Our pinyon/juniper woodlands

Utah juniper tree

The Great Basin contains extensive forests, even if some would rather call them miniature woodlands or pygmy forests. These woodlands are made up of two tree types, the rather brushy Utah junipers and pinyon pines. These two trees so often grow near each other that their stands are called pinyon/juniper woodlands. I will use the term p/j from here on. (The pinyon pine is also sometimes called the piñon.)

Most p/j woodlands grow in regions subject to temperature extremes and limited moisture. They cover as much as 15% of the land area in 5 states—Arizona, Colorado, Nevada, New Mexico, and Utah. While Elko County has extensive stands, they are nothing like the thick stands south of here and in western Utah. Although they cover millions of acres, p/j woodlands are among the least-studied North American forest types.

They provide wildlife habitat and vegetative cover for watershed protection. They also provide pinyon nuts and fuelwood.

The species of pinyon pine found in Elko County is singleleaf pinyon, unique among pines since each needle grows separately from the limb, unlike other pines that grow in bunches of 2,3 or 5 needles. Singleleaf needles also ends in sharp points. Utah junipers have flat, scale-like leaves and purple cones known as juniper berries.

P/j woodlands generally occur between 4,500- and 7,500-foot elevation. On some of the local mountain ranges, a distinct band of p/j can be seen. Below them in elevation are open grasslands or shrublands. Above them, usually along the mountain tops are other pines and firs. The p/j's highest elevation is still lower than that of pines and firs so an open area shows between the two bands of trees. The bottom of these woodlands is usually made up solely of junipers. A little higher in elevation, pinyon pines start mixing in. At the top elevation of the woodlands, pinyons predominate.

In pre-settlement times, frequent but small wildfires kept p/j woodlands restricted to fire-proof areas, usually steep, rocky slopes. The tree groves were fairly open with trees separated from each other.

With the arrival of settlers and their livestock, we drastically changed the landscape by fireproofing the rangelands. Plus, people began to actively fight wildfires. Without wildfire to manage the size of these woodlands, they were free to expand.

Scientists studied the ages of these trees in Nevada and Utah and found 80% of the trees are less than 140 years old, quite young for trees than can live for several hundred years. This shows many of these new trees are part of the migration down and out from mountain slopes.

Tree groves have filled in with trees closer together and the groves have expanded, spreading across slopes and out onto flats where they displace sagebrush and grass. Often, among the thick trees, the only other plant is cheatgrass.

These larger, thicker stands heighten the wildfire danger. They carry more fire fuel. Larger, more dangerous wildfires often start in pinyon/juniper forests before spreading across sagebrush flats. After a wildfire clears away the trees, cheatgrass is ready to take over the bare ground.

Pinyon pines ooze pitch from their limbs and trunks. Fires might burn across the ground and not do much damage but as pinyon pines heat up, the pitch drips down the trunks and forms a perfect ladder for fire to climb into the treetops where it can do much more damage as a crown fire.

Huge tree removal projects have taken place to beat back the woodland edge. Reseeding this new, bare area promotes more grass and shrubs that helps sage-grouse, wildlife and livestock.

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