A Critique of “A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest”

by Andy Kerr

Abstract

**A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest** is perceived by many to be an ecological restoration plan for 689,827 acres of National Forest System lands in south central Oregon. While it is a management plan that includes state-of-the-art ecological restoration information and recommendations for ponderosa pine-dominated forests, the document also includes recommendations for lodgepole pine-bitterbrush, red fir and mountain hemlock forests that emphasize timber production and revenue generation rather than ecological restoration. The document should not be construed as a template for the conservation and restoration of lodgepole pine-bitterbrush, red fir and mountain hemlock forests.

Introduction

There is much interest in and controversy around the conservation and restoration of publicly owned forests in the Oregon. Degraded public forests can generally be classified into two types: (1) monoculture plantations; and (2) fire-suppressed dry ponderosa pine and dry mixed-conifer forests. There is an emerging consensus that the thinning of younger trees that are generally more fire-vulnerable can often benefit the conservation and restoration of ponderosa pine-dominated forests by reducing stress due to competition and also reduce the risk of stand-replacing fire. After such restoration thinning from below, fire must be carefully reintroduced into treated stands. In many cases, fire can be reintroduced without first thinning.

The Klamath Tribes commissioned K. Norman Johnson of Oregon State University and Jerry F. Franklin of the University of Washington to prepare a management and take-over plan to aid their quest to transfer 689,827 acres of the Fremont-Winema National Forest to tribal control. The result is a publication entitled *A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest* (hereafter, “*A Plan*”).

The Klamath Tribes’ multiple objectives included both restoring ponderosa pine-dominated forests and also producing revenue from the management of what would be the “Klamath Reservation Forest.” Johnson and Franklin are pre-eminent in their fields and are universally recognized as experts in the conservation and restoration of Pacific Northwest forests. Congress, prior Administrations, federal land and resource management agencies, the media, the conservation community and others have sought their recommendations and perspectives.

When Johnson and Franklin speak, people listen, as they should. My concern is that *A Plan* is being viewed by many (who may or may not have read the entire document) as a plan that is
entirely transferrable to National Forest System management. It is not. As clearly disclosed, the plan was written to advise The Klamath Tribes that has many goals that are different from the statutory and policy goals for the National Forest System. In addition, I am concerned that the generally excellent recommendations in the plan as to the conservation and restoration of ponderosa pine-dominated forests are being conflated with the recommendations in the plan as to timber and deer production from lodgepole pine-bitterbrush forests. Following A Plan will not result in the conservation and restoration of lodgepole pine-bitterbrush forests.

**Underlying Premise: Tribal Ownership, Not Public Ownership**

The Klamath Tribes commissioned A Plan as part of an ongoing effort to transfer control to the Tribes of 1,078 square miles (689,827 acres, or a block of land 33 miles on a side) of federal public lands that are part of the Fremont-Winema National Forest. In 1954, the federal government “terminated” the official status of The Klamath Tribes, which resulted in the sale of reservation trust lands to private timber interests and the federal government (now part of the Fremont-Winema National Forest and the Klamath Marsh National Wildlife Refuge). The official status of The Klamath Tribes was restored in 1986.

While there is significant overlap, the purposes for which the Fremont-Winema National Forest is managed are different than the purposes for which a Klamath Reservation Forest would be managed. The Klamath Reservation Forest would be managed for the:

- Restoration of forest (stand structure) complexity;
- Reduction of average stand density to allow greater individual tree growth and shrub development;
- Reduction of overall fuel levels and continuity to reduce the potential for uncharacteristic stand-replacement fires;
- Restoration of more natural fire regimes;
- Increased habitat and carrying capacity for deer and elk, and other wildlife and fish species;
- Enhanced spiritual and cultural values; and
- Production of sustained monetary and subsistence income.

In general, national forests are increasingly and primarily managed for biodiversity conservation and watershed protection. While the archaic concept of “multiple use” that includes “outdoor recreation, range, timber watershed, wildlife and fish” is still on the books, the concept is increasingly and effectively marginalized by other statutes, regulations and policies—as well as changing public attitudes about the appropriate uses of public lands that discourage timbering and grazing. As Congress and a new Administration address climate change, it is likely that public lands will have a new effective, if not formal, purpose of carbon sequestration. Carbon sequestration is compatible with biodiversity conservation and watershed protection and some forms of outdoor recreation, but not timbering, grazing and other forms of outdoor recreation.

**General Premise: Ecological Restoration**

A Plan states:

*The basic principles guiding restoration of the Klamath Tribal Forest can be summarized as:*

* A Critique of “A Plan for the Klamath Tribes Management of the Klamath Reservation Forest”

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• Restoration of diverse, structurally complex forest ecosystems; and
• Enhancement and protection of the forest, wildlife, water, and soil resources of the reservation.

That is certainly generally and mostly the case for most of the forestlands in the covered area, as such forests are primarily ponderosa pine-dominated. A Plan notes:

*We believe that the desired future conditions should reflect the complex, pine-dominated forest landscape described in the 1921 (USDI Geologic Survey) and 1936 (USDA Forest Service) type maps of the Klamath Reservation Forest and other descriptions from the period. A copy of the aggregated version of the 1936 type map is included with this report (Appendix A, Map 1). The 1921 maps are available in the National Archives. This landscape showed a mix of ponderosa pine-dominated forest, wet meadows, dry meadows, “grassy glades,” lodgepole pine in flats (often with occasional ponderosa pine) and along streams, and hardwood patches in the uplands and along streams. These maps should guide the macro-architecture of restoration—the pattern of conifer forest, hardwood patch, meadow, and marsh that once typified the Klamath Reservation.*

However, a glaring and troubling exception to the general rule of ecology-based conservation and restoration for most forests in the covered area are the commercial forestry-based recommendations as it pertains to lodgepole pine-bitterbrush, red fir and mountain hemlock forests.

Ponderosa pine trees dominated the lands that were once the Klamath Indian Reservation. Most of the lands were pure ponderosa pine forests or mixed-conifer forests dominated by ponderosa pine, or other forest types where ponderosa pine was a component. A Plan notes that historically, 95% of the timber volume was ponderosa pine. Today, only 69% is ponderosa pine and much of it is threatened by the encroachment of other species that can outcompete ponderosa pine for moisture and/or contribute to forest conditions that jeopardize the ponderosa pine to loss from stand-replacing fires. There are now “(m)uch higher levels and proportions of white fir and lodgepole pine along with somewhat higher levels of sugar pine and Douglas fir/Incense cedar.”

A Plan classifies the 622,238-forested acres into major habitat types, based on plant association groups. They also classify another 46,089 non-forested acres. There are 21,500 acres that are not classified to make the total of 689,827 acres of National Forest System lands proposed to be transferred to The Klamath Tribes (Table 1).

**Recommended Management by Major Habitat Types**

Below I discuss A Plan’s management recommendations for major forest and non-forest habitat types. Table 1 displays the acreage of each habitat type, as well as summarizes the management recommendations as either ecology-based or forestry-based. The last column in Table 1 is my grade for A Plan’s recommendations for each major habitat type in the context of ecological conservation and restoration.
### Table 1
Major Habitat Types in “A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest” and Grading of Ecological Restoration Recommendations

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Acres</th>
<th>Management Emphasis &amp; Detail</th>
<th>Wood Production</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FORESTED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ponderosa Pine/Sagebrush</td>
<td>16,515</td>
<td>Ecological restoration by thinning young trees and/or reintroduction of fire. Extensive documentation of past, current and desired future conditions.</td>
<td>Secondary to ecological restoration with significant amounts of wood production expected.</td>
<td>A+</td>
</tr>
<tr>
<td>Ponderosa Pine/Bitterbrush</td>
<td>360,362</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Conifer/Snowbrush</td>
<td>89,277</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moist Mixed Conifer</td>
<td>40,375</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ponderosa Pine Dominated</td>
<td>506,529</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Fir and Mountain Hemlock</td>
<td>154</td>
<td>Timber production utilizing clearcutting or partial cuts for “regeneration harvest” (ecologically, a clearcut or its equivalent).</td>
<td>Primary, but little wood production due to insignificant acreage.</td>
<td>F</td>
</tr>
<tr>
<td>Lodgepole Pine/Bitterbrush</td>
<td>76,759</td>
<td>Modified commercial forestry to account somewhat for other forest values, including a single species (deer) emphasis for managing bitterbrush understory.</td>
<td>Primary.</td>
<td>F</td>
</tr>
<tr>
<td>Marginal Site &amp; High Elevation Lodgepole Pine</td>
<td>15,881</td>
<td>Custodial management with no restoration thinning or reintroduction of fire.</td>
<td>None.</td>
<td>A</td>
</tr>
<tr>
<td>Moist and Wet Lodgepole Pine</td>
<td>22,915</td>
<td>Restoration of declining hardwood component by removing increasing lodgepole pine component.</td>
<td>Secondary to ecological restoration with significant amounts of wood production expected.</td>
<td>A</td>
</tr>
<tr>
<td>Lodgepole Pine Dominated</td>
<td>115,555</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Forested</strong></td>
<td>622,238</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NON-FORESTED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Meadow</td>
<td>6,980</td>
<td>While recognizing importance and loss of meadows, recommendations are to first do an assessment of change in meadows in last 100 years. However, entire discussion is quite brief compared to discussion of major forest types.</td>
<td>None.</td>
<td>C</td>
</tr>
<tr>
<td>Wet Meadow</td>
<td>4,392</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Shrubland</td>
<td>2,934</td>
<td>Conserving and restoring native species and controlling exotics. However, entire discussion is quite brief compared to discussion of major forest types.</td>
<td>None.</td>
<td>C</td>
</tr>
<tr>
<td>Moist Shrubland</td>
<td>1,013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juniper</td>
<td>9,834</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sagebrush</td>
<td>12,151</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Vegetation</td>
<td>8,614</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>171</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Non-Forested</strong></td>
<td>46,089</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unclassified Acres</strong></td>
<td>21,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>689,827</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ponderosa Pine Dominated Forests.** Given that lands in question were mostly ponderosa pine (measured in either acres or board feet) and the species was historically the economically most valuable timber species, it is understandable that the most is known about the historical extent and character of these kinds of forests. *A Plan* exhaustively addresses the historical, current and...
desired future condition of these habitat types. Their recommendations for restoration are
detailed and include many pictures and tables. The portion of A Plan that deals with ponderosa
pine conservation and restoration is a worthy of going into a textbook.

**Red Fir and Mountain Hemlock Forests.** While eight pages are dedicated to the desired future
condition of ponderosa pine-dominated forests with tables, pictures, specific recommendations
and more, less than a half-page on the red fir and mountain hemlock habitat types. This is
understandable given both the paucity of their extent and information known about them. While
ponderosa pine may be a component of red fir and mountain hemlock stands, the species is not
likely ever dominant in a stand. The management recommendations for red fir and mountain
hemlock are brief enough to include here in their entirety:

Desired future conditions for these habitat types would be to maintain mixed
stands. Forest management could utilize a variety of silvicultural approaches,
including group selection and variable retention prescriptions for regeneration
harvests. Prescribed fire would not be a part of the management regime although
slash burning may be. On the higher elevation types, management should never
include clearcutting because of the severe conditions it creates for regeneration.xi
(emphasis added)

A Plan’s recommendations for the desired future condition of red fir and mountain hemlock
habitat types speak not of ecological conservation restoration but merely of timber production.
Ecological restoration is likely unneeded in these high-elevation forest types with a low- to
mixed intensity fire frequency and medium- to high-intensity stand-replacement regime.xii
“Group selection” is a clearcut and variable retention means variable amount of trees left from
few to a lot. The admonition against clearcutting at higher elevations would effectively moot the
recommendations to clearcut at all, as likely all 158 acres of this major habitat type is at higher
elevations. There is no recommendation for leave areas or reserves. A Plan’s recommendations
for red fir and mountain hemlock habitat types are rooted in commercial—rather than
restoration—forestry.

**Lodgepole Pine Dominated Forests.** A Plan categorizes three major kinds of lodgepole pine
forests: (1) lodgepole pine/bitterbrush; (2) wet and moist lodgepole pine; and (3) marginal and
high-elevation lodgepole pine.

A Plan acknowledges the low productivity of marginal and high-elevation lodgepole pine,
which often occurs on severe sites (low-productivity soils, frost pockets, etc.). Management
recommendations, though brief, are quite sound conservation:

Lodgepole pine forests found on marginal sites and at high elevations probably
are generally similar to those encountered historically and should generally be
allowed to develop under natural disturbance regimes. Logging such sensitive
habitats can often result in extended periods of deforestation.xiii

A Plan notes that most wet and moist lodgepole pine types are degraded due to fire suppression
allowing lodgepole pine to hardwood and other species. Management goals are quite sound
conservation and restoration:

The management goal for the wet lodgepole pine and related areas is restoration
of the hardwood component of these areas by reducing pine dominance using

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mechanical means and fire. Since wildlife values are high in these areas, restoration prescriptions will be largely guided and results assessed by wildlife staff. Since there is relatively little experience in restoring such areas, restoration also will need to be highly adaptive in aggressively assessing and modifying prescriptions and techniques.

Initial restoration work in wet lodgepole pine will take place in more constricted riparian areas found in upland drainages, such as the narrow wetland zones found along intermittent streams in the Wildhorse Ridge area. The prescriptions will include felling and removal of green lodgepole pine, retention of snags (as possible given safety issues) and other coarse wood, and experimentation with prescribed burning.\(^{xiv}\)

*A Plan*’s management recommendations for *lodgepole pine/bitterbrush* are the most disappointing. They have mostly to do with the social, economic and cultural desires of The Klamath Tribes and little to do with the ecological realities of the lodgepole pine/bitterbrush ecosystem. *A Plan* notes:

*Lodgepole pine is a relatively short-lived species in this region with a generational cycle of 75 to 150 years. Stand-regenerating disturbances include wildfire and mountain pine beetle epidemics. Lodgepole pine here typically regenerates well following such natural disturbances, assuming that a seed source remains....

We believe that much of the area characterized by the lodgepole pine/bitterbrush habitat type historically were occupied by mosaics of stands of different ages and, sometimes, low densities, due to natural wildfire and occasional insect outbreaks.\(^{xv}\)

Strikingly in contrast with the management recommendations for ponderosa pine-dominated forests, non-commercial lodgepole pine-dominated forests and other non-forest types, *A Plan* eschews ecological restoration goals and purposes and embraces those of resource production:

Management options for lodgepole pine/bitterbrush habitat are limited. Allowing stand replacement fires to burn uncontrolled throughout the type is not socially acceptable in the current landscape. Similarly, while the “boom and bust” pattern of lodgepole pine stand development experienced in the 20th century probably was part of the historical experience, it would be hard to argue that such a pattern provides desired resource values.\(^{xvi}\) (emphasis added)

*A Plan* seeks to accommodate The Klamath Tribes interest in both the production of very high levels of mule deer and revenues from timber production.

Among tribal values associated with the lodgepole pine/bitterbrush forests are provision of important habitat for mule deer and potential economic benefits from harvesting lodgepole pine timber, which currently has significant commercial value. Hence, a program for systematic management of lodgepole pine/bitterbrush forests should reflect these values.\(^{xvii}\) (emphasis added)

Timber production is *A Plan*’s primary goal for lodgepole pine-bitterbrush forests:

*A Critique of “A Plan for the Klamath Tribes Management of the Klamath Reservation Forest”*
We suggest that lodgepole pine/bitterbrush forests on the Klamath Reservation Forest be managed on a variable 75-150 year rotation reflecting the historical disturbance cycles of this type. Variable retention harvest prescriptions should be used in the regeneration harvests, with approximately 25% retention of green trees in both aggregated and dispersed patterns.\textsuperscript{viii} (emphasis added)

The proposed management of lodgepole pine/bitterbrush forest is a long way from a system of conservation reserves as the authors recommended for the Northwest Forest Plan.

We also suggest retaining a portion of the types in reserves, perhaps 10% of the entire acreage, and buffering the forest around natural openings and meadows.\textsuperscript{ix} (emphasis added)

When it is not about the timber production it is about the mule deer production:

A specific objective in managing these stands will be to perpetuate a healthy understory of bitterbrush; this consideration will be addressed in both logging and burning activities.\textsuperscript{x} (emphasis added)

A Plan notes that far less is known about the historic extent, ecology and silviculture of lodgepole pine because until recently it was little studied, as it wasn’t considered a commercial species. Today, lodgepole pine is twice as profitable to log per unit than ponderosa pine.\textsuperscript{xxi}

**Hardwood Trees.** A Plan notes that aspen, willow and other hardwoods—while never great in proportion to conifers—are important for foraging animals and other aspects of biodiversity. The document notes the challenges of restoring this component in the face of expanding elk populations (wolves could remedy the challenge). A Plan recommends identifying past abundance and location of hardwoods to guide the conservation and restoration of the hardwood component of the forest.

**Non-Forested Lands.** A Plan also briefly addresses non-forest habitats, such as wet meadows, dry meadows, dry shrubland, moist shrubland, western juniper, sagebrush steppe and vegetation-free areas. The document identifies wetland draining, livestock grazing, juniper encroachment of sagebrush steppe, drought, fire control, exotic species and other factors as causing the decline and/or degradation of such habitats and urges the conservation and restoration of such habitats.

**Comprehensive Restoration Recommendations Often Lacking**

While A Plan brings up other ecological issues such as riparian areas, roads, and livestock grazing, the document does not make anywhere near the substantive, quantitative or qualitative recommendations as it does for the ecological restoration of ponderosa pine dominated forests (or, for that matter, the economic exploitation of lodgepole pine/bitterbrush forests).

**Real Lodgepole Pine-Bitterbrush Forests Versus Recent Pretenders**

While I am critical of the timber production emphasis for lodgepole pine-bitterbrush forests, I only favor the conservation and restoration of true lodgepole pine-bitterbrush forests. As A Plan notes:

There is significant evidence to support the hypothesis that some forest sites currently labeled as lodgepole pine/bitterbrush are potentially ponderosa

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pine/bitterbrush sites. The typing call between the two types was based on the presence of the two species on the vegetation plots. Examination of the inventory plots revealed that over 20% of the CFI plots in areas called lodgepole pine/bitterbrush had sufficient ponderosa pine basal area to be typed as ponderosa pine/bitterbrush. In additional areas, stumps reveal that numerous large ponderosa pine have been removed. In yet other areas, fire suppression has allowed lodgepole pine to migrate up the slopes from the frosty flats and replace the ponderosa pine that were there historically. We feel that a high management priority should be shifting the forest composition on these sites currently occupied by lodgepole pine back to dominance of ponderosa pine. After these areas are identified, the lodgepole pine should be removed while retaining all existing ponderosa pine. Prescribed fire should be judiciously used to maintain and encourage a further compositional shift toward ponderosa pine.

I heartily concur. At 76,759 acres, lodgepole pine/bitterbrush forests currently comprise 11% of the covered lands (689,827 acres). *A Plan* notes that one-fifth of this 11% (15,352 acres) was historically ponderosa pine dominated-forest that has been invaded by lodgepole pine. So it’s actually only 61,407 acres (9%) of true lodgepole pine-bitterbrush forests on the covered area.

**Lodgepole Pine Schizophrenia**

*A Plan* reflects not only The Klamath Tribes desire to make money from lodgepole pine logging, but also acknowledges—either explicitly or implicitly—other societal prejudices against this lodgepole pine, including, but perhaps not limited to:

1. Lodgepole pine forests are generally not considered as esthetically pleasing to the eye as ponderosa pine forests. The former are often dense and scraggly, while the latter are often open and majestic.

2. By their nature, lodgepole pine forests do not attain what most people would consider “old growth.” Scientists generally recognize the onset of old-growth character for ponderosa pine, Douglas-fir and other species at ~150-200 years of age. 150-years old for a lodgepole pine is beyond ancient for lodgepole pine as the odds are very low of previously not having succumbed to disease, insects, wind, fire or a combination of factors.

3. The often communal nature and concurrent timing of the death of lodgepole pine trees is nearly always dramatic and displeases both the human wants for beauty and utility. A stand of predominantly or totally dead lodgepole pine looks neither pretty nor useful—unless you have the perspective of a black-backed woodpecker.

4. Ponderosa pine forests, because of both their historic utility and beauty have been vastly more studied than lodgepole pine forests. Only recently have lodgepole pine forests become more profitable to log than ponderosa pine forests. Most of the academic attention given to lodgepole pine forests has been more silvicultural than ecological.

5. As society prioritizes resources for conservation and restoration and simultaneously seeks to minimize reductions of timber production, its greater knowledge and appreciation of ponderosa pine forests and lesser knowledge and appreciation of lodgepole pine forests can make for an unstated and even unconscious tradeoff in areas where both occur.
6. Societal views of lodgepole pine forests is complicated by the fact that vast numbers of lodgepole pine trees have invaded ponderosa pine forests.

**Recommendations to the Authors, Public Policy Makers, The Klamath Tribes and the Conservation Community**

A. The authors should extract the state-of-the-art information and recommendations in *A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest* that pertains to ponderosa pine-dominated forests and publish it separately in a publication that speaks solely to ecological restoration needs and opportunities and is not mixed with controversial proposals to transfer public lands out of the National Forest System or with timber production-oriented forestry recommendations.

B. The authors should apply their prodigious, critical, talented, creative, visionary and rational minds to creating a set of ecological conservation and restoration recommendations for true lodgepole pine-dominated forests as they have for ponderosa pine-dominated forests.

C. Efforts to restore to tribal control lands that were once in the Klamath Indian Reservation should focus exclusively on lands that are now in private ownership.

D. Embrace the aspects of *A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest* that address the management of ponderosa pine-dominated forests, marginal site and high elevation lodgepole pine and moist and wet lodgepole pine.

E. Eschew the aspects of *A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest* that address the management of true lodgepole pine-bitterbrush, red fir and mountain hemlock forests.

**Lodgepole Pine: Lop It or Leave It?**

My lodgepole love is conditional. As they say in retail, it’s location, location, location.

I favor the killing and probable removal of lodgepole pine trees if said trees are invading either a riparian zone that was or should be comprised mostly of hardwoods or a natural ponderosa pine forest—and if it can be done without significant and/or permanent harm to soil, water and other forest resources. If such out-of-place lodgepole pine logs can be sold to offset ecological restoration costs, that’s fine.

However, if lodgepole pine trees occupy a site that is naturally a lodgepole pine-dominated forest or where lodgepole pine trees are a natural component of a mixed-species forest, then leave the lodgepole be.

Leave a natural lodgepole pine-dominated forest be, even though that stand is so thick as to be impassible to humans or it has or will soon likely expire in a fiery blaze, hellacious windstorm, insect infestation or disease outbreak. It is the nature of a lodgepole pine tree to live briefly and to die both dramatically and rarely alone.

Ponderosa pine forests are (or should be) sculpted by frequent low-intensity stand-maintaining fire. Lodgepole pine forests are (or should be) sculpted by infrequent high-intensity stand-replacing fire. If the fire gods and/or human intervention have conspired to prevent the dramatic
burning of an old stand of lodgepole pine, then the wind, the bugs or the pathogens will step up. Society needs to get used to it.

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iii Johnson, K. Norman, Jerry F. Franklin and Debora L. Johnson. 2007. A Plan for the Klamath Tribes’ Management of the Klamath Reservation Forest. (Download at http://www.klamathtribes.org/NEW/Klamath%20Plan%20Final%20May%202008.pdf)

iv The Klamath Tribes contend that Klamath Indian Reservation was sold against their will and that tribal members did not receive just compensation. The termination of The Klamath Tribes was unjust and sordid. The Larch Company feels that federal public lands should remain public for all to use and enjoy. If tribal members did not receive just compensation, they should seek redress of their grievance by seeking additional compensation. The Klamath Tribes are also seeking $21 million from the federal government to acquire the Mazama Tract of private timberland east of Crater Lake National Park that was once part of the Klamath Indian Reservation. (See __________. 2008 Proposed Klamath River Basin Restoration Agreement for the Sustainability of Public and Trust Resources and Affected Communities (January 15, 2008 Draft 1). (Download at http://www.edsheets.com/Proposed%20Klamath%20Basin%20Restoration%20Agreement%20%20%20January%20%2008%20Draft%2011.pdf.) The funding is part of a $985 million package that various interests have mutually pledged themselves to seek from the United States in the context the removal of four hydroelectric power dams on the Klamath River in both Oregon and California. The Larch Company supports the effort of The Klamath Tribes to regain those portions of their former reservation that are not in federal public ownership.

v Johnson, et al., page 2.


vii Johnson et al., 3

viii Johnson et al., 4.

ix Johnson et al., page 9

x Habitat types and acreages adapted from Johnson, et al., pages 10-11.

xi Johnson, et al., 20


xiii Johnson, et al., 25.


xv Johnson, et al., 21.

xvi Johnson, et al., 22.

xvii Johnson, et al., 22.

xviii Johnson, et al., 22.

xix Johnson, et al., 22.

xx Johnson, et al., 22.

xxi Johnson, et al., 22.

xxii Johnson, et al., 22.

xxiii Johnson, et al., 84-85