

DRAFT - February 19, 1998

Strategic Plan

Western Juniper Commercialization Project

Introduction

Resource (How Much Is There?)

There are approximately 3.8 million acres of western juniper (*Juniperus occidentalis*) woodlands within its primary range of eastern Oregon, northeastern California, and southwestern Idaho (10% canopy cover or more). About 58% of this acreage is on public lands managed by the Bureau of Land Management, U.S. Forest Service, State, Indian tribes, and other Federal agencies, and about 42% is privately owned. There are literally millions more acres of scattered juniper and areas in which young juniper are just now becoming visible on standard resolution aerial photography.

Western juniper is the least-utilized wood fiber resource in this region. Total woodland volume is estimated to be at least 691 million cubic feet (MMCF)¹. About 39% of the volume is on private lands and 61% on public lands. Volume data, for the most part, do not include western juniper on forested lands which, according to industry, has the best commercial potential because of form and access (Swan 1997).²

Western juniper has less than one-tenth the standing volume of red alder (7,436 MMCF), but more than twice as much standing volume as myrtlewood (California-laurel) (297 MMCF). Current western juniper volume estimates rank it fifth among 10 common Pacific Northwest hardwood species (number one is red alder and number 10 is giant chinkapin).

Background (Where Have We Been?)

The Western Juniper Commercialization Project (Project) is an ad hoc effort to develop an integrated industry which uses western juniper to ensure long-term sustainability of the resource, benefit landowners and local communities, and fully utilize and add value to surplus raw material produced by ecosystem management activities³.

The Project was begun in 1992 as a result of feedback from a Forest Products Industry focus group run by the Winema National Forest (Klamath Falls, Oregon). Forest Products Industry

¹One cubic foot of juniper is estimated equivalent to three to four board feet. This is less than the rough rule-of-thumb of five board feet due to poor form (juniper is more like a carrot than a cylinder).

²A significant portion of forested lands which have western juniper in their understory are within National Forest System boundaries, and are not included in Pacific Northwest Research Station Oregon and California field sample plots.

³Mission statement of Western Juniper Commercialization Steering Committee (1994).

representatives saw juniper as a potential new source of fiber, and wanted to find cost-effective processing methods and markets for juniper cut down by ranchers to improve grazing lands. Industry representatives recalled a number of small-scale, commercial juniper manufacturing and marketing trials over the years, but only one manufacturer who had any success, and even that lasted for just a few years in the late 1970s (Gumpert, Prineville, OR.).

Preliminary market exploration conducted by Sycan Forest Products (now 4-Mac Industries) confirmed that juniper could be used for air-dried fencing, radius-edge decking, and landscape timbers. There was also interest expressed by manufacturers in using the higher-grade lumber for flooring, cabinetry, furniture, interior paneling, novelties, and as a substitute for species that were becoming difficult and expensive to acquire. Additionally, markets were explored and confirmed for low-grade material (dunnage and pallets) and milling residual (composites).

Interest in the commercialization of juniper prompted the first "Juniper Forum" in 1993. One result of the Forum was that an ad hoc "Steering Committee" was formed. Steering Committee participants represent the full range of interests involved in the commercialization of a new species, including industry, landowners, university extension, government agencies, and non-profit economic development organizations. Logistical support and facilitation of the Steering Committee and its projects are a combined effort of the Forest Service, a retired private business consultant hired by the Steering Committee (Dick Handley), a non-profit economic development organization (Klamath County Economic Development Association), Oregon State University Extension, and the Northwest Wood Products Association.

Current Status (Where Are We?)

There has been a steady increase in manufacturer interest in western juniper and market trials since 1992. Major reasons for this include: 1) Commitment and involvement of a core group of companies; 2) Cash financing from the Oregon Regional Strategies Program; and 3) Continuity in leadership of the ad hoc Western Juniper Commercialization Steering Committee. The largest increase in manufacturer interest has occurred over the last 12 to 18 months, due to the activities of an Industry Facilitator (Bill Breedlove), who was hired with Regional Strategies funding and is supervised by the Industry Steering Committee.

Cash and in-kind contributions for Project activities have totaled over \$1 million dollars over the last five years (1993-97): About \$250,000 came from a mixture of Federal, Forest Service, and university programs; \$360,000 from the Oregon Multi-Region Strategies Program⁴; and approximately \$500,000 from private industry. Over 100 partners have been involved in Steering Committee projects over the last five years.

Serious market interest has been confirmed for juniper chips, sliced veneer, logs for log homes, landscape timbers, decking, flooring, interior paneling, doors, cabinetry, rustic and conventional furniture, store displays, picture frame moulding, and miscellaneous gifts and accessories. The marketing emphasis for log/lumber products has changed during the last couple of years from

⁴Multi-Region Strategy Governor grants are part of a state economic development program which uses a highly competitive process to choose projects which will create or sustain family-wage jobs in rural Oregon, and benefit more than one region. It is funded by Oregon lottery dollars.

commodity products (e.g. fencing and decking) to specialized niches (e.g. gifts and novelties, architectural accents, store displays, and custom log and timber frame homes). Although on a small scale, western juniper products are being distributed nationally (Connolly Wood Products doors, Kolbe and Kolbe) and are in a retail store chain coast-to-coast (Pendleton Woolen Mills).

There are between five and 10 "cottage industry"-size manufacturer (fewer than two employees) and one medium-size manufacturer (about 10 employees) who consistently use juniper for value-added products, and twenty or more who do so for custom orders. Although juniper production volumes are small by normal industry standards, the growth curve looks good. There are currently five to 10 portable mills (average production less than 2 MBF feet per day) and one medium-size mill (average production 20 MBF per day) which cut juniper on a special order or custom basis. Total aggregated juniper lumber production at this time is estimated to average at least 15 MBF per month.

Kiln-dried juniper lumber inventory and availability continue to improve. Currently, truckload quantities of kiln-dried lumber are available on a 30-45 day turnaround basis. Depending on specifications, there is normally sufficient inventory to ship thousand board foot-units within days of receiving an order.

In terms of fiber markets, semi-clean juniper chips (less than three percent bark content) have been accepted off and on since 1992 by the Collins Products hardboard plant (Klamath Falls), which uses a dry process to manufacture exterior siding. The plant does not currently accept juniper chips, but according to Kevin Platte (chip buyer and quality control supervisor), would consider it if the price is lower than that of pine or white fir (estimate \$70/bone dry ton versus the current \$80/bone dry ton for pine or white fir). Other commercial applications for western juniper fiber and oils are being investigated by a unique consortium of research interests at Oregon State University, involving five different departments and schools.

Future Direction (Where Is The Western Juniper Commercialization Project Headed?)

It is an almost overwhelming task to commercialize a previously non-commercial species in a manner which benefits the land and generates sufficient profit for private industry to stay involved. This means that Project goals and activities are complex and interactive, and are not necessarily as straight-forward as a private business venture. To illustrate, the Steering Committee has been active in 12 key strategic areas, ranging from inventory to marketing (see footnote below)⁵. At least eighteen "stakeholder" groups have also been identified (see *Stakeholders and Expectations* section)⁶.

⁵Key Strategic Areas: 1) Inventory; 2) Stimulating Private Business Interest & Motivation; 3) Markets/Products & Distribution Channels; 4) Science; 5) Harvest; 6) Management; 7) Primary Processing; 8) Secondary Processing; 9) Technology Transfer; 10) Public Awareness/Input/Involvement; 11) Government Agency Awareness/Input/Involvement; 12) Integrating Activities and Interests, and Building a Sustainable Organization.

⁶Stakeholder is defined as any group or individual who can affect or is affected by the achievement of Steering Committee goals and objectives.

Interest and funding support for the Western Juniper Commercialization Project have remained high over the past five years. A major reason for this is that Project goals satisfy a unique combination of interests. For example, the Forest Products Industry is interested in alternative fiber resources and new markets, and many major Oregon forest product company owners and families own large tracts of western juniper woodlands in Eastern Oregon. The Agriculture Industry and government land management agencies are interested in improving rangeland habitat and decreasing costs associated with thinning juniper woodlands. Finally, local, state, and Federal economic development programs are interested in creating or sustaining jobs in rural areas, especially where reductions in Federal timber supply have severely impacted local economies.

It is assumed that public cash contributions from the Oregon Regional Strategies funding will not be available after the two currently-approved projects are completed: Alternative Fiber Markets (December, 1998) and Industry Facilitator (June, 1999). The major reasons for this are on-going legislative and economic development programmatic changes, and the Steering Committee's previous success in obtaining Regional Strategies funding. Other public funding sources may be available though, especially if significant progress is made in generating 1) cash match, 2) family-wage jobs in rural areas, and 3) more treated acreage.

[May or may not include in Strategic Plan].....

Following are some problem areas identified by the Steering Committee:

Harvest Costs - Special techniques and equipment design are needed to significantly reduce costs and assure the option of slash dispersal. These are being worked on, but costs are not going to drop overnight.

Economies of Scale - The western juniper industry needs higher volume logging and manufacturing operations to obtain economies of scale, and assure consistent supply quantity and quality.

Marketing - Before higher volume operations can be developed, markets must be identified and entered which will absorb additional volume.

Falldown and Residuals - Markets have to be developed for falldown and residuals. On-going work with Oregon State University and the first, whole-log shavings mill west of the Rockies show promise, but it will take time to develop the infrastructure that the wood products industry takes for granted for other species.

Increasing and Maintaining Public and Government Agency Awareness, Support, and Participation - The Steering Committee has been successful in obtaining the support and participation of private industry and landowners. However, it is has become obvious that maintaining communication and organizing funding support from public agencies and non-profit environmental organizations is another full-time job.

Maintaining Communication and Networking - Communication and information exchange do not take place without someone to organize them. Besides personnel time, a small amount of

baseline project funding is needed. It is almost impossible to finance large-scale communication methods, such as newsletters and conferences, without some public support.

Relevant and Compatible Resource Inventory - It is difficult to convince private industry to invest significant capital without better inventory data. From a business perspective, key inventory questions are: 1) How much is there?; 2) What is the quality?; 3) Where is it located?; and 4) How accessible is it (considering physical, geographic, legal, and social factors)?⁷

⁷The Forest Service Pacific Northwest Research Station plans to conduct another large-scale inventory of western juniper woodlands in 1999 (results should be available in 2000). It appears sampling and field plot methodology will include data categories which will address potential log quality and improve characterization of early woodland development.

Mission

Western Juniper Commercialization Industry Steering Committee

The mission of the Industry Steering Committee is to develop an integrated Western Juniper Industry which ensures long-term sustainability of the resource, benefit landowners and local communities, stresses value-added processing and full utilization of raw material, and uses the unique characteristics of juniper to meet a broad spectrum of customer needs at competitive prices.

Stakeholders and Expectations

Western Juniper Commercialization Industry Steering Committee

	<u>Stakeholders</u> ⁸	<u>Expectations</u> [About What?]
1.	Consumers	Satisfy needs; available; value-priced; acceptable quality; credibility; trust;
2.	Retailers/Distributors	Reliable providers; acceptable price; acceptable quality; reasonable profit; acceptable delivery schedule;
3.	Secondary Processors	Reliable lumber supply; reliable quality and lumber grading rules; acceptable price; reasonable profit; technical and marketing assistance; markets for fall-down;
4.	Primary Processors	Available log supply at acceptable price; sufficient order volume for economies of scale; lumber grading rules acceptable to secondary manufacturers; reasonable profit; technical and marketing assistance; markets for residuals;
5.	Artisans	Access to character material; marketing assistance;
6.	Harvesters	Access to raw material; log grade guidelines; reasonable profit; technical assistance; minimum regulation;
7.	Private Landowners	Low- or no-cost juniper clearing or thinning assistance (some want cash for better form trees); rangeland habitat improvement; improved surface waterflow;

⁸Stakeholder is defined as any group or individual who can affect or is affected by the achievement of Steering Committee goals and objectives.

Stakeholders	Expectations	Needs and desi
8. Public Land Managers	Reduced costs to thin juniper woodlands; rangeland habitat improvement; slash dispersal (in many cases); increase in acres treated;	
9. Private Industry Employees	Steady work and competitive wages; safe work environment;	
10. Investors	Market return on investment;	
11. OEDD/Regional Strategies	Meet contract deliverables; create family-wage jobs, especially in rural and economically-depressed areas; build sustainable industry; build partnerships between public and private entities;	
12. Communities/Local Economic Development Boards	Create family-wage jobs; help maintain forest products industrial base and family-owned businesses;	
13. Ag. Industry/Cattleman's Assoc.	Reduced costs of thinning and clearing juniper; improve rangeland and forage production; improve watershed health;	
14. NW Wood Products Association	No competing association; new members for own organization; new markets for members;	
15. Local Government & Legislators		Needs and desi
16. Environmental Organizations (e.g. Oregon Natural Desert Assoc. & ONRC)		Regular commu opportunities to education; actio
17. Media	Regular communication with Steering Committee;	n o t i f i c a t i o

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18. Competition

[Who and what are the expectations?]

Planning Assumptions

Western Juniper Commercialization Industry Steering Committee

Legal Assumptions

State Forestry Regulations - Western juniper will not be classified as a commercial species (i.e. no required harvest plans, severance tax, or regeneration requirements);

Federal - There will be legal challenges to Federal land management actions;

Science & Management Assumptions

Science - There will be continued progress on research and publication of findings concerning key management issues;

Private Landowners - Land management objectives and attitudes of private landowners may differ somewhat from the public sector (more clearing than thinning, and less emphasis on seeding and slash dispersal). This will result in increased scrutiny of juniper management actions on public lands;

Public Land Managers - Looking for partners to reduce costs of thinning juniper; interested in new ways to accomplish vegetation management objectives; will support and assist scientific research on a unit by unit basis, rather than in an organized and cohesive fashion;

Harvest Assumptions

Link to Best Science Available - Increased training and education will be needed to link harvest practices with best known science and recommendations (e.g. leaving all old growth and trees with complex branch structure or cavities);

Harvest Costs - Average commercial harvest costs per green ton are \$25-\$35. Harvest costs will decrease to \$15-\$25 as new equipment, techniques, and reliable buyers are developed (high range costs includes \$5/green ton allowance for payment to landowners for high quality logs).

Juniper-Specific Harvest Equipment - Equipment designed and manufactured specifically for juniper harvest will be in operation within three years.

Log Supply/Lumber, Panel, and Shavings Inventory Assumptions

Inventory Data⁹:

E. Oregon = 224 MM cu. ft. Public + 217 MM cu. ft. Private = 441 MM cu. ft. Total
NE Calif. = 176 MM cu. ft. Public + 47 MM cu. ft. Private = 223 MM cu. ft. Total
Idaho = 23 MM cu. ft. Public + 5 MM cu. ft. Private = 28 MM cu. ft. Total

Highest Vol./Ac. E. Oregon Counties - _____

Private Land Log Supply - Log supplies are sufficient from private lands to support three to five geographically-separated, medium-size processing operations (2.5 MMBF/yr. or 13,000 green tons of fiber) for foreseeable future; best source of logs will be from ranchers, who often belong to the Oregon Cattleman's Association; close contact must be maintained with Oregon Cattleman's Association, Soil and Water Conservation Districts, and other watershed interests, to maintain support and access to private log supply;

Publicly-Managed Log Supply - Both BLM and the U.S. Forest Service want to work with harvesters to thin woodlands; important to develop Federal and State supply sources to balance private landowner log prices; assume one- to two-year lead-time for Federal agencies to produce significant project acreage (more than 40 acres/project);

Publicly-Subsidized, Private Log Supply - Communication must be maintained with Natural Resource Conservation Service (USDA), Soil and Water Conservation Districts, Resource Conservation and Development Areas, Oregon Fish and Wildlife Dept., and various watershed councils to ensure opportunities to harvest juniper for publicly-subsidized projects are recognized;

State-Wide Log Inventory - Need to have 100 MBF board feet equivalent of saw logs decked before December 1st for at least the next two to three years to respond to orders (500 green tons or at least 1,250 logs [averaging 800 lbs/log]);

State-Wide Lumber Inventory - Need to maintain inventory of 50 MBF of KD tight-knot or better 6/4?? to respond and commit to larger orders;

State-Wide Edge-Glue Panel Inventory - Need to maintain inventory of _____ MBF to respond and commit to orders;

Shavings Operation Inventory - Projected raw material needs: 1st year = 4,900 green tons (12-16,000 trees or 150-300 ac.); 2nd year = 13,000 green tons (33-43,000 trees or 400-800 ac./yr.).

Processing Assumptions

⁹One cubic foot of juniper is estimated equivalent to three to four board feet. This is less than the rough rule- of-thumb of five board feet due to poor form (juniper is more like a carrot than a cylinder).

Log Sort - Saw log sort criteria will improve recovery data from an average of 5 tons/MBF to 4 tons/MBF.

Chip Market - "Dirty" chip market prices (1-2% bark) will remain in the range of \$70/BDT to \$90/BDT for next 12 months; juniper chips will receive on average \$10/BDT less than other species; someone interested in providing juniper chips will have to commit to contract for minimum of _____ BDT/yr;

Hog Fuel - Hog fuel market will remain depressed at prices of between \$10/BDT to \$15/BDT.

Shavings - Shavings plant in Klamath Falls will draw in more saw logs (uncertain whether or not there will be an increase in supply or most will go to shavings....will also have to deal with 8 ft. lengths);

Saw Log Storage - Saw logs and better will be end-sealed to reduce end-splitting and improve recovery if stored for longer than 30 days.

Secondary Processing Fall-Down Utilization - Fall-down utilization networks will be developed for 50% of the fall-down from secondary manufacturers within five years.

Primary Processors (includes shavings operations) - There will be three to five medium-size processors within five years (2.5 MMBF/yr. or 13,000 green tons of fiber), along with five to 10 small scale sawing operations (125 MBF - 500 MBF/yr. production). Most will run only on a part-time basis. It is expected that small-scale sawing operations will produce about 50% of the lumber needed for next two years.

Secondary Processors - Will require 300 MBF to 350 MBF per year of tight knot or better lumber within two years; will have five to 10 processors using on average 20 MBF to 50 MBF per year;

Artisans - Number of full-time artisans who use juniper for a significant amount of their production will increase about 100% over next two to three years (from around five to 10); most artisans will continue to procure most of own material, but will begin to participate in projects where logs are sorted and "character" wood and logs are set-aside for the artisan raw material market;

Oil Production - By year five, about _____ lbs./yr. of leaf oil expected. No heartwood oil production expected unless better markets are found.

Marketing Assumptions

Eastern Redcedar (ERC) - Within five years, juniper will acquire 50% of current ERC market share in Pacific Northwest and California for animal bedding, paneling, closet, chest, and drawer lining, drawer and closet accessories, sliced veneer, craftsman lumber market, particle board, and some gifts and accessories. **[What is total ERC market value and volume, and in what product lines?]**

Volume - Higher volume lumber orders will produce economies of scale and better quality for secondary manufacturers; minimum particle board production run is _____, which requires _____ BDT of shavings???

Product Differentiation - Must clearly differentiate western juniper from other commonly-available species in Pacific NW and Western U.S.

Fiber - Animal bedding market will be most viable fiber market for foreseeable future; initial sales will be through established distributors; extra effort will be needed to access more profitable niches and distribution channels;

Chips - Viable chip markets can be developed, especially in Southern Oregon (Collins Products, Klamath Falls), but it will take consistent volume and acceptance of lower prices than paid for other species (average \$5 to \$10 less per BDT).

Traditional Architectural Accents and Furniture - The traditional architectural accent market, such as doors, cabinetry, flooring, paneling, outdoor fixtures, and high-end, traditional furniture, will be a major component of the total juniper market.

Rustic Architectural Accents and High-End Furniture - Rustic architectural accents and furniture will continue to be critical to stimulate interest, and open and penetrate new markets.

Marketing Assistance - There will not be sufficient revenue to support full-time, traveling salespersons for the foreseeable future (within the next three years).

Niche Markets - Niche markets, such as gifts and accessories, picture frames, store displays, and funeral items, are viable and worth pursuing once sufficient high-grade volume is produced to achieve economies of scale (estimate 300 MBF to 350 MBF per year).

Industry Facilitator - Regional Strategy funding for the Industry Facilitator will not continue beyond June, 1999. Other public funding sources may be available if significant private industry cash match is available (\$30,000 to \$50,000). Support could also be generated for special legislative authorization or direction, if undertaken in partnership with a major industry group, such as the Oregon Cattleman's Association. Approximately \$100,000/year is needed for Industry Facilitator activities.

Organizational Assumptions

Voluntary Assessments and Fees for Services - It is estimated it will take up to five years to generate an average \$150,000 per year in revenue, which will support an Industry Facilitator, modest marketing campaign, and contracted office and association services;

Successor to Western Juniper Commercialization Steering Committee - An independent board and officers, elected by a dues-paying membership, is foreseen as the logical successor to the current Industry Steering Committee; the time is not ripe yet to make the decision to seek non-profit status yet, due to lack of a reliable revenue stream.

Models - Other association examples and bylaws are available for review and adaptation to the particular circumstances of the Western Juniper Commercialization Project.

Revenue-Producing Assumptions

Self-Assessment - The best way for the Steering Committee to generate revenue is to expedite orders for everything from logs to residuals, and adding a percent to the price;

Modest Annual Association Fee - Once an association is formed, annual dues could be collected; services provided by the association will include _____;

Fee for "Western Juniper Certification" and Use of Logo - **[Is this included in the self-assessment program?]**

Public Events - Produce and conduct money-making public events, such as the Western Juniper Forum.

Expand Membership Pool - Include all stakeholders in commercialization of western juniper (private landowners to marketers). Also include Idaho and NE California.

Fee for Use of Grade Stamp - Collect modest fee for use of grade stamp program.

Business Cards - Continue sale of juniper business cards.

Trade Shows - Organize and rent western juniper trade show booth and space.

Business Linkages - Collect modest fee when business linkages result in sales.

Business and Marketing Plans - Charge modest fee to help research and prepare business and marketing plans specific to juniper.

Western Juniper Newsletter - Will be self-supporting at \$5/yr. subscription along with modest government agency contributions (<\$1,000). Assuming production and mailing costs will average \$1,200/issue, writing/editing are contributed, and mailing list does not exceed 1,500. **[Have to check these assumptions with Scott.]**

Emerging Issues

Western Juniper Commercialization Project Industry Steering Committee

Increasing Lumber Demand - How can the Steering Committee assist in creating more demand for lumber, in order to achieve economies of scale, and consistent and reliable production?

Satisfying Stakeholders - What can the Steering Committee do to satisfy stakeholder expectations?

Facilitator Time and Regional Strategies Grant Resources - How can the Industry Facilitator's time be best allocated [**cannot lose track of Regional Strategies grant deliverables**]?

Bridge Funding for Industry Facilitator - Should the Steering Committee begin process to obtain public assistance for Industry Facilitator activities beyond June, 1999? What sources should be consulted and who else should be included?

Voluntary Assessment - How can more manufacturers be signed-up for the Voluntary Assessment Program? What are the benefits and how can they be demonstrated?

Shavings Mill - What is the best way to assist the REACH shavings mill project?

Oil Production and Research - What uses appear most economically viable and how can the Steering Committee assist? What ones are feasible, but will require further development before additional funding can be obtained?

U.S. Forest Service Liaison Time - Which activities are most important from the perspective of the Steering Committee and OEDD/U.S. Forest Service, and what are the priorities for the approximately four to five months of time available?

Communication - How will the *Western Juniper Newsletter* be funded now that there is no Regional Strategies money to support it? What can be done to maintain networks and communication without public support?

Key Issues for Success

Western Juniper Commercialization Project Industry Steering Committee

[Have to be clear about which stakeholder and expectations will be addressed through this process, and which will not be addressed?]

[Order of priority taken from Mission Statement - order of priority and individual items may be changed by Steering Committee.]

Revenue and Profit - What can the Steering Committee do to increase gross revenue and profit derived from juniper products and services?

Woodland Acreage Thinned - How can more juniper woodland acreage be thinned and rangeland habitat restored?

Private Investment - How can more private investment be obtained to continue growth of Juniper Industry and increase acres of rangeland habitat restored?

Bridge Financing - Which publicly-funded Western Juniper Commercialization Project services are critical to success, and how should they be paid for between now and when there is sufficient revenue generated to sustain a small association and its activities (assuming significant reductions in lottery dollars and Federal funding)?

Communication and Networks - Communication with which stakeholders should be emphasized, what methods should be used, which networks should be maintained and enhanced, and how should this be done?