

Visual Resource Inventory



Objective

- Understand how to conduct a VRM Inventory
- Create Inventory Classes



What is a Visual Resource Inventory?

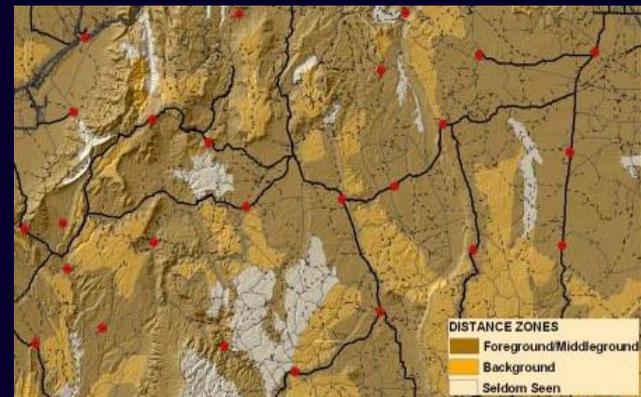
- Systematic process used to determine the extent and quality of visual resources in a given area
- Provides a means to determine visual values on public land



Inventory Process

Three Main Elements

1. Scenic Quality Evaluation
2. Sensitivity Level Analysis
3. Distance Zones and Viewshed Analysis



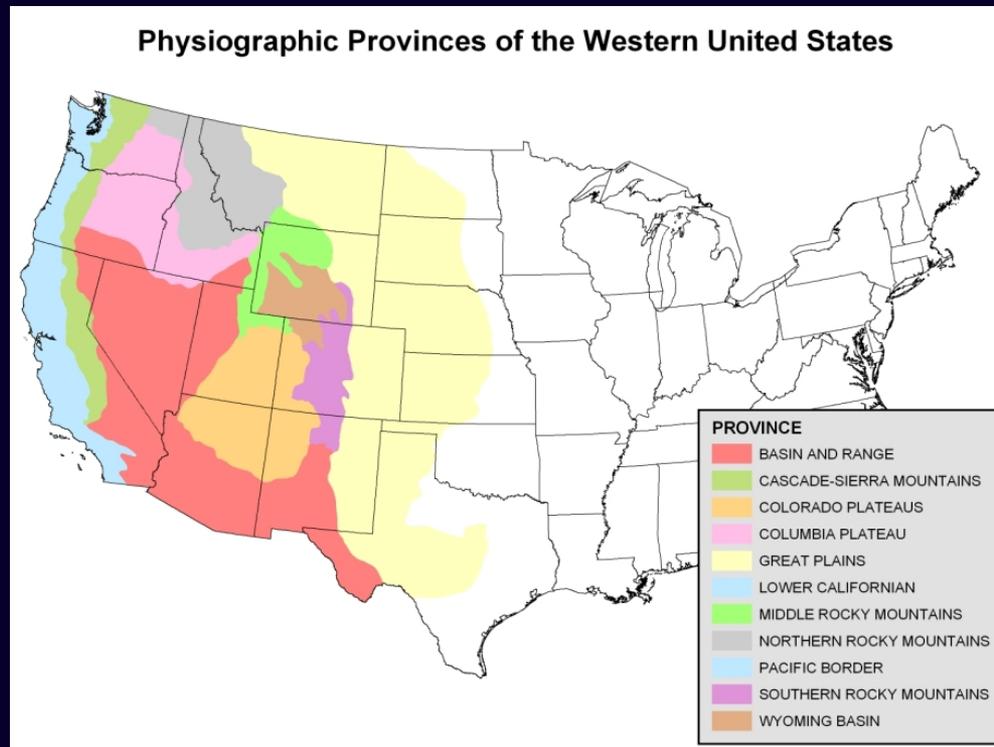
VRM Inventory Classes

- Based on a combination scenic quality, sensitivity, and distance zones, BLM lands fall into one of four classes
 - Class I (assigned)
 - Class II
 - Class III
 - Class IV

These are inventory classes, not management classes

Physiographic Regions

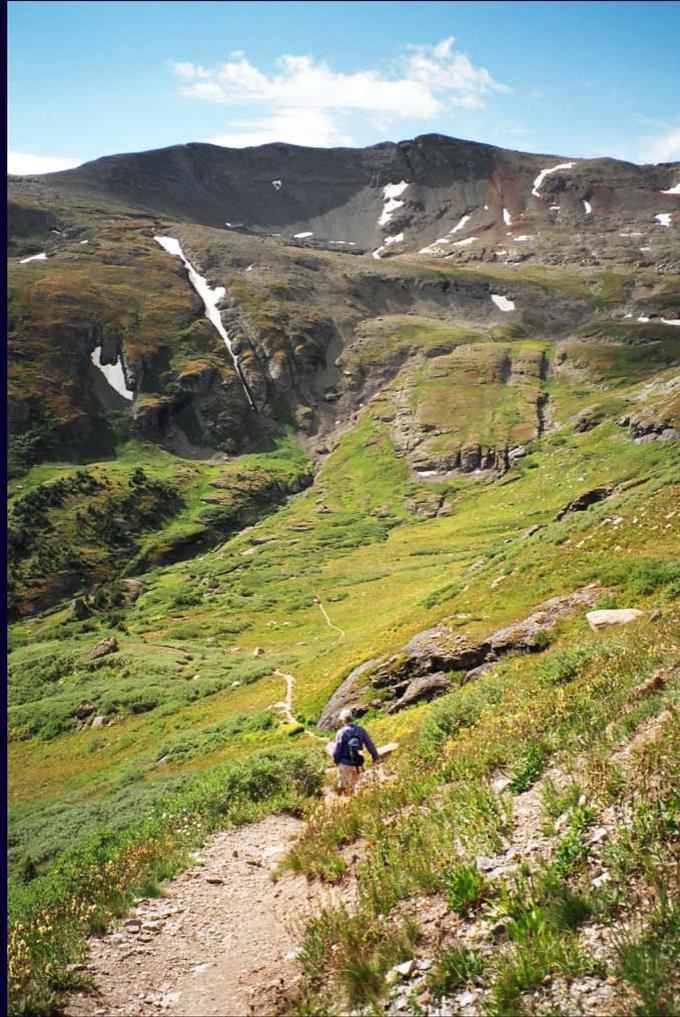
- Scenery ranked relative to similar features in the same physiographic region



Physiographic Regions



Colorado Plateau



Southern Rocky Mountains

Physiographic Regions



Colorado Plateau



Colorado Plateau

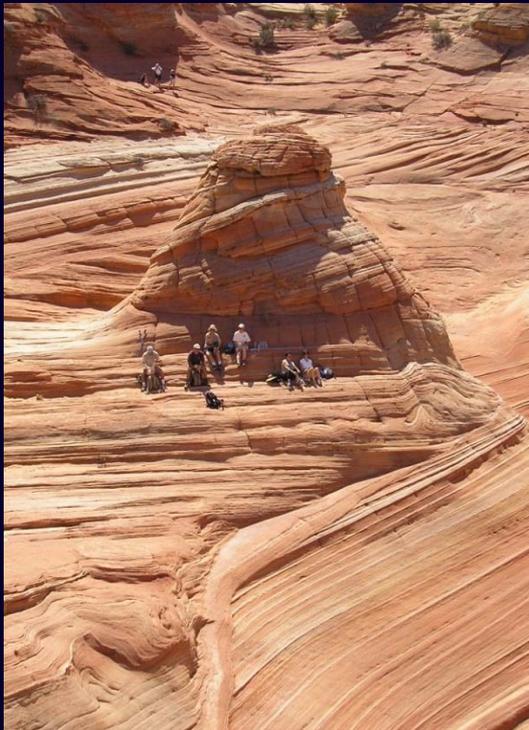
Scenic Quality Evaluation

- All lands have scenic value
 - Areas with the most variety and the most harmonious composition have the greatest scenic value
 - Evaluation of scenic quality is done in relation to the natural landscape. This does not mean man-made features necessarily detract



Scenic Quality Evaluation

- Scenic quality is a measure of the visual appeal of a parcel of land
- Public lands are given an A, B, or C rating based on apparent scenic quality



Inventory Factors

Seven Scenic Quality Inventory Factors

- Land Forms
- Vegetation
- Water
- Color
- Adjacent Scenery
- Scarcity
- Cultural Modifications

Inventory Factors

Land Forms

- Topography gets more interesting as it gets steeper and more massive, or more severely sculptured



Inventory Factors

Vegetation

- Give primary consideration to the variety of patterns, forms, and texture created by plant life



Inventory Factors

Water

- Adds movement or serenity to a scene. The degree to which water dominates the scene affects the rating.



Inventory Factors

Color

- Consider the overall color(s) in the landscape. Key factors are variety, contrast, and harmony.



Inventory Factors

Adjacent Scenery

- The degree to which scenery outside the rating unit enhances the overall impression of the scenery within the unit.



Inventory Factors

Scarcity

- An opportunity to give added importance to one or all of the scenic features that may be relatively unique within a physiographic region.



Inventory Factors

Cultural Modifications

- May detract or compliment. May actually improve the scenic quality of an area.



Scenic Quality Evaluation

You Will Use 7 Key Factors to Rank Lands
as A, B, or C

Comparative Basis – similar features in
a given Physiographic Province



Scenic Quality Evaluation

Form 8400-1
(September 1985)
Format Modified 2008)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SCENIC QUALITY FIELD INVENTORY

Field Office: _____ Date: _____

Scenic Quality Rating Unit: _____ Time (24hr format): _____

1. Evaluators:

2. LANDSCAPE CHARACTER (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form			
Line			
Color			
Texture			

3. Narrative:

Scenic Quality Rating Unit:			SCENIC QUALITY CLASSIFICATION (check one)
4. SCORE			
	Rating	EXPLANATION OR RATIONALE	
a. Landform			<input type="checkbox"/> A - 19 or more
b. Vegetation			<input type="checkbox"/> B - 12 - 18
c. Water			<input type="checkbox"/> C - 11 or less
d. Color			
e. Adjacent Scenery			
f. Scarcity			<input type="checkbox"/> Rehab
g. Cultural Modification			<input type="checkbox"/> Special Area
TOTAL			

Comments:

Scenic Quality Evaluation

Inventory and Evaluation Chart

Key Factors	Rating Criteria and Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops; or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. 5	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in shape and size of landforms; or detail features which are interesting though not dominant or exceptional. 3	Low rolling hills, foothills, or flat valley bottoms, or few or no interesting landscape features. 1
Vegetation	Variety of vegetative types as expressed in interesting forms, textures, and patterns. 5	Some variety of vegetation but only one or two major types. 3	Little or no variety or contrast in vegetation. 1
Water	Clear and clean appearing, still or cascading white water, any of which are a dominant factor in the landscape. 5	Flowing or still, but not dominant in the landscape. 3	Absent, or present but not noticeable. 0
Color	Rich color combinations, variety or vivid color, or pleasing contrasts in the soil, rock, vegetation, water, or snowfields. 5	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element. 3	Subtle color variations, contrast, or interest, generally muted tones. 1
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality. 5	Adjacent scenery moderately enhances overall visual quality. 3	Adjacent scenery has little or no influence on overall visual quality. 0
Scarcity	One of a kind, or unusually memorable, or very rare within the region. Consistent chance for exceptional wildlife or wildflower viewing. 5+	Distinctive, though somewhat similar to others within region. 3	Interesting within setting, but fairly common within the region. 1
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. 2	Modifications add little or no visual variety to the area, and introduce no discordant elements. 0	Modifications add variety but are very discordant and promote strong disharmony. -4

SCENIC QUALITY: A = 19 or more, B = 12 - 18, C = 11 or less

Scenic Quality Evaluation

Rating Summary Example

Form 8400-5
(May 1984)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date Aug. 16, 1985

District Moab

Resource Area Grand

SCENIC QUALITY RATING SUMMARY

1. Evaluators (*names*)

Bob Tumwater, Russ Grimes, Pete Jordan

SCENIC QUALITY RATING UNITS (1)	Landform (2)	Vegetation (3)	Water (4)	Color (5)	Adjacent Scenery (6)	Scarcity (7)	Cultural Modification (8)	Total Score (9)	Scenic Quality Rating (10)	EXPLANATION (11)
001	3	4	5	4	2	2	0	20	A	colorful waterway
002	3	1	0	2	3	2	0	11	C	rolling hills, colorless, little veg.
003	2	1	0	2	3	2	0	10	C	flat, colorless, barren
004	4	3	4	4	3	1	0	19	A	water, scenic cliffs, & interesting veg.
005	4	3	0	4	4	3	0	18	B	scenic cliffs
006	1	1	0	2	2	2	0	8	C	flat, colorless, barren
007	4	4	5	4	3	2	0	22	A	water, riverside veg., colorful cliffs.
008	3	3	0	3	3	3	0	15	B	good mixture of color, topo., & veg.
009	3	2	0	2	2	2	0	11	C	rugged but otherwise mountains
010	1	2	0	2	3	2	0	10	C	mountains but good view of N.P.

Scenic Quality Evaluation

- Use Interdisciplinary Team
- Evaluate – Several Viewpoints (IOPs)
- Score Based on Overall Impression
- Develop a Photographic (visual) Record
- File Evaluation Forms (keep a record of your work)

Class A Scenery Example



Class B Scenery Example



Class C Scenery Example



Scenic Quality Rating Exercise I

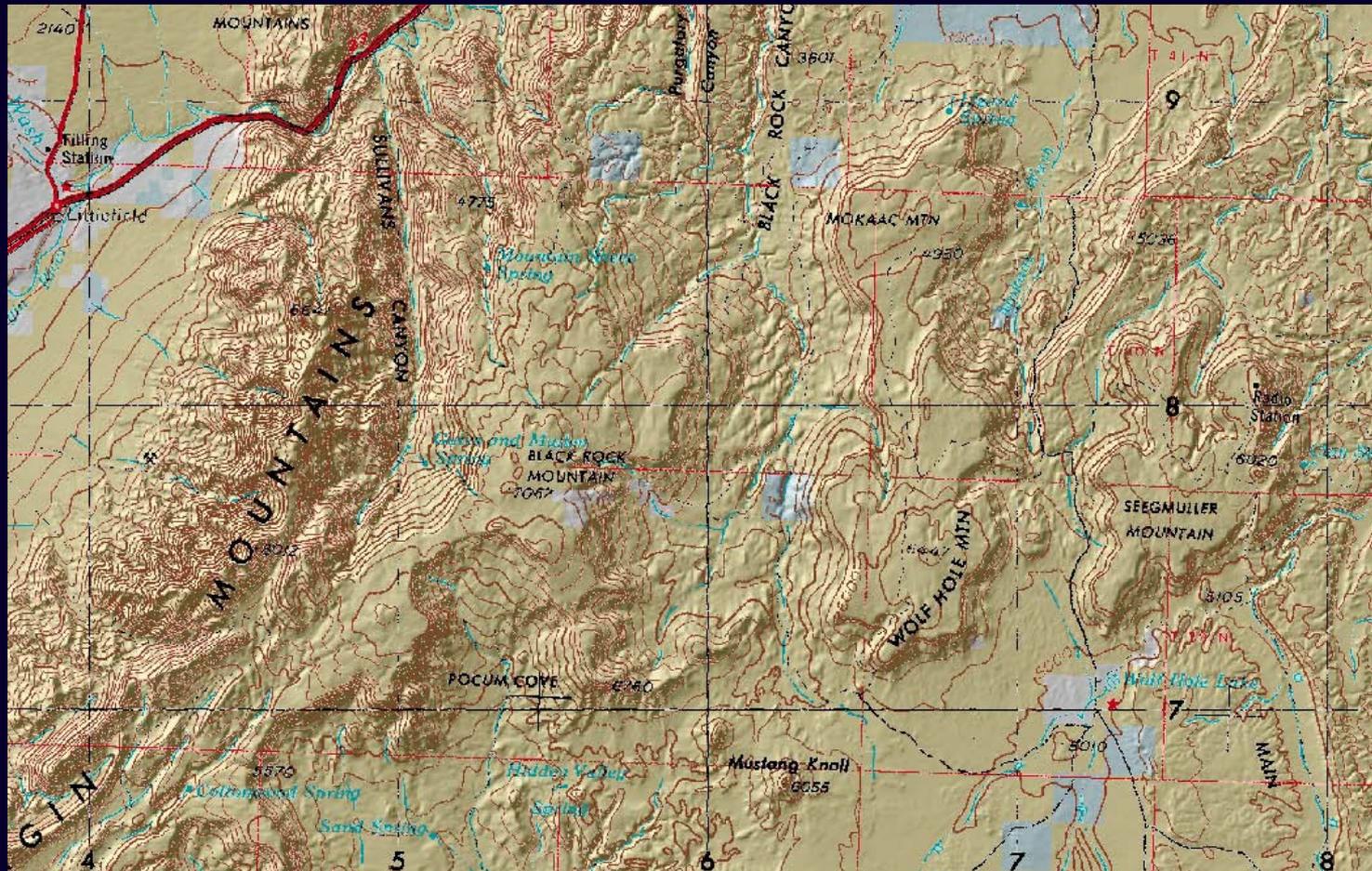


Creating Rating Units

- Divide Planning Area into Scenic Quality Rating Units
- Based on Like Physiographic Characteristics
- Landform, Vegetation, etc.
- Use Available Tools and Resources

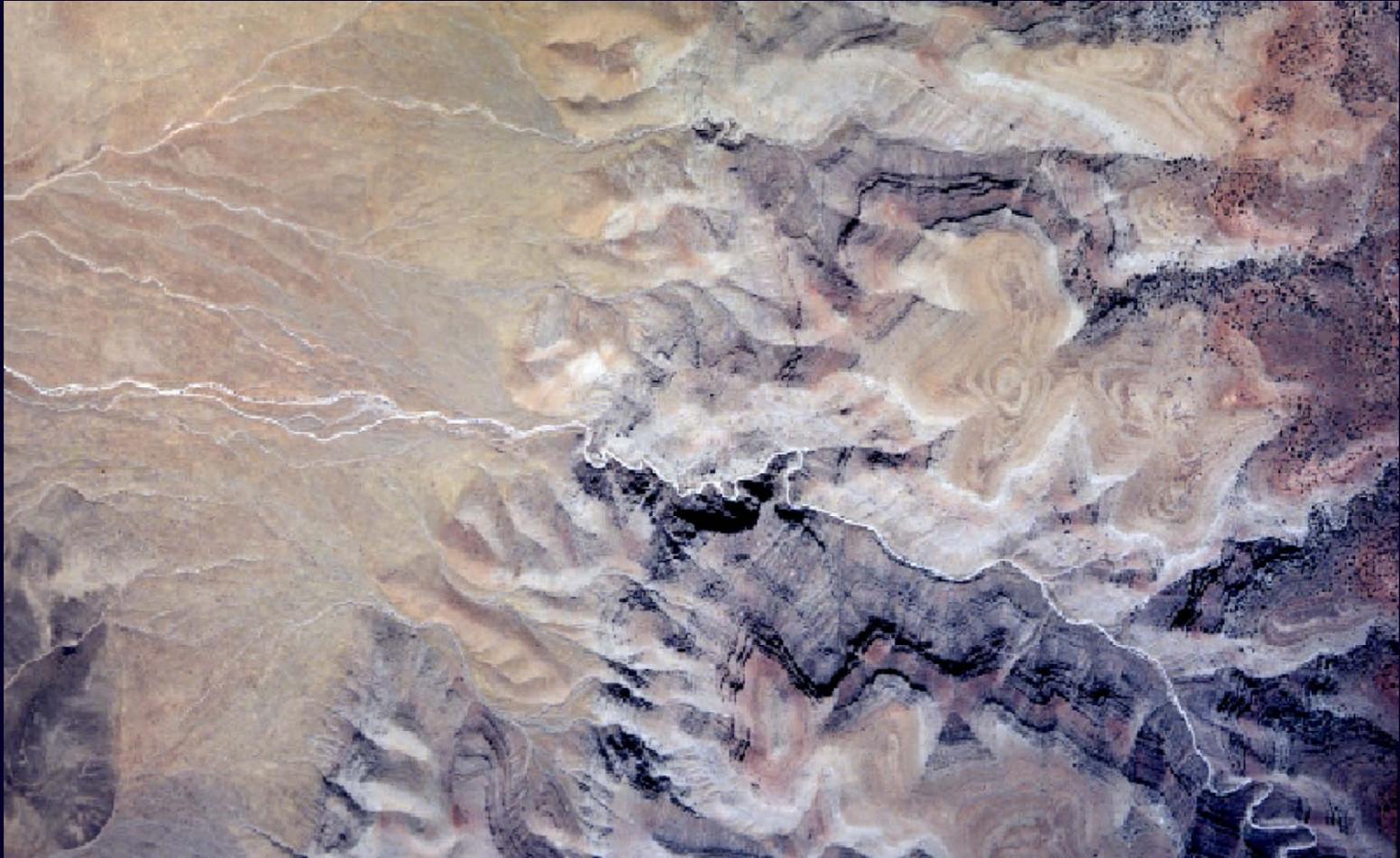
DRG's and DEM's

- Look for unique features and landforms



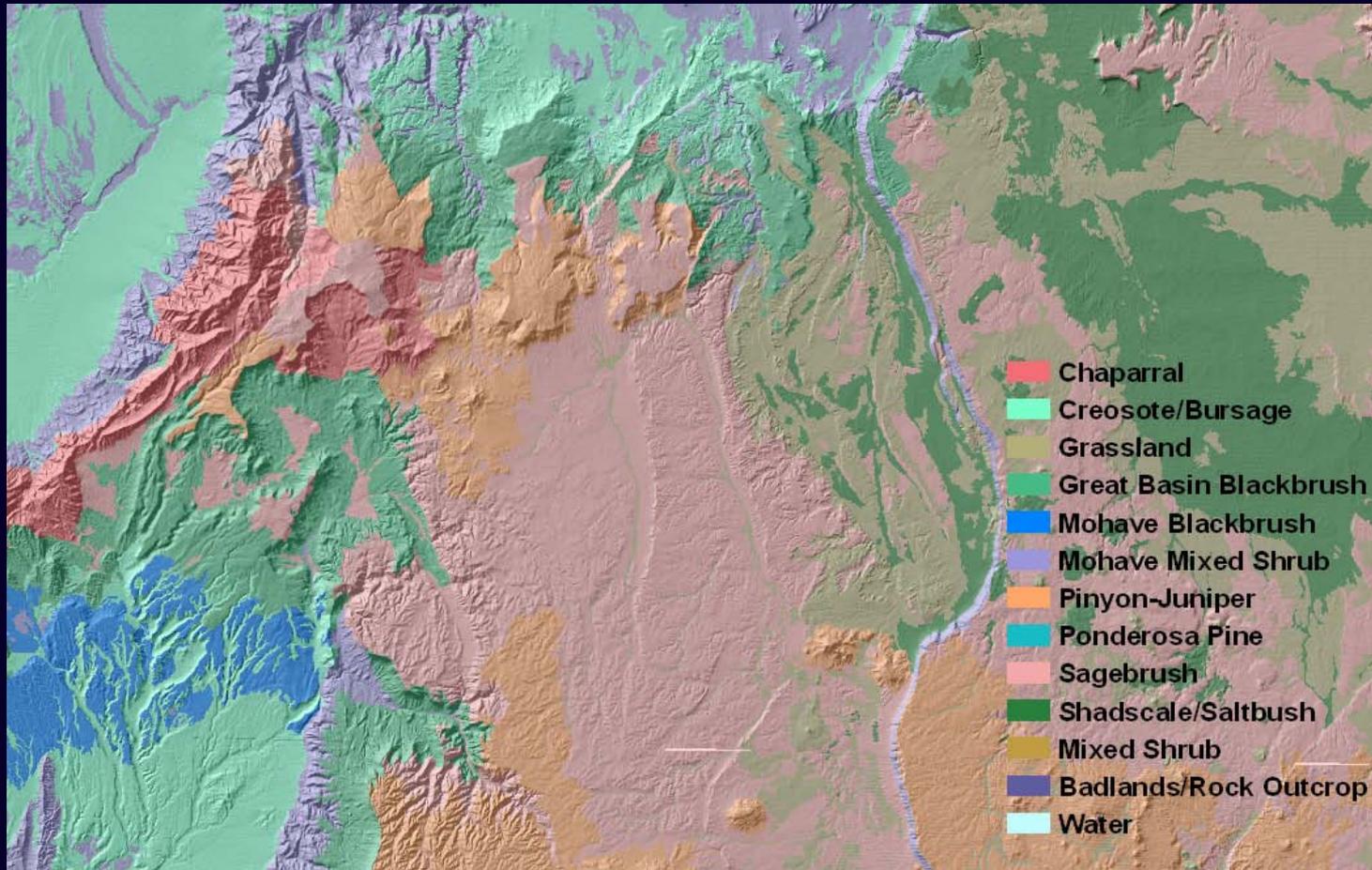
Aerial Photography

- Landform features, vegetation, and color



Landscape Features

■Vegetation Communities



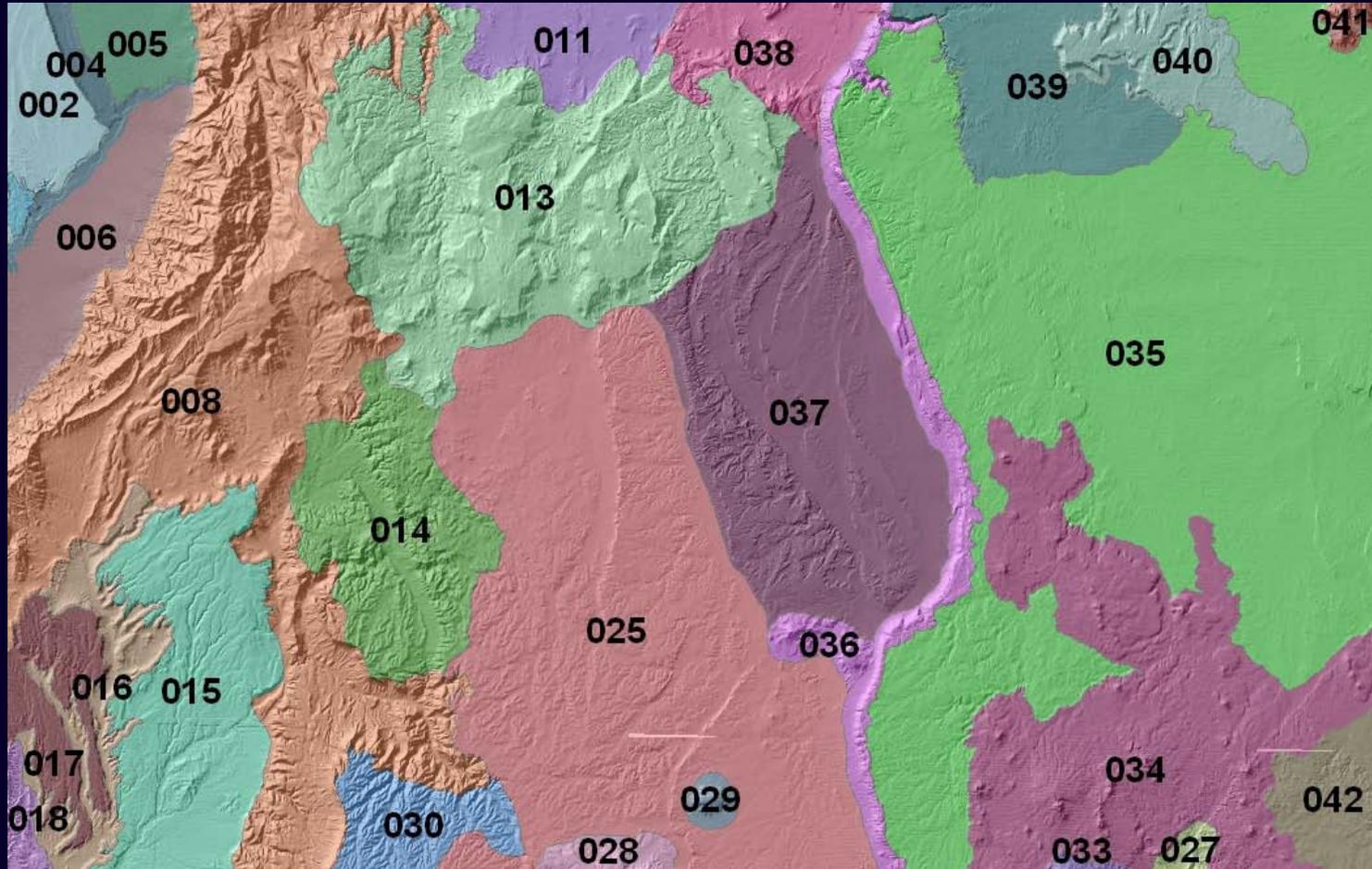
SCRUs on Paper

- Preliminary Unit Boundary Example



SQRUs in GIS

- Integrate Technology



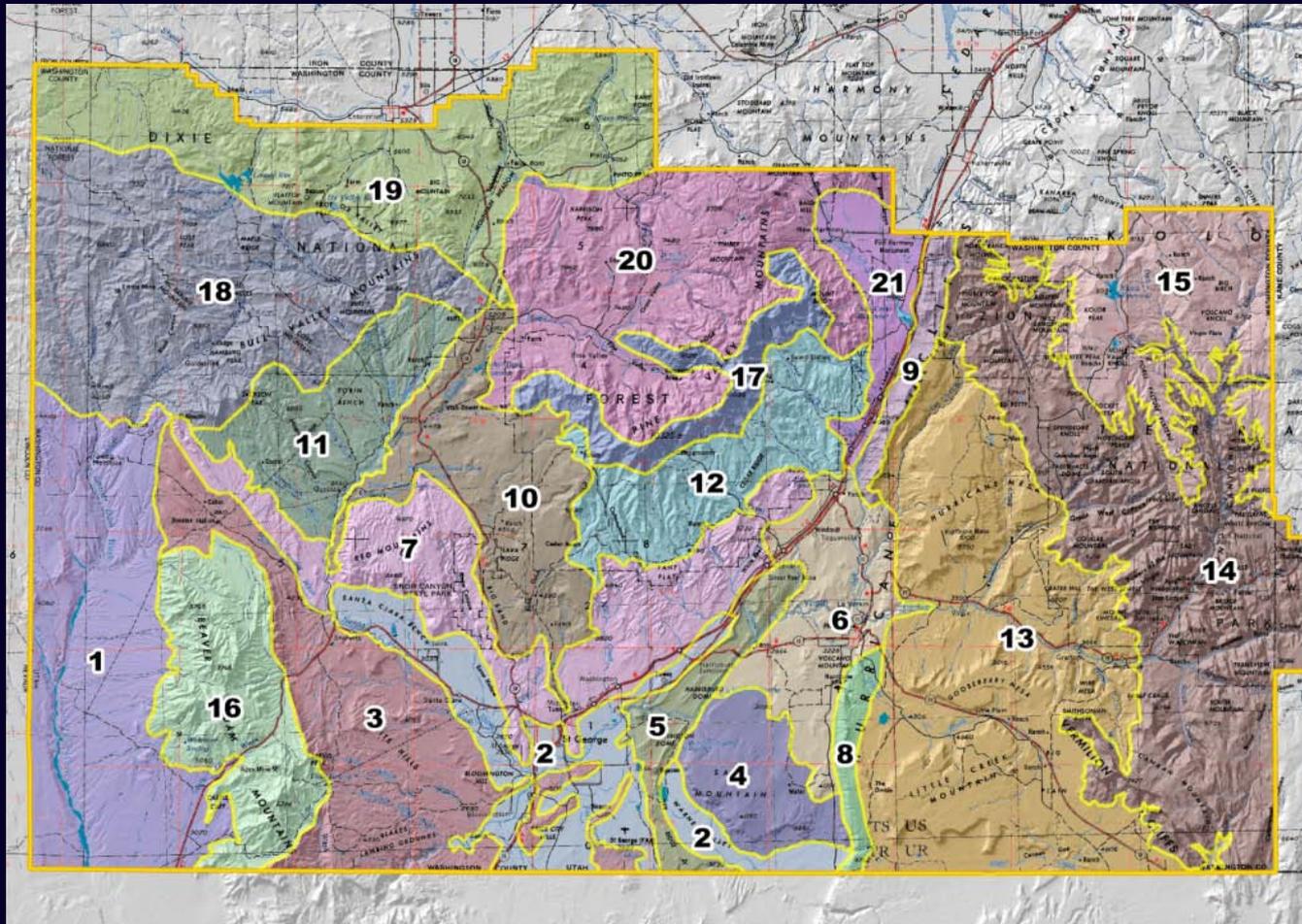
Rating Unit Size

- Is there a “right” size?



Rating Unit Size

- Units vary in size and shape

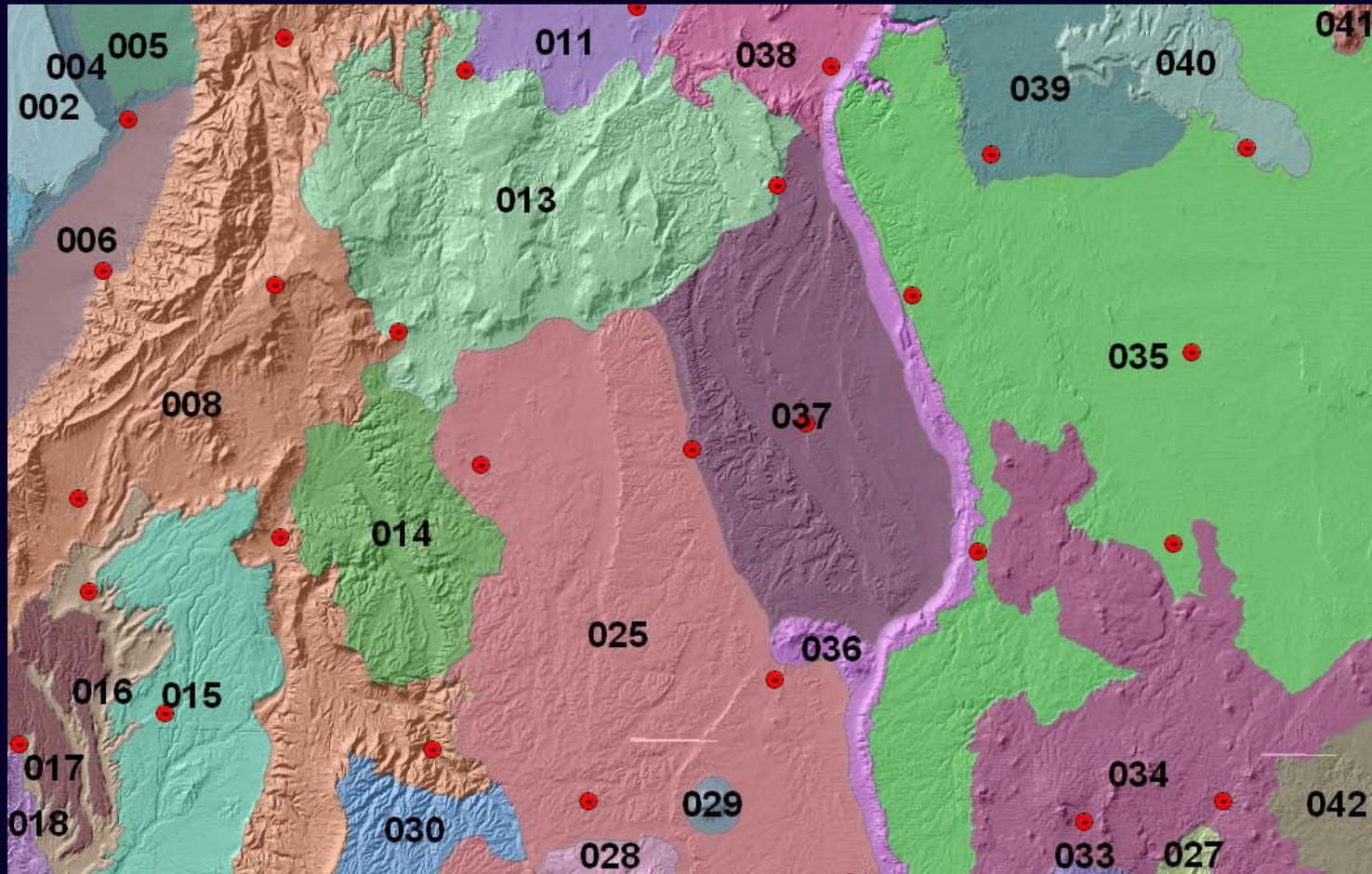


Choosing IOP's

- Traffic volume
- Logical stopping places
- Effectively evaluate the SQRU
- Representative view of the unit

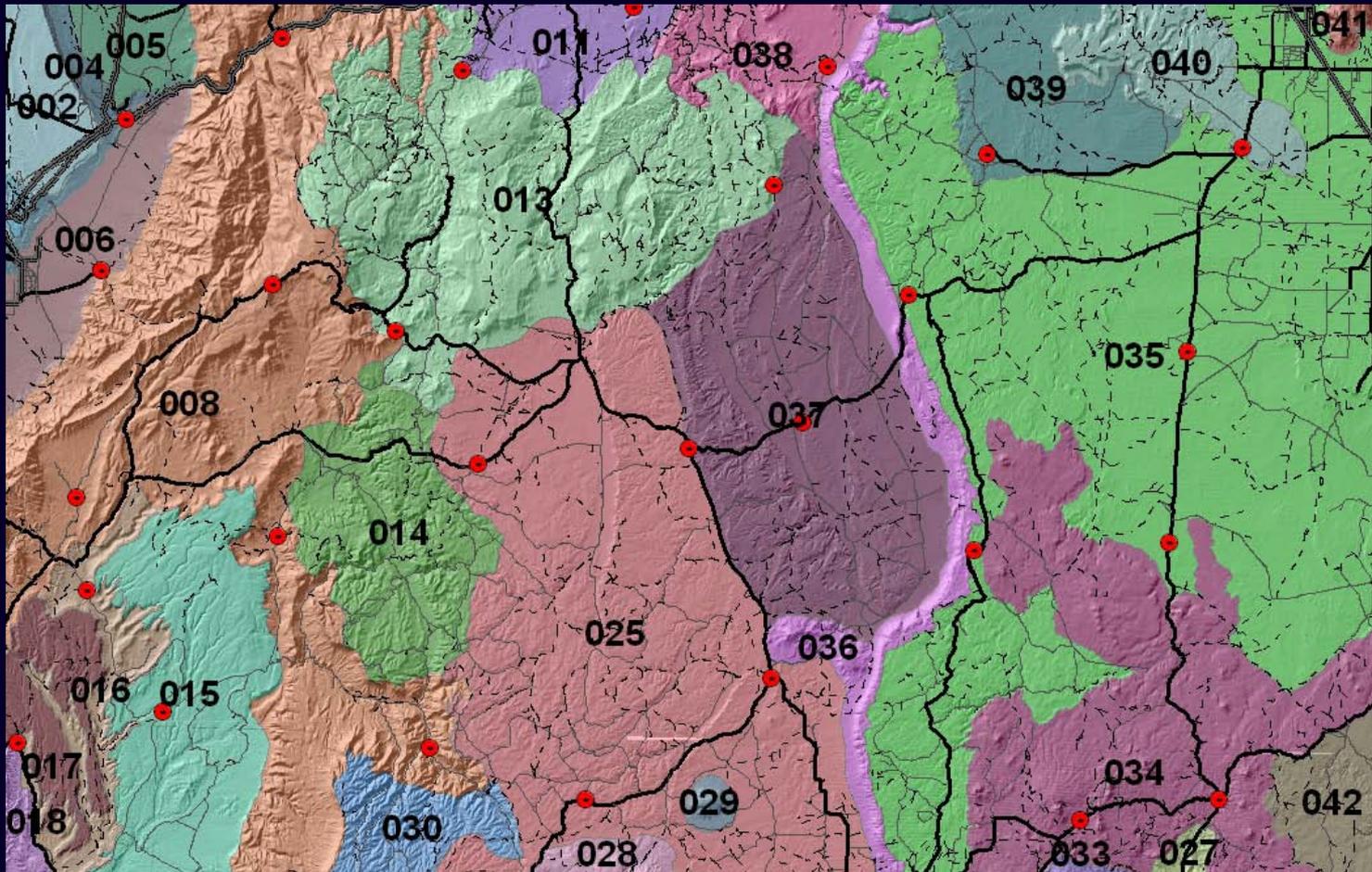
Choosing IOP's

- Points can serve multiple units

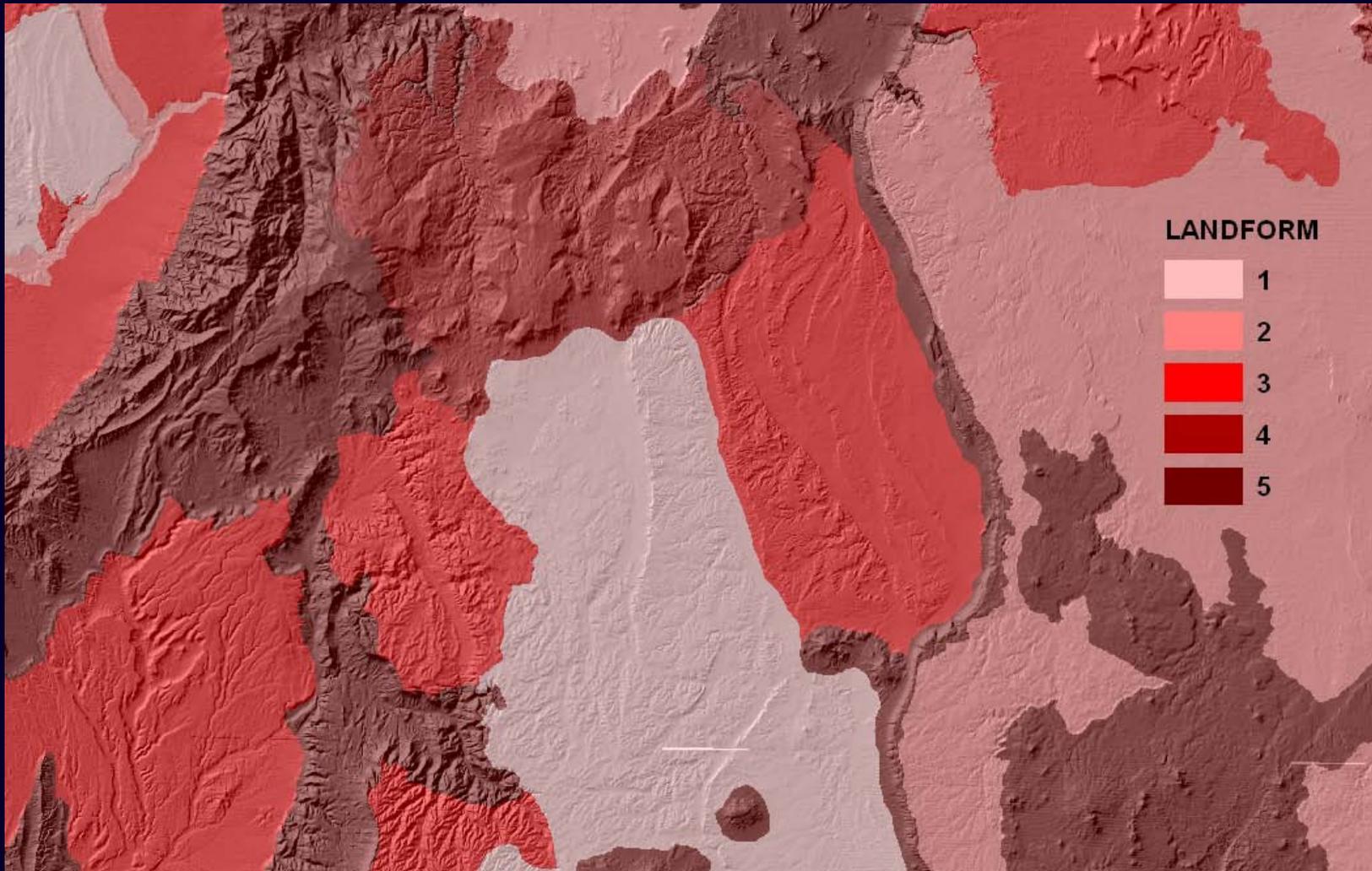


Choosing IOP's

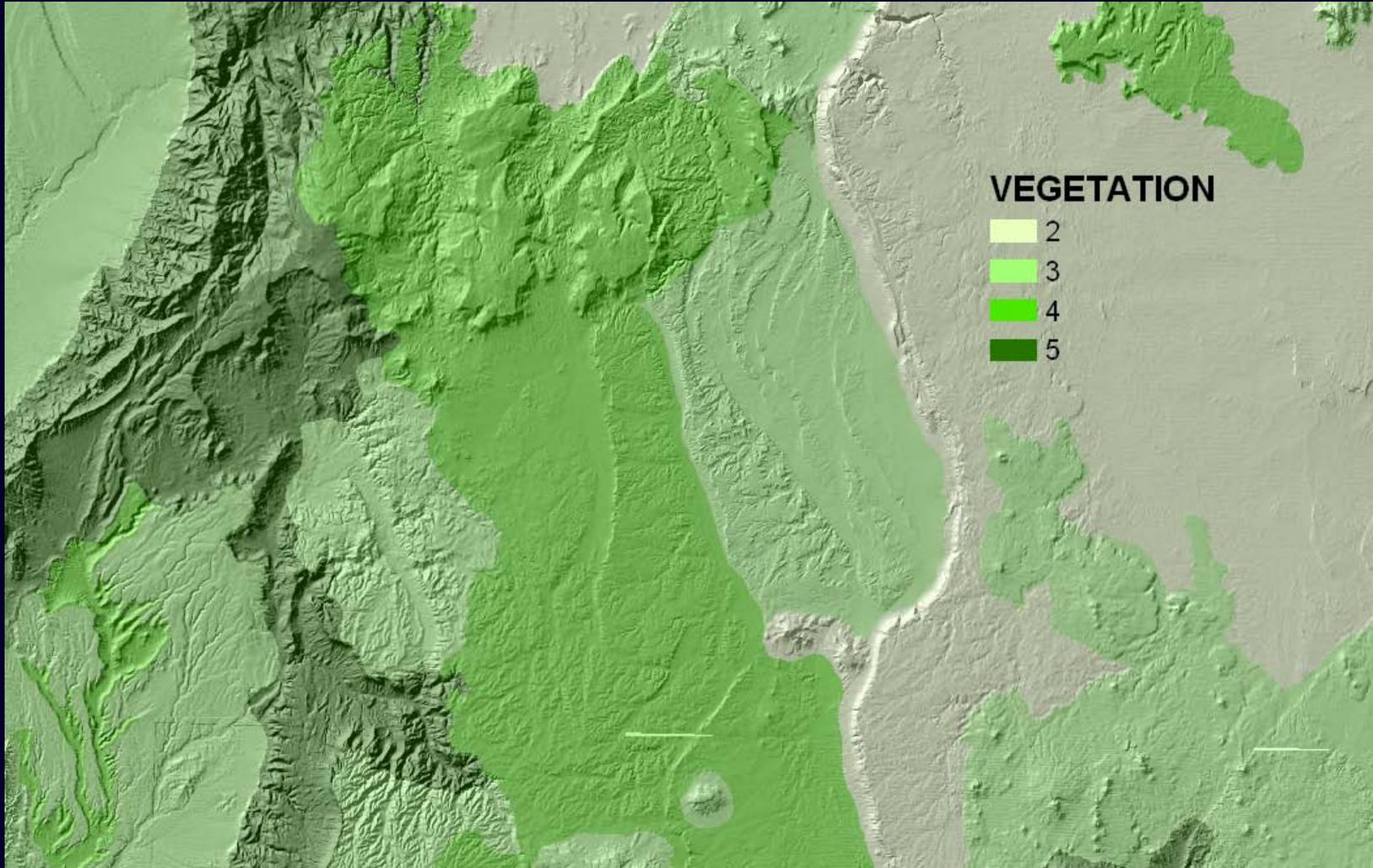
- With road network



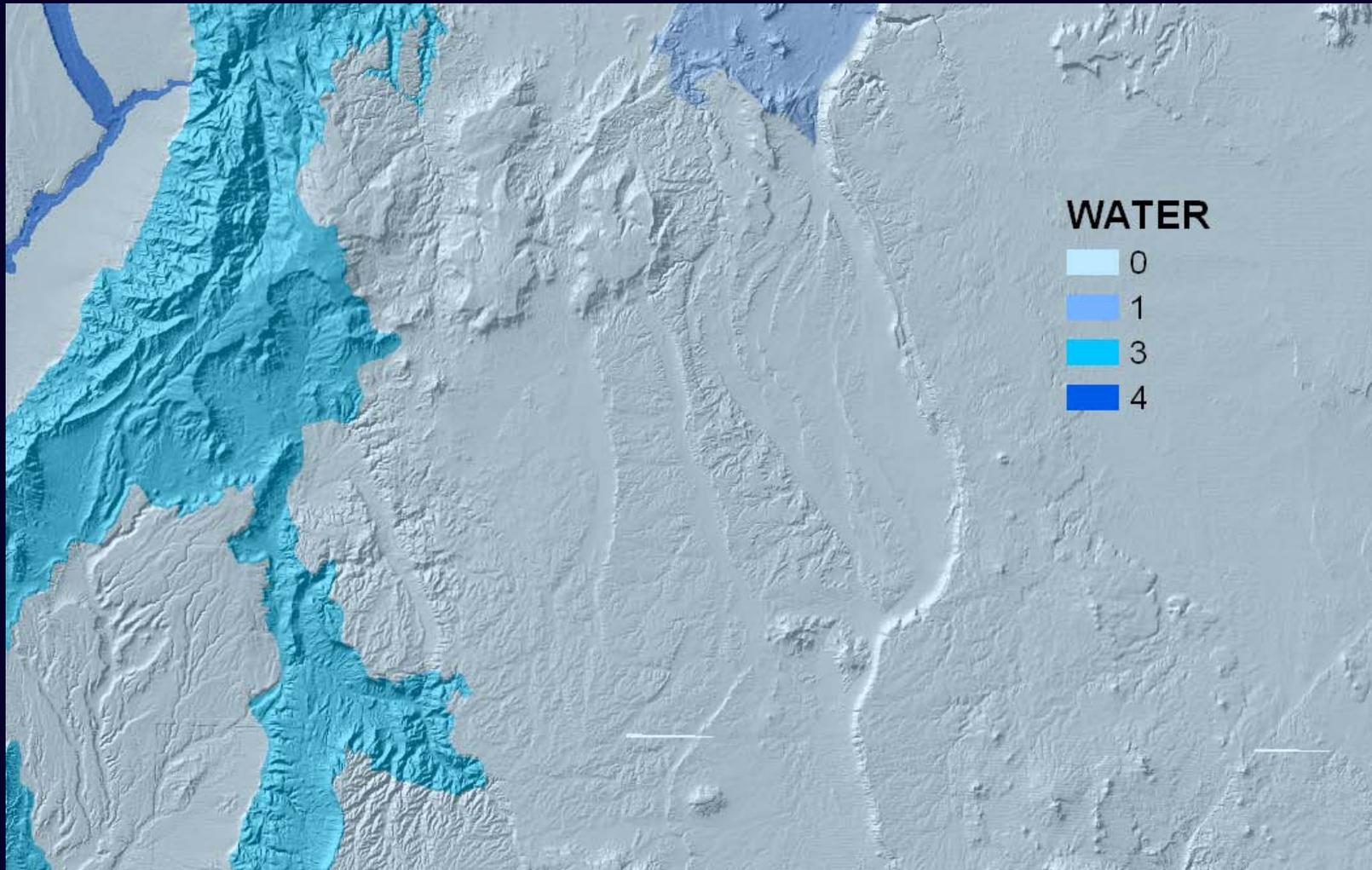
Mapping - Landform



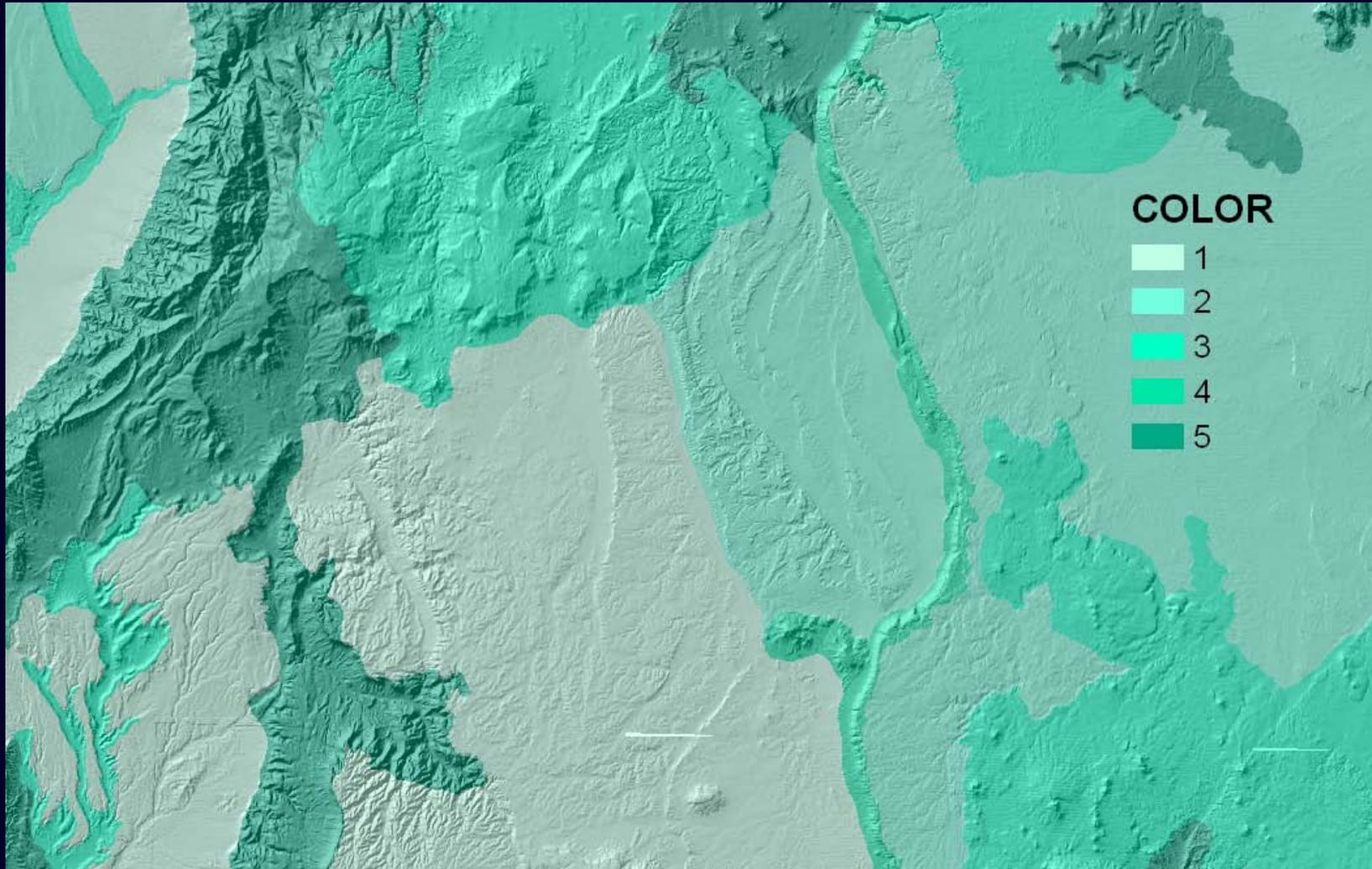
Mapping - Vegetation



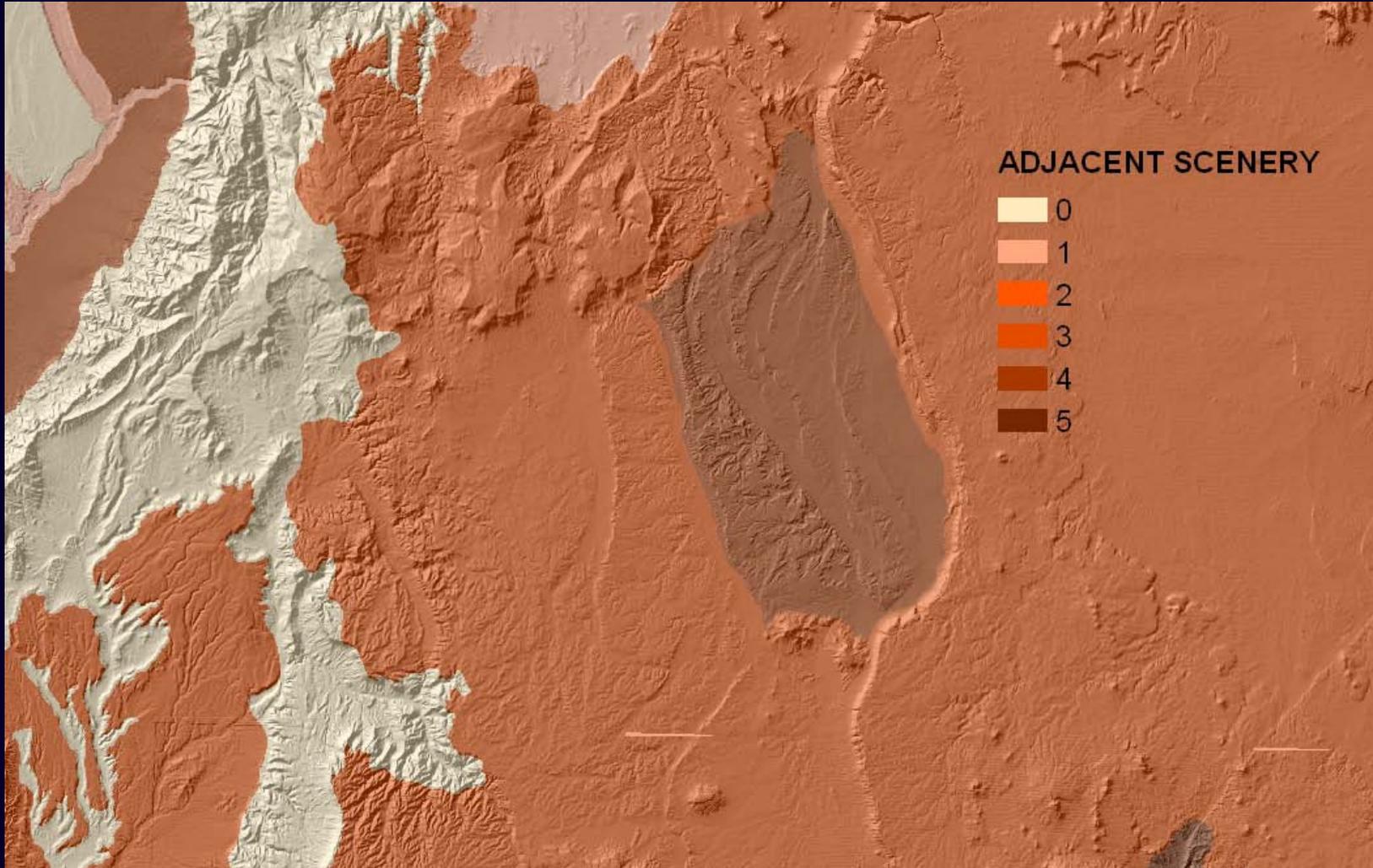
Mapping - Water



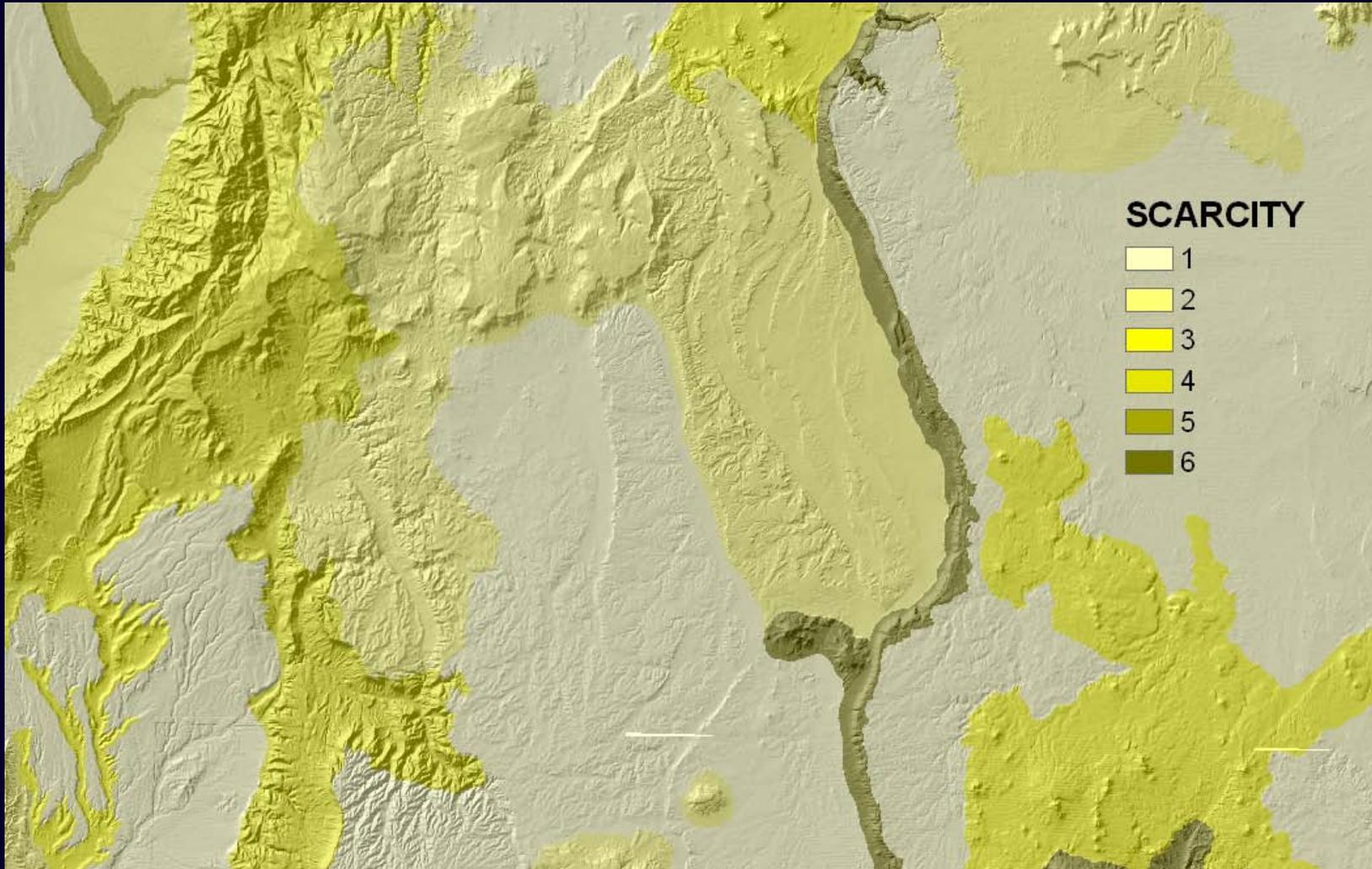
Mapping - Color



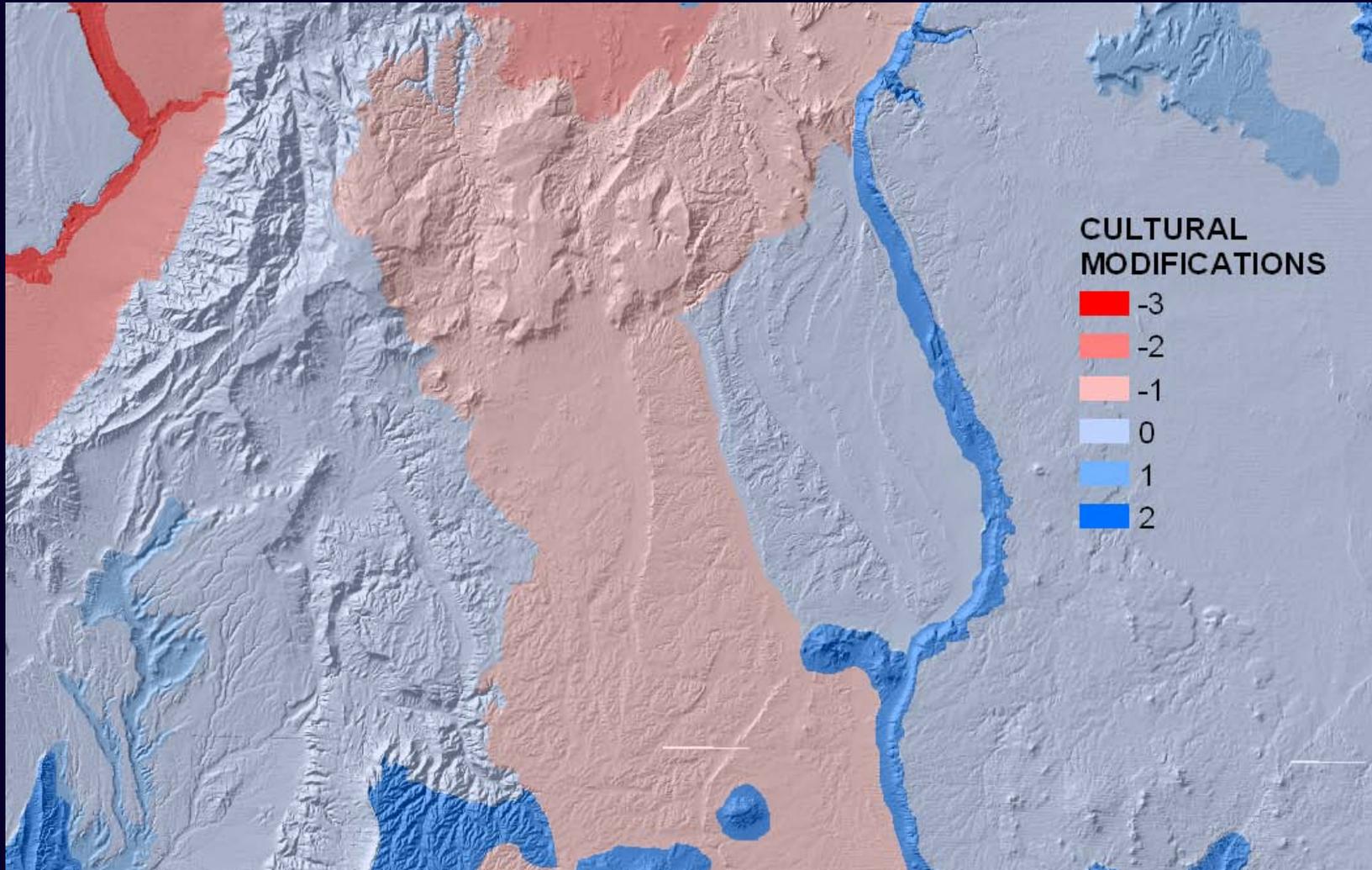
Mapping - Adjacent Scenery



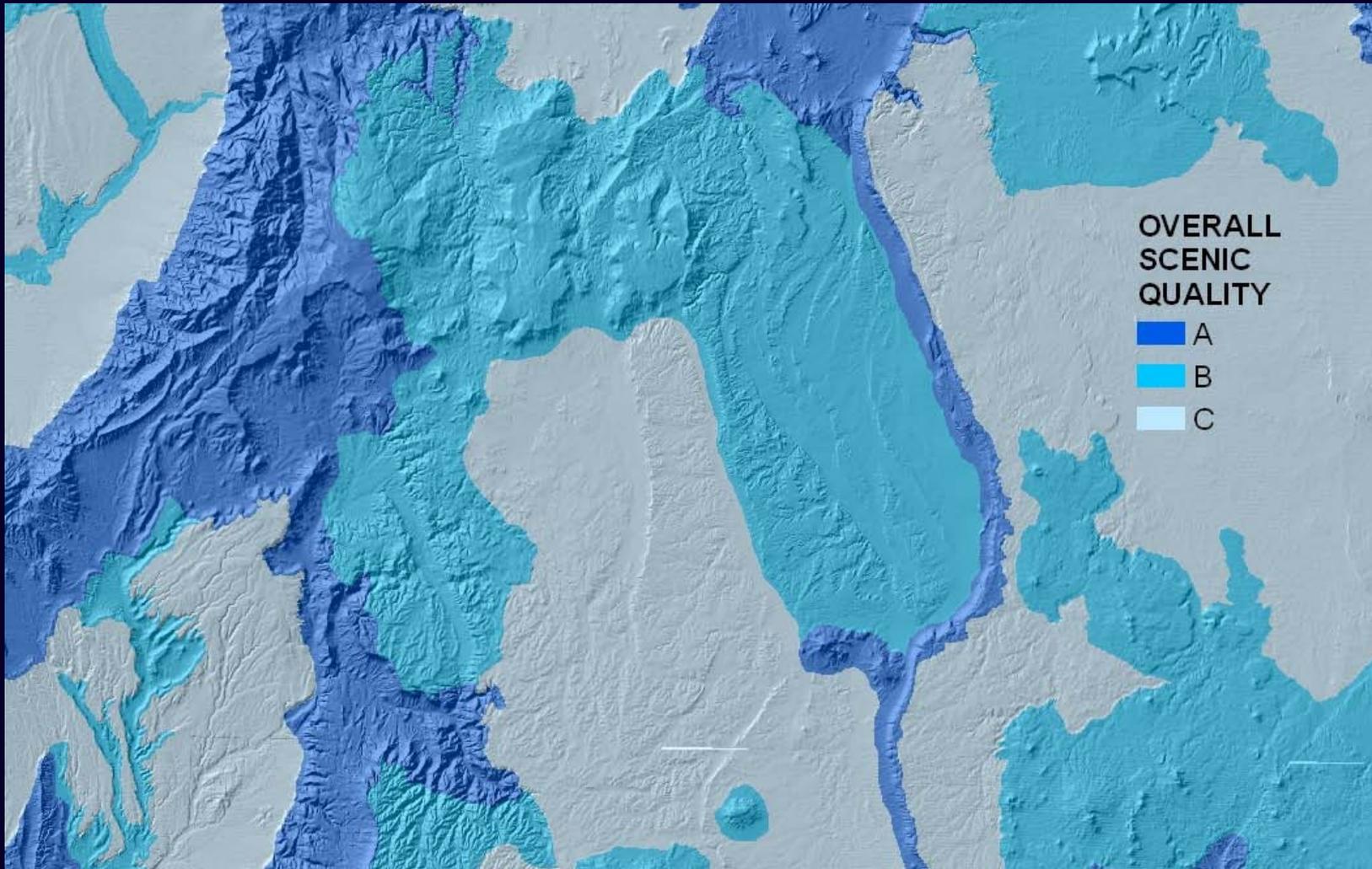
Mapping - Scarcity



Mapping - Cultural Modifications



Mapping – Overall Scenic Quality



Sensitivity Level Analysis

- A measure of public concern for Scenic Quality
- Public Lands assigned:
 - High Sensitivity
 - Medium Sensitivity
 - Low Sensitivity

Low Visual Sensitivity



High Visual Sensitivity



Sensitivity Level Analysis

Factors to Consider

- Types of Users
- Amount of Use
- Public Interest
- Adjacent Land Uses
- Special Areas
- Other Factors

Types of Uses

Sensitivity levels vary by use



Oil and Gas



Recreation

Amount of Use

Be Aware of Seasonal Considerations



Amount of Use

Areas seen by large numbers of people are often more sensitive.

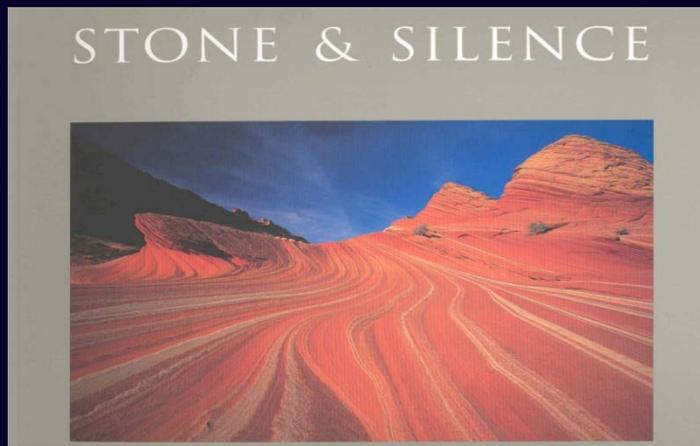
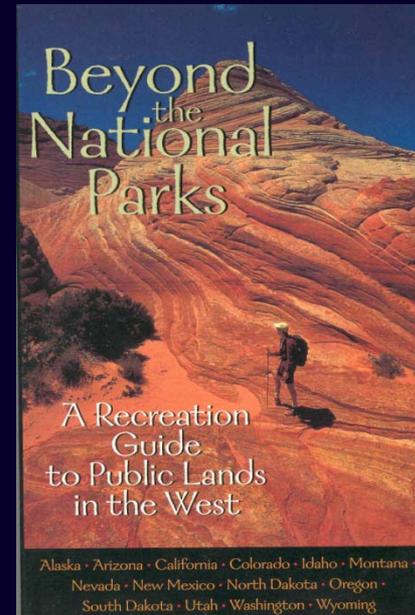
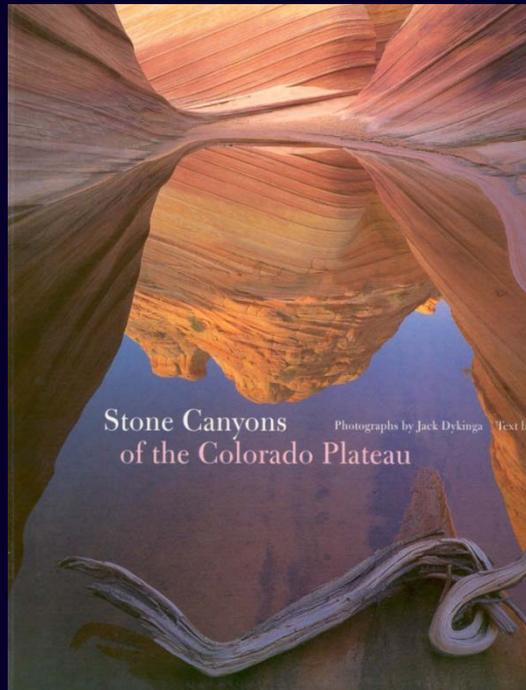
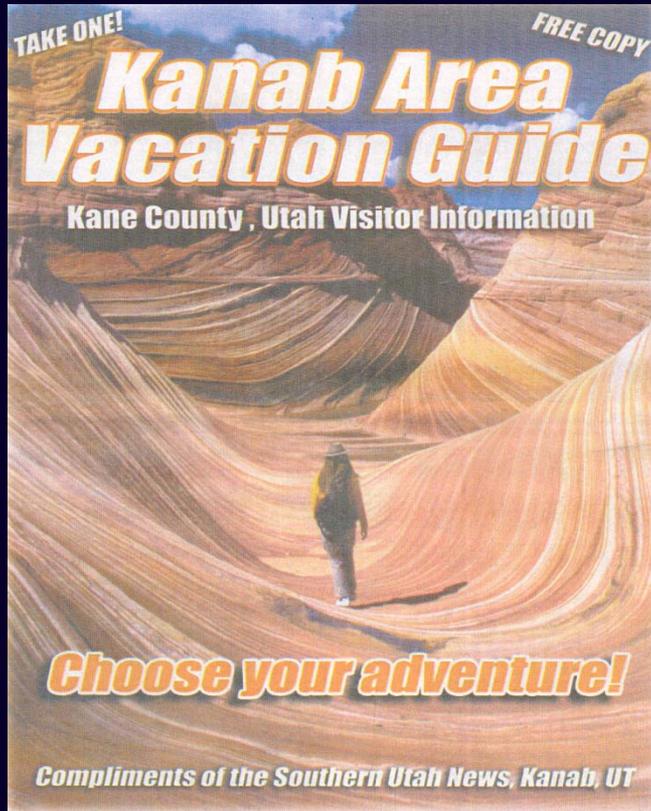


Public Interest

Visual Quality may be of concern to Local, State, or National groups.



Public Interest



Adjacent Land Uses

Interrelationships with adjacent land uses can affect Visual Sensitivity of an area.



Special Areas

Management objective for special areas frequently require special consideration.



Sensitivity Level Analysis

- Break area into Sensitivity Level Rating Units (SLRU)
- Based on physical characteristics
- Often coincide with SQRUs
- Score using Form 8400-6
- Scores are High, Medium, and Low
- Score high sensitivity areas first

Sensitivity Level Analysis

Form 8400-6
(September 1985)
(Format Modified 2008)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SENSITIVITY LEVEL RATING SHEET

Field Office: _____

Date: _____

Evaluators: _____

Sensitivity Level Rating Unit: _____

Type of Area: _____

Predominant Types of Users: _____

	H/M/L	Explanation of Rating (Mandatory)
Type of Use		
Amount of Use		
Public Interest		
Adjacent Land Uses		
Special Area Sensitivity		
Other Factors		
Overall Rating		

Narrative: _____

Sensitivity Level Analysis

High Sensitivity Examples

- National Monuments
- Wilderness / WSA
- Scenic Byways and Backways
- Major Transportation Corridors
- Historic Trail Corridors

Low Sensitivity Examples

- OHV Open Areas
- Oil and Gas or Mineral Development

Sensitivity Level Analysis

Using GIS data for sensitivity level rating

- Offset transportation corridors (viewsheds)
- Use existing polygon data to identify other high sensitivity areas
- Divide remaining area into medium and low sensitivity
- Record rationale on Form 8400-6

Distance Zones

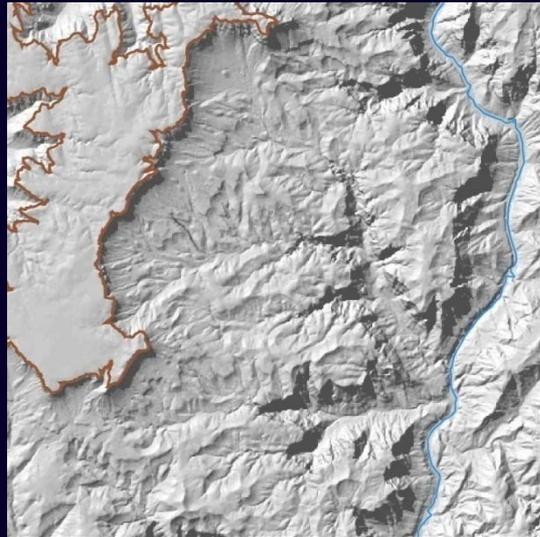
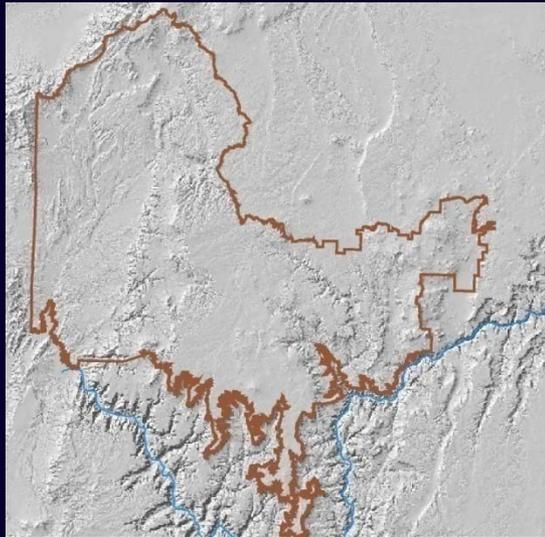
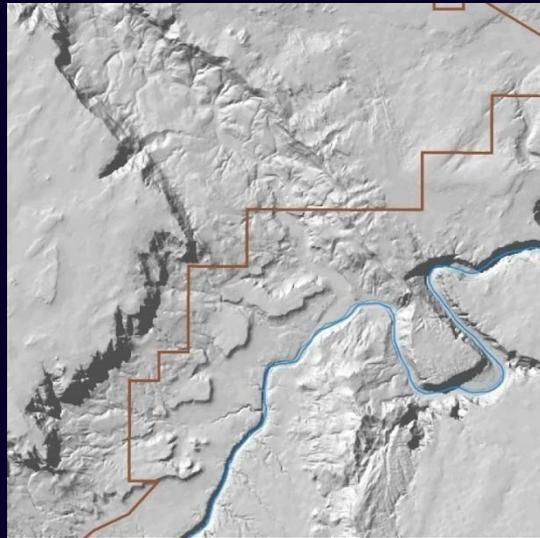
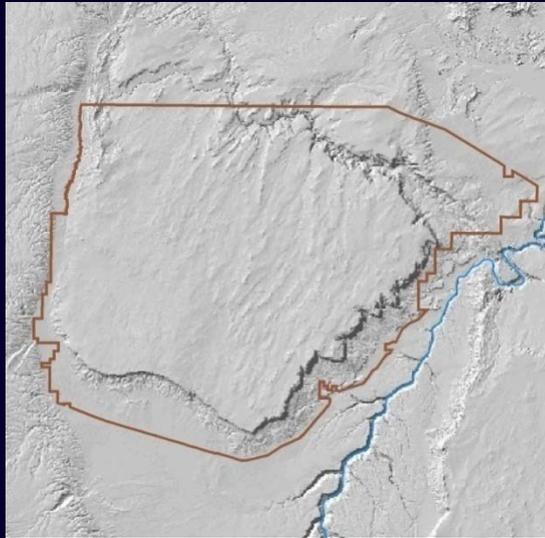
Three Distance Zones

- Foreground/Middleground: 0-5 miles
- Background: 5-15 miles
- Seldom Seen: beyond the background or can't see

Distance Zones

- Relative Visibility – From Travel Routes and Key Observation Points
- Closer to Viewer – More Details are Visible

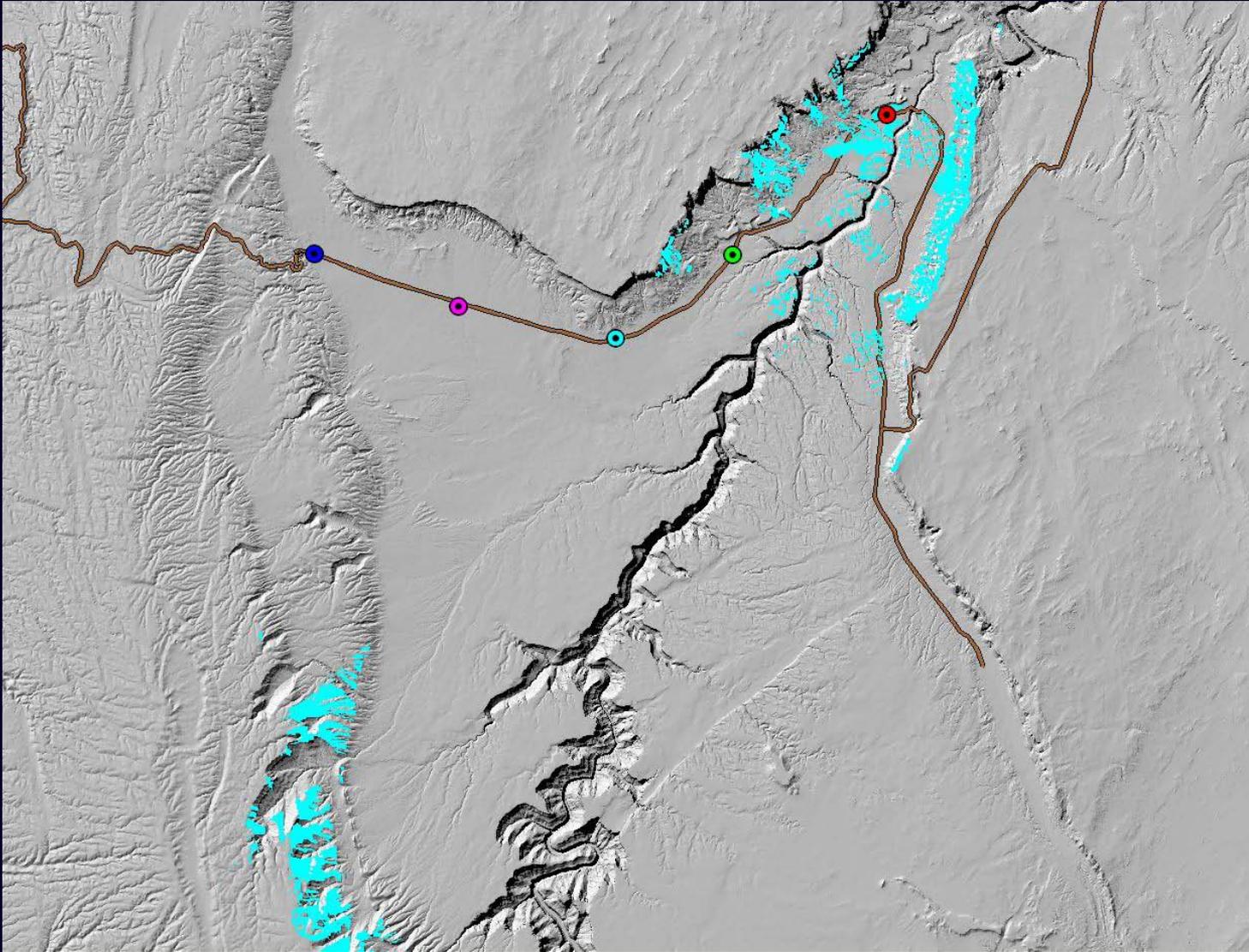
Using Digital Elevation Models



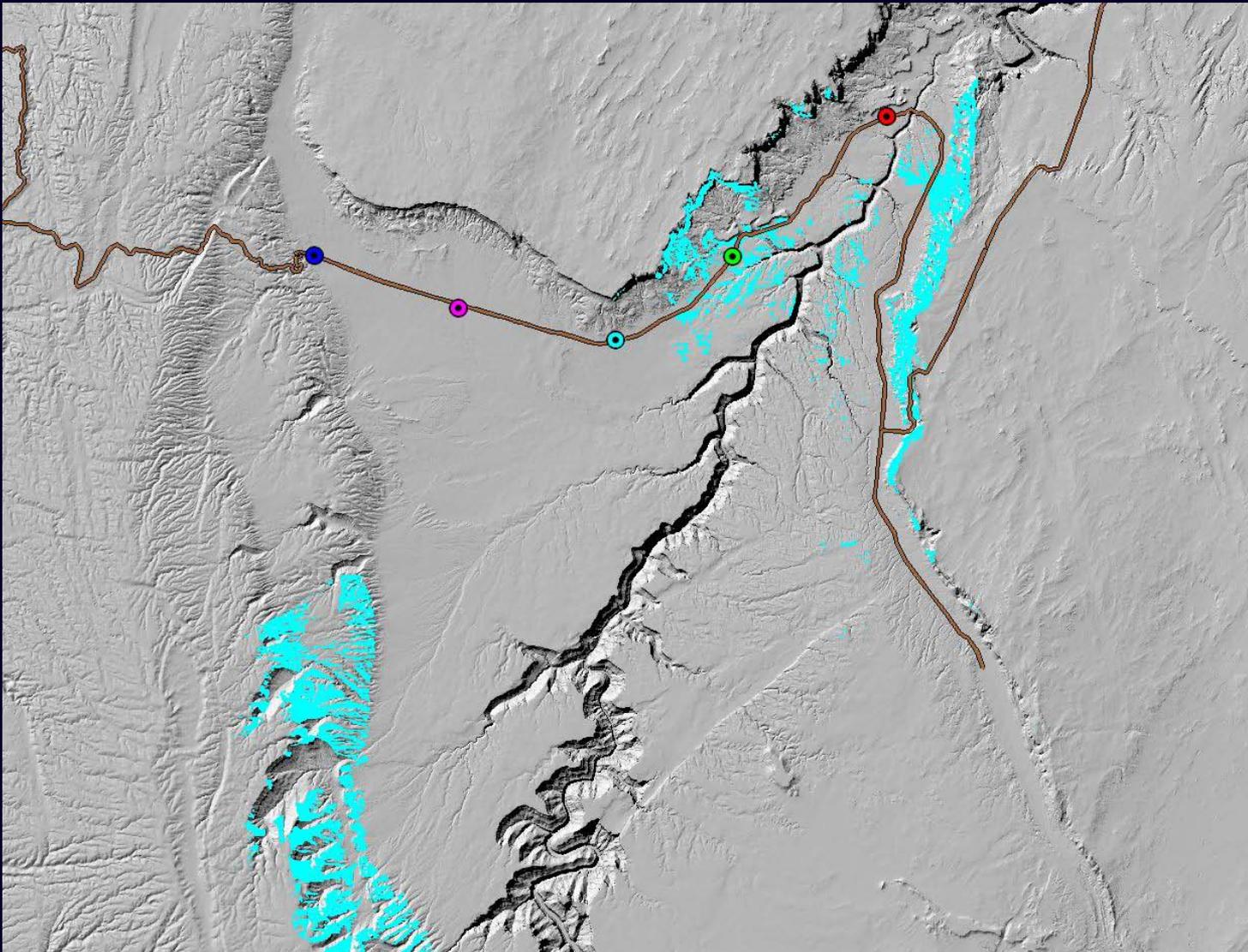
DEM's are for more than just pretty maps

- Viewsheds
- Slope
- Aspect
- Line of Sight

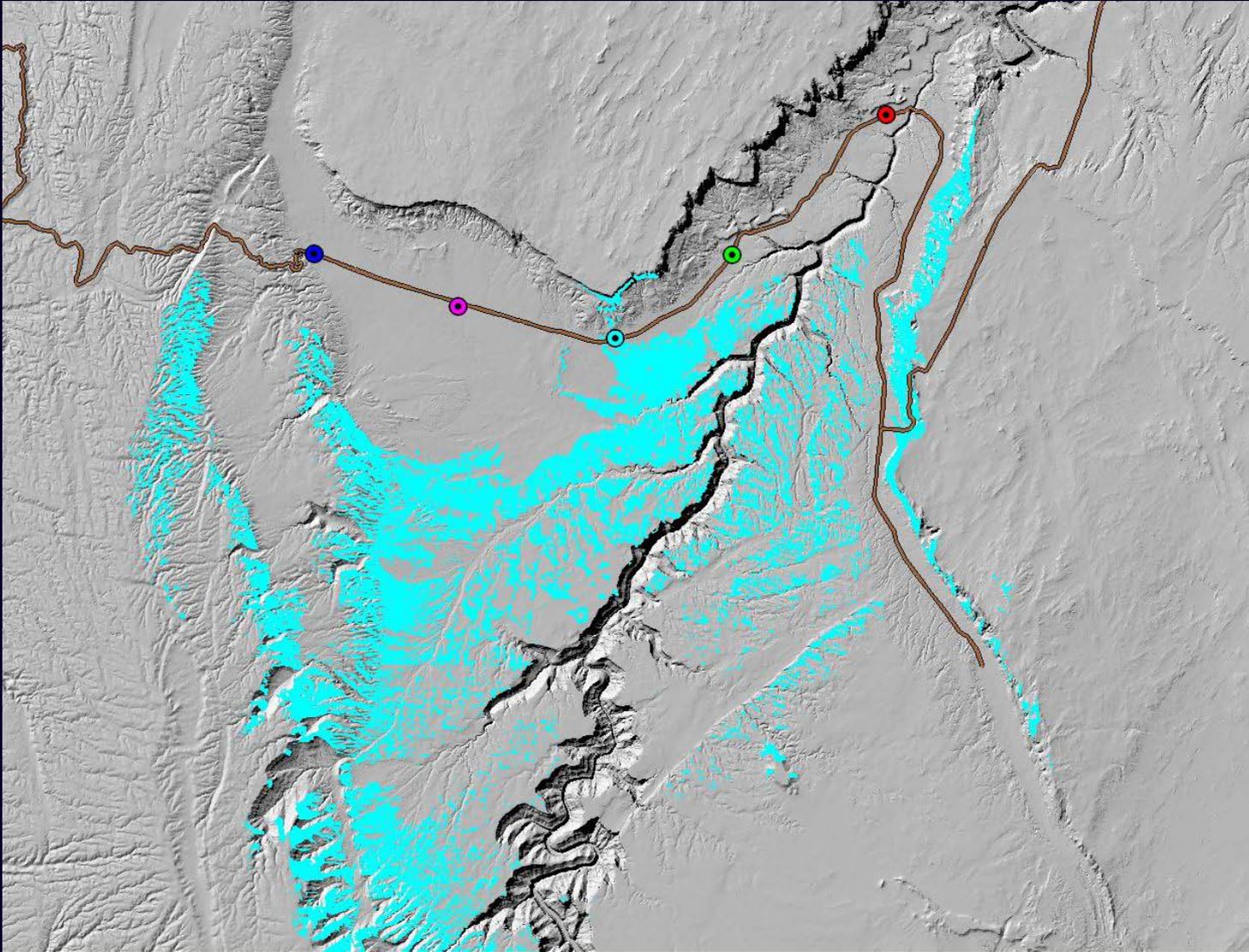
Viewsheds



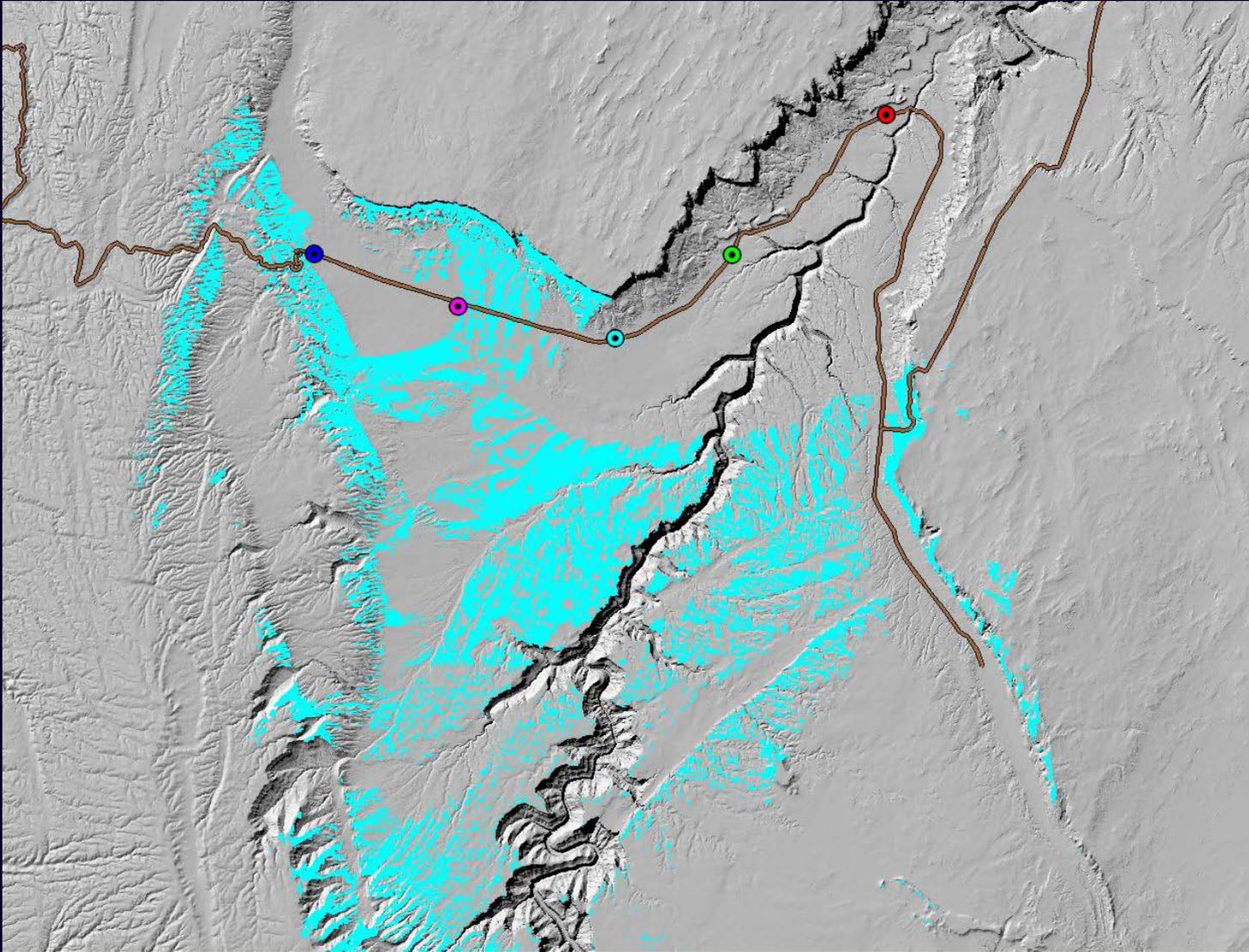
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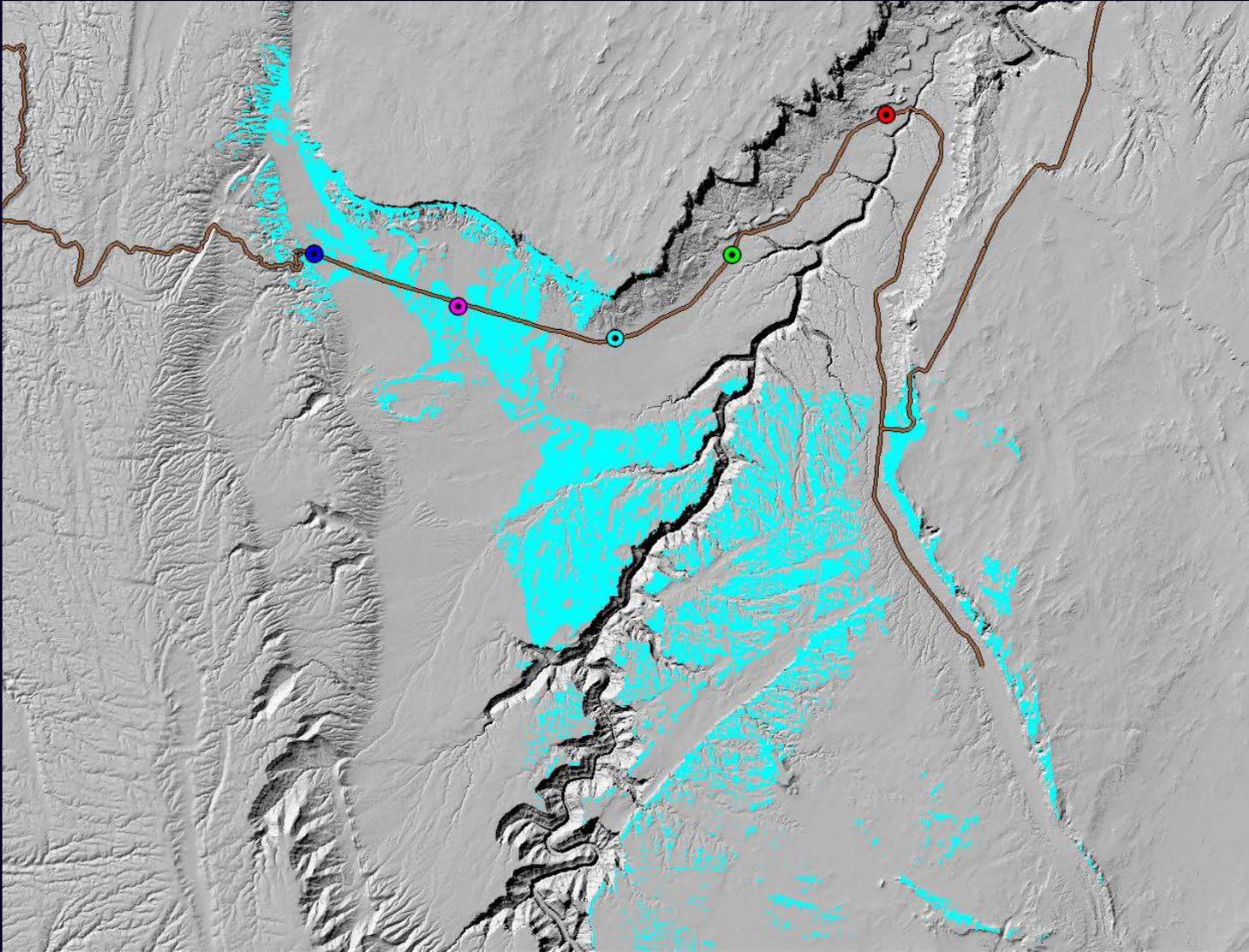
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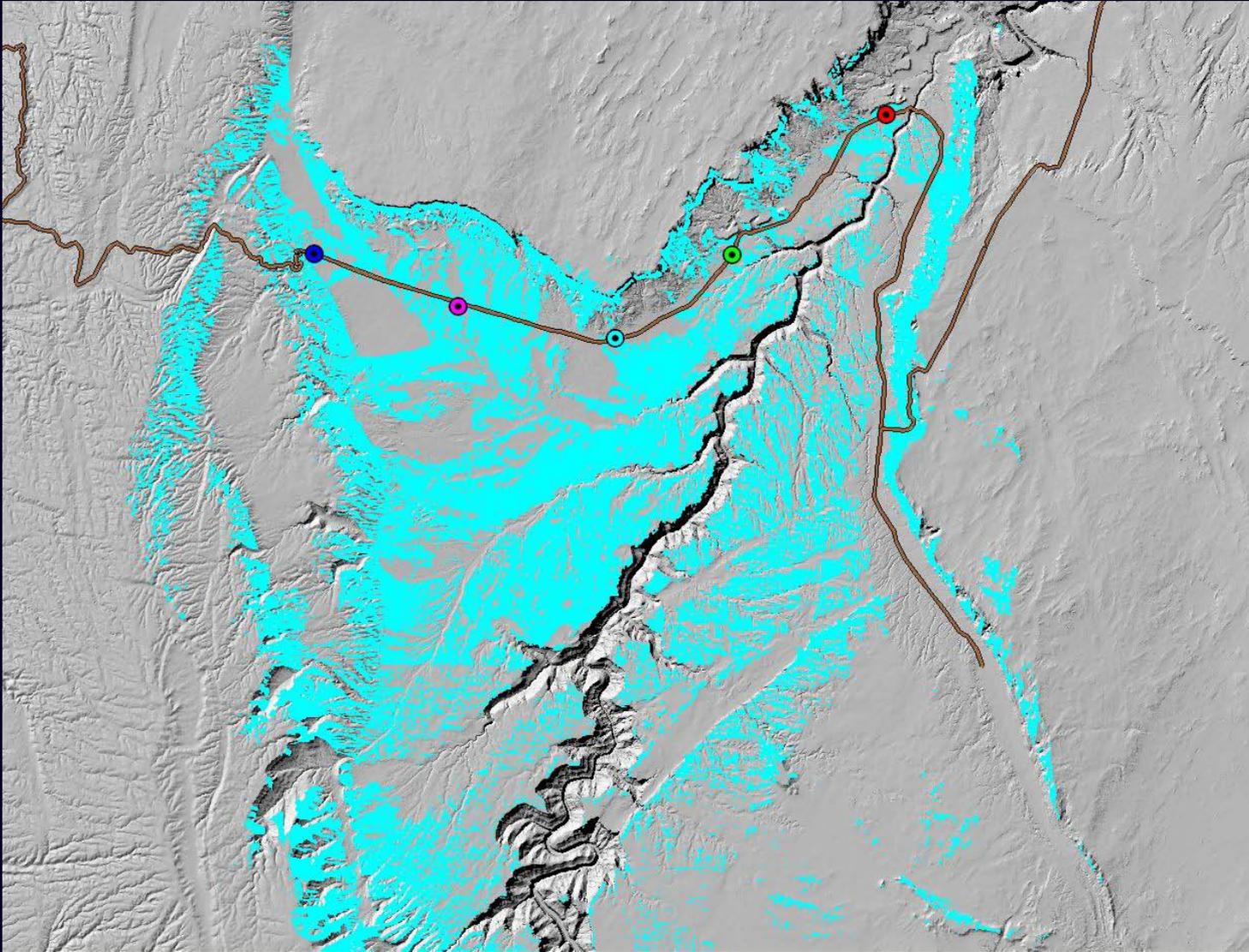
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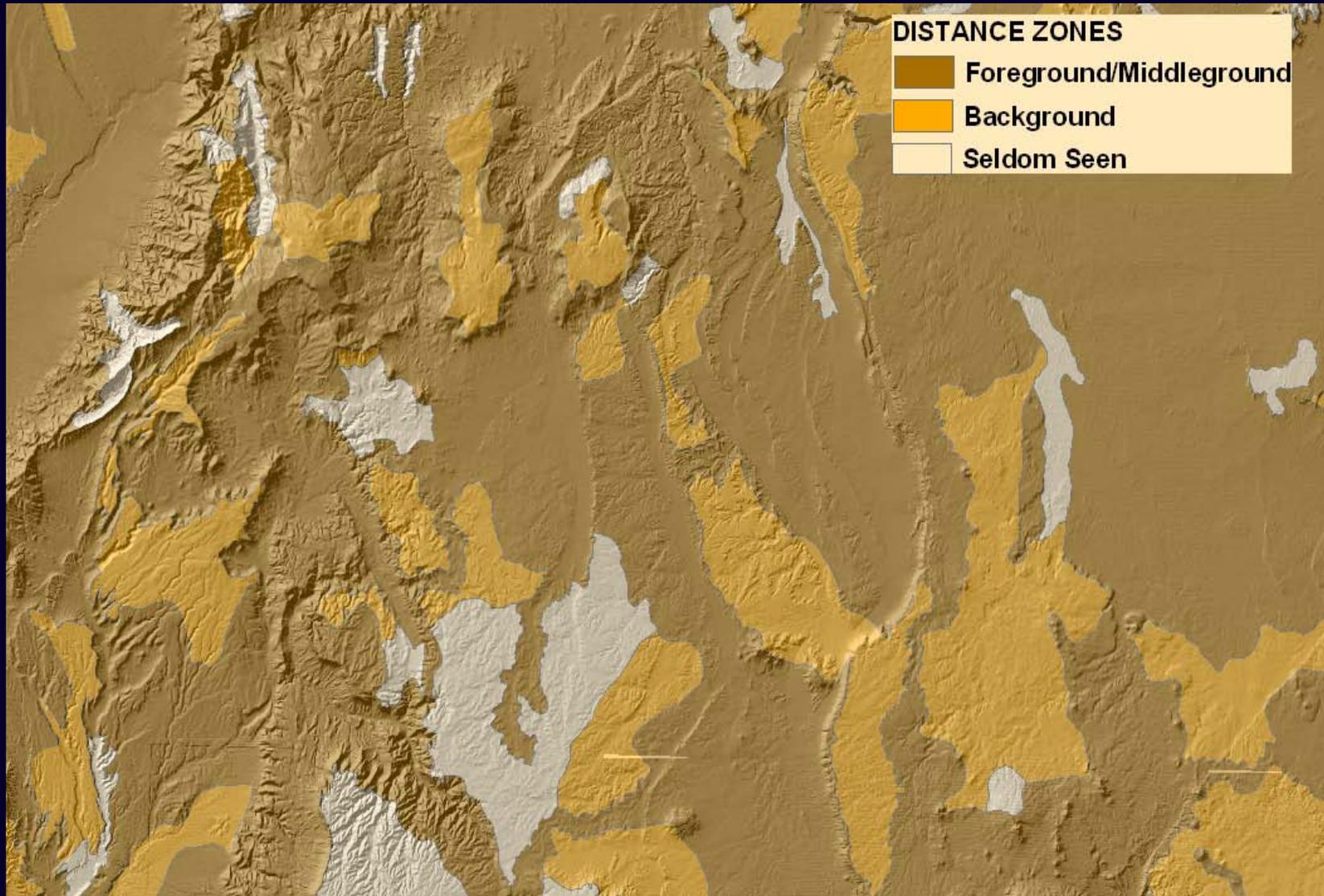
Viewsheds



Viewsheds



Distance Zones in GIS



Determining Inventory Classes

- Combine the Following Overlays:
 - Scenic Quality
 - Sensitivity Levels
 - Distance Zones
- Use Matrix (H-8410-1) to Determine Inventory Classes
- Use GIS to overlay data

Determining Inventory Classes

Class I – Assigned to those areas in which a management decision has been made to maintain a natural landscape.

Class II, III, & IV – Assigned based on combinations of Scenic Quality, Sensitivity Levels, and Distance Zones as shown in the following matrix.

Basis for Determining Visual Resource Inventory Classes

		Visual Sensitivity Levels					
		High		Medium		Low	
Special Areas		I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II
	B	II	III	III / IV *	III	IV	IV
	C	III	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s
		Distance Zones					

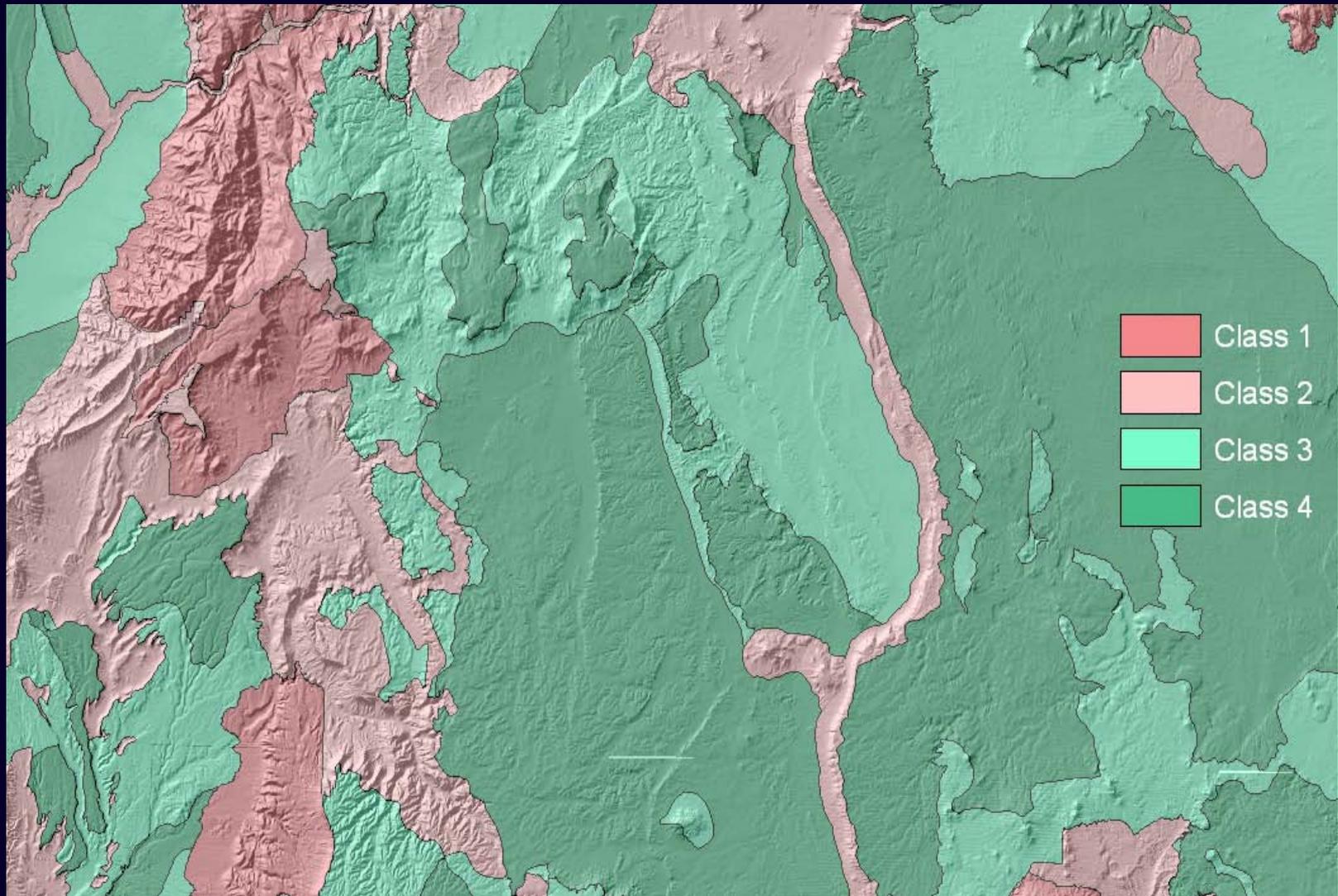
* if adjacent area is Class III or lower, (ie - Class II) assign Class III, if higher, (ie. Class IV) Class IV

Basis for Determining Visual Resource Inventory Classes

		Visual Sensitivity Levels					
		High		Medium		Low	
Special Areas		I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II
	B	II	III	III ^{IV*}	III	IV	IV
	C	III	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s
		Distance Zones					

* if adjacent area is Class III or lower, (ie - Class II) assign Class III, if higher, (ie. Class IV) Class IV

Final VRM Inventory – GIS Data



Final VRM Inventory – GIS

- GIS is indispensable to process
- New geodatabase is in prototype stage
- Storage and ease of sharing data

VRM Inventory Record					
VRM Matters Field					Office
KOP ID	Photo ID	Date	Azimuth	Waypoint ID	GPS Coordinates
01	153	4/3/06	290°	001	N 4143692 E 295000
01	154	4/3/06	15°	002	N 4154991 E 288765
01	155	4/3/06	185°	003	N 4180021 E 300029
02	156	4/4/06	90°	004	N 4142900 E 296000
02	157	4/4/06	270°	005	N 4131942 E 299054
03	158	4/5/06	100°	006	N 4191874 E 298004
03	159	4/5/06	200°	007	N 4171899 E 288755
03	160	4/5/06	300°	008	N 4162873 E 287642
04	161	4/6/06	25°	009	N 4143600 E 288764

Land Use Planning and VRM

Updating VRM Inventories

- Maintain an updated inventory for every acre
- Priorities for new inventory work (8410-1)
 - Issue Resolution
 - Projects with no inventory
- Goal - complete inventory with each RMP revision
- During plan revision, consider;
 - areas that have experienced most change
 - population growth, recreation use
 - new land use status, trails, byways, corridors

Conducting an Inventory

- Scenic Quality Inventory can be daunting
- Volunteers/Tech Staff/Interns are invaluable
- Contractors are a great option
- GIS is indispensable

Conducting an Inventory

Using Volunteers/Interns/Seasonals

- Need to know how to drive
- Need to know how to use a GPS
- Need to know how to read a map
- Need to know how to use a digital camera
- Need to know how to use a compass

Conducting an Inventory

Using Contractors

- Write a good scope of work
- Clearly define deliverables
 - Scenic Quality (GIS)
 - Sensitivity (GIS)
 - Distance Zones (GIS)
 - Inventory Classes (GIS)
 - Metadata for all GIS data
 - Administrative Record (photos and forms)

Questions?

