

Seed Banks

The most important monitoring tool, your rangeland management plan doesn't include

Input

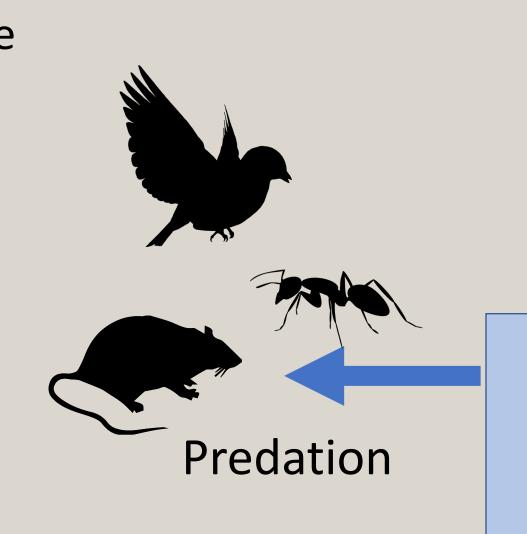
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Seed Bank Soil Bioassay

Identifies the number of viable seeds in a given area of soil



It is hard to find a mention of seed banks in most rangeland monitoring programs

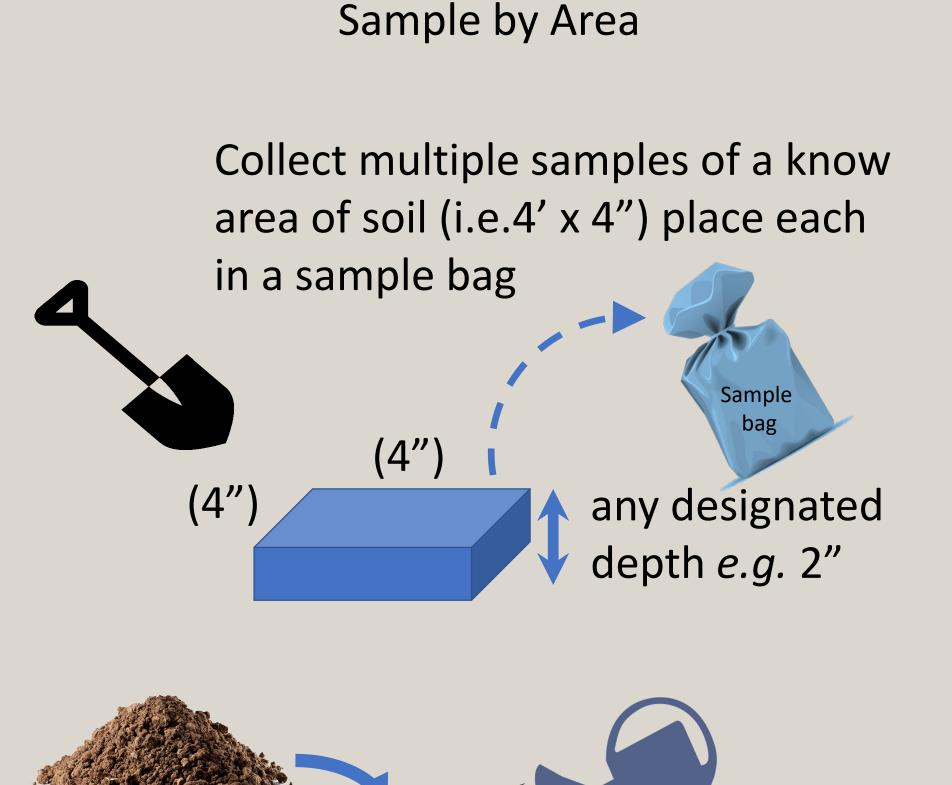
"BLM AIM Strategy does not assess seed banks"

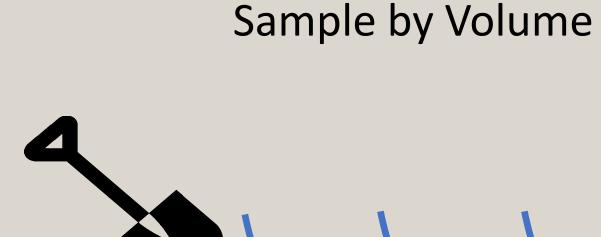
Uses

- Estimate weed populations
- Predict plant community recruitment
- Determine herbicide efficacy
- Predict post fire plant establishment
- Predict weed competition for rehabilitation seedings

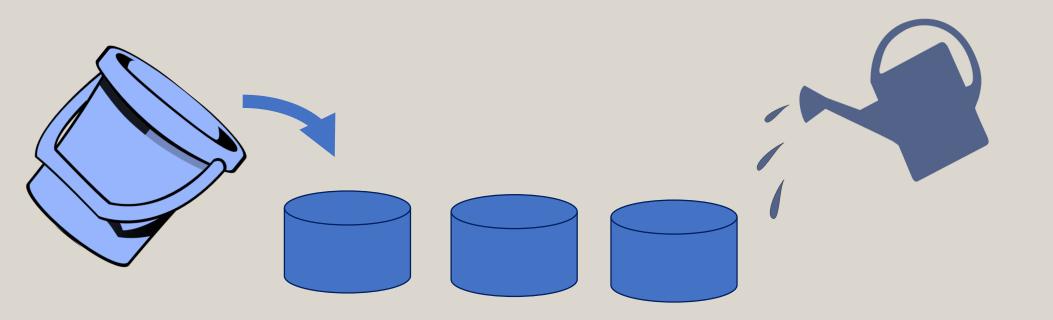
Successful germination, **Soil Seed Bank** the viable seed reservoir present in a soil emergence and establishment 315 cheatgrass seeds /ft2 Natural Seed Death Failed Germination 148

Methods to Measure Seed Banks





Collect the top inch of soil and fill 5 gallon bucket (take a scoop every 10 steps)



Fill containers of known volume (<2" deep) e.g. 10 oz



post fire

1st year

effective

herbicide

fallow

Suppression zone

perennial grass

supression

zone

sagebrush

understory

cheatgrass

dominated

Seeds per ft² or m²

1 sample per

container

Area: e.g. 4"x4" multiply by $9 = 1ft^2$

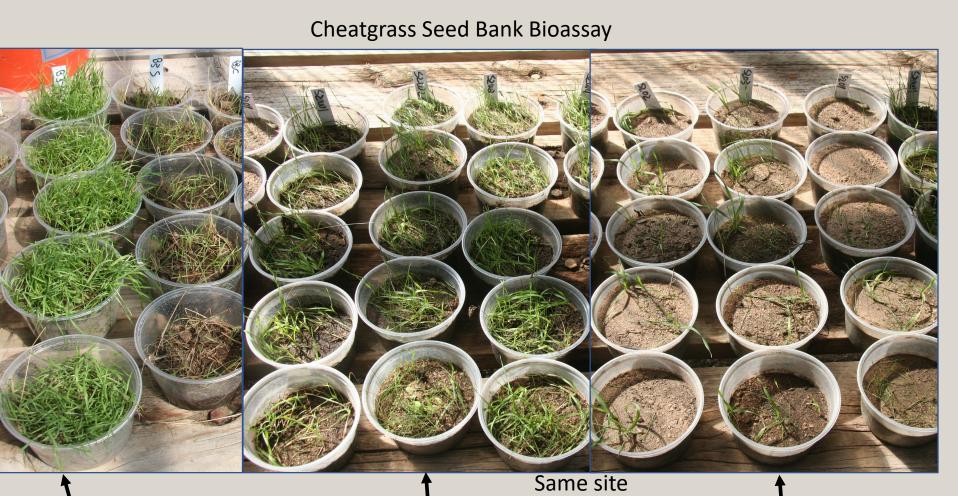
Volume: e.g. 10oz *multiply by 7.98 = 1ft2*





Count the number of seedlings = number of viable seeds

(multiple weeks) (may require stratification treatments or Gibberellic acid for dormant seeds)





With perennial grass Increased soil nitrogen Without perennial grass

