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Notes to the Oregon House, Committee on Agriculture and Forestry
SB315A

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Range and Livestock

Dear Chair Kropf and Committee members,

I appreciate the opportunity to discuss the management of western Juniper in eastern Oregon with you. OSU Extension Service employs me as an Agricultural Extension Agent with primary program responsibilities in range and livestock management. I also served as a member of the Juniper Ad Hoc Task Group which spent that last year reviewing juniper, its management and its potential as a commercial species. I have lived in central Oregon for 14 years during which time I have participated in numerous research projects, land management planning activities and pre and post treatment follow-ups with private land owners and public land managers who are working with juniper and the lands it occupies. It is from this first hand experience that I have prepared these comments for you.

In 1999, the United States Forest Service, Pacific Northwest Research Station, reported that there were over 2.2 million acres of western Juniper in eastern Oregon. While this survey only reported acreage that had a juniper canopy cover of greater that 10 percent, this still represents a 5-fold increase in juniper occupied lands since 1934. This same publication, reports that the potential expansion will include some 6 million acres.

Historically, western Juniper did not receive much attention from landowners, land managers or researchers. When wood was needed for fence posts or firewood, juniper served the purpose when pine and other woods were not available.

1960's

The first juniper work really began in the 1960's. The goal of this early control effort was to enhance wildlife habitat. In cooperative efforts, the Oregon Department of Fish and Wildlife in conjunction with the BLM, removed juniper for the purpose of improving wildlife habitat. Results from control efforts showed increased grass, forb and shrub production. **The unintential consequence was that soil erosion was reduced.**

Control efforts included chaining, anchor chains attached to two large crawler tractors that pulled the trees over. Large tractors with blades on the front were also used to push the trees over. After pushing the tree over, the trees were pushed into piles. This method of control is referred to as "push and pile". Primary use of the wood was still fence posts and firewood.

1970's

Juniper work in the 1970's evolved to where the goal became soil erosion control. Now, wildlife habitat was no longer the primary focus of the control effort. Control efforts were primarily focused on public lands (Bureau of Land Management), with some control efforts occurring on private lands.

Techniques used to control juniper continued to include chaining, push and pile and to some limited extent, chainsaws. Juniper had a reputation of being a dirty wood and it would easily dull a chainsaw blade. On private lands, portable chippers came to remove the juniper piles. Uses of juniper chips included hog fuel and limited paper production. This commercial effort came and went quickly as economics quickly indicated that it didn't pay, even when the wood was free.

In the late 1970's, Gary Gumpert, a logger from Prineville and an inventor of sorts, began playing with juniper as a wood product. Over a several year period, Mr. Gumpert learned how to mill the wood, dry it and turn it into a useable product. Several homes in Prineville have juniper paneling on their walls. Lack of usable volume and market support eventually caused Mr. Gumpert to close his mill. The primary use of juniper continued to be fence-posts and firewood.

1980's

The early 1980's saw the first real research into the ecology and biology of western Juniper in Oregon. Dr. Lee Eddleman, OSU Rangeland Resources Department began to look at western Juniper and how it functioned on eastern Oregon rangelands. The focus of juniper control again shifted, this time from erosion control to watershed enhancement and the "Capture, Storage and Safe Release of water".

Juniper control moved from public lands to private lands. With cost share assistance from the Farm Service Agency (then called ACSC) and technical assistance from the Natural Resources Conservation Service (then called SCS), private landowners began to

cut juniper for the purposes of forage production, soil erosion control and watershed improvement. The Agricultural Conservation Program (ACP) provided cost share dollars to landowners to help implement conservation practices. Cost share rates were usually set at 50 percent of the total cost. Some FSA County Committees set rates based on tree density, tree size and slope of the landscape. Projects were completed with the use of chainsaws and limited push and piles. Because of the disturbance observed on some sites following push and pile treatments, some counties removed this practice from their cost share programs.

The late 1980's saw multiple agency cooperation in educational efforts, implementation of practices and monitoring of restoration results. Landowners incorporated wildlife needs into control efforts. Size of cuts were reduced, the shape of cuts were modified and larger trees where left as "Mature trees". BLM adopted a policy on many of their cuts to leave trees with dbh's greater than 16 inches, declaring anything larger than this as "Old Growth".

Commercial use of juniper still was primarily focused on fence posts and firewood. Some portable chippers reappeared on the landscape to provide chips to the co-generation plants. Now, because the trees were cut instead of being pushed and piled, small helicopters were brought in to carry the trees to the chippers. As in the past, economics again showed that these operations were not feasible.

1990's

For most of the early 1990's, juniper control efforts stayed focused on private lands. However, in 1992, the ACP program was eliminated with the 1992 Farm Bill and cost share dollars dried up. Limited dollars were made available through the Access and Habitat program administered by ODF&W and through demonstration dollars made available by the Governor's Watershed Enhancement Board (GWEB), now called OWEB. All of the entities providing cost share assistance have ways of providing technical assistance to the landowner. This technical assistance assures that the funding entity's goals and objectives are meet. This loss of cost share assistance resulted in a significant reduction in the number of juniper acres being treated in eastern Oregon. In the mid-1990's, a shift back to public lands (BLM primarily) occurred. The focus on treatments this time was to restore range health, improve watershed conditions, increase plant/animal diversity and to begin to address Threatened and Endangered species (i.e. Sage grouse).

Treatment practices included the use of chainsaws, prescribed fire and mechanical methods. Post treatment practices tried to increase ground cover through the loop and scatter of limbs following the cutting of the juniper. This practice helps with grass and forb seedling survival by distributing nutrients over a larger area and by shading the soil and reducing surface soil temperatures in order to reduce soil moisture loss through evaporation.

The 1990's saw an effort to create a juniper market. Through the efforts of the U.S. Forest Service, the Oregon Economic Development Department and local agencies and organizations, a critical mass of expertise, market opportunities and supply was identified in an effort to create jobs, add value to a large resource and to provide an economic return to the landowner. The Western Juniper Commercialization Steering Committee was created to help guide this effort. Their goal is to help coordinate the marketing, research and education that is focused on the development of market share for western Juniper. Regional Strategies and private dollars have funded research in harvesting techniques, sawing strategies and drying requirements of this tree. Connolly Wood Products of Bend has been one of the leaders in product development. They have shown that there is a demand for juniper wood products. The problem is that the economics driving harvest techniques, sawing technology and transportation make this product impossible to produce.

Treatment Costs

In central Oregon today, typical treatment costs are $35.00 to $60.00 per acre to cut (chainsaw) juniper. As a member of the regional review committee for OWEB, I have seen costs projected as high as $400.00 per acre. IN: Harvesting Western Juniper in Eastern Oregon – A Case Study, by J.F. McNeel and Larry Swan, they project juniper harvest costs at $6.00 to $9.00 per tree. These costs include the cutting and delimbing of the tree. In tree stands where densities are commonly found in the 150 to 200 trees per acre and have been recorded at over 400 trees per acre, this cost represents a substantial investment on the part of the landowner. In that same report, Mr. McNeel and Mr. Swan conclude, "Landowners should not expect to receive any stumpage for their juniper stumpage".

Factors affecting costs of harvest include remoteness of the site (access to fallers, firewood cutters), tree density and tree size, slope and the land management requirements placed by the landowner or land management agency.

Factors affecting Tree Value

Many factors affect western Juniper tree value and its acceptance in the market place. The form of the tree is its greatest down fall. Known for its large base that quickly tapers to a small tip. This tree form limits recovery rates of sawn boards and produces a high percent of waste.

Other factors affecting its usefulness and value include:

Older trees tend to have rotten centers
Heavily limbed (lots of knots)
Lacks acceptance in large mills
Low volume per tree
High harvest cost per volume
High freight cost per volume

Distance to major fiber markets
Lack of industry specific infrastructure for the commodity

Due to these factors and others, for many landowners, commercial harvest will not be an option, even if the landowner is willing to give the timber to contractor.

Conclusion

Many landowners have said that, "someday, these trees will be worth something, why are we wasting them today?" The majority of trees cut today (by my estimates 90-95%) are either eventually burned or decay on site. Removal of the bole or trunk of the tree is limited to sites with easy access to the public (both roads and proximity to the population).

Given the rapid increase of juniper over eastern Oregon rangelands, the negative watershed impacts these acres represent, and the lack of economic justification for commercialization, the Juniper Task Group felt, and therefore recommended to the Board of Forestry that western Juniper did not represent a commercial tree species and that activities related to its harvest and follow-up land treatments be removed from the jurisdiction of the Forest Practices Act and be addressed by the Sub-basin Agricultural Water Quality Management Plans, commonly referred to as SB1010 plans.

I again thank you Chair Kropf and the other committee members for the opportunity to address you today in regards to SB315A. I would be happy to address any questions that you may have.

Western Juniper's Growing Influence in Eastern Oregon

Estimated Acreage	1936	1988
> 10 percent cover	420,000	2.2 million
Total area with juniper		6 million

Volume of current stand -------- 467 million cubic feet

Private landowners own 58 percent of the area and 49 percent of the volume

BLM is the principle owner of public lands with juniper – 79 percent of publicly owned juniper forest

Over ½ of the present juniper forest became established between 1850 and 1900 (greatest increase came between (1879 and 1918).

Rate of Establishment	
1650 – 1800	2900 acres/year
1800 – 1850	8200 acres/year
1850 – 1900	23,100 acres/year
1900 – 1940	6000 acres/year

52 percent of juniper grows in the 10 – 15 inch precipitation zone

41 percent of juniper grows between 4000 – 5000 ft. in elevation

Juniper crown intercepts more that ½ of the annual precipitation

Juniper transpires water year round compared to seasonal transpiration of other vegetation

Juniper roots can extend several times the crown diameter

Almost 50 percent of juniper forests have crown covers 10-20 percent

Juniper woodlands have up to 10 times the erosion rate of sagebrush – grass ecotypes (Buckhouse et. al.)

Average cubic volume of wood per acre in juniper forests is 200 cubic feet

Over half the area of juniper forests have fewer than 50 trees per acre

Counties with more that ½ million acres of juniper

Crook	857,000	Harney	884,000
Grant	539,000	Jefferson	582,000

Information from:

Gedney, D.R. et.al. (1999). Western Juniper in Eastern Oregon. USDA Forest Service. Pacific Northwest Research Station. General Technical Report, PNW-GTR-464, November 1999.

Buckhouse, J. et al. (1982). Potential Sediment Production within Vegetative Communities in Oregon's Blue Mountains. Journal of Soil and Water Conservation. Vol. 37, Number 2. Pgs. 120 – 122.

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