

A Landscape View of Idaho Range

Using Major Land Resource Areas & Ecological Site
Descriptions to Characterize Rangelands

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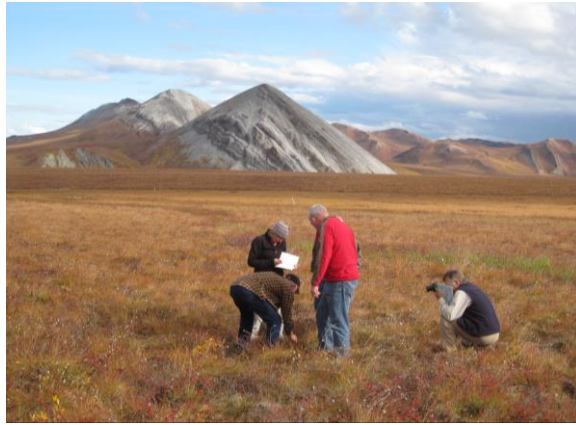
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Supported by a grant from Western SARE



Rangelands are Diverse

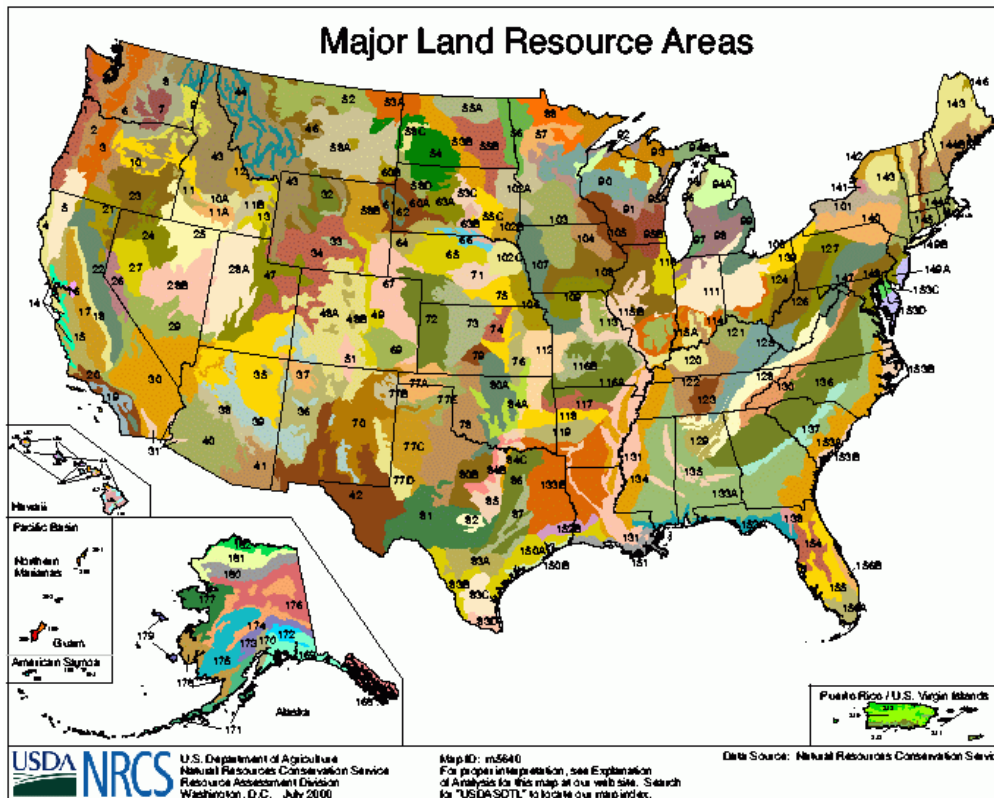
Characterizing Different Rangelands

Principle Environmental Covariates		NRCS Land Resource Hierarchical Framework		Map Scale
CLIMATE	GEOLOGY	Land Resource Regions	Land Resource Regions	1:7,500,000
		Major Land Resource Areas	Major Land Resource Areas	1:5,000,000
LANDFORM	TOPOGRAPHY	Land Resource Units	Land Resource Units	1:1,000,000
		STATSGO General Soil Map	Ecological Sites Groups	1:250,000
Soil & Vegetation DYNAMICS		SSURGO Detailed Soil Map	Ecological Sites	1:12,000 to 1:24,000
		Component		1:15,840 or larger
		Soil Pedon	Patch	1:1

Figure from Salley et al. (2016) - <https://doi.org/10.1016/j.rala.2016.10.003>

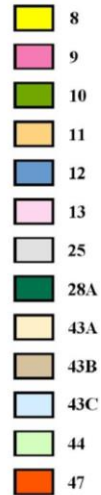
Major Land Resource Areas (MLRAs)

- Areas with comparable biotic potentials or limitations, identified as geographic areas with similar physiography, geology, climate, water resources, soils, biological resources, and land use



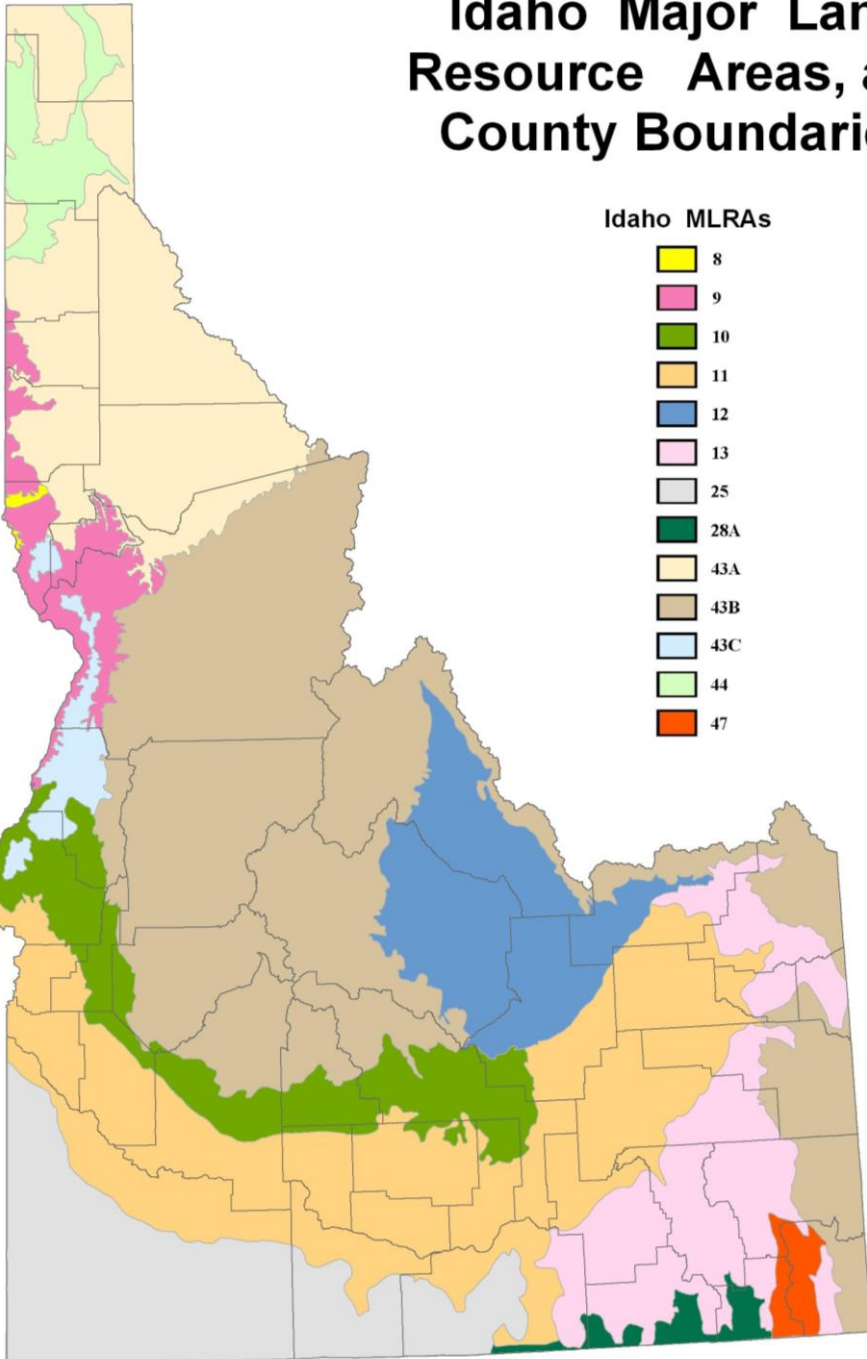
Idaho Major Land Resource Areas, and County Boundaries

Idaho MLRAs



- 9 – Palouse and Nez Perce Prairies
- 10 – Central Rocky and Blue Mountain Foothills
- 11 – Snake River Plains
- 12 – Lost River Valleys and Mountains
- 13 – Eastern Idaho Plateaus
- 25 – Owyhee High Plateau
- 28A – Great Salt Lake Area
- 43A – Northern Rocky Mountains
- 43B – Central Rocky Mountains
- 43C – Blue and Seven Devils Mountains
- 44 – Northern Rocky Mountain Valleys
- 47 – Wasatch and Uinta Mountains

Don't over interpret the lines!



MLRAs – So why do I care???

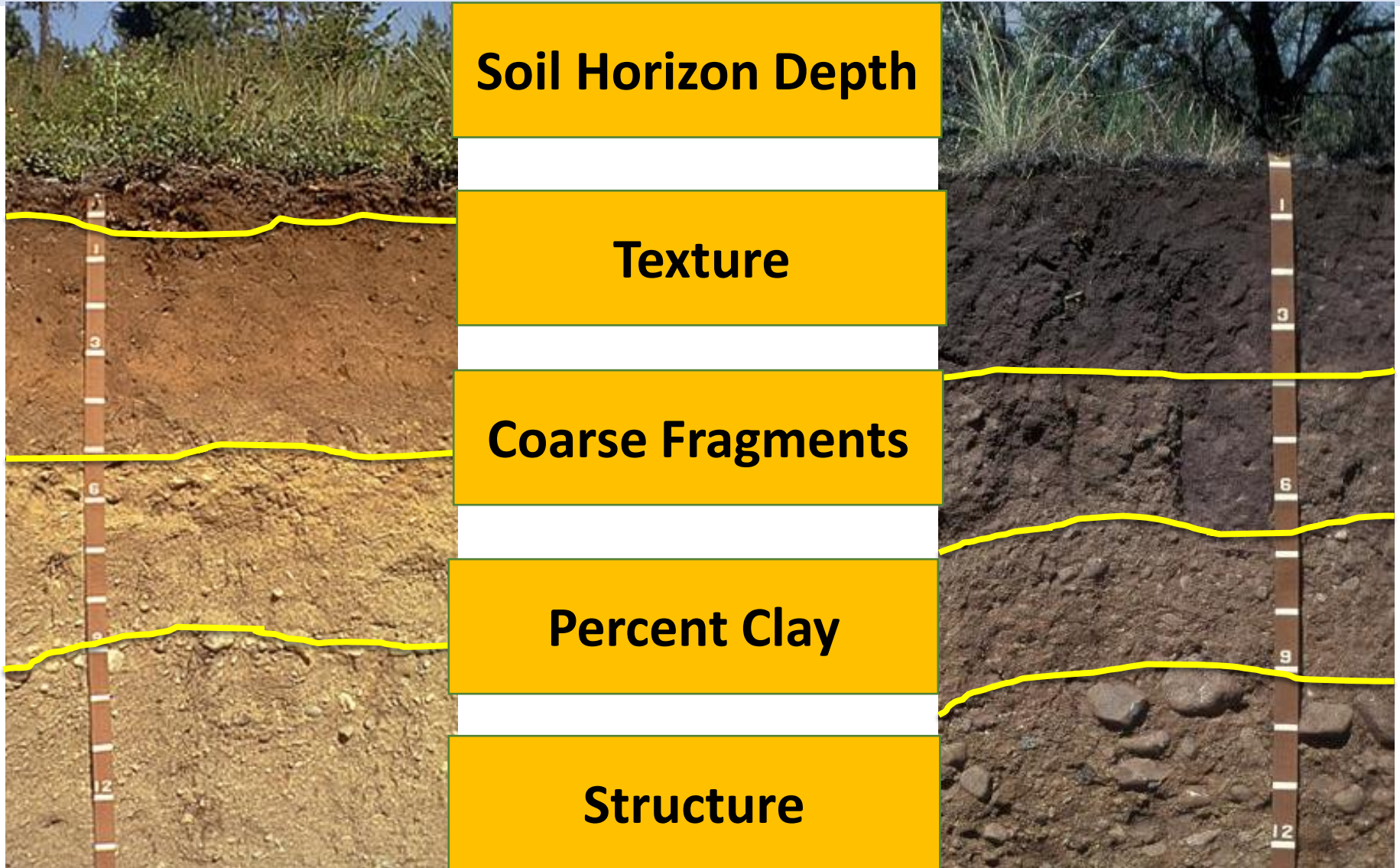
- Rangelands within a MLRA are:
 - Responding to the same basic set of environmental factors
 - Expected to have similar response to management and disturbance
- MLRA's are how **ecological sites** are organized

Ecological Sites:

... a distinctive kind of land with specific soil and physical characteristics that differ from other kinds of land in its ability to produce a distinctive kind and amount of vegetation and its ability to respond similarly to management actions and natural disturbances.



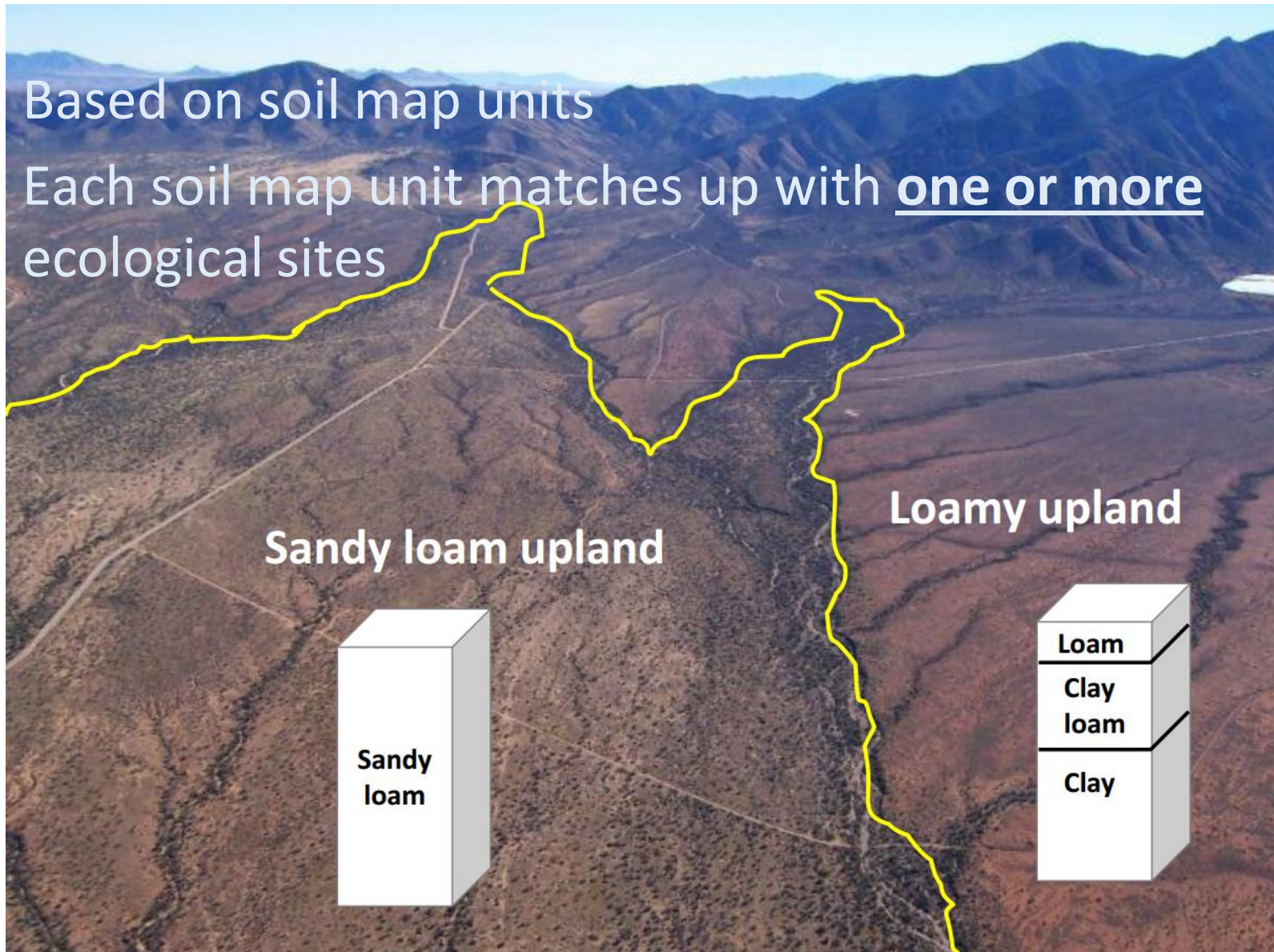
Ecological Site Differences



Differences in vegetation are a result of ecological site differences!

Ecological Site Descriptions

- Based on soil map units
- Each soil map unit matches up with one or more ecological sites

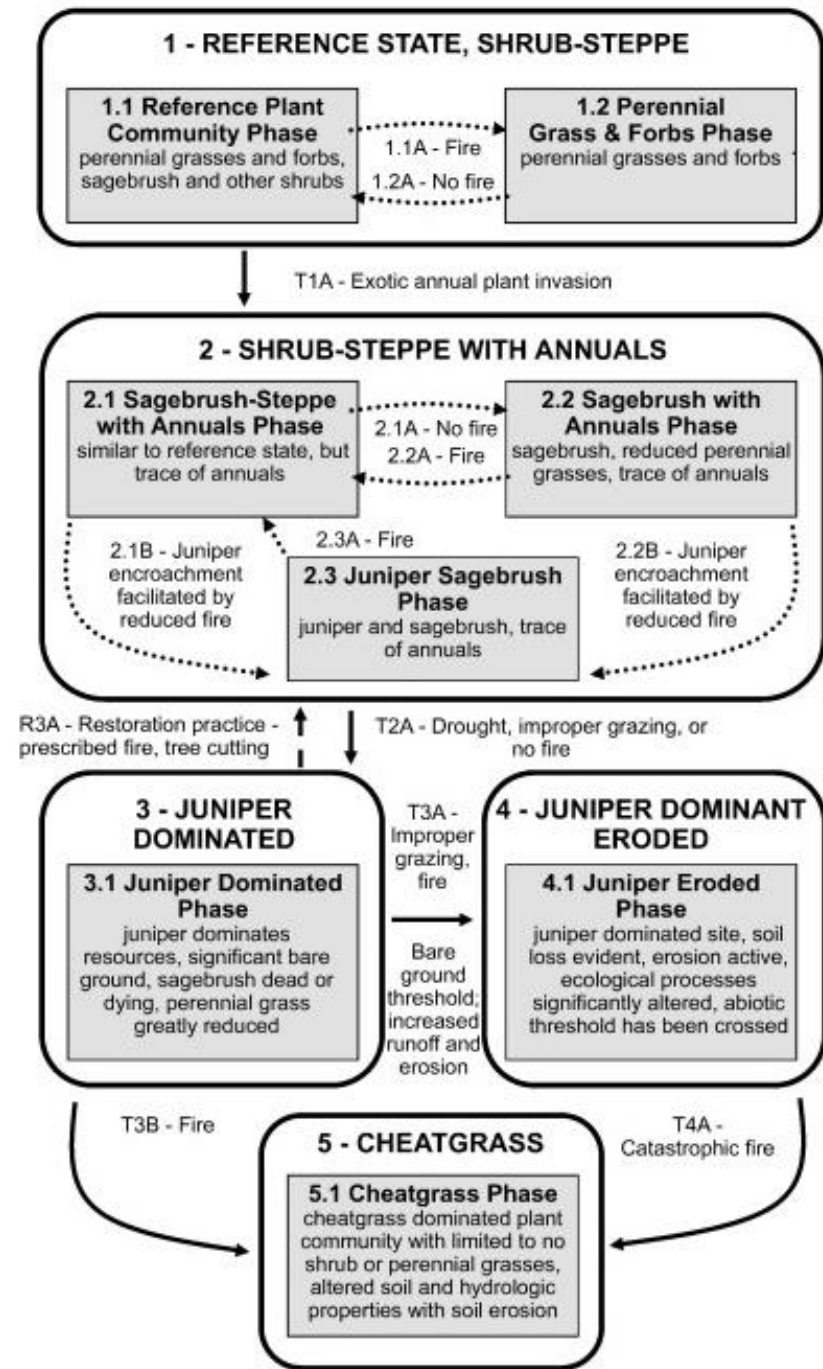


Ecological Site Descriptions

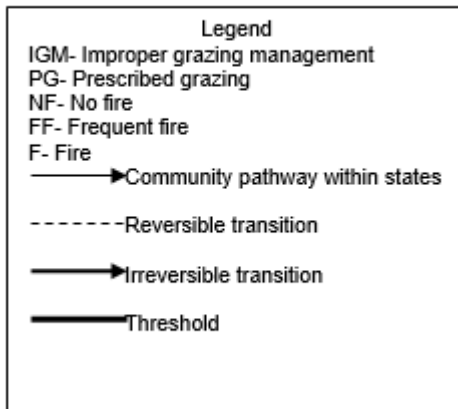
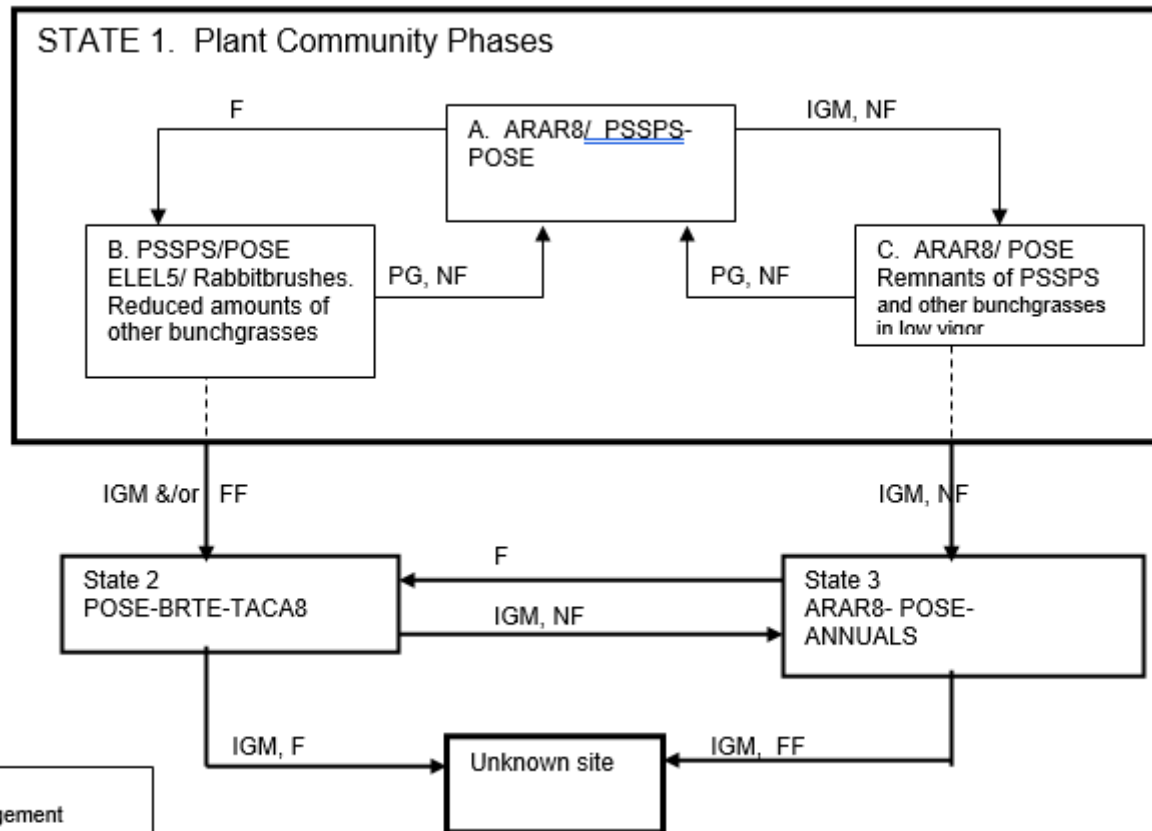
- Full documentation of an Ecological Site
- Best understanding of vegetation dynamics of an ecological site
- State & Transition Model
 - Vegetation composition/production for each state
 - Observed (or hypothesized) transitions between states

State & Transition Models

- Conceptual models of different vegetation communities in an ecological site
 - State – relatively stable
 - Phase – will transition over time without extra inputs
 - Transition – Change between states
- Description of processes/events that cause change from one state to another



South Slope Clayey

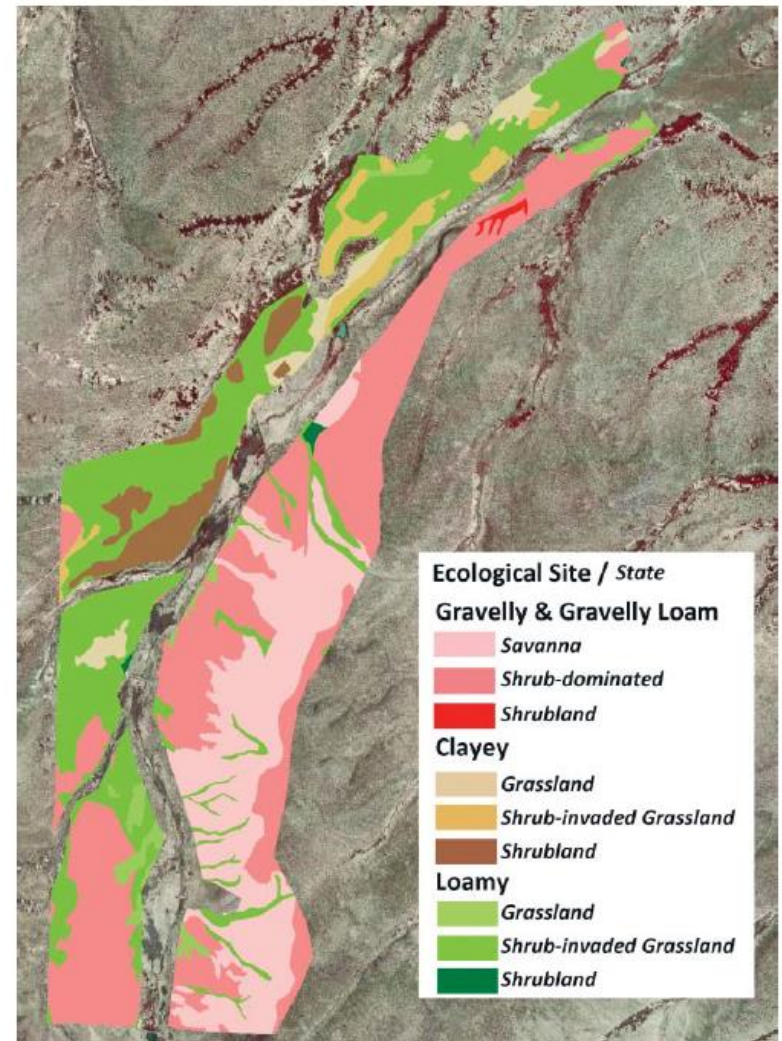


Plant Legend States 1 & 2

ARAR8 - Low Sagebrush
 PSSPS - Bluebunch Wheatgrass
 POSE - Sandberg Bluegrass
 ELEL5 - Bottlebrush Squirreltail
 BRTE - Cheatgrass
 TACA8 - Medusahead

What's the value of Ecological Sites?

- Expected plant communities
- Interpretations of different plant communities
- Expectation of vegetation composition and production
 - How to interpret monitoring data!



Something to know...

- Ecological site concepts are never “finished”
- What we know about rangelands is constantly evolving
- Ecological Site Descriptions are always being updated
 - This has caused some challenges for NRCS
- Best understanding of how rangelands work
 - Actual mileage may vary!

So what are the steps in identifying ecological sites?

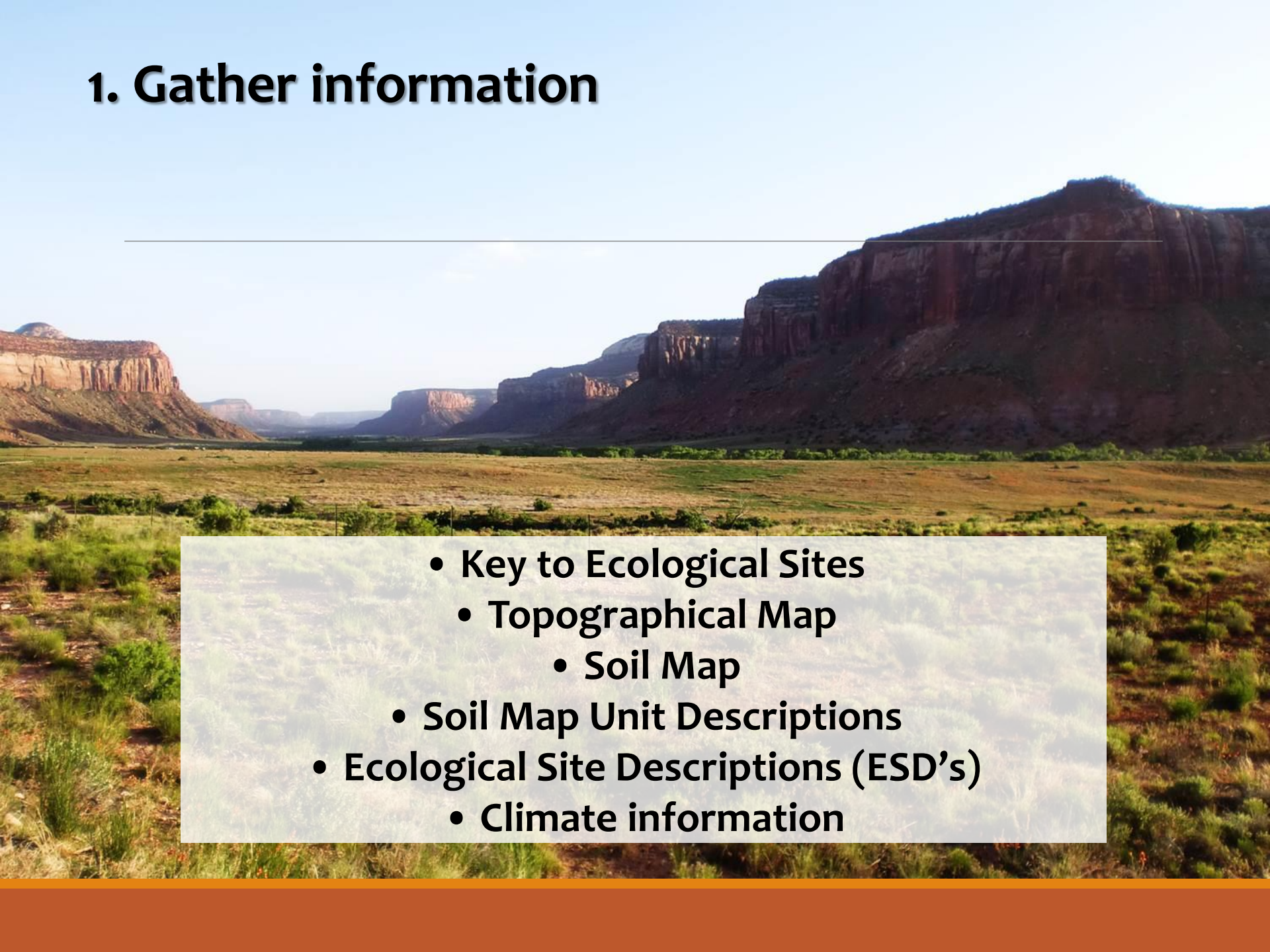
Gather information

Go to the field

Compare physical characteristics (soil)

Compare vegetation

1. Gather information

- 
- Key to Ecological Sites
 - Topographical Map
 - Soil Map
 - Soil Map Unit Descriptions
 - Ecological Site Descriptions (ESD's)
 - Climate information

Web Soil Survey

Area of Interest (AOI)

Soil Map

Soil Data Explorer

Download Soils Data

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Search

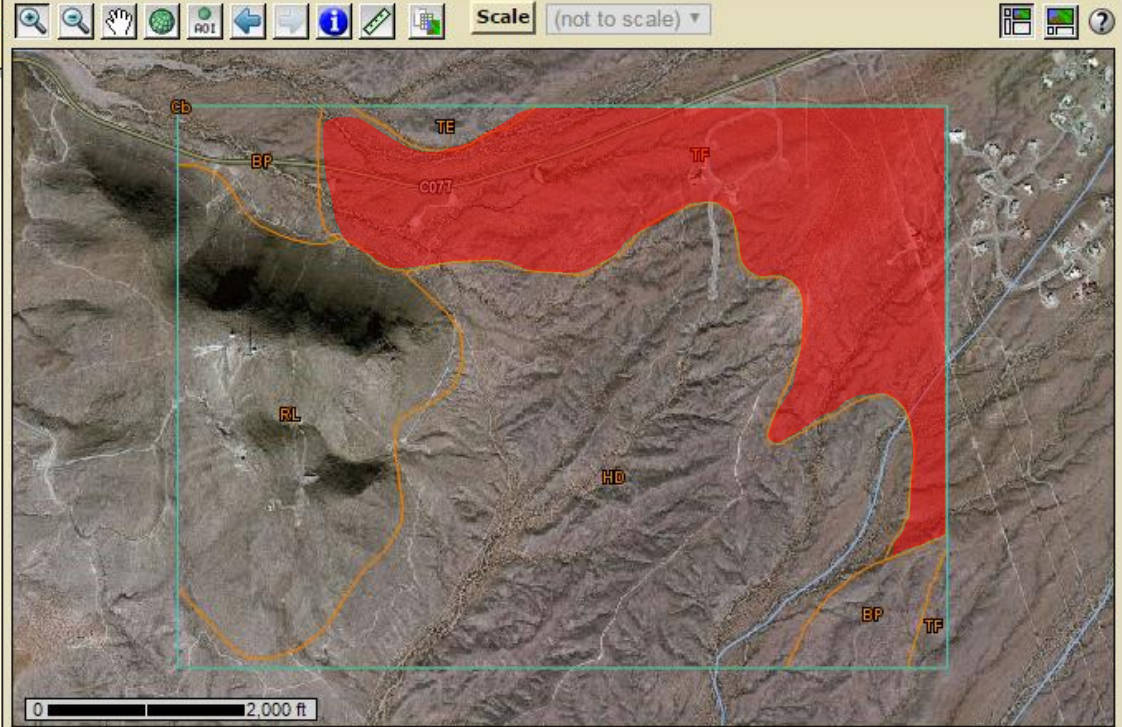
Map Unit Legend

Dona Ana County Area, New Mexico (NM690)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BP	Bluepoint-Caliza-Yturbide complex	64.0	6.1%
Cb	Canutio and Arizo gravelly sandy loams MLRA 42	0.1	0.0%
HD	Haplargids, dissected	457.9	43.5%
RL	Rock outcrop-Lozier association	228.3	21.7%
TE	Tencee-Upton association	12.5	1.2%
TF	Terino-Casito association	290.6	27.6%
Totals for Area of Interest		1,053.3	100.0%

Soil Map

Legend



EDIT – <https://edit.jornada.nmsu.edu>

Owyhee High Plateau

HOME / ESD CATALOG / MLRA 025X



General information

Next steps

Ecological site list

Ecological site map

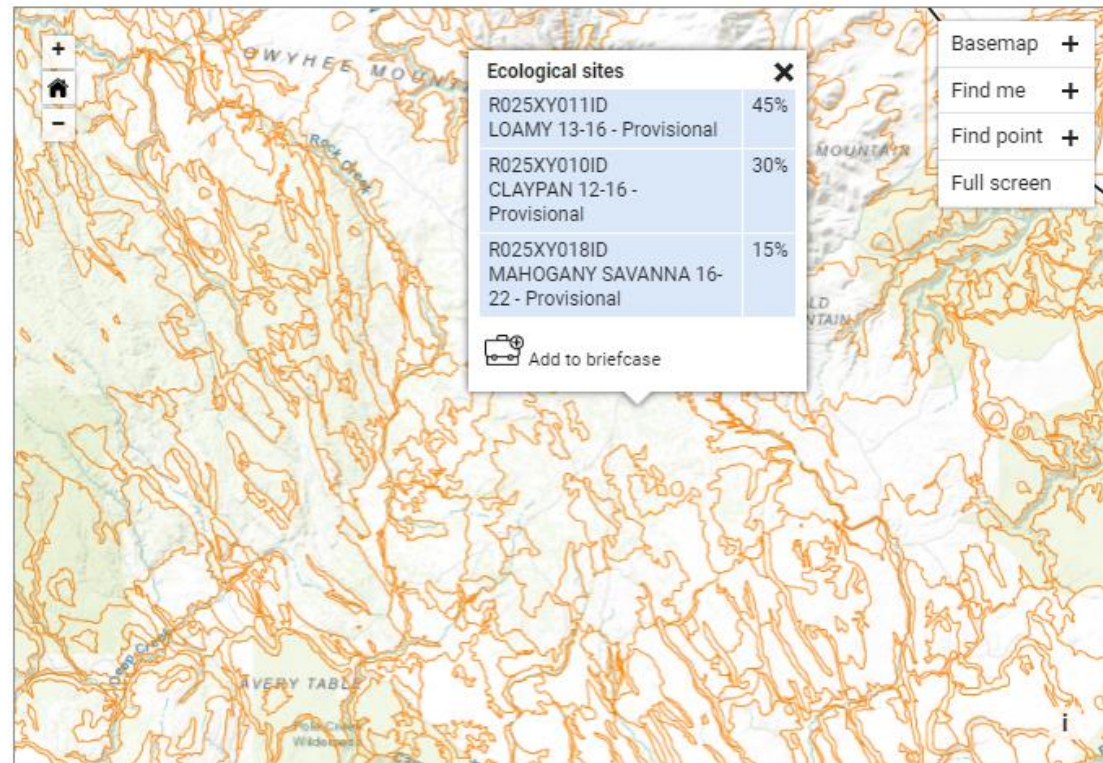
Ecological site keys

Ecological site photos


Print

Briefcase

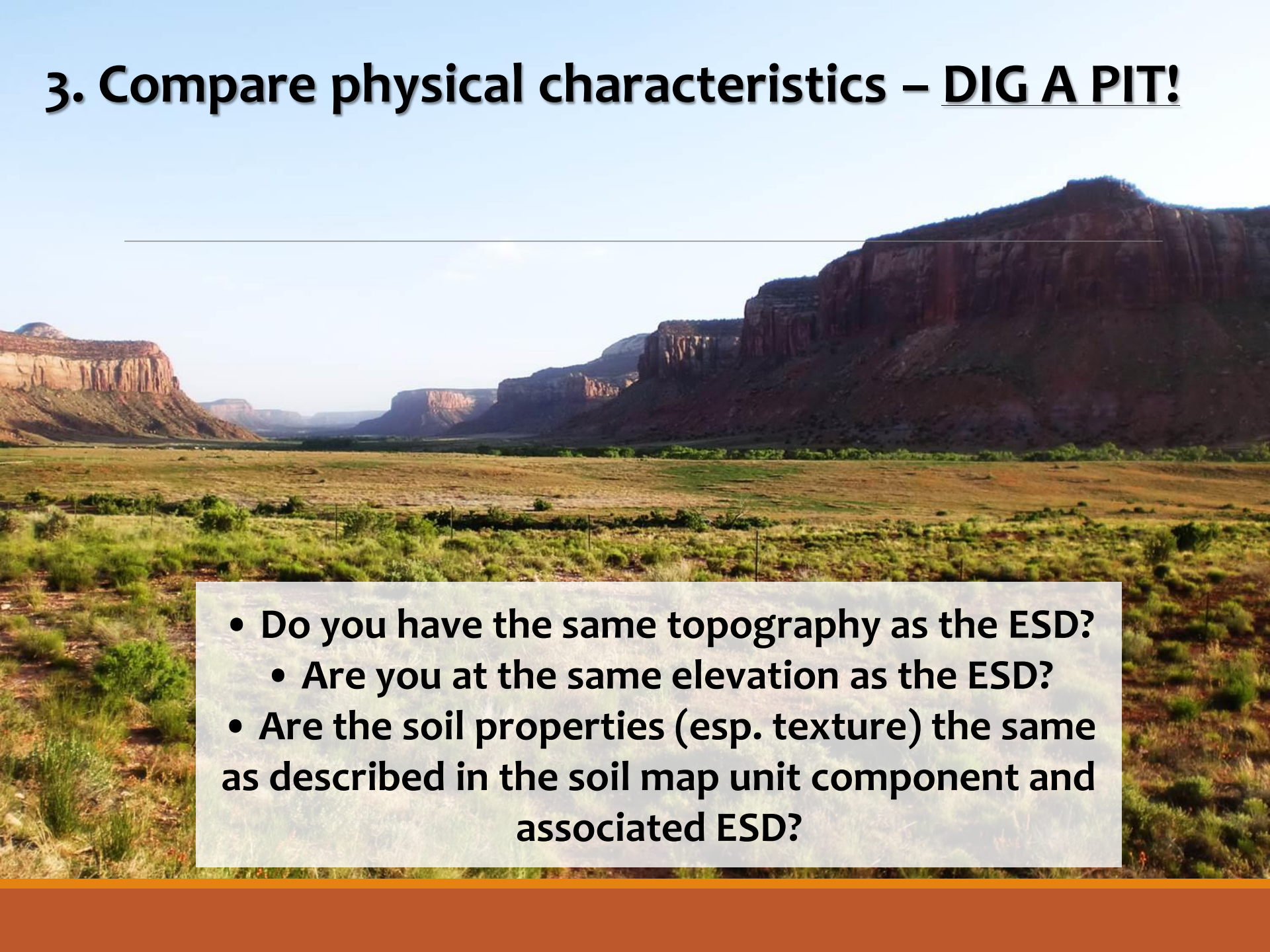
Ecological site map



2. Go to the field

- 
- **Navigate to your site.**
 - **Find out where you are on the maps.**
 - **According to the soil map units in the area, what ecological site(s) could you be on?**

3. Compare physical characteristics – DIG A PIT!

- 
- Do you have the same topography as the ESD?
 - Are you at the same elevation as the ESD?
 - Are the soil properties (esp. texture) the same as described in the soil map unit component and associated ESD?

Soil scientist not required
(Yes, he is enjoying this)



Identify Ecological Sites by digging a pit



4. Compare vegetation

- 
- What plants are on the site?
 - Which state or community are you in?

Questions?

