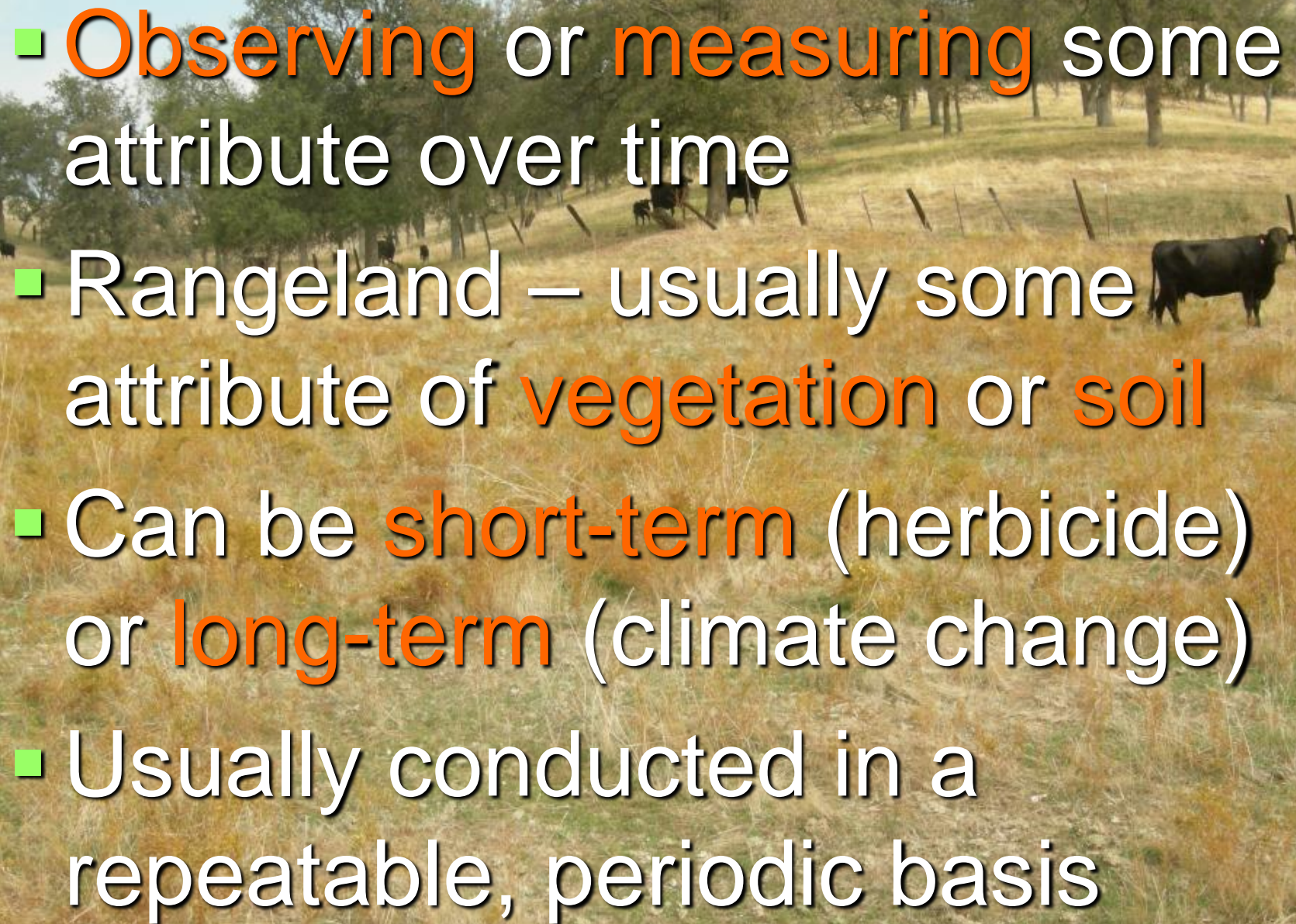


**Grazing Ecology
Workshop**
Monitoring Grazing
March 12, 2014

A person wearing a wide-brimmed hat, a green shirt, and light-colored pants is walking through a field of tall green vegetation. The field is situated on a hillside with dry, yellowish grass. In the background, there are several trees and a clear blue sky. The overall scene suggests a field study or monitoring activity in a natural environment.

What is Monitoring? Why Monitor?

- 
- Observing or measuring some attribute over time
 - Rangeland – usually some attribute of **vegetation** or **soil**
 - Can be **short-term** (herbicide) or **long-term** (climate change)
 - Usually conducted in a repeatable, periodic basis

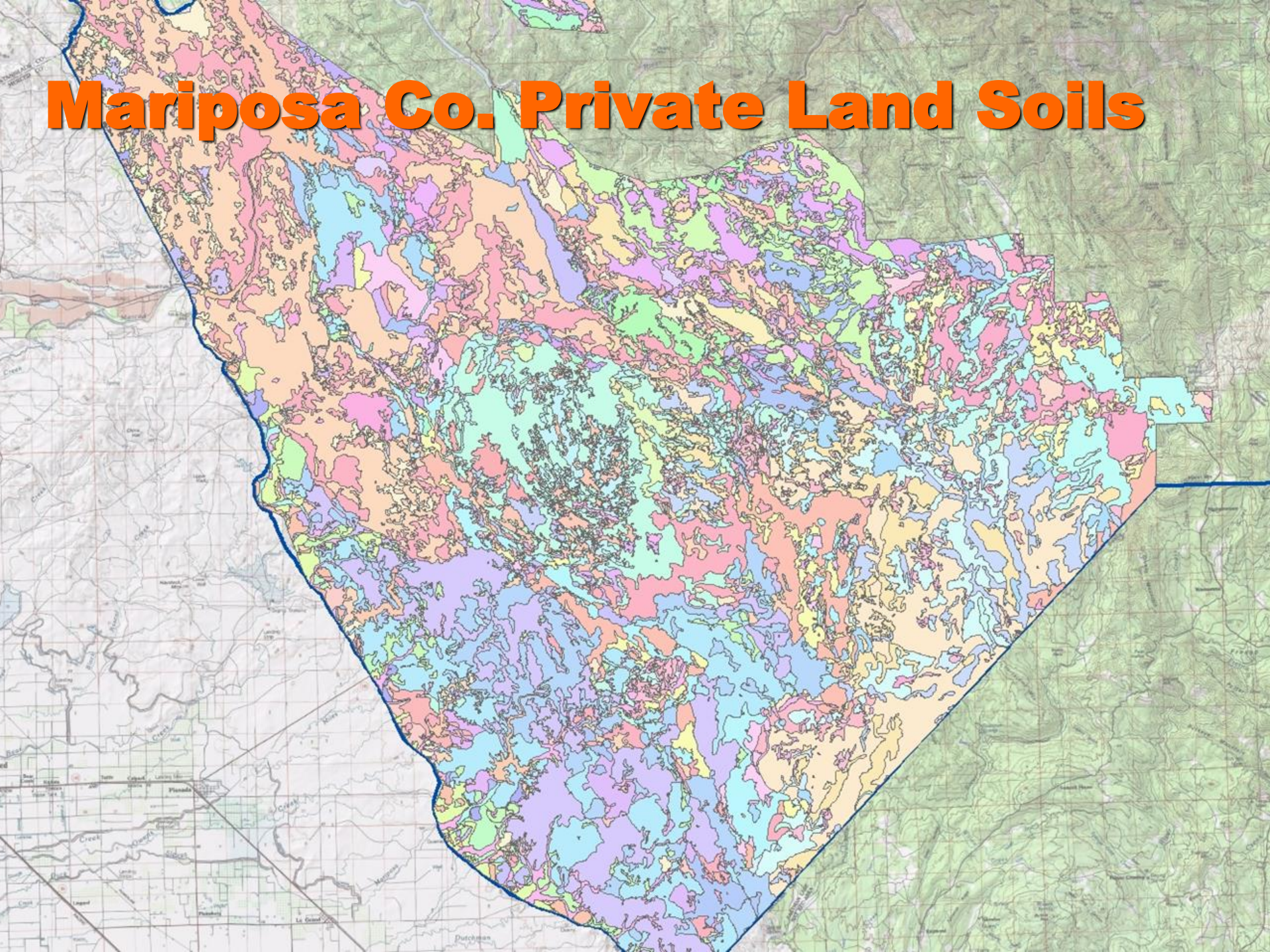
- **Statistical monitoring**: when an estimate is needed of the level of probability that sample data reflects that of the entire population
- Often required in scientific publications

- **Professional judgment:**
selecting sample areas and measurement techniques that are repeatable and have a high likelihood of representing a larger area
- Not subject to statistical analysis

Controlling influencing factors

- Stratify (subdivide) monitoring areas into similar units
- This reduces the influence of soil, site potential, aspect, slope, elevation, on your data

Mariposa Co. Private Land Soils



What are some typical monitoring techniques?

- Photo monitoring
- Line-point intercept
- Production (Yield)
- Plant Density / Frequency
- Canopy gap / Basal gap

What are some important attributes to monitor in Sierra Nevada Foothill Rangeland?

- Residual Dry Matter (RDM)
- Noxious Weeds
- Increase of Perennial Species
- Riparian Area Health
- Vernal Pools

RDM



RDM



RDM



RDM



RDM



RDM



Noxious Weeds



Noxious Weeds



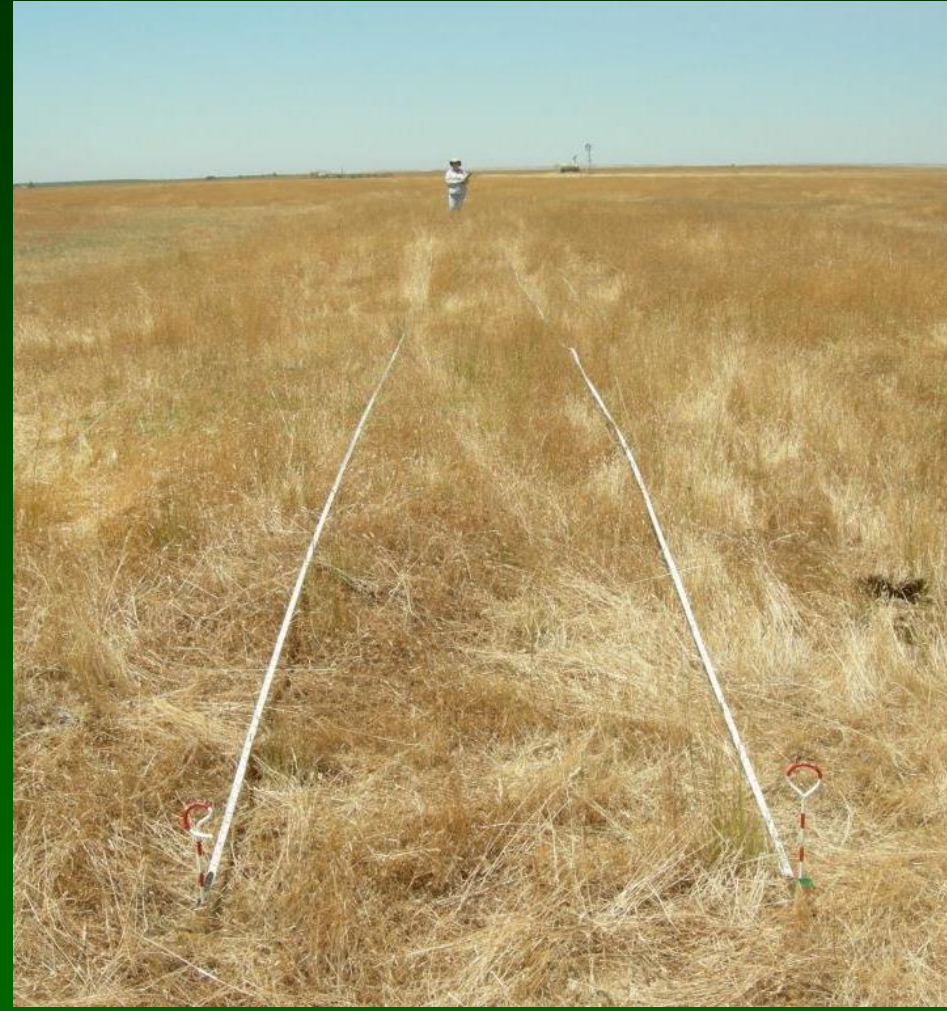
Noxious Weeds

- Medusahead best monitored in late spring
- YST in early spring (rosette stage) or mid-summer
- Techniques: photo monitoring, frequency

Perennial Grasses



Line point Intercept & Density



Line point Intercept & Density



Riparian Habitat



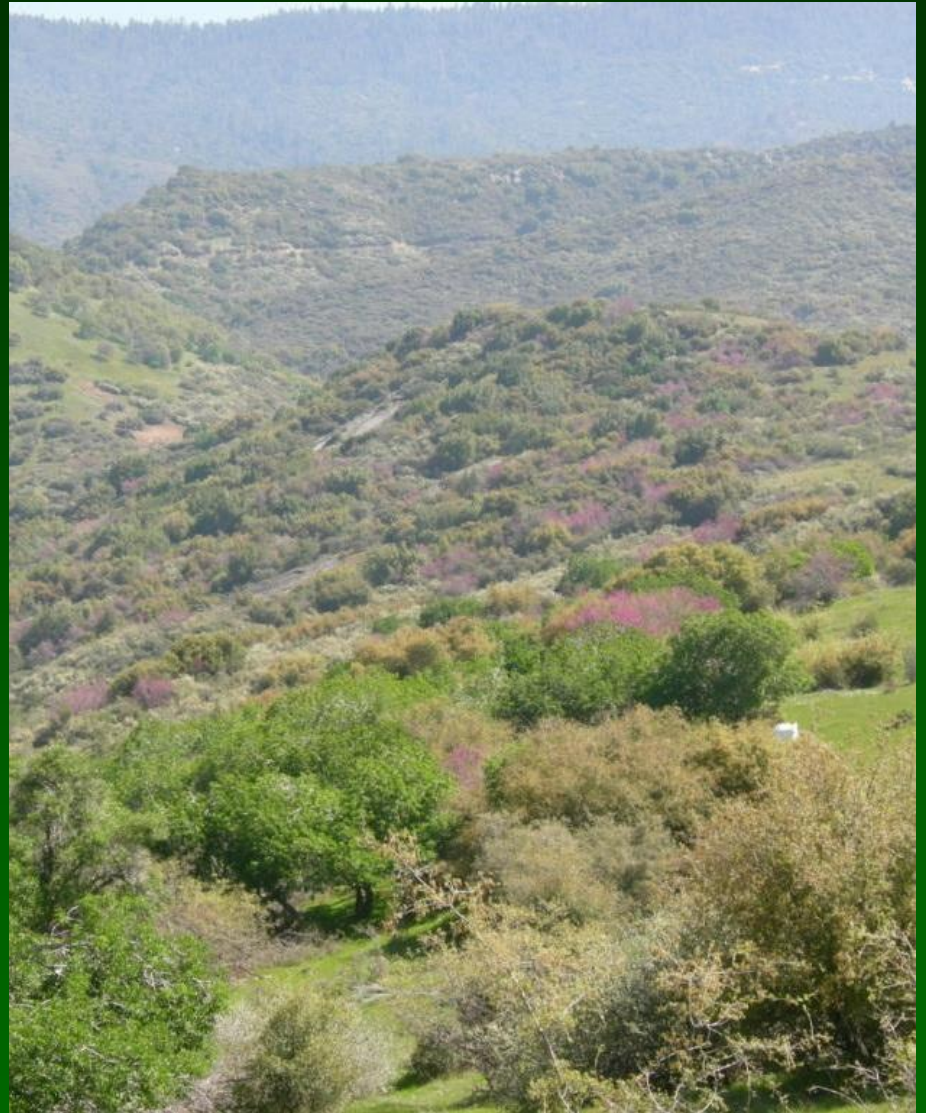
Riparian Habitat



Riparian Habitat



Brush Management



Brush Management



Vernal Pools



Vernal Pools



Vernal Pools

