

Forest thinning proves excellent management tool

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Thinning is an excellent management tool for forest landowners to use to improve forest health and productivity and to reduce wildfire hazard. Thinning reduces tree density and competition between trees in a forest stand. It enhances tree vigor and selectively encourages fewer, higher-quality trees that may provide periodic income, as well as other benefits such as wildfire protection, increased grazing capacity, and enhanced wildlife habitat.

Cooler weather makes the work more pleasant and reduces the spread of certain insect pests. September marks the beginning of one of the best times to thin ponderosa pine forests.

The 2012 drought severely stressed our forests, making the trees susceptible to insects and disease. Large swaths of dead and dying ponderosa pine are visible in many locations, especially on the hillsides above the Niobrara and Snake rivers. Of particular concern is the Ips bark beetle, which has recently killed a large number of ponderosa pines. The beetle breeds in green pine slash (tops and branches left after logging or storms), then moves into the bark of living trees to finish the cycle. After the first of September there isn't enough time for the insects to complete another breeding cycle before first frost.

When thinning, visualize what the forest will look like after the job is done. Ponderosa pine likes to grow in open, park-like stands with plenty of space between groups of trees. In pre-settlement times, periodic low-intensity lightning fires kept tree density down and the forests were very well adapted to fire because of the healthy spacing between trees. Today, we can use thinning to recreate those conditions.

The forestry term for tree spacing is "basal area." This is the cross-sectional area of a tree trunk, measured at 4.5 feet above ground. The term is used to describe the total number of square feet per acre occupied by tree trunks. Ponderosa pine grows best in stands where the basal area is about 60-80 sq. ft. In our unmanaged, overgrown forests in the Niobrara watershed, the density is often 120 sq. ft. or more. A thinned pine forest will have a basal area from 40-60 sq. ft. in which healthy, quality trees are left in groups, with plenty of space between. Grouping the trees protects them from the wind.

Eastern redcedar has encroached on many ponderosa pine forests. If a pine stand has a cedar understory, it's often easiest to start thinning by removing some of the cedar first. This removes ladder fuels and allows us to see the pines.



Doak Nickerson, a forester with the Nebraska Forest Service, marks trees to retain on a thinning project near Valentine. Unmarked trees will be removed to improve forest health and increase safety from wildfire hazards. Photo by Michelle Garwood

Choose to retain healthy trees with a single, pointed top and straight trunk (no fork), full foliage with dark green color, and free of insects, disease, and damage from animals, logging, weather, or fire. Retain larger trees (greater than 10 inches in diameter) while maintaining a good mix of small and large trees. This helps protect forests from pests that target only a certain age of tree. Uneven-aged management sustains forest cover, provides income at more frequent intervals, minimizes regeneration costs, and provides many wildlife habitat and recreational benefits.

Retain a good mix of tree species (pine, hardwoods) in order to provide diversity for wildlife and forest utilization. Character counts with trees, too. Keep some trees that have a unique appearance, historical significance, old growth qualities, visual/noise barrier, and wildlife habitat (snags).

Don't damage trees you wish to retain. Gouges from equipment or from falling trees will make the "keeper" trees more susceptible to insects and disease. Pile slash from the project in open areas at least 30 feet away from the trees you want to keep. Burning slash can produce enough heat to kill any overhanging trees. Up to 75 percent cost share assistance is available to landowners for forest thinning projects.

For information, contact the Nebraska Forest Service, at 402-472-2944, or find your district forester on our website: nfs.unl.edu/nfs-districts