An Introduction to NatureServe
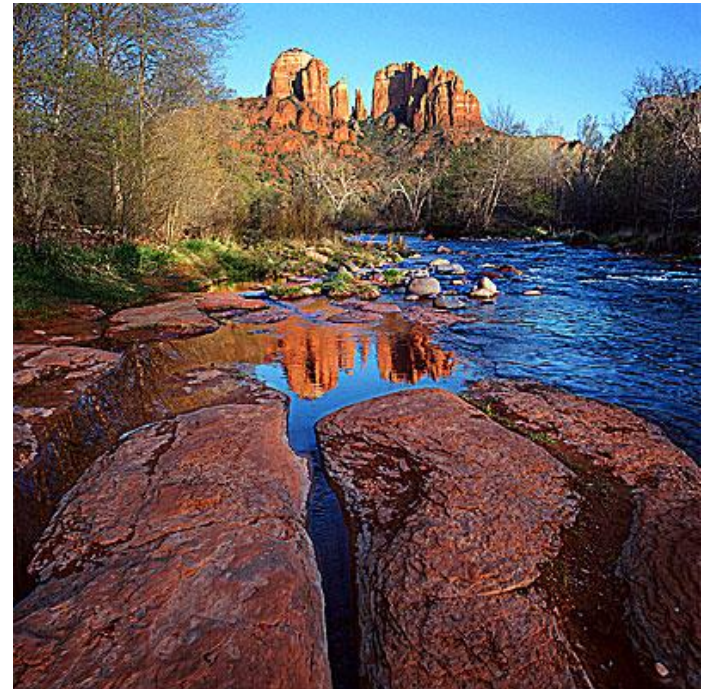
Linking Conservation and Transportation Planning

Phoenix, Arizona

November 8 & 9, 2006
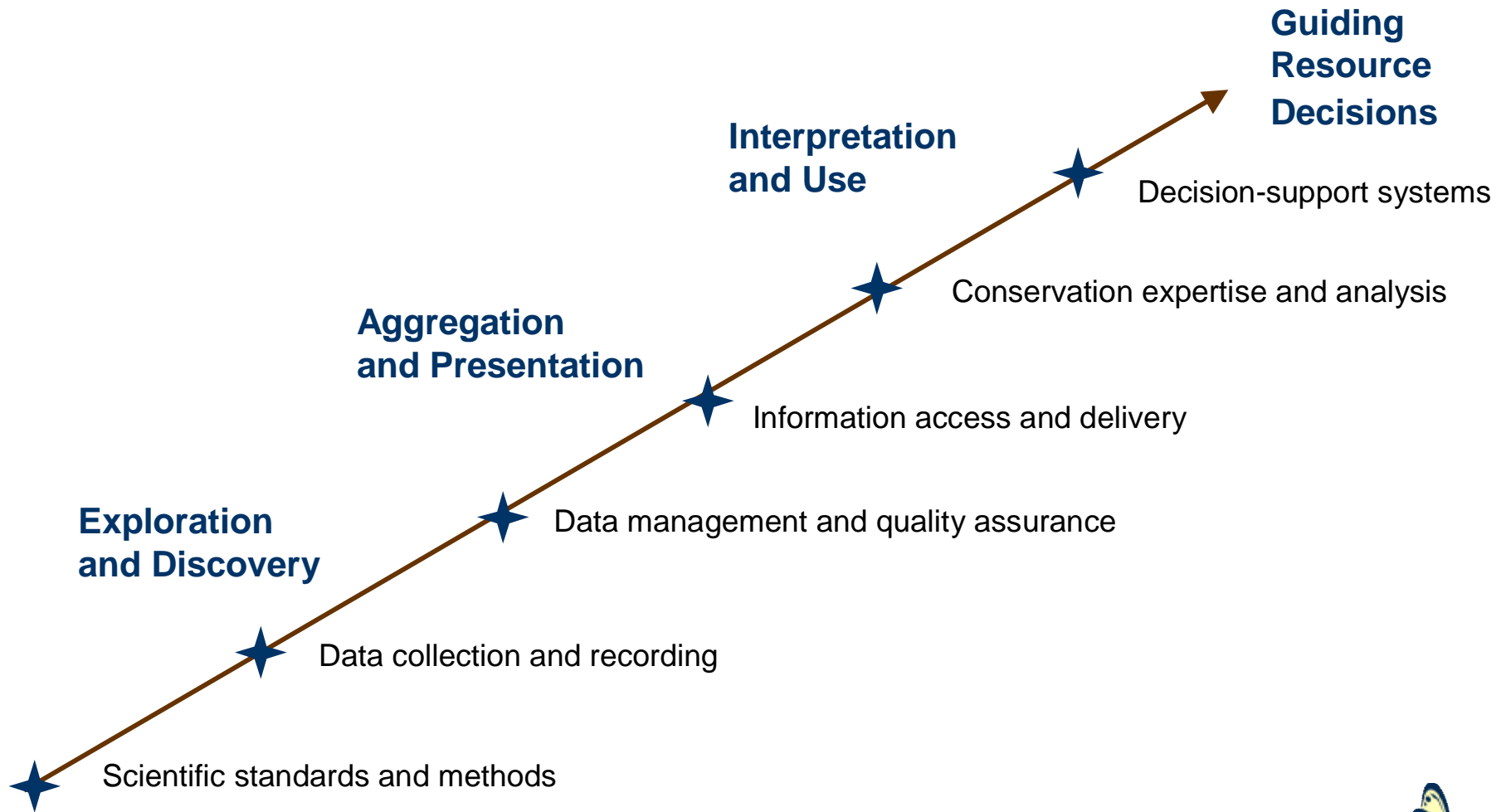
NatureServe

NatureServe in Brief

§ An independent, non-profit conservation organization

§ Provides the scientific basis for effective conservation

§ Coordinates and supports the network of state natural heritage programs

§ Carrying forward 30 years of scientific experience

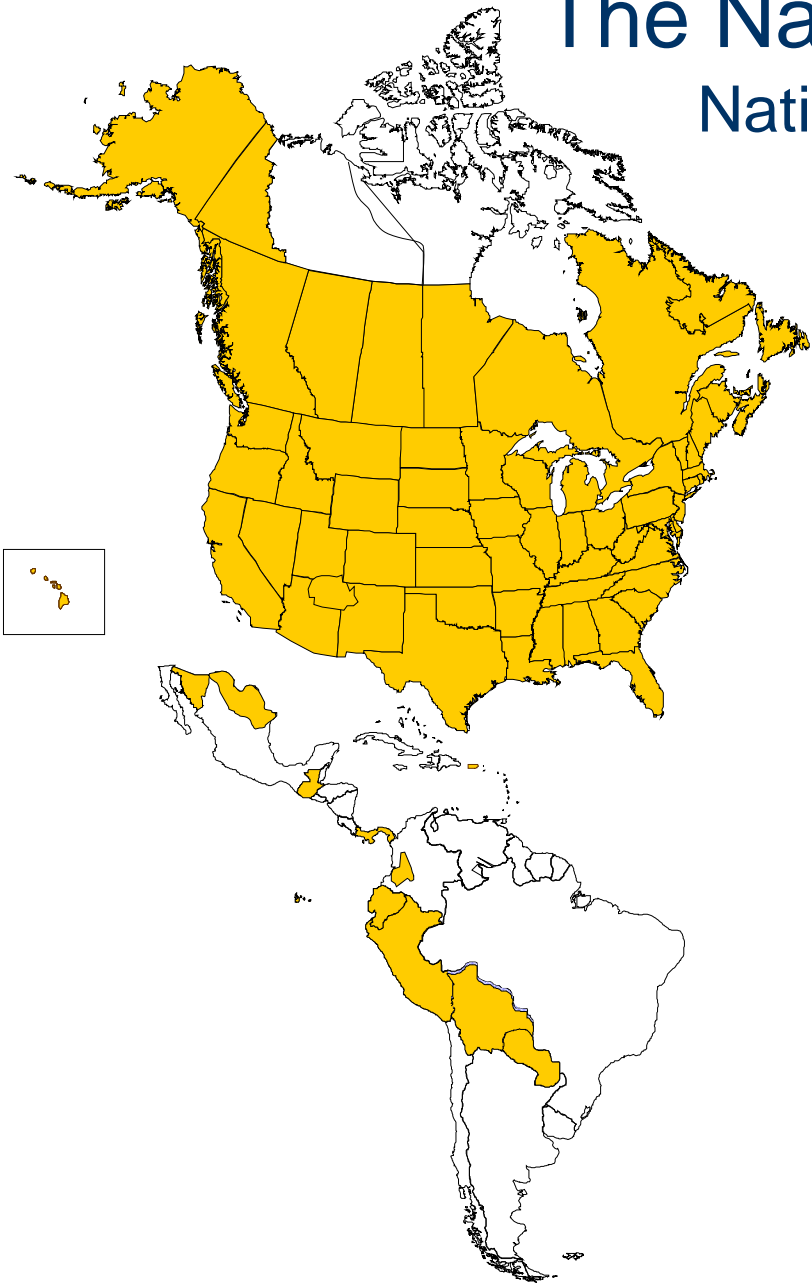§ Collaboration and service to all sectors—government, conservation NGOs, academia, and industry.

NatureServe

NatureServe Information Value Chain

Guiding Resource Decisions

Interpretation and Use

Decision-support systems

Conservation expertise and analysis

Aggregation and Presentation

Information access and delivery

Data management and quality assurance

Exploration and Discovery

Data collection and recording

Scientific standards and methods

NatureServe

The NatureServe Network
Nationwide and Beyond

- NatureServe's Member Programs operate across the Americas to distribute authoritative information critical to conservation

- Member Programs use standard methods for collecting and managing biodiversity data

- Over 800 scientists and technology specialists working locally

NatureServe

Setting Management Priorities

§ NatureServe *conservation status ranks* consider a dozen risk factors such as:

  ü number and condition of populations

  ü trends in populations and ranges

 ü threats, either known or likely

§ Uses a one to five scale

  ü critically imperiled (G1) to secure (G5)

  ü Presumed (GX) and possible extinctions (GH)

Distribution

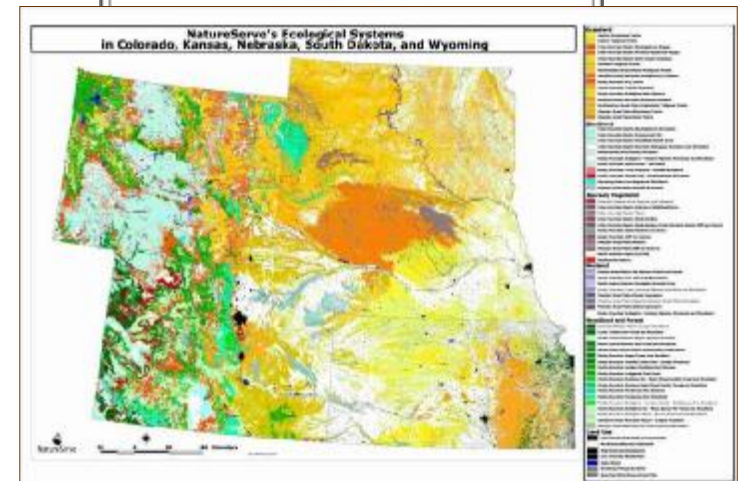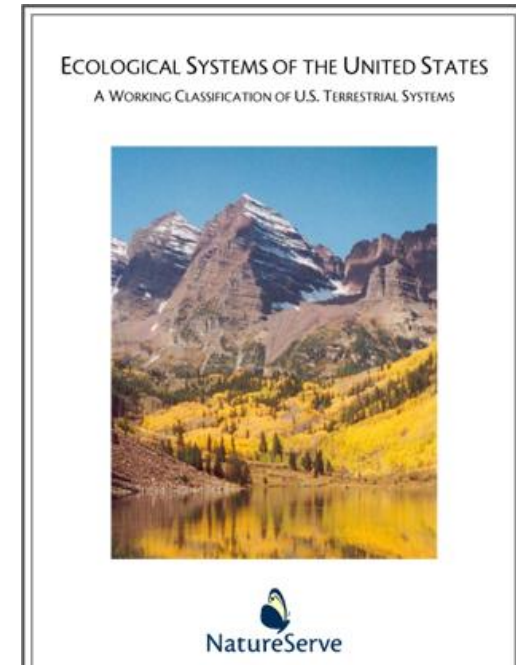U.S. States and Canadian Provinces
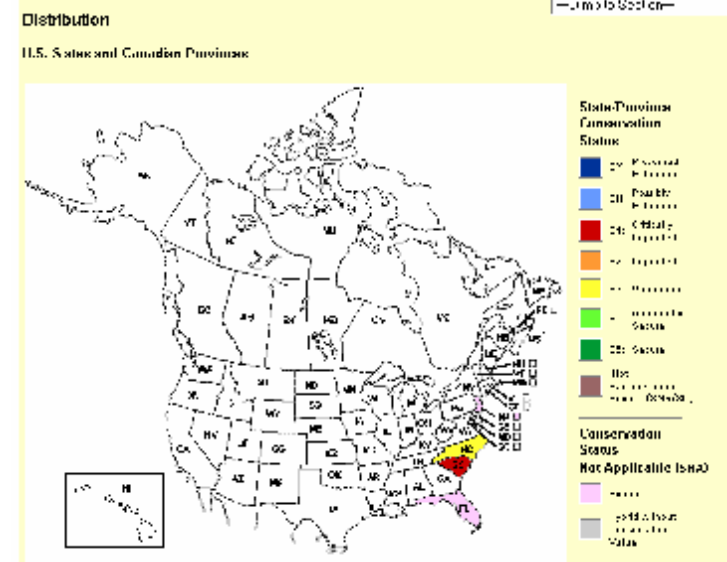
Venus fly-trap (G3)

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Detailed Mapping of At-Risk Species and Ecological Communities

§ State natural heritage programs map population and stand-level occurrences using nationally consistent standards.

§ NatureServe maintains an aggregated national data set with more than 500,000 occurrences, and millions of individual observations.
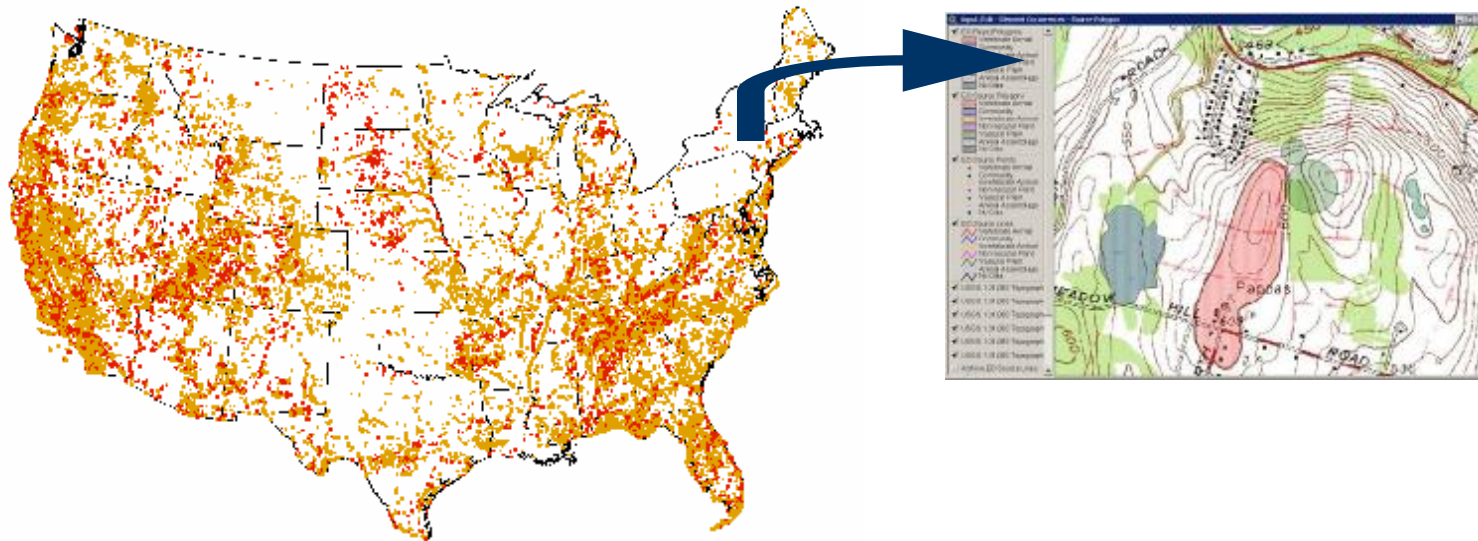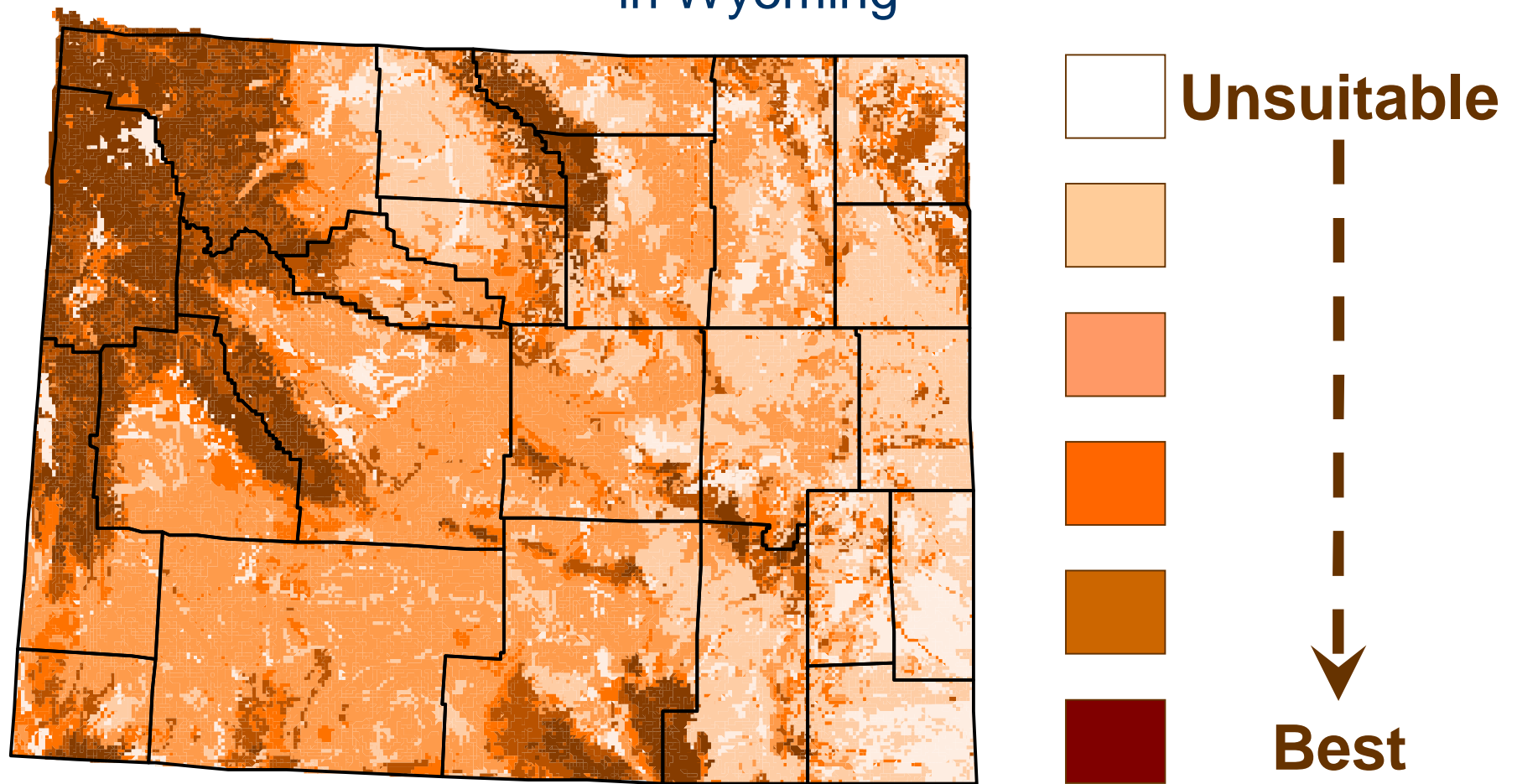
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Ecological Communities Classification

§ U.S. National Vegetation Classification – developed by TNC/NatureServe; now the federal data standard,

§ Canadian National Vegetation Classification – under development, beginning with forest ecosystems

§ Ecological Systems of the U.S. (pub. June 2003), Ecological Systems of Latin America (pub. Oct. 2003)

• Systems have been mapped across much of the Western U.S. and Canada, as well as other areas in the Americas (North, Central and South)

§ NatureServe network & partners continually adding to classifications & mapping systems and vegetation

ECOLOGICAL SYSTEMS OF THE UNITED STATES
A WORKING CLASSIFICATION OF U.S. TERRESTRIAL SYSTEMS

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NatureServe's Ecological Systems
In Colorado, Kansas, Nebraska, South Dakota, and Wyoming

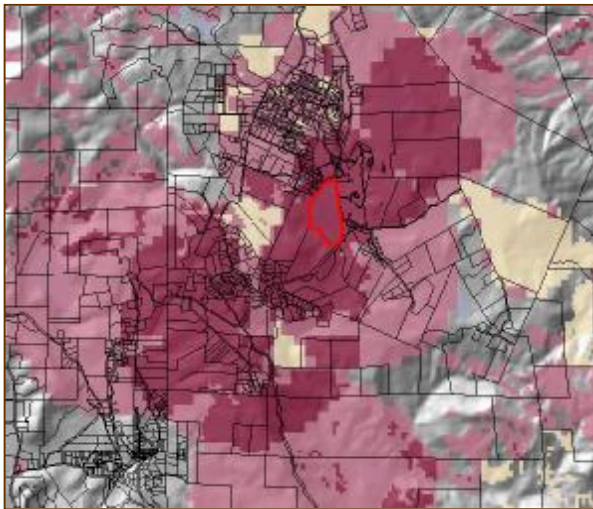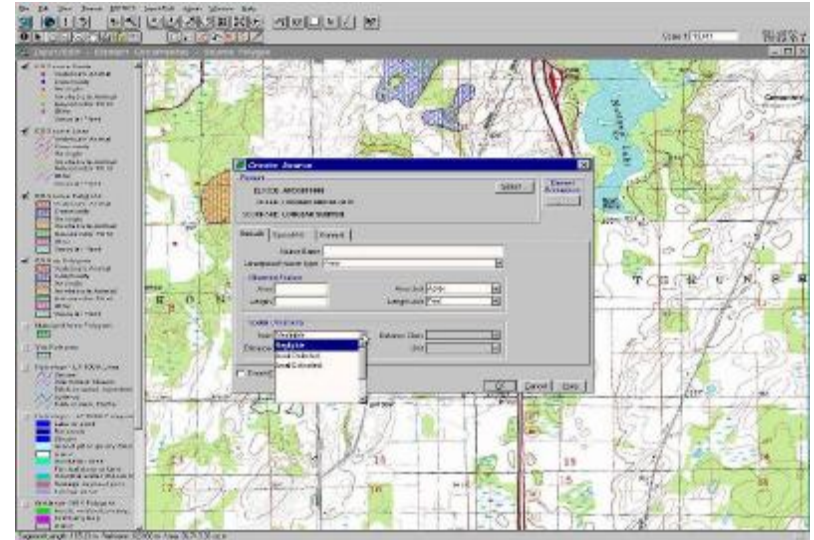# Predictive Distribution Modeling
Canada lynx (*Lynx canadensis*) habitat in Wyoming

Unsuitable

Best

Source: Wyoming Natural Diversity Database

Tools that Encompass Our Standards:

- Data Management - **Biotics**

- Data Access – **NatureServe Explorer** (http://www.natureserve.org/explorer)

- Land Use Analysis - **NatureServe Vista**

NatureServe

Uses of NatureServe Data

Department of Transportation
Pipeline Safety Risk Mitigation

§ Formal rule for unusually sensitive areas (USAs) under the Pipeline Safety Act relies on NatureServe conservation status ranks (G1 and G2 species)

§ Nationwide mapping of ecological USAs relies on consistent NatureServe locational data for federally listed and G1G2 species

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Bureau of Land Management
A regional context for Species of Concern in BLM Resource Development Planning Areas
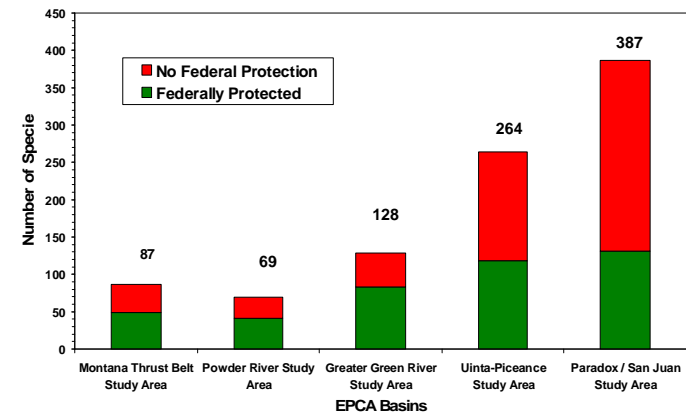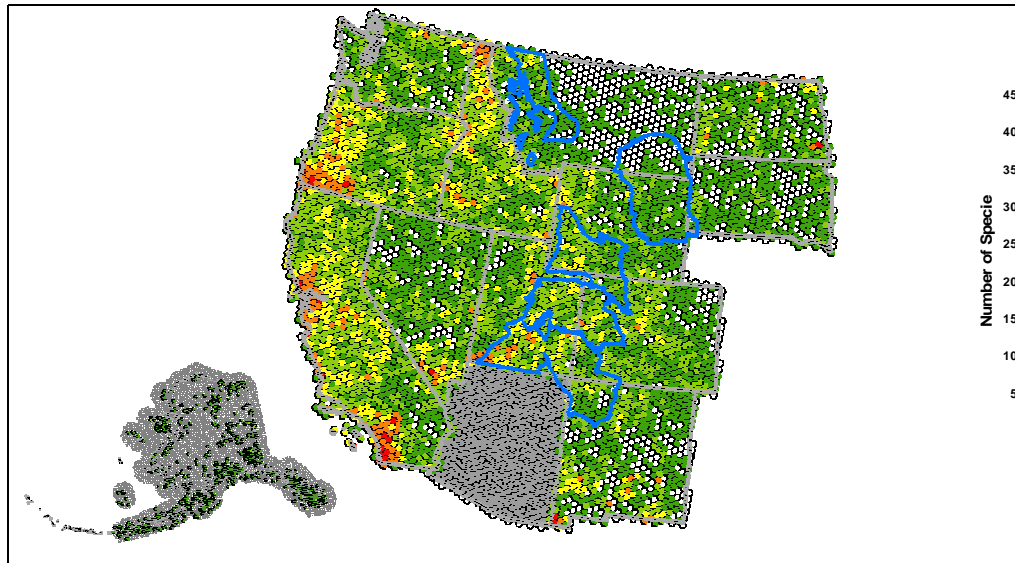
- § Document the importance of populations on BLM planning areas compared to other known populations

- § Quality and quantity measures

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Department of Defense

- Mapped the locations of at-risk plants and animals lacking federal protection

- The military incorporates this information into natural resource management plans to help protect these species <u>before</u> they are listed as threatened or endangered

Number of Species at Risk on DOD Installations
(Top 20 Installations are labeled)

Longleaf Pine Regeneration at Fort Benning
Photo by Milo Pyne
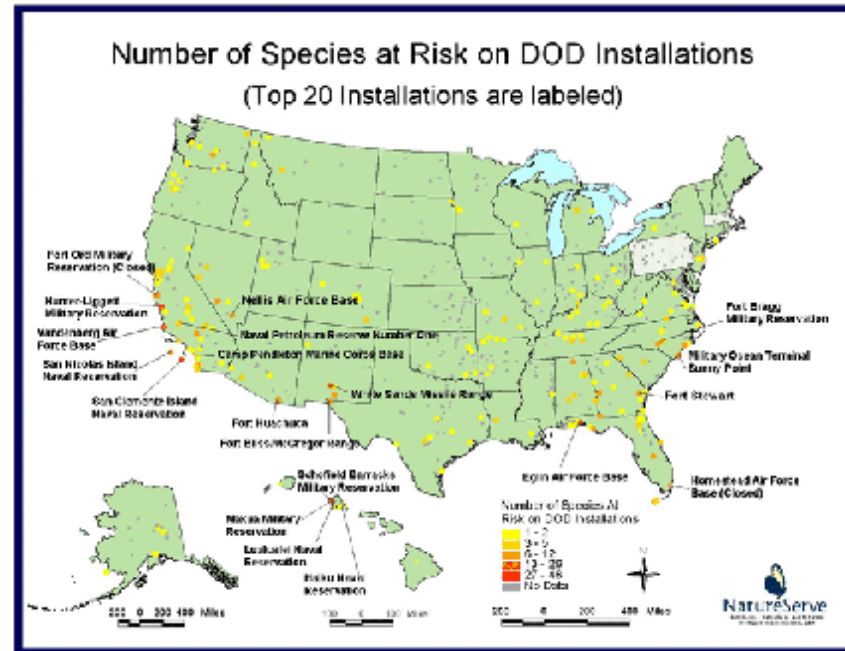
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How can NatureServe assist the transportation community?

Improve and streamline planning processes through use of:
- Land Use Planning Tools (NatureServe Vista)
- Standardized Data on T&E Species and Areas of High Biodiversity
- Experts in conservation analysis

In Summary:
Conservation is a public objective. The tools and approaches presented in this workshop will assist us in identifying and preserving the unique and irreplaceable areas in Arizona.