

## A HEALTHY RANGELAND AND TWO EXAMPLES OF DEGRADED RANGELANDS



Figure 17. **HEALTHY RANGELAND** -- Native rangeland ecosystem with an abundant diversity of grasses, forbs, and shrubs. Juniper trees occupy rocky outcrops on the upland. The riparian ecosystem along the stream is dominated by willows and herbaceous riparian species. The entire landscape is maintained by fire at a moderate frequency.



Figure 18. **DEGRADED RANGELAND** -- Due to disruptions in its fire regime, this rangeland ecosystem has experienced a decrease in diversity of grasses, forbs, and shrubs. In this case, fire exclusion has allowed juniper trees to expand downslope, covering an increasing portion of the landscape. As juniper increases in density and extent, herbaceous cover decreases. This decrease in surface fuel (herbaceous vegetative cover) results in decreased fire frequency, enabling the spread of juniper. Because of this reduction in herbaceous cover, the riparian area has received an increased overland flow during high rainfall events. This, in turn, has contributed to channel down-cutting. Down-cutting and grazing have also caused the disappearance of willow from the riparian area.



Figure 19. **DEGRADED RANGELAND** -- This rangeland ecosystem contains very little plant species diversity. Cheatgrass invasion has fueled an increased frequency of wildland fire that has reduced shrubs and small trees. While juniper trees, sagebrush, and other shrubs occupy small portions of the distant landscape, the majority is dominated by cheatgrass. Cheatgrass promotes an increased fire frequency, causing invasive species to become increasingly dominant over time. Reductions in native perennial forbs, shrubs, and small trees contribute to overland flow of water during high rainfall events. Overland flow of water, in turn, contributes to down-cutting in stream channels. Down-cutting and grazing have also caused the disappearance of willow from the riparian area.