

Measuring Rangelands

Vegetation Attributes:

- **Plant Species**
- **Life Span**
- **Functional Group**

Monitoring Methods

- **Frequency:**
 - How often a plant occurs within a sample area.
 - Proportion (%) of times a plant occurs in the total number of plots examined.
 - Examples:
 1. What is the frequency of cheatgrass?
Cheatgrass occurs in _____ of the _____ plots = _____ %
 2. What is the frequency of sagebrush?
 3. What is the frequency of perennials?
- **Density:**
 - Number of individuals per unit area.
 - Unit areas = plants/m² or plants/hectare or plants/acre
 - Examples:
 1. What is the density of yellow triangles?
_____ yellow triangles/m²
 2. What is the density of circles?
_____ circles/m²
 3. What is the number of juniper trees per hectare?
_____ junipers/0.1 ha
- **Cover:**
 - Proportion of ground surface covered by vegetation or other objects.
 - Plots or Points
 - Examples: Line-point intercept
 1. What is the cover of perennial grasses (PG)?
Hit PG 12 times out of 31 points sampled = _____ % cover
 2. What is the cover of annual grasses (AG)?
Hit AG 21 out of 31 points sampled = _____ % cover
 3. Estimate the cover of red circles using line-point intercept?

- **Biomass**
 - Total weight of living organisms, including plants and animals, for a given area
 - Usually expressed as kg/ha or lbs/acre
 - Determined by clipping and weighing

- **Structure**
 - Three-dimensional arrangement of a plant community
 - Examples: cover board method, Robel pole

- **Plant Composition**
 - A calculation based on proportions of biomass or cover
 - Proportion (%) of various plants (or life forms) in relation to total plant biomass or cover
 - Calculation steps:
 1. Sum the total foliar cover
 2. Divide individual foliar cover by the total foliar cover
 3. Multiply by 100 to get % composition

Functional Groups	Foliar Cover	Composition
Shrub	40	
Tall Grasses (Perennial)	30	
Short Grass (POSE)	15	
Perennial Forb	18	
Annual Forb	5	
Annual Grass (Introduced)	2	

- **Photo Monitoring**
 - **Steps:**
 1. Gather your equipment
 2. Take your pictures at the same time every year
 3. Select sites that reflect your management goals
 4. Record your locations
 5. Include a distinct landscape feature
 6. Always use a photo board
 7. Make notes in your field notebook
 8. Download and print photos

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