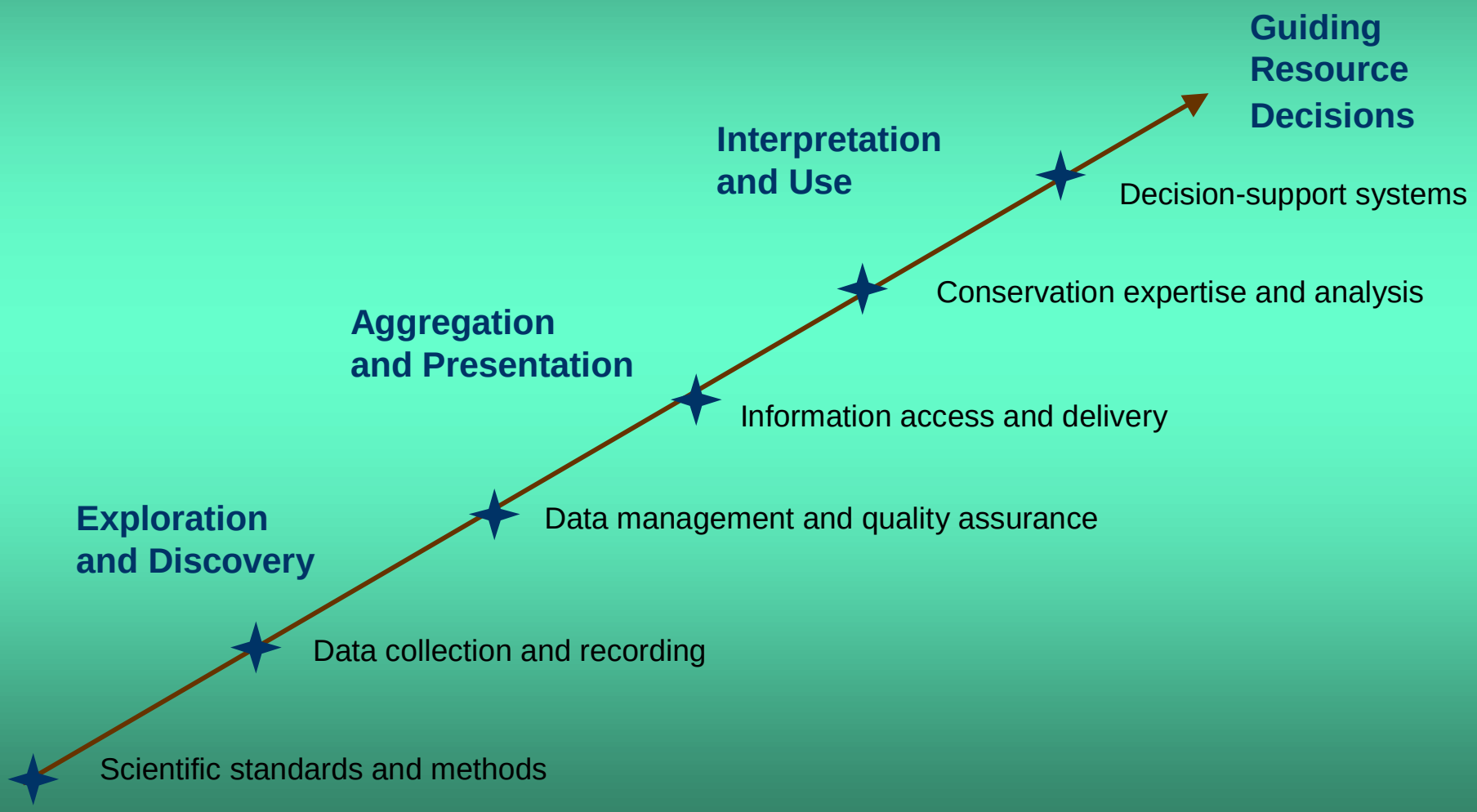
NatureServe Staff

- Provide technical and scientific support to natural heritage programs
- Advance the network's scientific standards and data management software
- Develop and maintain comprehensive rangewide (global) data for species and ecosystems

NatureServe in Brief

- An independent, non-profit conservation organization
- Provides the scientific basis for effective conservation and natural resource management
- Coordinates and supports the network of state natural heritage programs (public-private partnership)
- Carries forward 30 years of scientific experience
- Collaboration and service to all sectors—government, conservation NGOs, academia, and industry.

NatureServe Information Value Chain



Reliability of NatureServe Data

NatureServe's databases represent "one of the most comprehensive information sources on rare and imperiled species."

- *US Fish and Wildlife Service. Federal Register publication on the "Identification of Candidates for Listing"*

"The Fish and Wildlife Service uses the best available scientific information to assess species for consideration for listing. One chief source of information is the network of state Natural Heritage Program databases, which tracks species already imperiled and those that are declining or at risk."

- *Department of Interior FY2006 Budget Justification*

"The Forest Service and numerous other federal agencies rely daily on the scientific data, information management tools, and conservation services provided by NatureServe and its affiliated state natural heritage programs."

- *Dale Bosworth, Chief, U.S. Forest Service*

ANHC Data

The Research Section of the Arkansas Natural Heritage Commission currently gathers location information on **897** rare plants, animals and natural communities

ANHC Data

This includes 481 plant species

ANHC Data

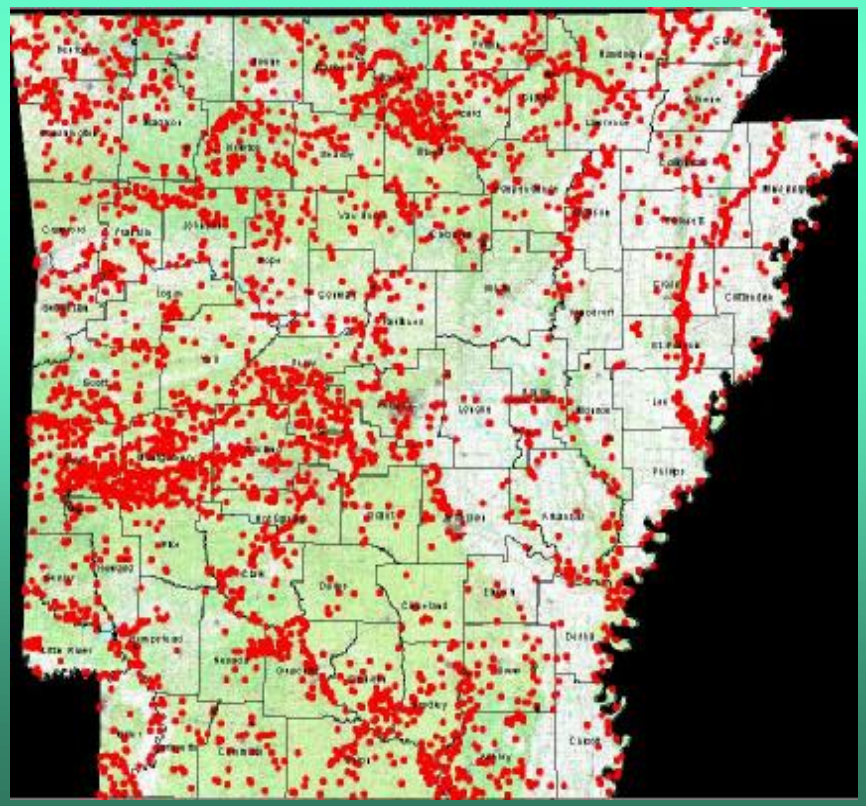
340 Animal Species

ANHC Data

73 Natural Community Types

The Data

As well as locations of colonial bird nesting sites and special geologic features.



For a total of more than 11,338 occurrences.

The Data

- What we collect

Data on Species of Conservation Concern

- Species listed as Endangered or Threatened by the U.S. Fish and Wildlife Service

- Species that are endemic to the state or region

- Species that are on the edge of their range, disjunct, or undercollected.

The Data

Each species tracked is evaluated and assigned two conservation ranks:

- The State Rank (SRANK), which addresses the rarity of a species within the state, and is assigned through the State Heritage Program.
- The Global Rank (GRANK), which addresses the rarity of a species throughout it range, and is assigned at the National level through NatureServe.

The Data

Greatest Conservation Concern

Least Conservation Concern

1

5

Ozark Cave Crayfish

Red-winged Blackbird

The Data

- What we track

The plants, animals, natural communities, colonial bird nesting sites and geologic features are referred to as “Elements of Diversity.” The data documenting the occurrence of an Element constitutes an Element Occurrence Record (EOR).

The Data

- How we collect data

Data Sources for Element Occurrence Records

  - Field Surveys
  - Reports
  - Theses
  - Literature
  - Herbarium and museum specimen
  - Collections Databases

The Data

- How we collect data
  - Collections Databases
    - FISHDATA- Arkansas Fish Database (Dr. Henry Robison of SAU, AGFC,USFS, ANHC)
    - MUSSELDATA-Arkansas Freshwater Mussel Database (AGFC, USFS, Arkansas State University, ANHC)
    - CRAYFISHDATA – Arkansas Crayfish Database (AGFC, Dr. Henry Robison of SAU, ANHC)
    - HERPDATA- Arkansas amphibian and reptile Data (AGFC, Arkansas State University, ANHC)

The Data

Ø Sharing the data

The Database has become an important resource. The agency makes its information available to outside users in several ways:

- Some data are made available on the web site in the form of county element lists (Annual Report) and the "Rare Element Search Engine."
- Some data are made available through the formal Information Sharing Program.

The Data

Ø How the data are shared

Location data is available only through the formal Information Sharing Program for several reasons:

•The Data are complicated and can be easily misinterpreted

•Many occurrences fall on lands owned by entities other than ANHC including:

*The U.S. Forest Service

*The National Park Service

*Corps of Engineers

*Private Landowners

Publicly posting data could create management problems

•Some of the elements are fragile and susceptible to abuse

The Data

- How the data are shared

There is a charge for location data provided by the agency through the formal information sharing program. Charges are necessary for several reasons:

- To help defray the costs of providing data
- To discourage frivolous data requests
- To discourage misuse of the data

Data User	Staff Time Charge	Per-record Charge
agencies of government, 501(c)3-qualified not-for-profit organizations, and students engaged in completing their assignments	no charge for the first 2 hours of any project; thereafter, $30 per hour or fraction of an hour	no charge for first 20 records; thereafter $1.50 per record
all other organizations, offices, and individuals	$30 per hour or fraction of an hour	$1.50 per record

Notwithstanding the schedule of fees detailed above, the Director of the Natural Heritage Commission is authorized to enter into fixed-price contracts to provide services that go beyond retrieval of data already on hand. In such cases the fee will be determined through negotiation. The Director of the Natural Heritage Commission is authorized also to negotiate agreements to supply data/information in exchange for data/information.

The Data

- How the data are shared

The charge for the data covers the costs of preparing the data for the end user. The data system used by the agency is fairly complex, and specialized. When we provide data to outside users we must extract the information from our standard systems and put it into a “universal” format. The data must be reviewed and as many errors and discrepancies resolved as possible. This is a complicated, and time consuming process, especially with large data sets. The fees collected from the data sharing program are used to help support research and data management.

The Data

- How the data are shared

Subscriptions

Frequent users of specific datasets (such as The Arkansas Highway and Transportation Department) are encouraged to enter into a data subscription. Under such an agreement, they receive a dataset tailored to their needs to be used repeatedly for a period of time. At the end of that time (usually a year) they are provided an updated dataset. Cost of update is substantially less that the original cost, and the agency has flexibility to use the data for multiple projects. Subscriptions are guided by a Data Sharing Agreement that specifies who may use the data and under what conditions.

The Data

- How the data are shared

Training

An advantage of a subscription is that at least one person, as a part of the data sharing agreement, is trained to understand some of the complexities, such as locational uncertainty and date of last observation. Users are encouraged to provided new element occurrence data back to ANHC in order to improve the database, and in some cases this input may be used to reduce the cost to the subscriber.

The Data

- How the data are used

Efficient Environmental Protection

The AHTD data subscription has enabled both AHTD and ANHC to reduce time spent in providing negative data for many small projects such as bridge replacements, and to concentrate on review of projects that have a high likelihood of impacting species of concern.

The Data

- How the data are used

AHTD and ANHC as Partners

Protecting Element Occurrences From Other Developments

Utilities must have a permit to cross highway rights-of-way. AHTD staff review the permit applications using ANHC shared data to determine whether element occurrences have been recorded at or near the proposed crossing. If so, the applicant is directed to coordinate with ANHC. ANHC recommendations for protecting EOs are incorporated into permit conditions.

- Questions or Comments?