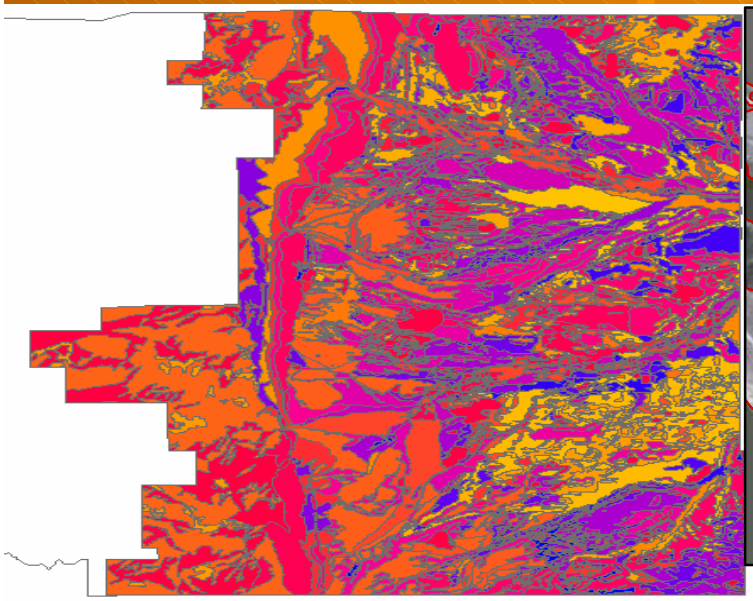
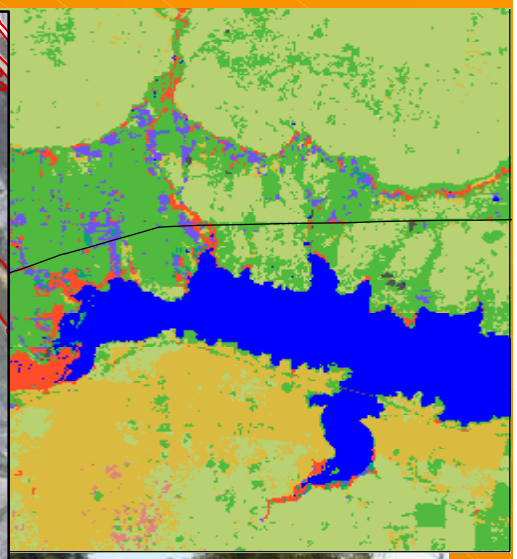
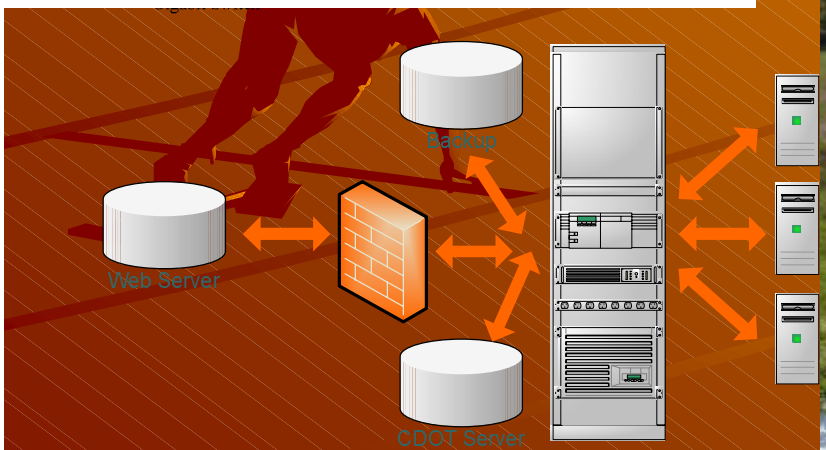
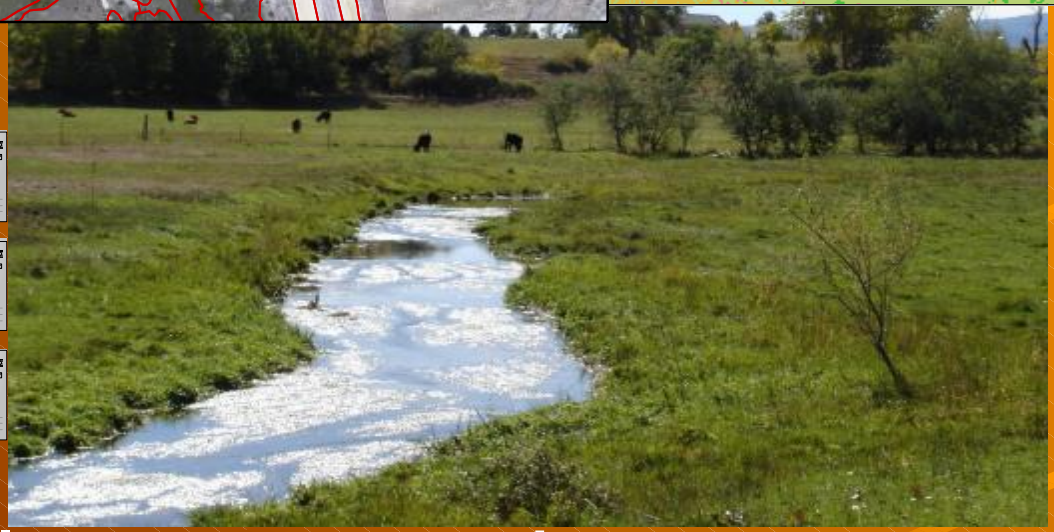
CDOT Environmental Data Initiative









CDOT Environmental Programs Branch
Environmental Planning Section

Roland Wostl

Environmental Data Initiative

Objectives

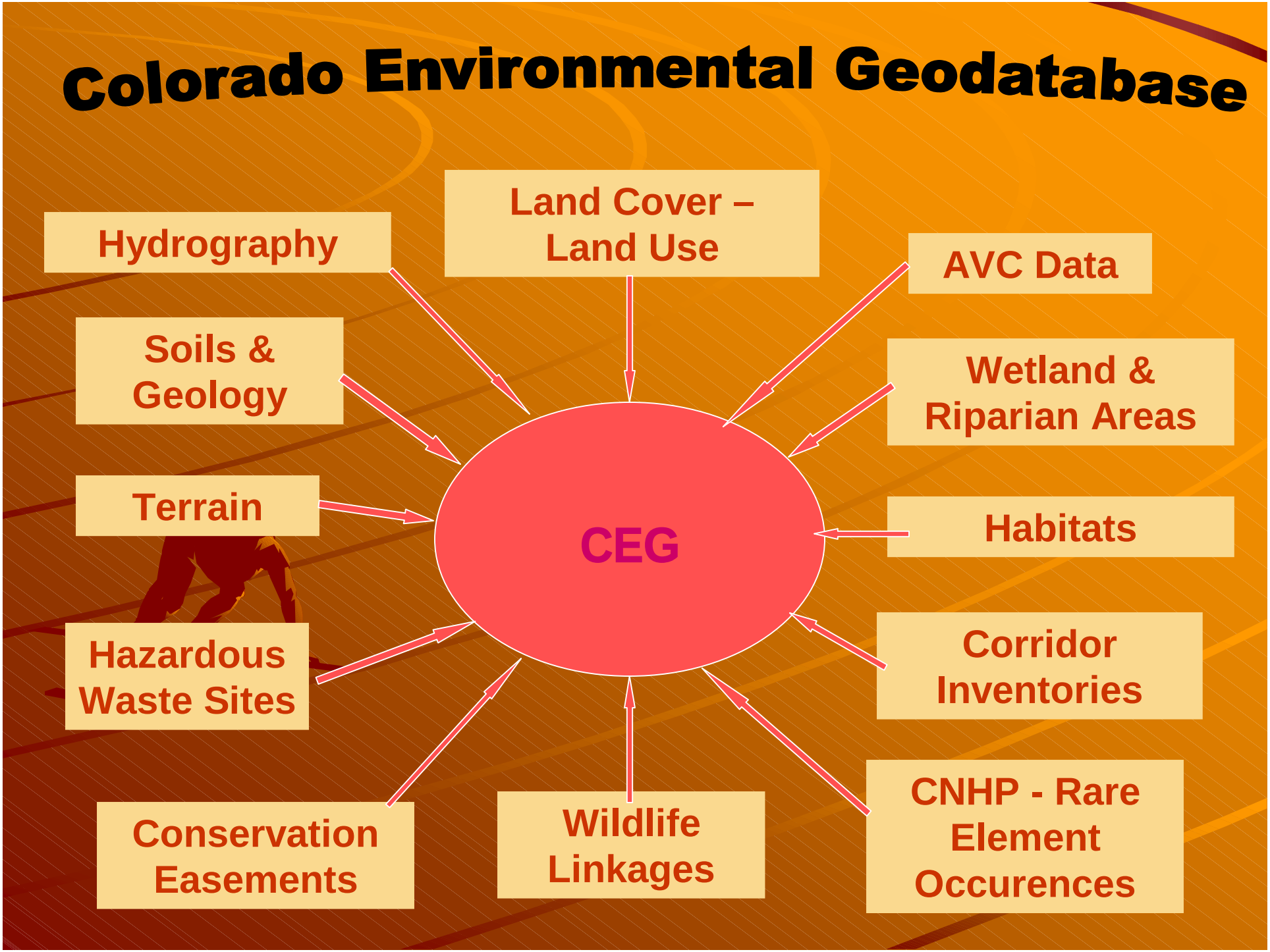
- **Acquire, develop, maintain and provide environmental data and analytical tools for use at key points in the transportation planning and development process**
- **Develop methods and procedures for early identification and evaluation of environmental issues along transportation corridors**
- **Support Advance Mitigation and Conservation Strategies**

Environmental Geodatabase

Purpose

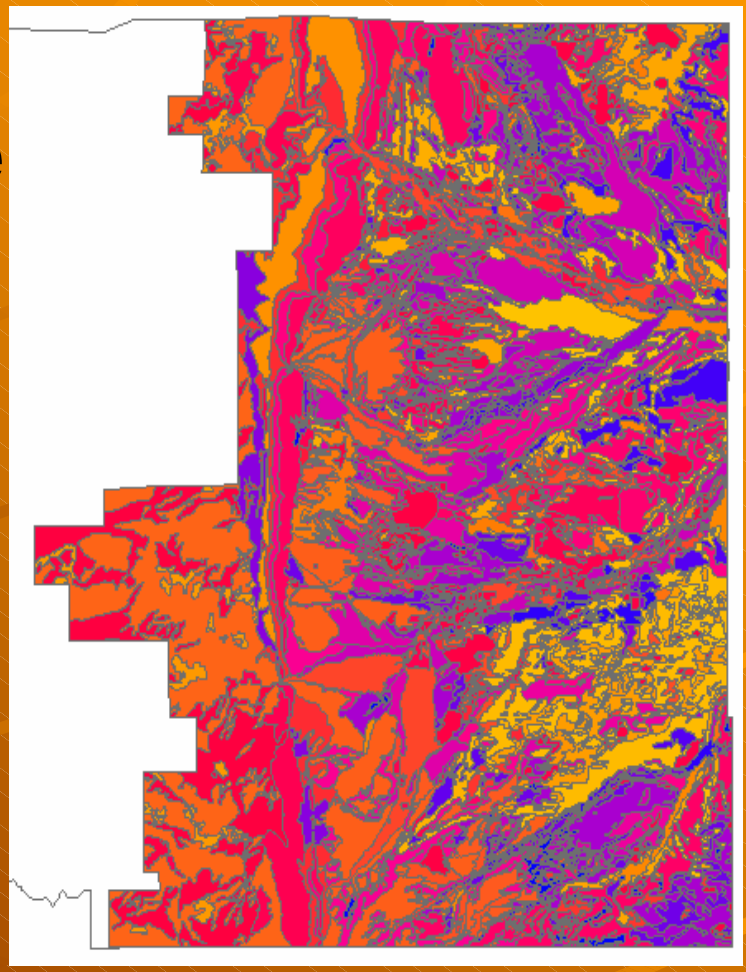
Provide statewide environmental geodatabase and GIS processing procedures in support of CDOT environmental planning

Colorado Environmental Geodatabase



Soil Survey Geographic (SSURGO) Database

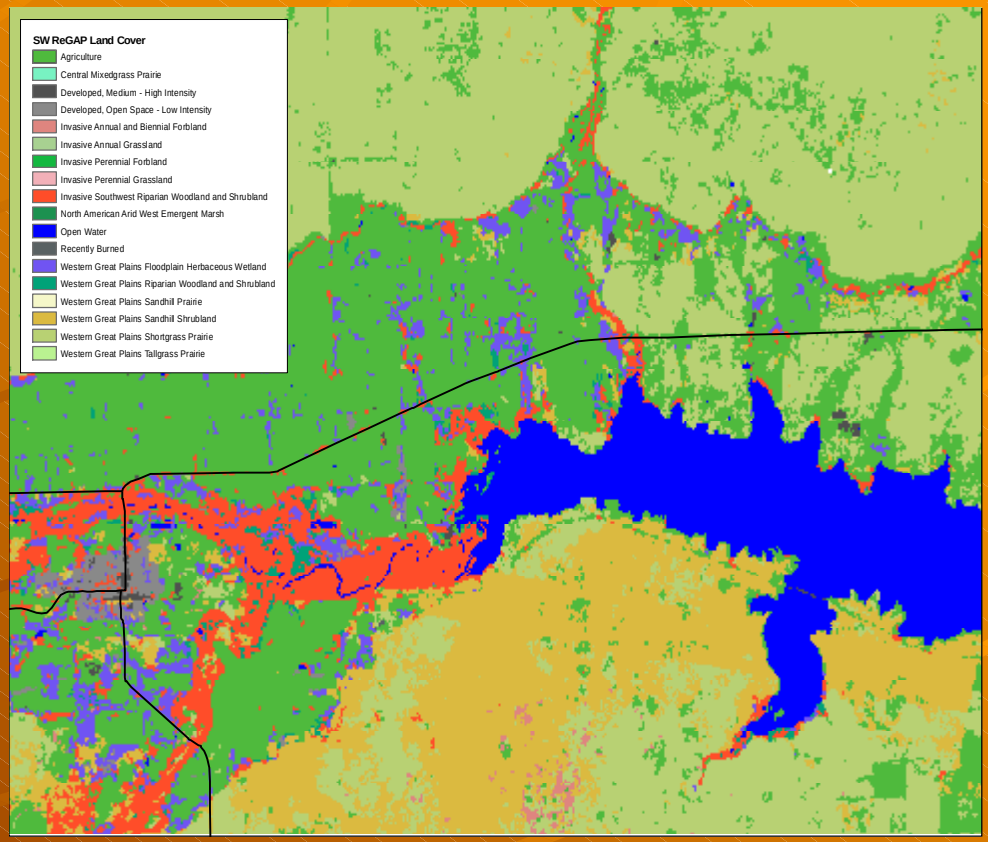
- Riparian Areas, Hydric Soils, Prime and Unique Farmlands, Land Use.
- MMU 5 Acres
- Incomplete, e.g. Denver County not available



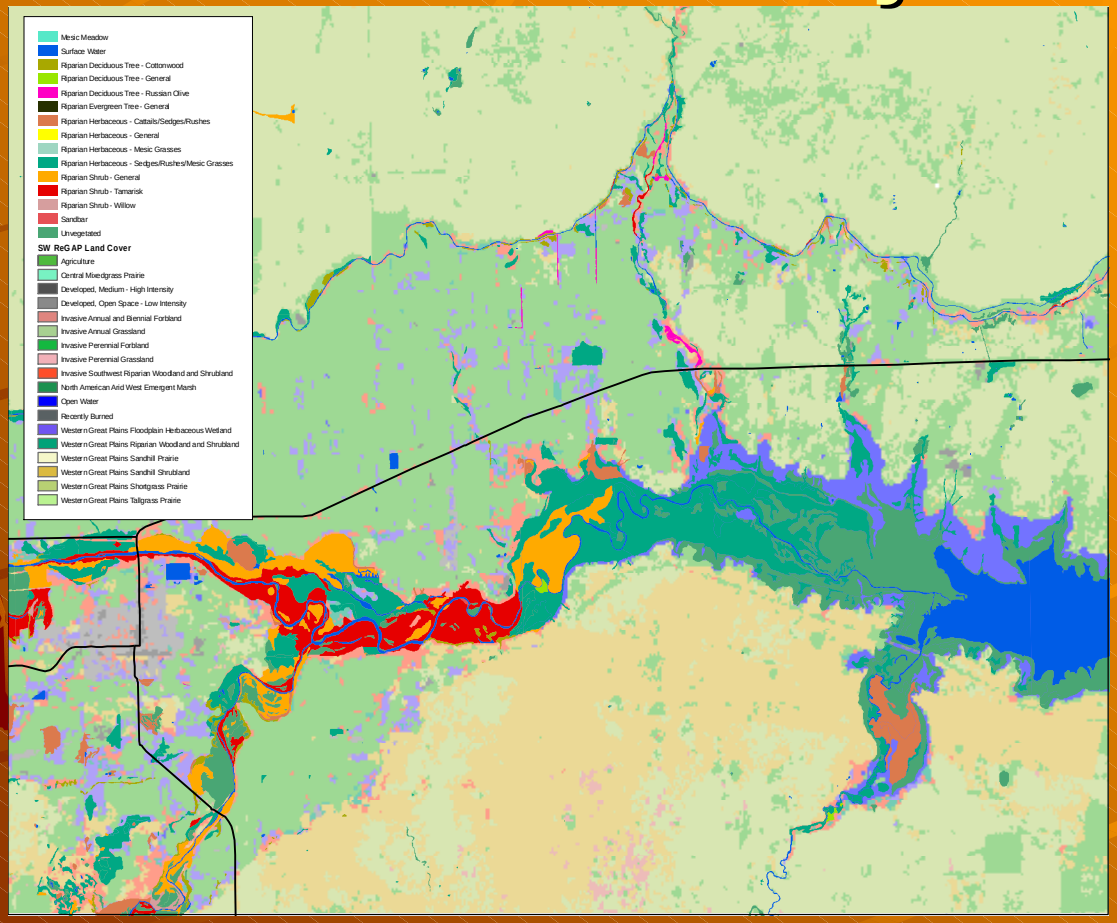
•Date - 2000-06

SW ReGap

- Date – 2003
- Uses - Riparian, Land cover, Land Use, Prime and Unique Farmlands
- MMU is 1 acre Land cover derived from CART modeling
- No accuracy assessment has been completed

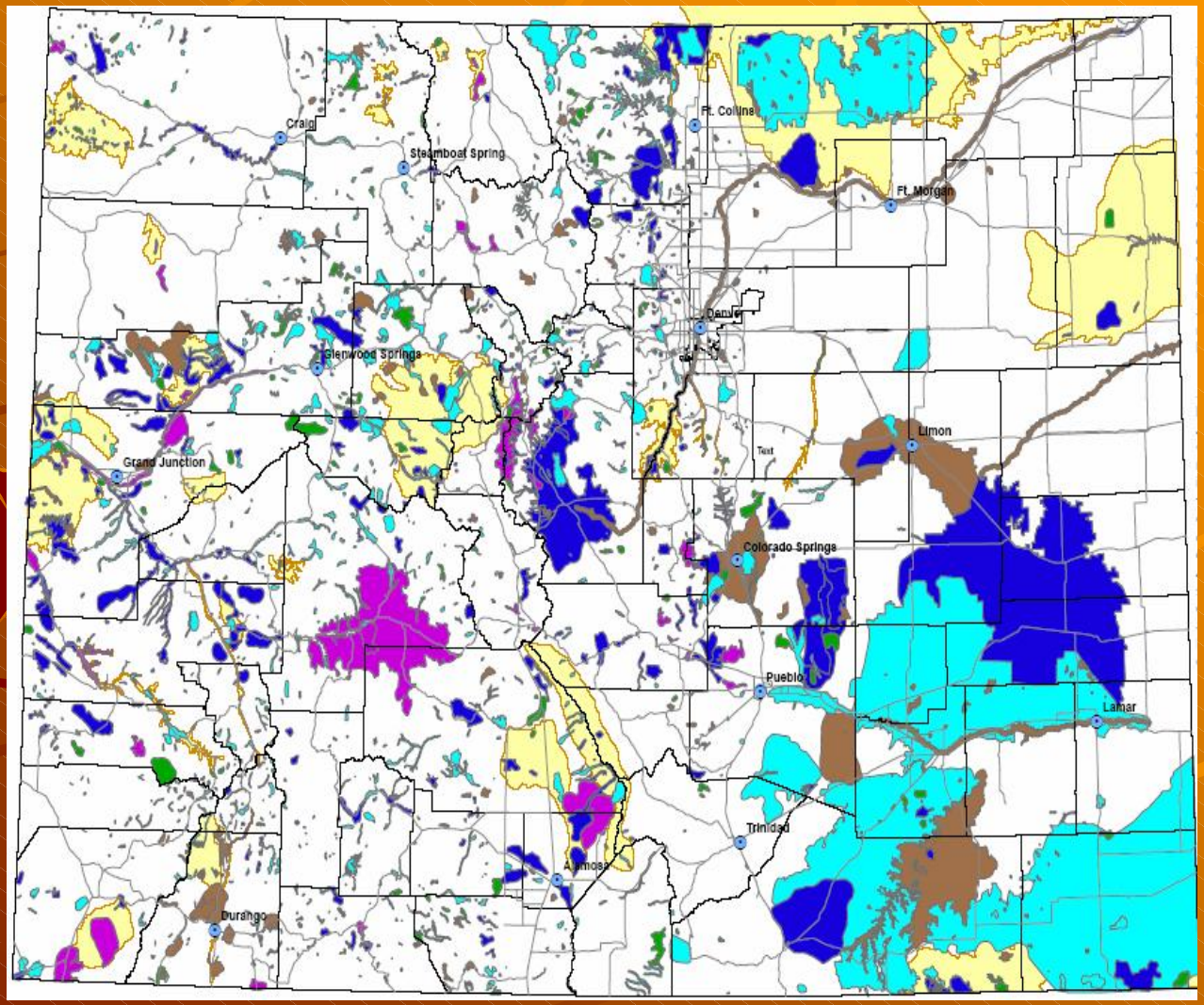


Colorado Vegetation Classification Project



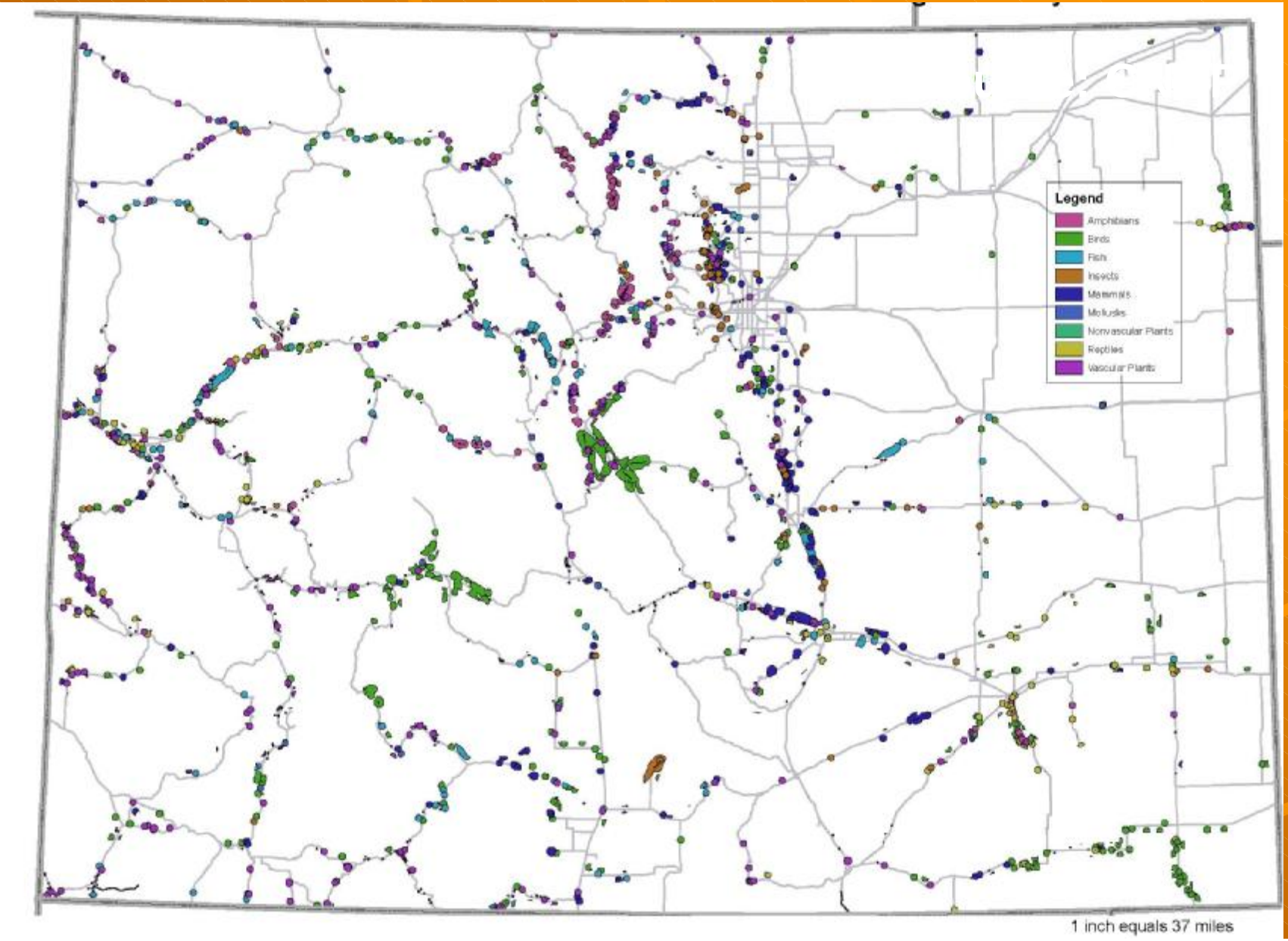
- Land cover, Land Use, Prime and Unique Farmlands
- Mapped by watershed, 25 Meter pixels
- Point observations

Potential Habitat Conservation Areas

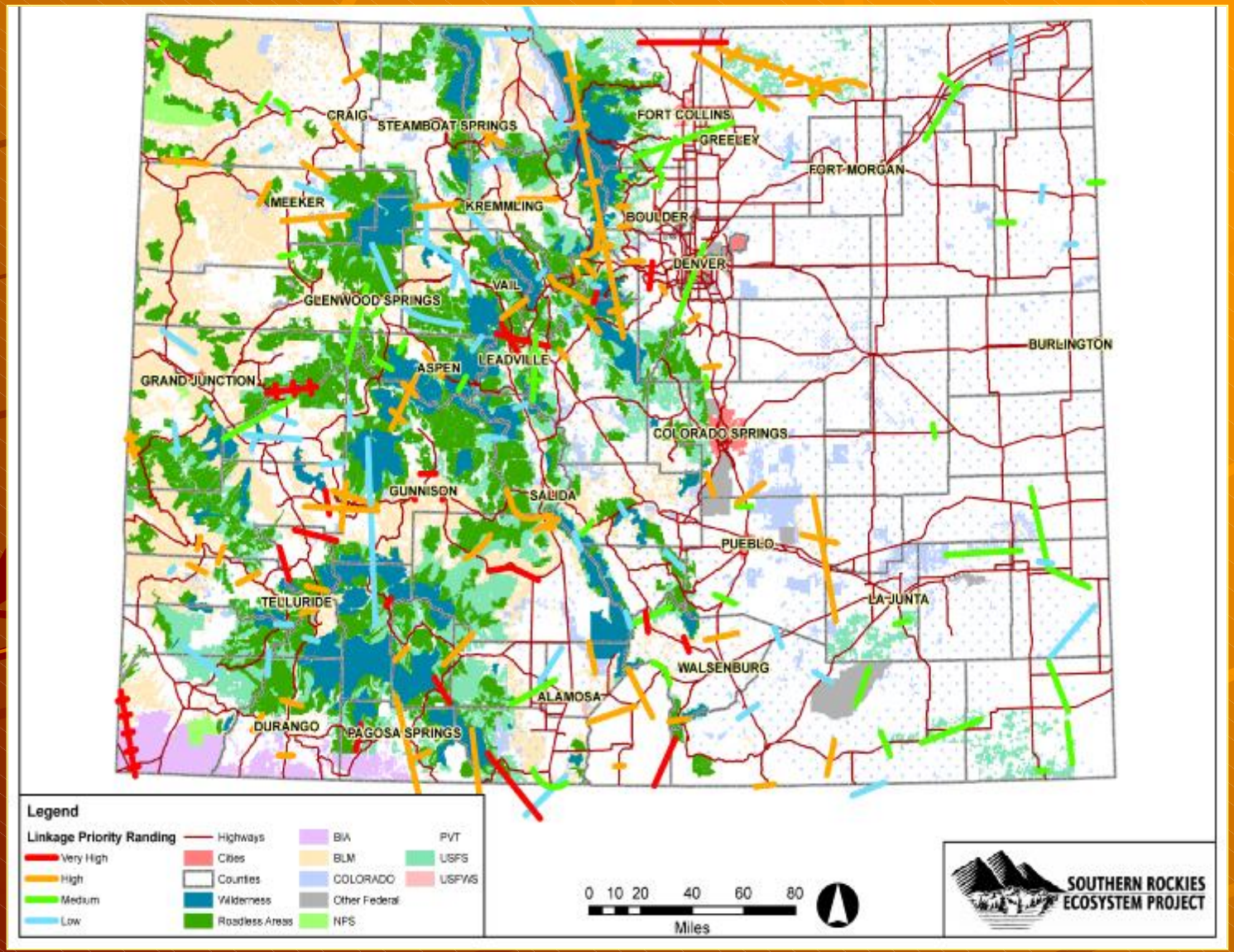


Source: CNHP

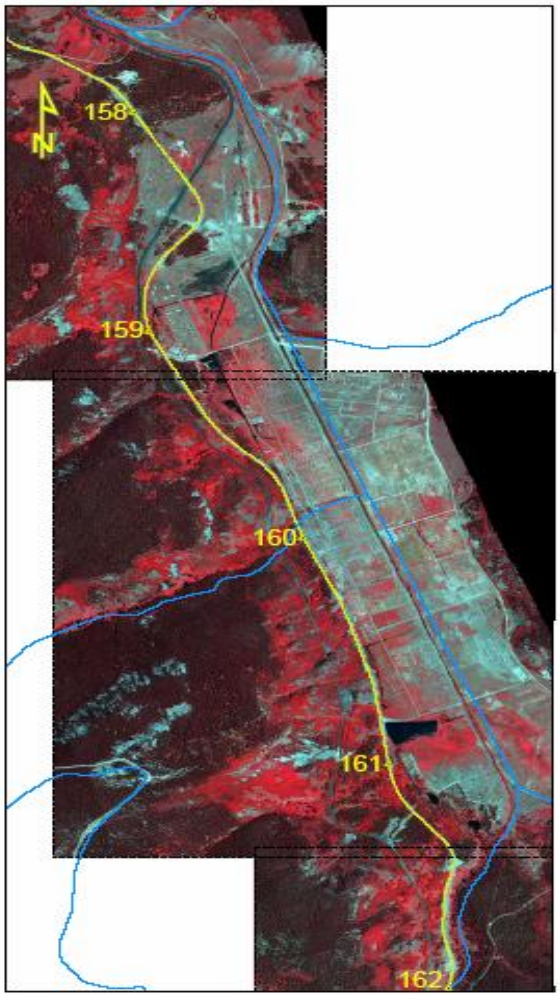
Rare Element Occurences within 2 miles of ROW



Wildlife Linkages



Environmental Inventories of Transportation Corridors



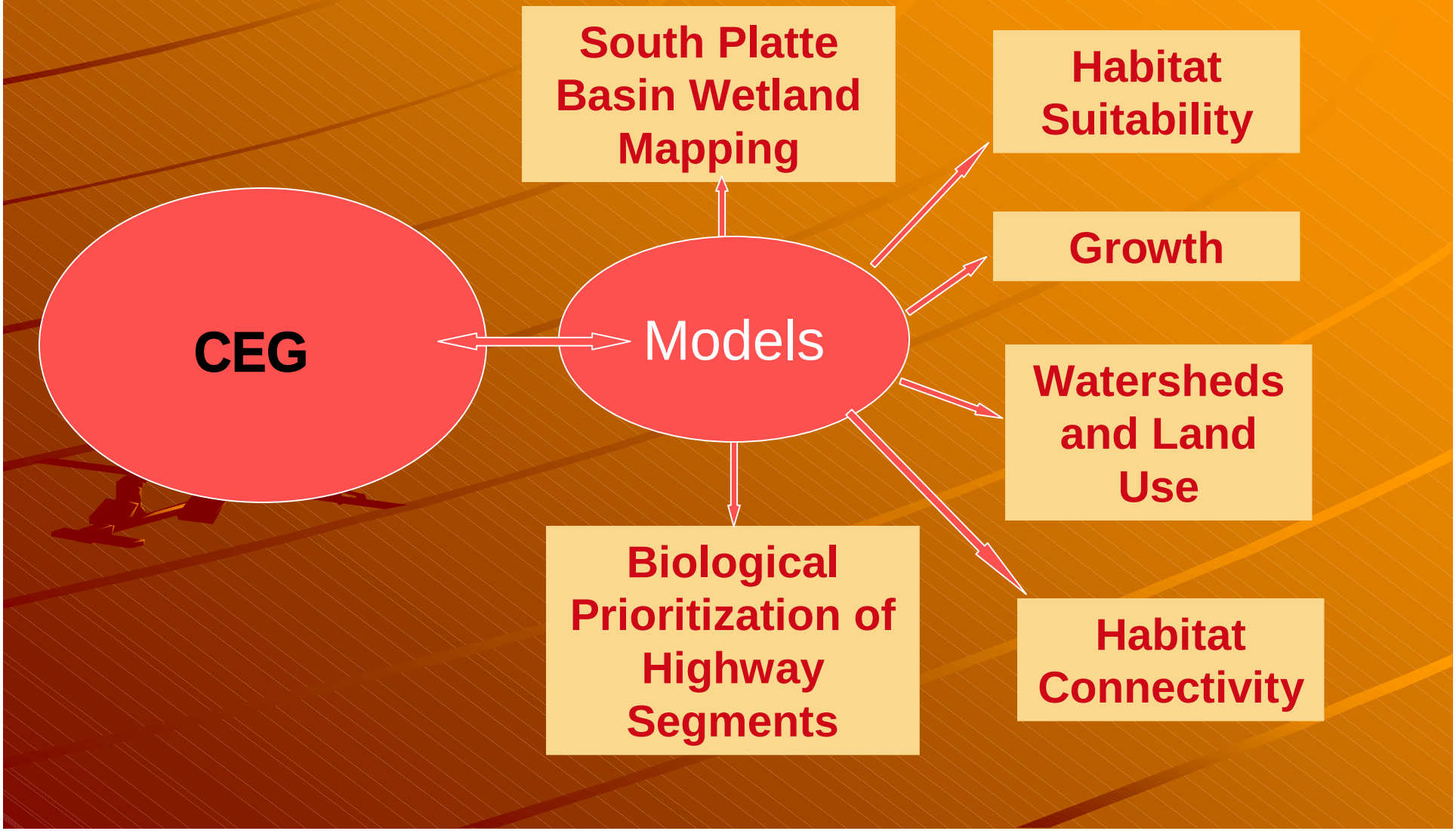
Revised Classification

Legend
- Reference Points
- Highway Centerline
- Image Tile Boundary
- Forested Upland
- Shrub
- Herbaceous
- Wetland-Woody
- Potential Wetland-Woody
- Wetland-Herbaceous
- Potential Wetland-Herbaceous
- Water
- Barren
- Rail
- Roads
- Developed
- training_points

0 0.5 1 Miles

1:14,426

Colorado Environmental Geodatabase – cont.

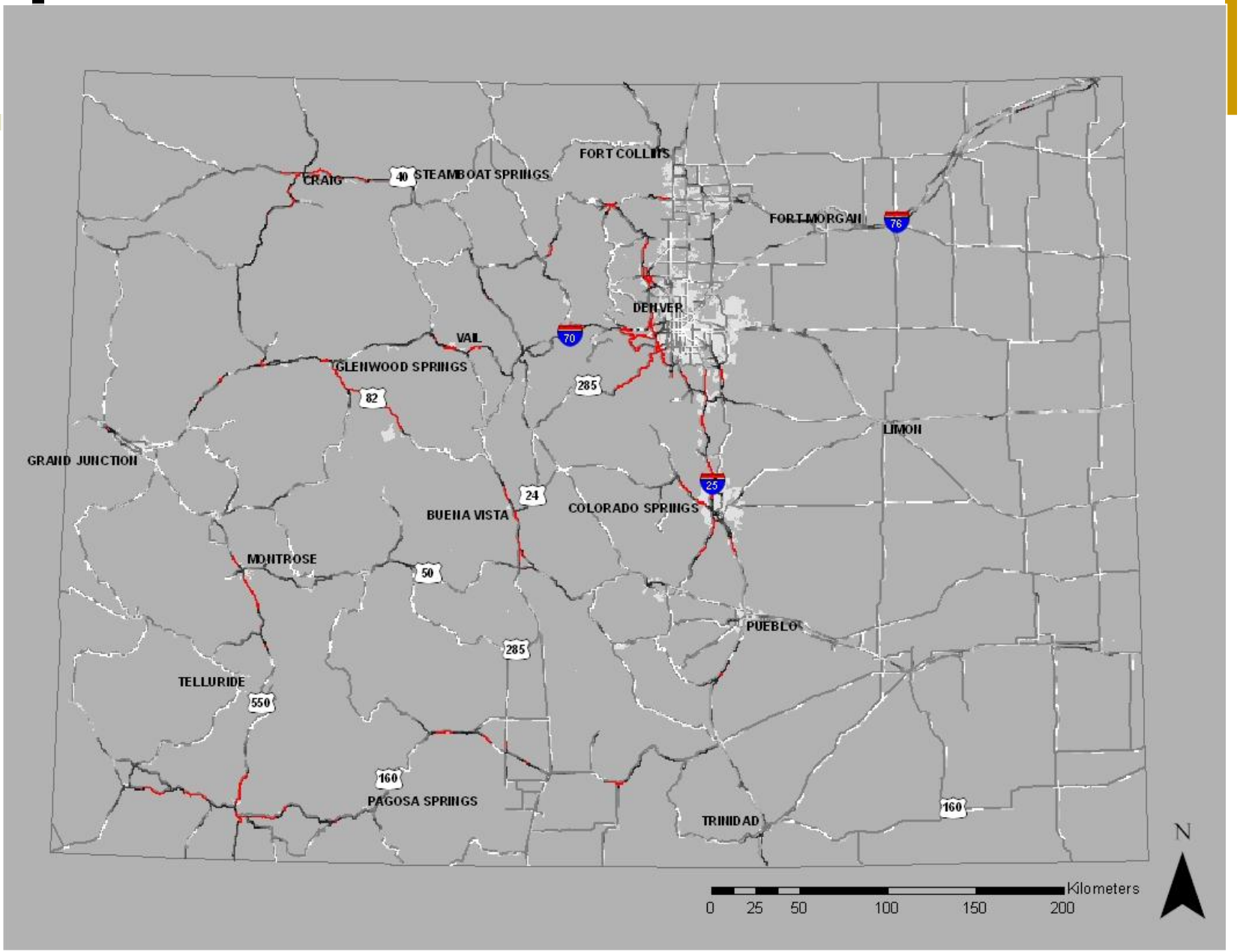


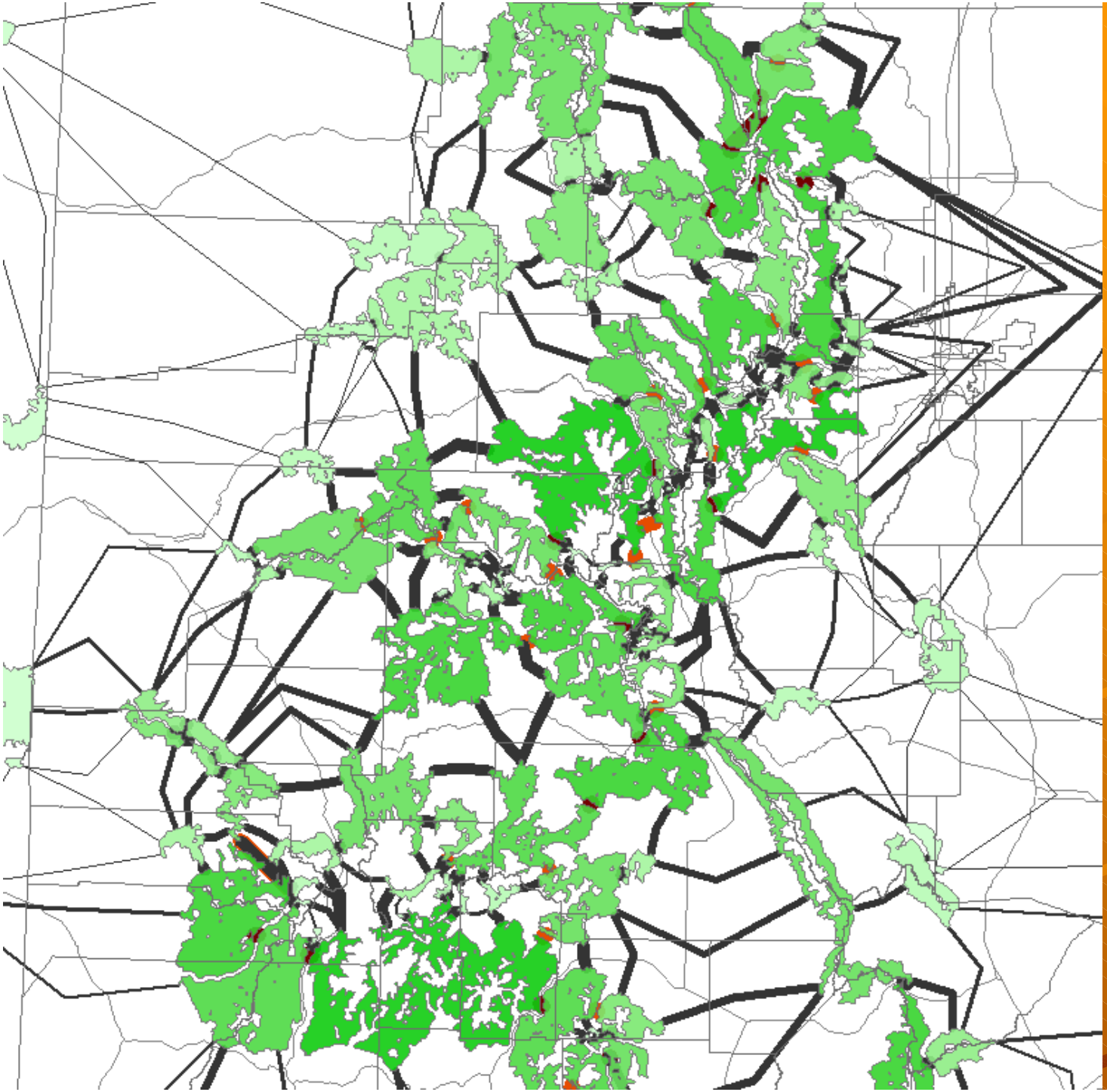
Road Kill Data

2 datasets:

- **Non species-specific 1986-2002**
- **Species-specific data for 1999-2003 for >20 species**
  - **Combined to one all inclusive dataset from 1986-2003 (>25,000 records)**

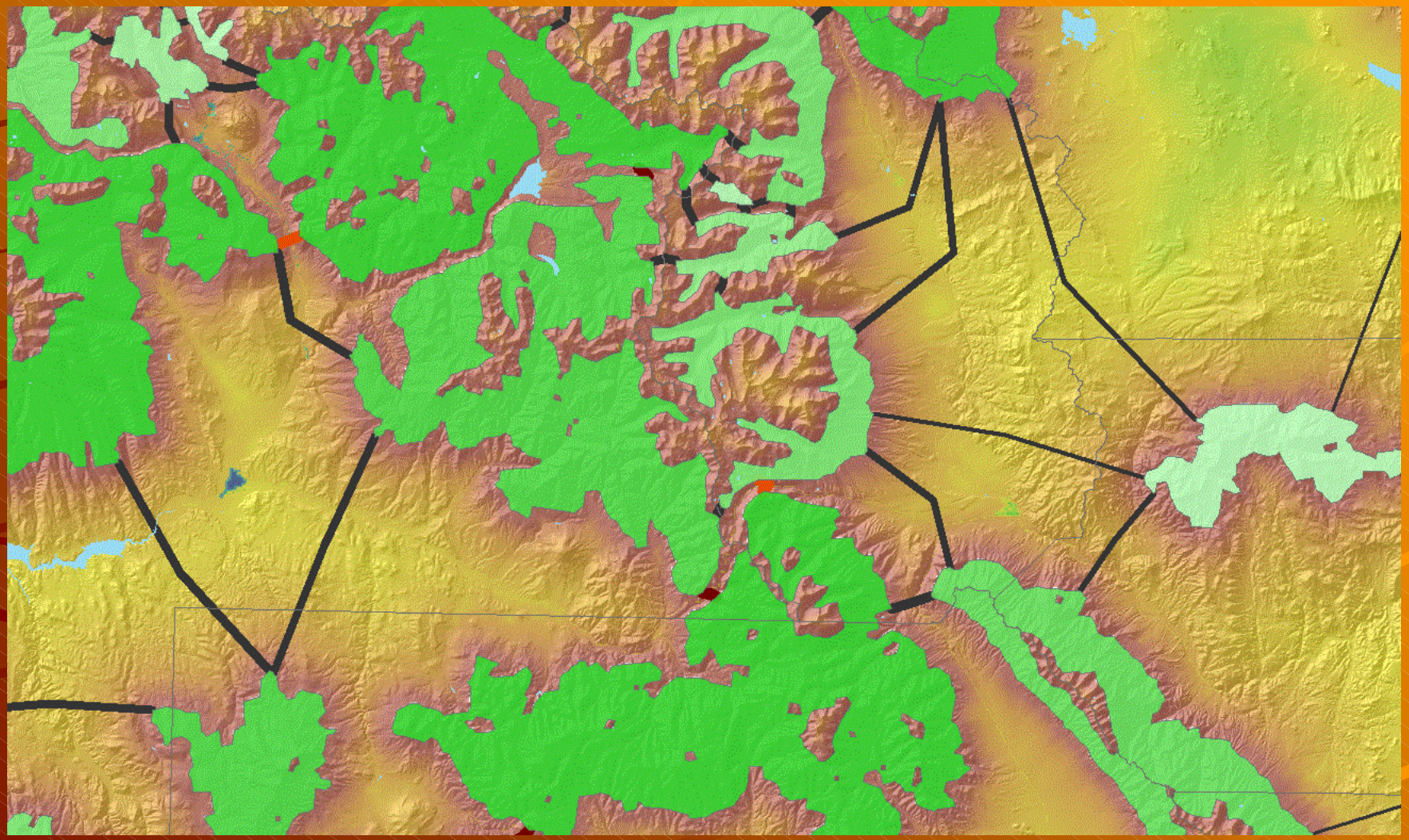
All AVC density (2-mile window): Top 10% in Red



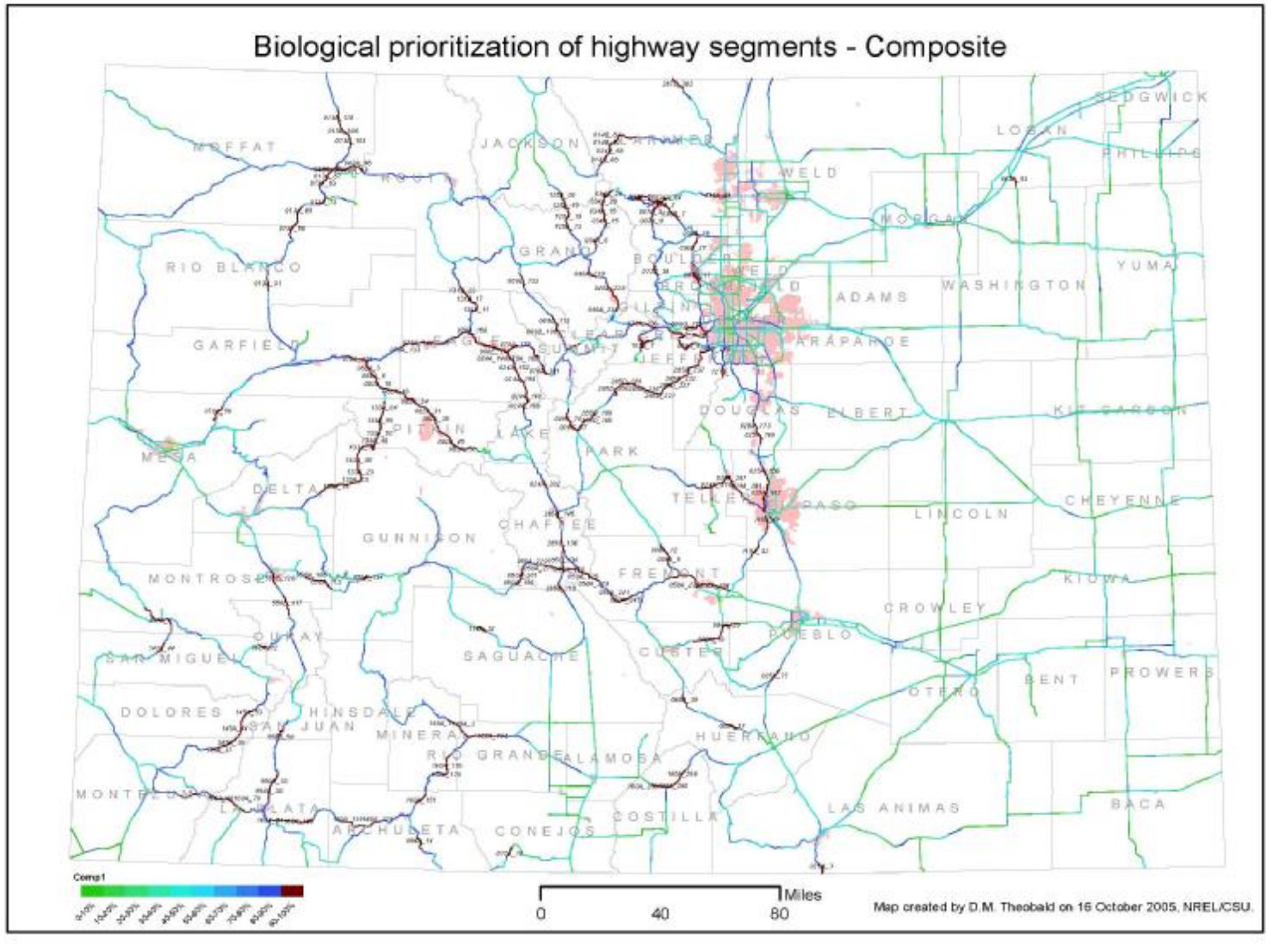


Lynx Links

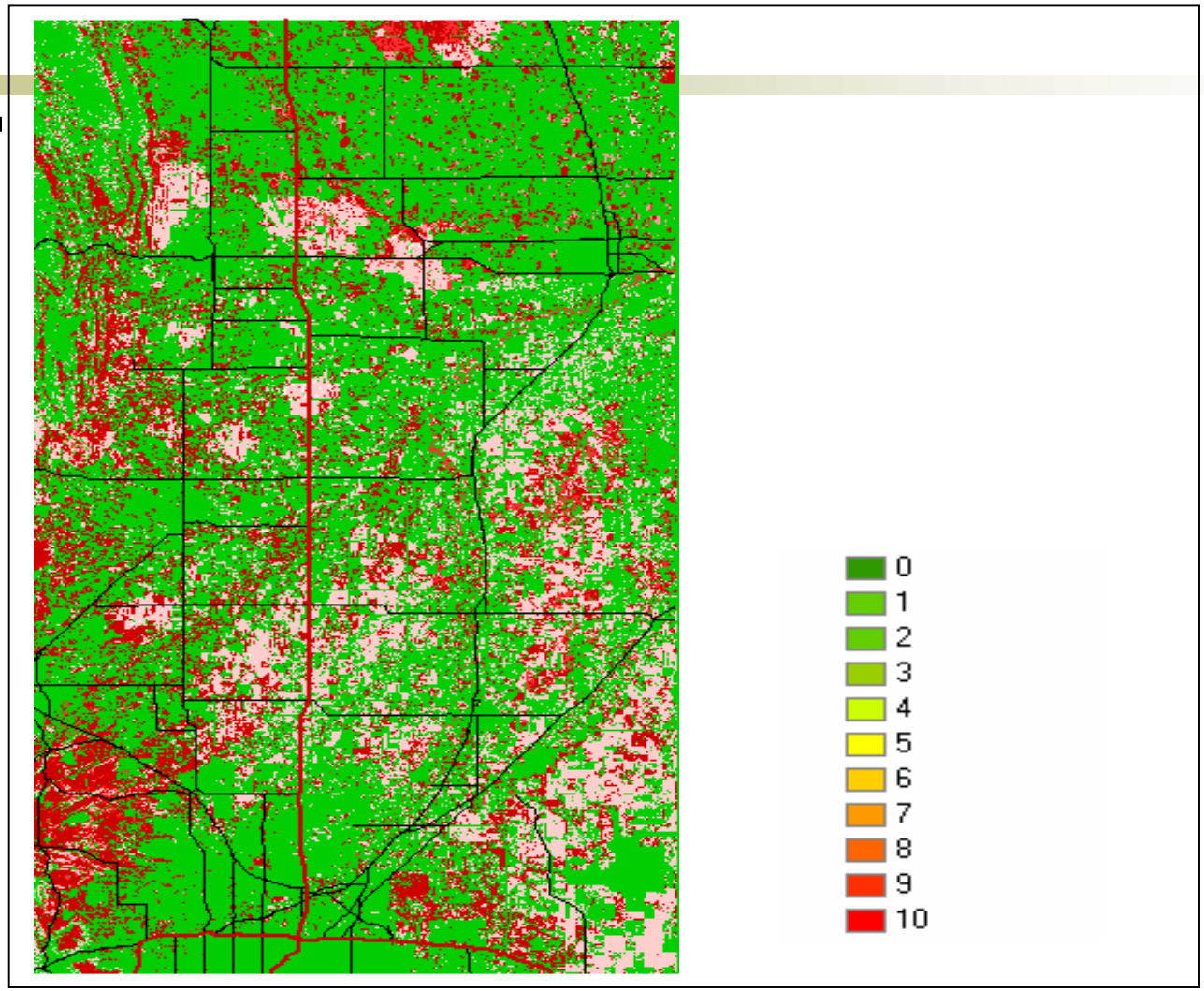
Close-Up: Monarch Pass



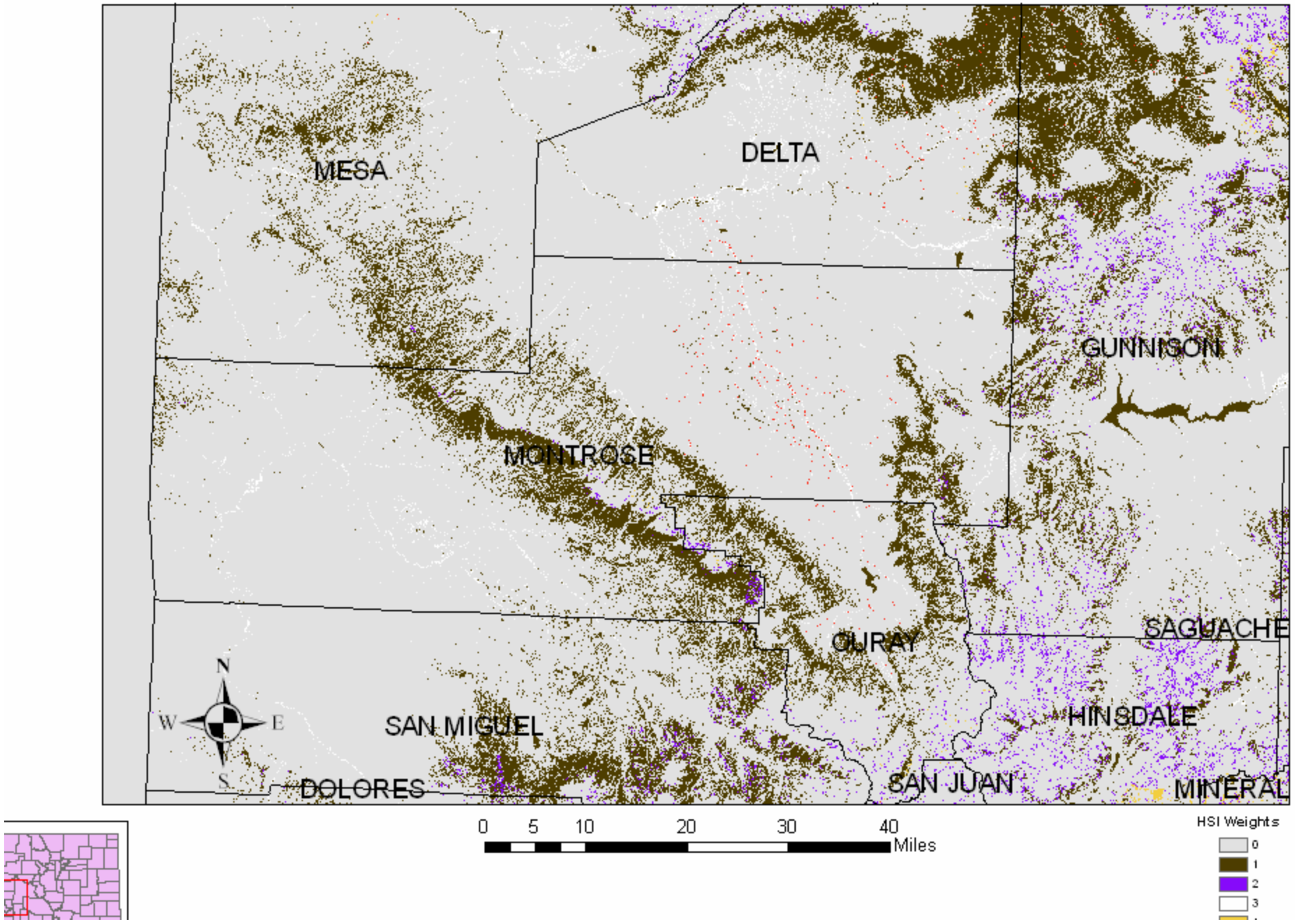
Biological Prioritization of Highway Segments



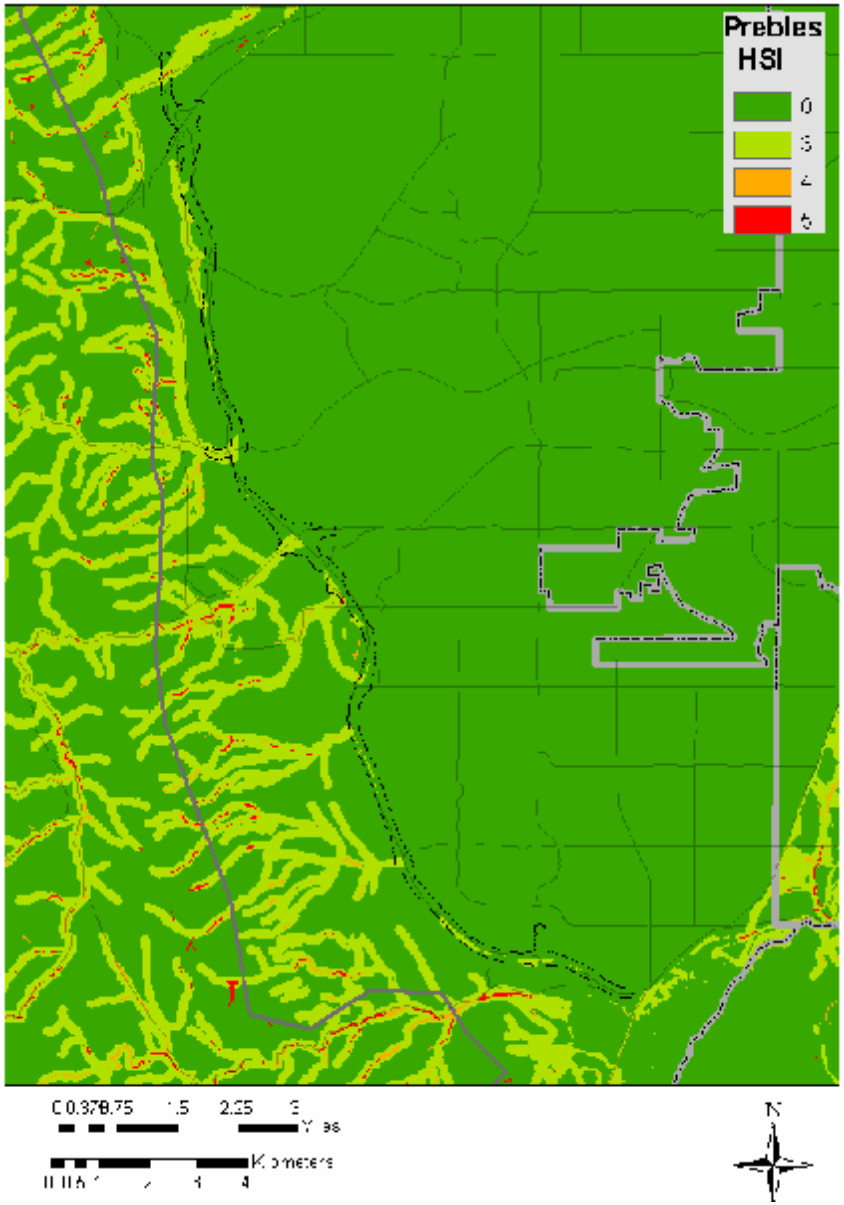
Black-tailed Prairie Dog Habitat Suitability Model



Habitat Suitability Model for the Southwestern Willow Flycathcher



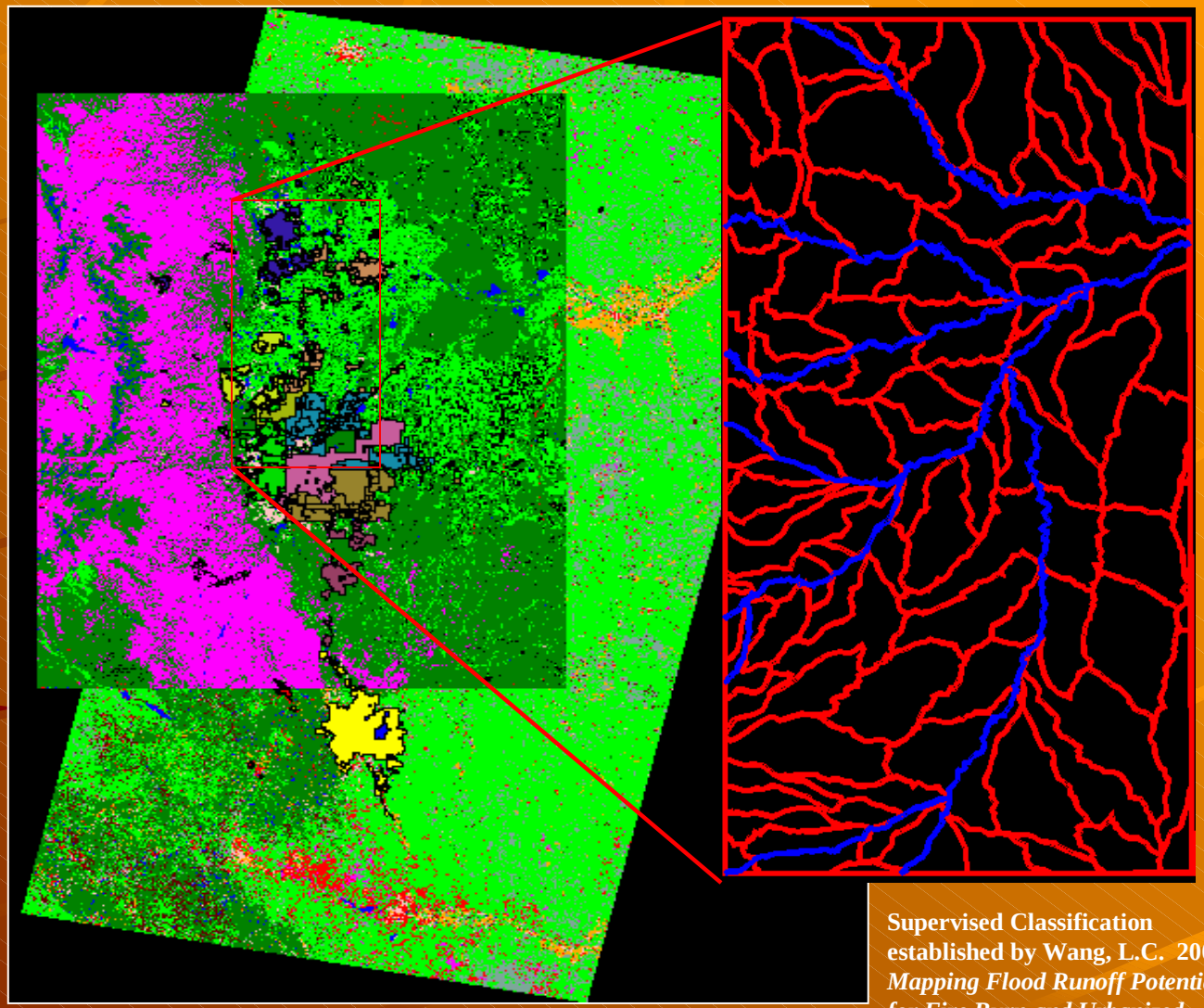
Preble's Habitat Suitability Model



C-470 - Kipling to I-70

WATERSHEDS AND LAND USE

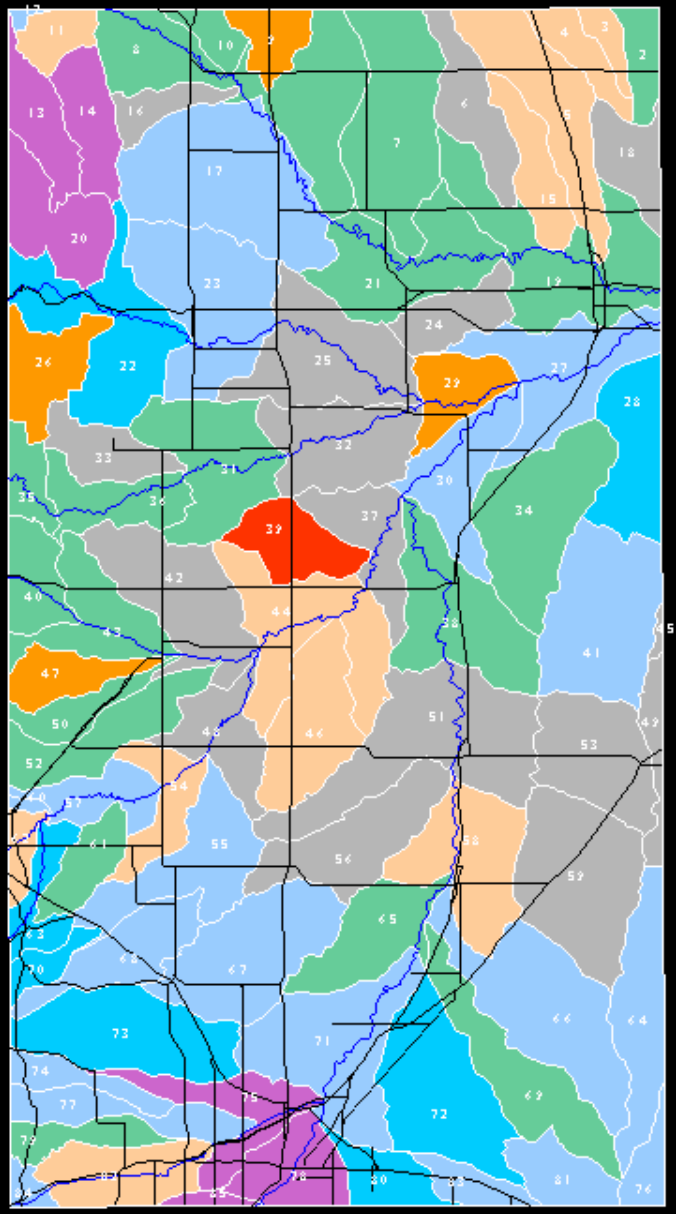
CDOT Study Area



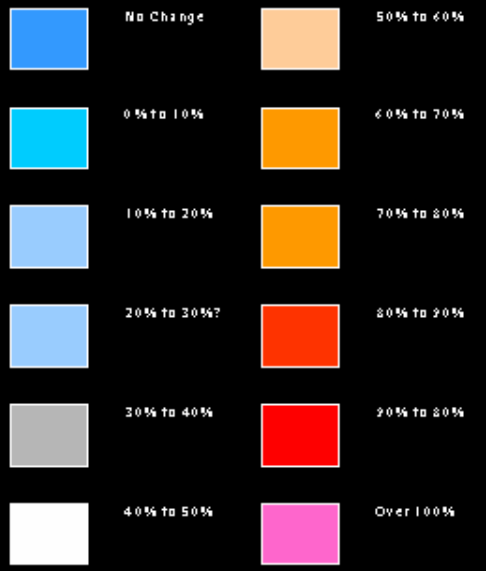
Supervised Classification established by Wang, L.C. 2002. *Mapping Flood Runoff Potential for Fire Burn and Urbanized Lands.*

ARCPLOT

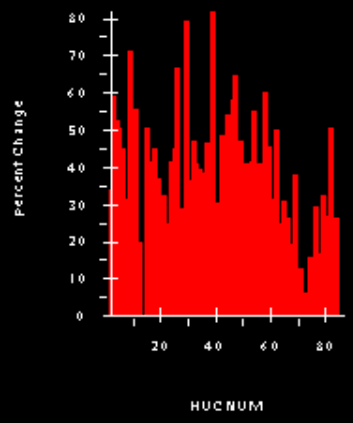
Pan/Zoom



Map Displaying Percent Change in Q Peak for a 50-Year Storm



Bar Graph for a 50-Year Storm Displaying Delta from 1990-2000

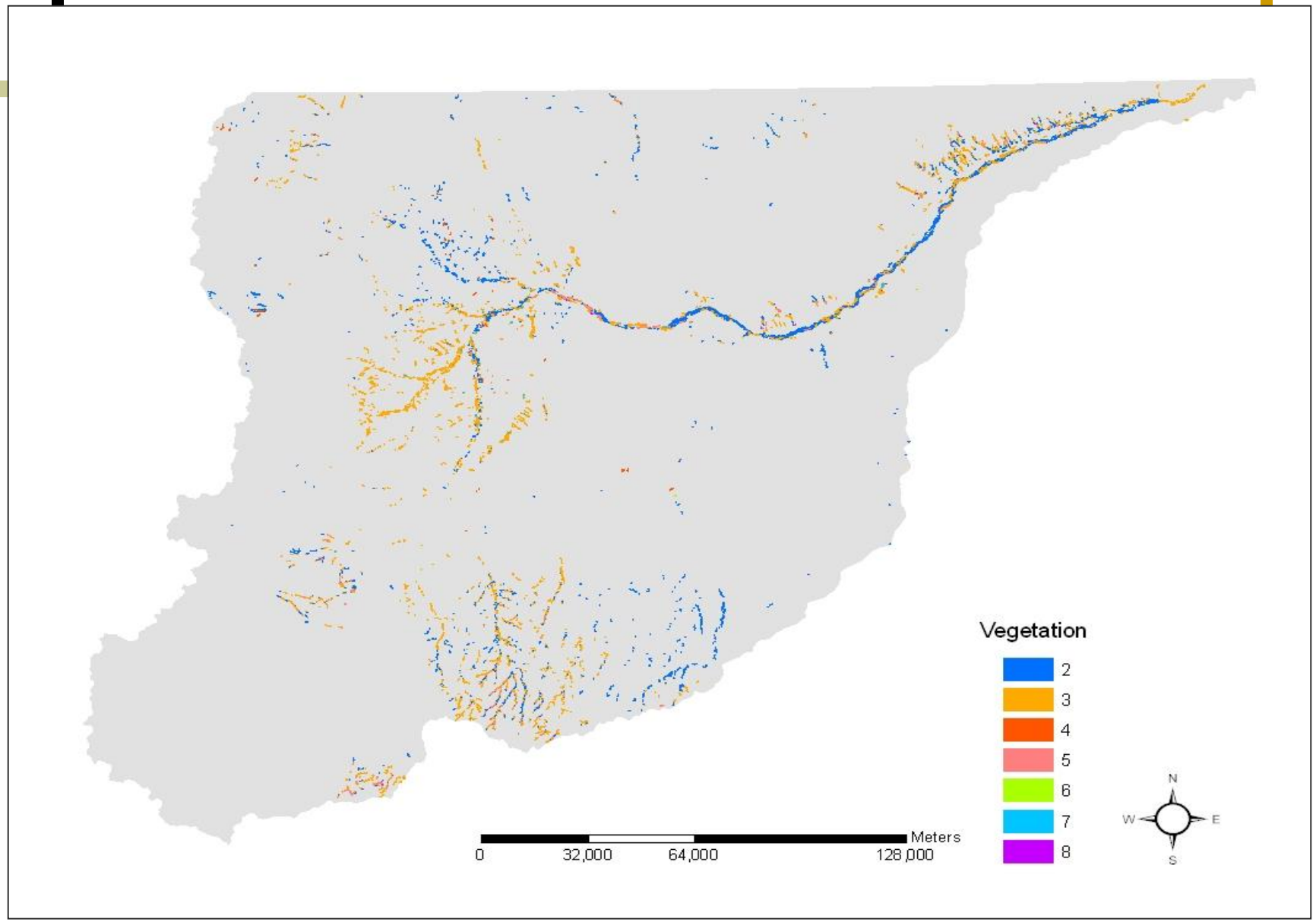


Arc

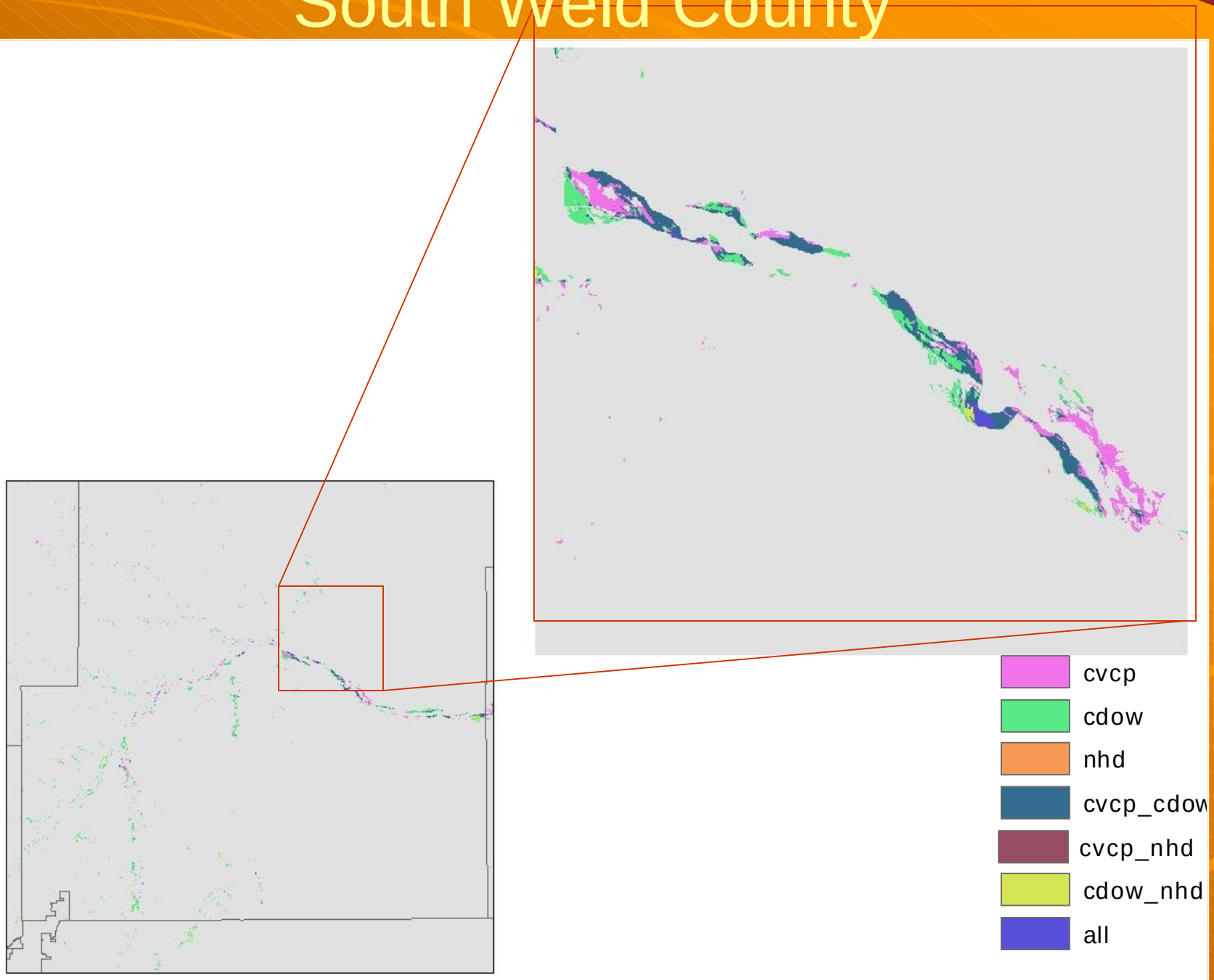
```
Reporting the Runoff Profile of a 50-Year
The average 2000 Curve Number in HUC #84 =
The average 2000 Roughness Coefficient in
The Time of Concentration for the HUC #84
The Velocity through HUC #84 in 2000 in un
The 2000 50-year Precipitation in units of
Depth of Runoff in HUC #84 for a 2000 even
Peak Runoff in HUC #84 for a 2000 event in

==========================================
Increase in Peak Runoff in HUC #84 from 19
Percent change Peak Runoff increased in HU
==========================================

++++++++++++++++++
Displying HUC #85
++++++++++++++++++



==========================================
Reporting HUC #85 Geographic Characteristi
The area of HUC #85 in units of square mil
The length of HUC #85 in units of feet = 2
The slope from the top of HUC #85 to the b

==========================================
Reporting the Runoff Profile of a 50-Year
The average 1990 Curve Number in HUC #85 =
The average 1990 Roughness Coefficient in
The Time of Concentration for the HUC #85
The Velocity through HUC #85 in 1990 in un
The 1990 50-year Precipitation in units of
Depth of Runoff in HUC #85 for a 1990 even
Peak Runoff in HUC #85 for a 1990 event in

==========================================
Reporting the Runoff Profile of a 50-Year
The average 2000 Curve Number in HUC #85 =
The average 2000 Roughness Coefficient in
The Time of Concentration for the HUC #85
The Velocity through HUC #85 in 2000 in un
The 2000 50-year Precipitation in units of
Depth of Runoff in HUC #85 for a 2000 even
Peak Runoff in HUC #85 for a 2000 event in

==========================================
==========================================


Leaving GRID...
Copyright (C) 1982-2002 Environmental Syst
All rights reserved.
TABLES 8.3 (Wed Dec 18 08:17:08 PST 2002)

WARNING graph limits exceeds pagesize, cli
Hit Return to Continue:
==========================================
Displaying Map of Percent Change in Q Peak
Arcplot:
```

Start | working | Microsoft PowerPoint - [... | Arc | gis-55.aml - Notepad | ARCPLOT | 4:41 PM

Potential Wetland Areas-South Platte River Basin



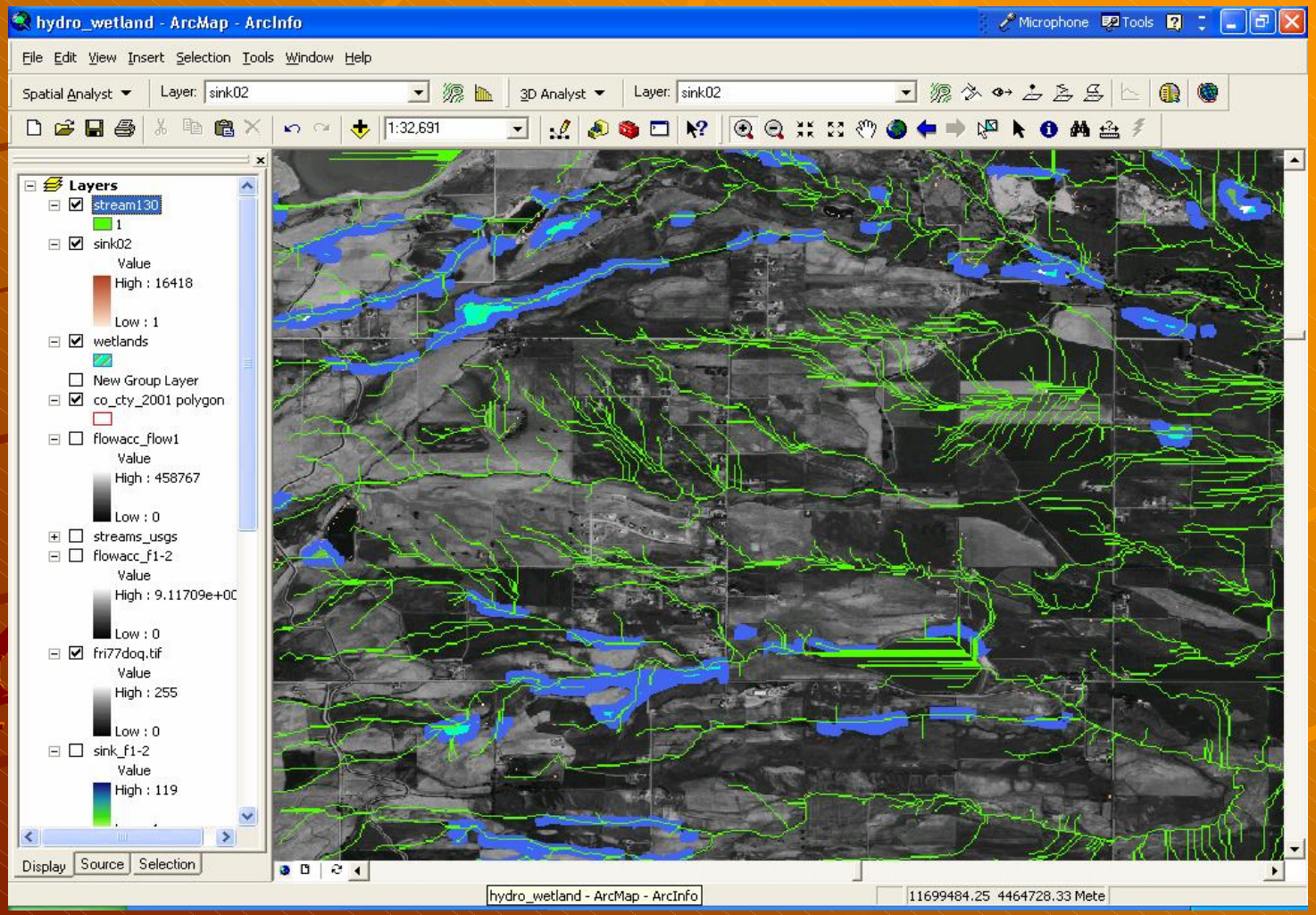
South Weld County



In Progress

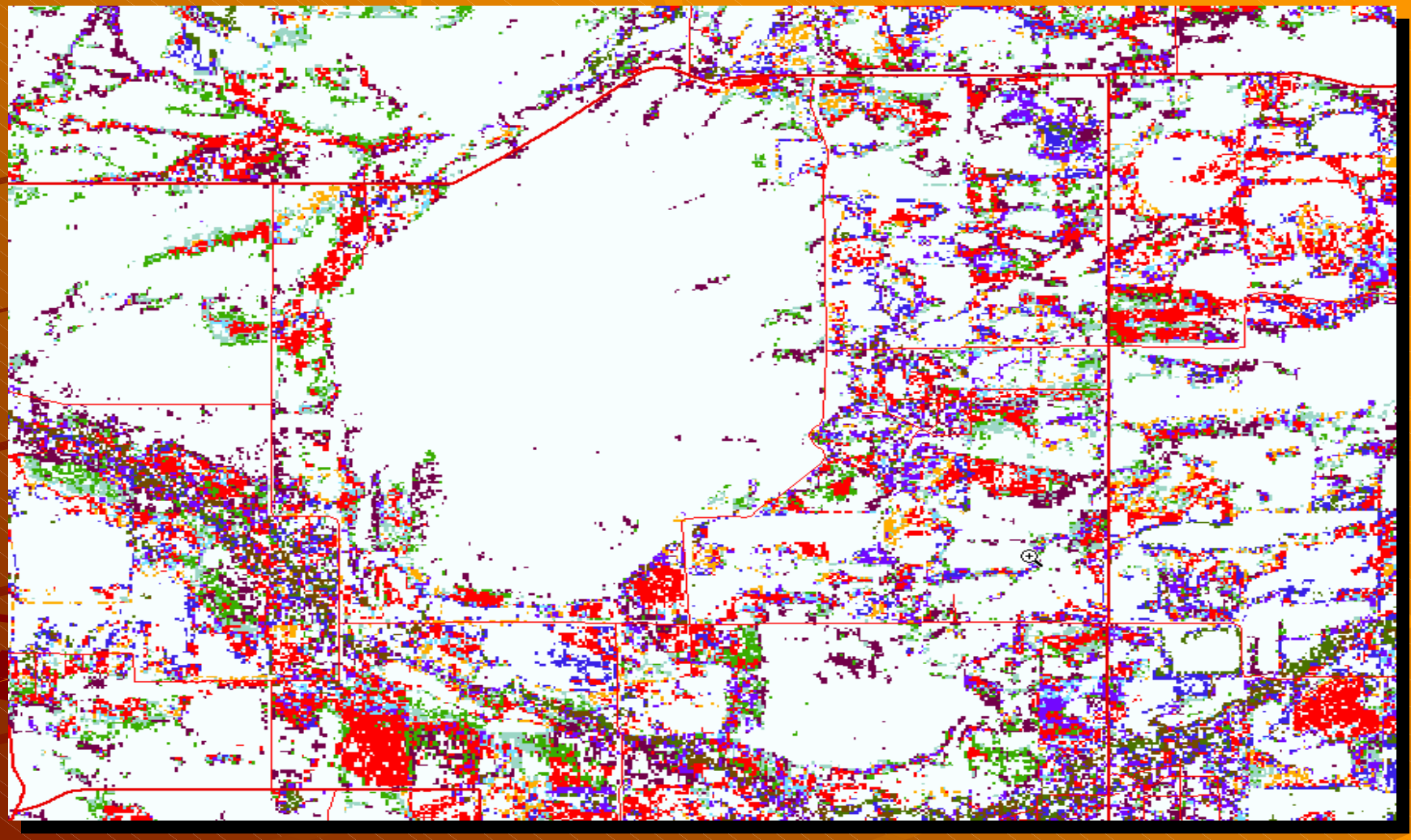
- **Multi-Criteria Wetland Mapping**
- **More Habitat Suitability Models**
- **Environmental Data Access**

Multi-Criteria Wetland Mapping



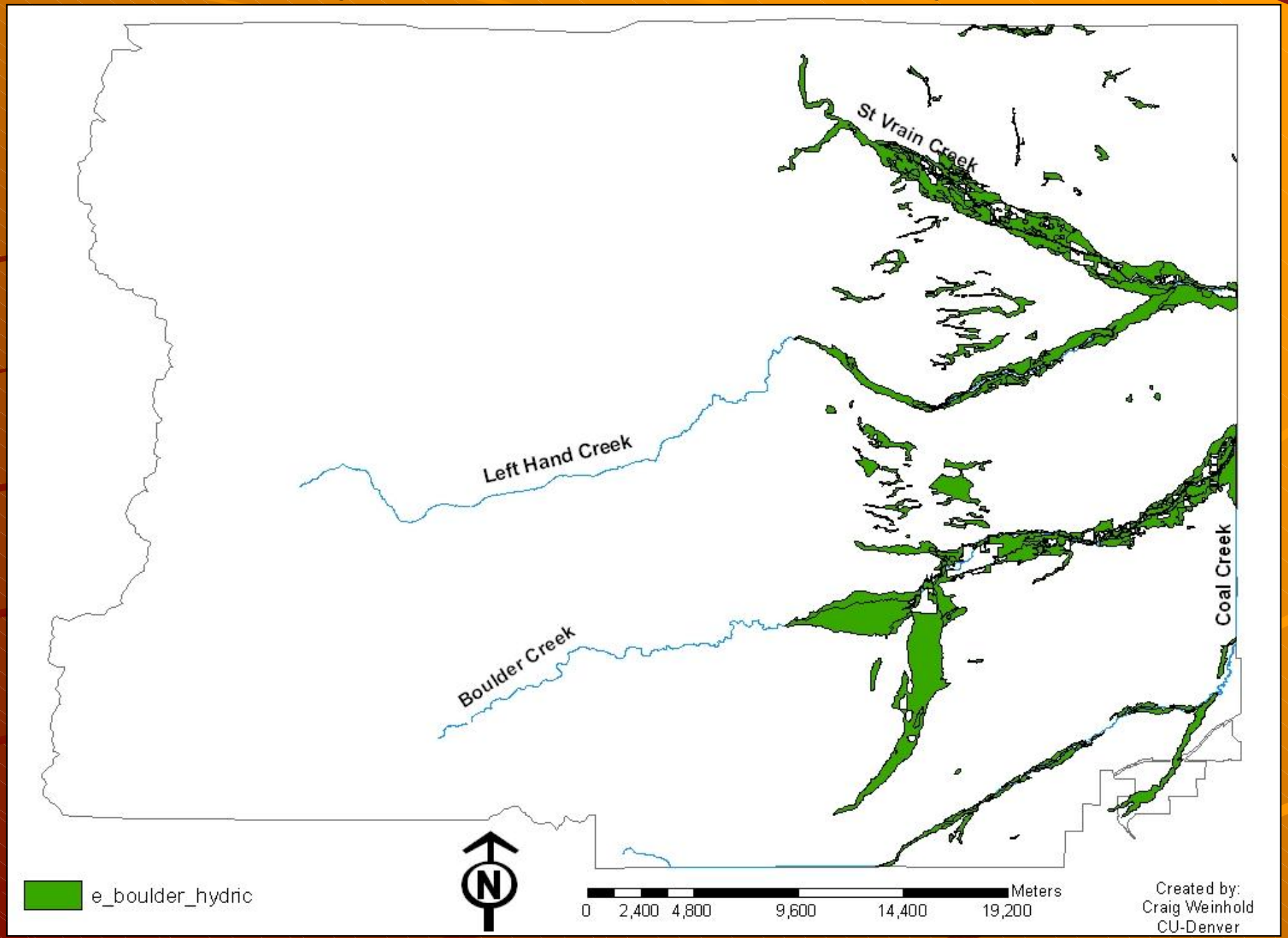
Stream Network & Hydrolgy

Multi-Criteria Wetland Mapping

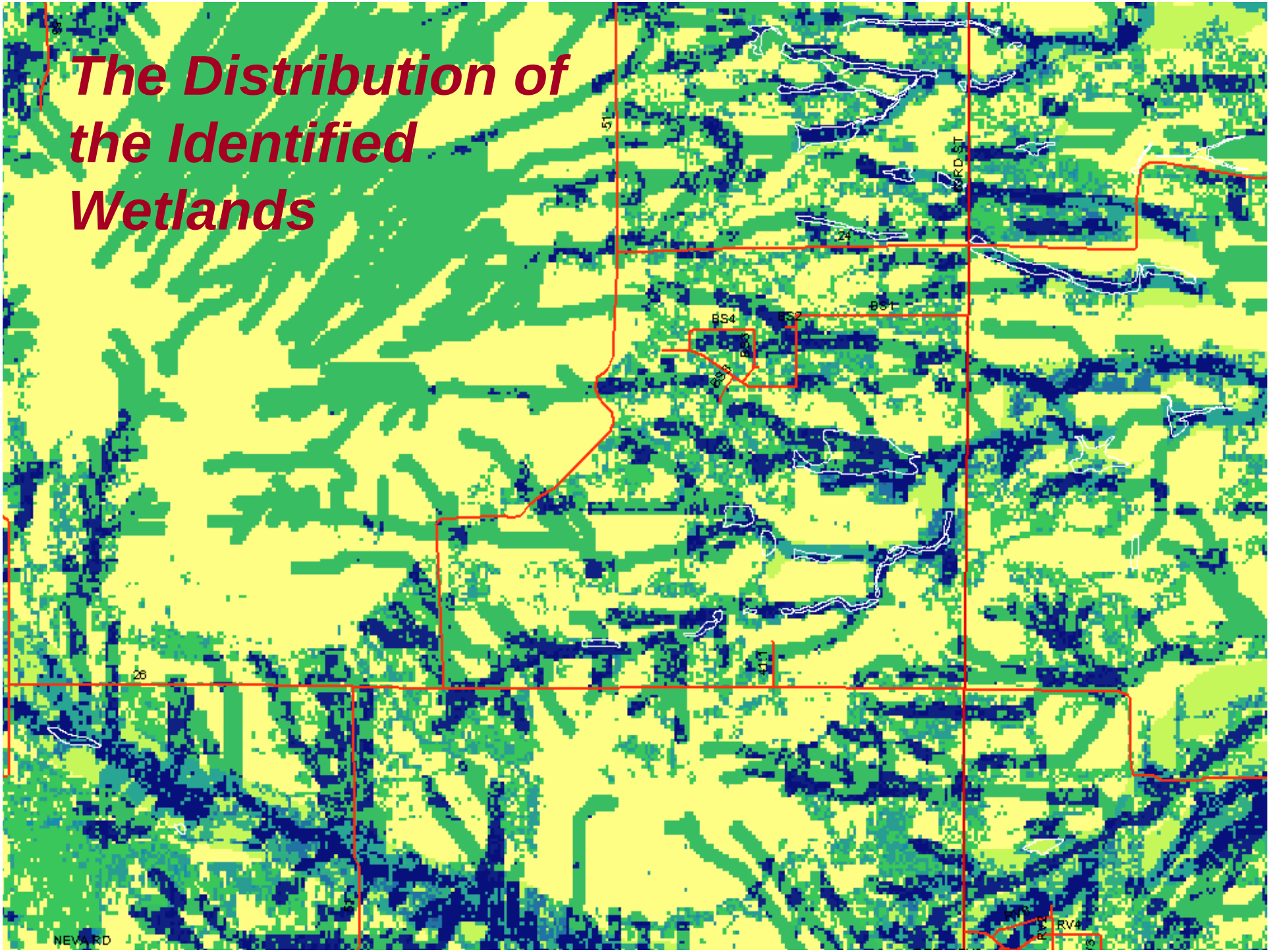


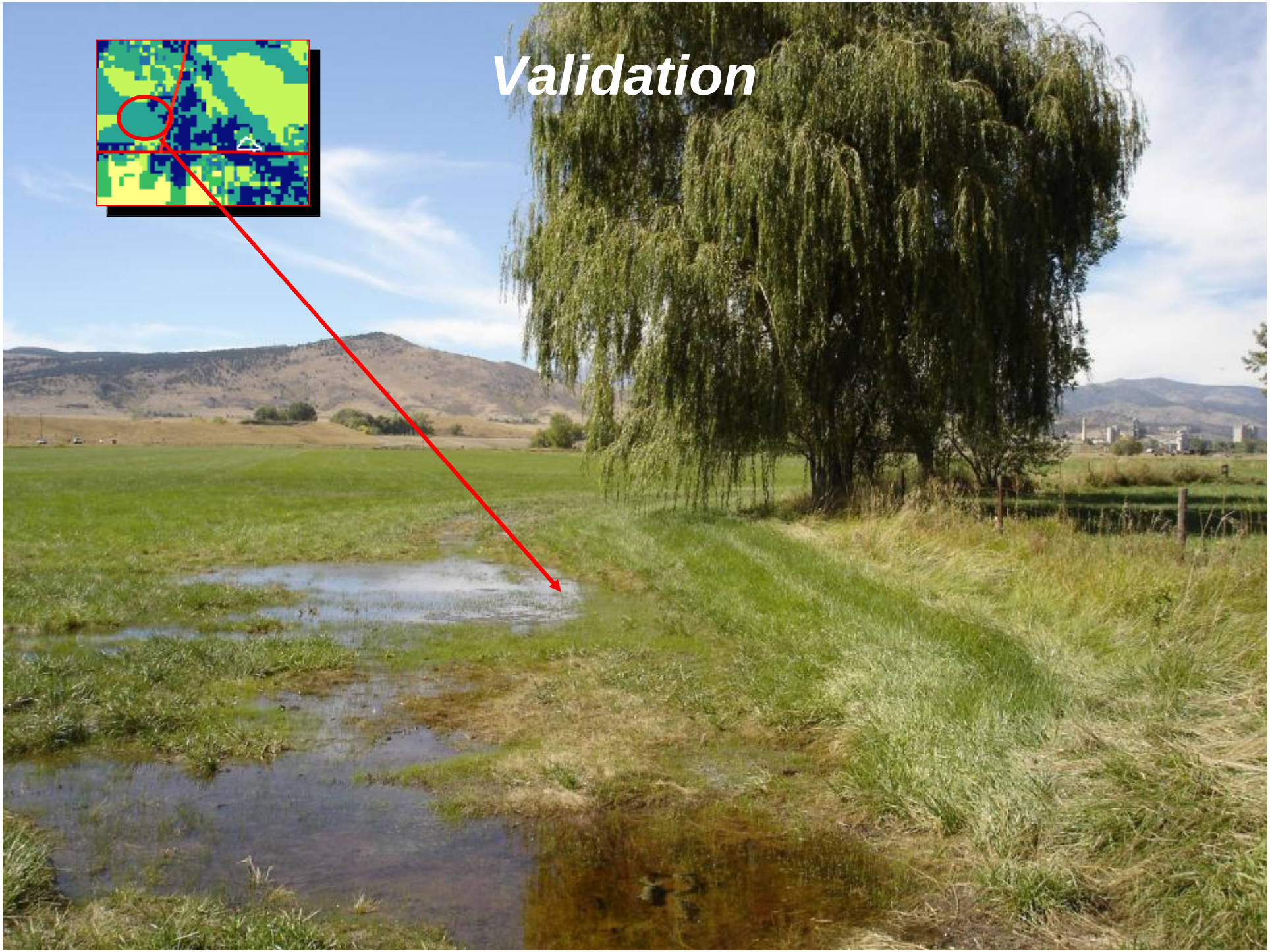
- Vegetation Classification

Hydric Soils in Eastern Boulder County



The Distribution of the Identified Wetlands




Validation

Environmental Data Access

Objectives

- Provide CDOT, its partners, and other authorized users with:
  - reliable and ready access to data stored in the CEG and other databases.
  - ability to download environmental data models
- Protect sensitive data by regulating the level of access provided to each stakeholder.

What will we do Now?
(This Year FY07)

Environmental Geodatabase Delivery

- Extend current web delivery interface with a dropdown for CEG
- Data will be available within the next 30 days

What will we do Now?
(This Year FY07)

Environmental Geodatabase Delivery

- Develop and Implement a new web interface that will allow users to :
  - View data in map form
  - Query data in map form
  - Map printing
  - Download data (clip,zip and ship)
  - Ability to accept and respond to user feedback

Future Capability

(Next 2-3 years*)

- **Accommodations for external users**
  - **Data maintainers can extract, update and replace themes in the repository**
  - **Simple models are executable within the repository**
  - **Ability to serve models over the web**

Organizational and technical issues need to be explored and resolved in order to effectively implement these future capabilities. Results of STEP UP (Phase 2) will inform many of these issues

Conclusions

- EDI is continuing effort
- Next steps require stakeholder participation
  - Developing truly useful access to a data for environmental analysis is beyond the capabilities, or even the responsibilities of CDOT
    - Data Sharing Agreements
- Who is interested in participating?

Questions?