

4. Impacts of Precipitation on Rangelands—Photo Series

Time: 20-25 minutes

Supplies: Graph, PowerPoint

Background:

Rangelands are usually characterized by limited precipitation, often sparse vegetation, sharp climatic extremes, highly variable soils, frequent salinity, and diverse topography. Some of Idaho’s rangelands receive as little as 10 inches of precipitation each year, so plants have adapted to survive long, hot, dry summers.

Weather and climate are highly influential factors determining how rangelands change over time. Water is the primary limiting resource on rangelands, and vegetation production depends heavily on both water availability and suitable growing temperatures. Idaho’s rangelands, while for the most part are very dry and cool, can experience great variation in moisture and temperature depending on region, slope, and aspect. Idaho Precipitation that is received on a landscape can vary substantially from year to year.

These vast swings in the precipitation that a site receives each year result in massive variation in the amount of forage that the site can produce annually.

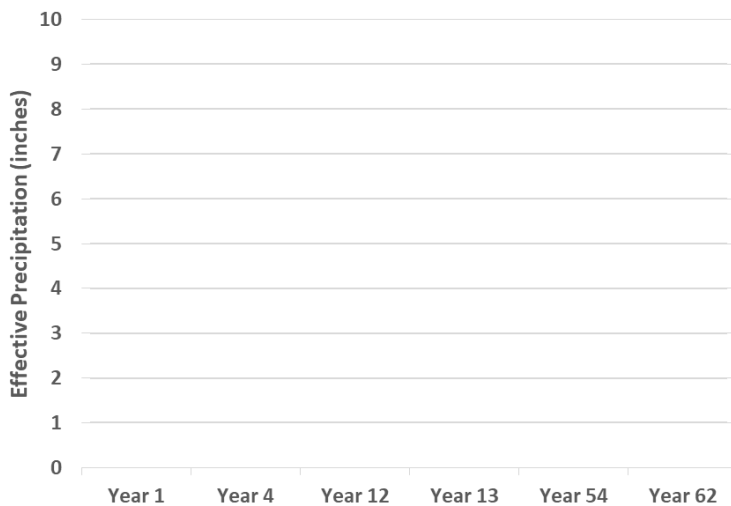
Do:

- Graph the amount of precipitation between April-June for each of the years as indicated in the photo series.

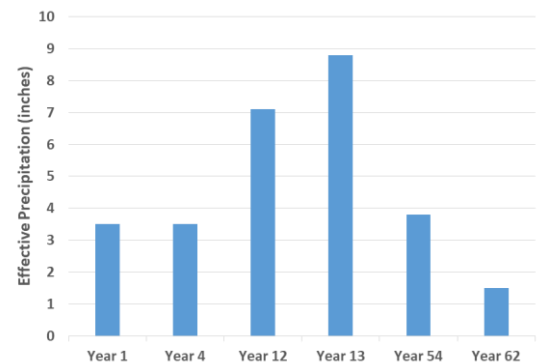
Reflect:

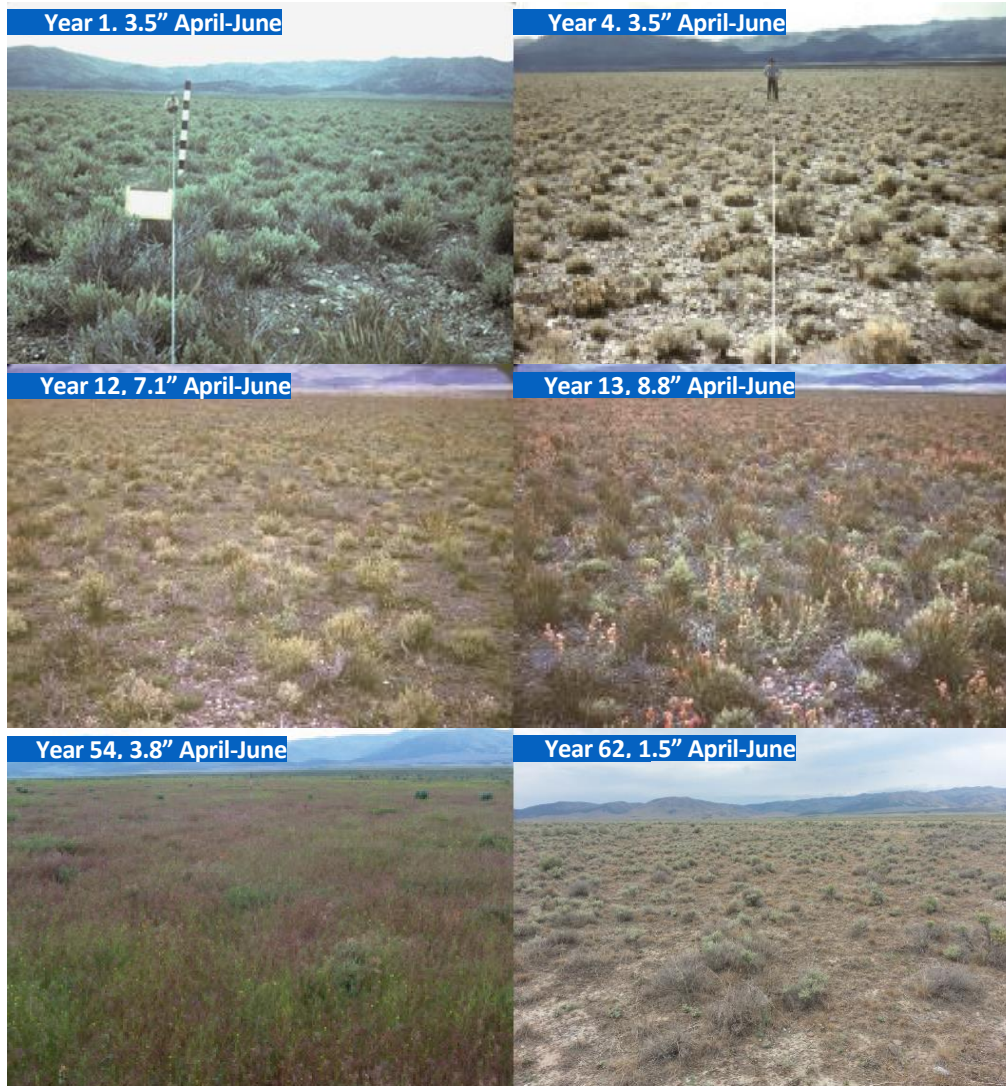
Observe the differences between the photos and answer the following question:

- How does effective precipitation influence the plant community? For example, what year(s) had the greatest amount of visible forbs? What year(s) had the greatest amount of bare ground? What year(s) had the greatest amount of grasses? What year(s) had the greatest amount of shrubs?



Answer:





Description of each photo:

- **Year 1:** Shadscale (the dominant shrub in the photo) appears to be very healthy. Precipitation was near average during the spring.
- **Year 4:** After a very dry year 2 and 3, the shadscale had very little current year production.
- **Year 12:** Precipitation was above normal in the spring. A number of shadscale seedlings gave rise the shadscale recovery. Note the globemallow (orange flowered plants) and grass (squirreltail) throughout the stand.
- **Year 13:** Spring precipitation was even greater than in the previous year. This was the best globemallow expression in 50 years. Squirreltail grass was also very productive.
- **Year 54:** The plant community shifted from native shrubs, forbs, and grasses to a cheatgrass community that has a high wildfire risk.
- **Year 62:** A cold dry winter took a toll on the cheatgrass on the site. Now the site looks much like it did in the past with shadscale, and some perennial grasses. Cheatgrass and forbs are nearly absent.