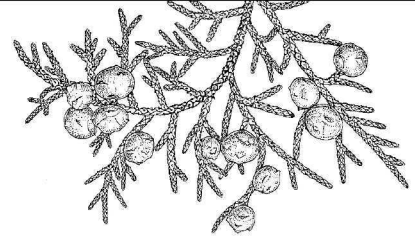
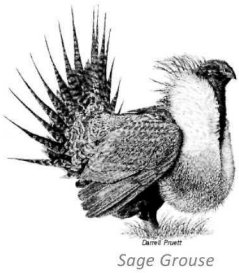




## Western Juniper Management



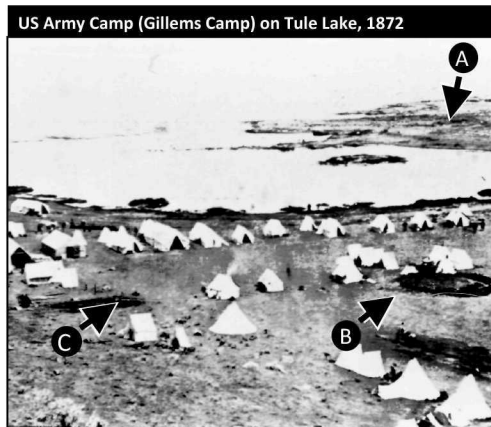
### Can A Tree Be A Weed?



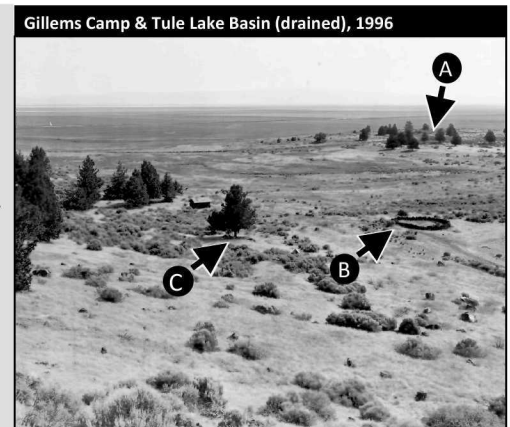
Sage Grouse

Broadly defined, a weed is an unwanted plant growing profusely in an undesired place. In that sense, Western Juniper has become a weed, even though it is native to much of the western United States. Due to the suppression of wildfire and the introduction of grazing livestock, the Western Juniper has dramatically increased its range. It now dominates over 3.5 million acres of northeastern California and eastern Oregon, a ten-fold increase over the past 100 years. By replacing grassland and sagebrush habitats, juniper encroachment has impacted wildlife that rely on these open, treeless areas. This includes herds of browsing animals like pronghorn antelope, and ground-dwelling birds such as the sage grouse.

### A Changed Landscape



US Army Camp (Gillems Camp) on Tule Lake, 1872



Gillems Camp & Tule Lake Basin (drained), 1996

A landscape's appearance has much to do with its history. Before Tule Lake was drained for agriculture, the lava beds were a very different place. Wildfires frequently swept through what is now the northern section of the monument, promoting grasslands and removing trees and shrubs. Deer, elk, and pronghorn browsed in widely dispersed herds, and native grasses grew back every year. Historic photos, the earliest taken by journalists covering the Modoc War in 1872, reveal a completely treeless landscape (see image above).

Several factors greatly changed this ecosystem in the 20<sup>th</sup> century. Prior to the creation of Lava Beds National Monument in 1925 and into the 1970s, sheep and cattle grazed here. Some years, tens of thousands of animals crowded the grass and shrub lands, most heavily impacting the lakeshore and

historic battlefield sites. Livestock grazed on plants more palatable than Western Juniper, allowing trees and non-native grasses to invade.

When the suppression of wildland fire became standard practice on public lands through much of the 1900s, juniper seedlings were no longer killed by fire. Though Western Junipers are native to the middle section of the lava beds, they continued to push northward into the grasslands.

Together, livestock grazing and fire suppression radically altered thousands of acres at Lava Beds. Views from historic battlefields became impeded by trees, and less diversity of habitat remained for wildlife.

### Restoring Grasslands



A thinning crew hikes to a stand of Western Junipers

To remove Western Juniper and return Lava Beds' northern grasslands to their pre-20<sup>th</sup> century condition, the National Park Service has two tools at their disposal: fire and mechanical thinning. Fire can be used to thin junipers and promote native grasses, and many prescribed fires have been carefully ignited here in the past few decades. If a fire might harm archeological or historic sites, or where junipers have grown too large to be eliminated by fire, trees are trimmed and felled by hand instead. In spring 2008, a large number of Western Junipers were removed by mechanical thinning. You may notice piles of juniper limbs left

behind from this project along the monument's northern roadsides. When this woody debris has dried, fire managers will burn them, returning ash to the soil to further promote the growth of grasses.

Through this and future efforts, you will be able to experience the battlefields of the Modoc War as they appeared in 1872, and maybe someday enjoy viewing pronghorn and sage grouse once more in their natural range. For more information, please contact a ranger.