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Comments: Proposed Revised Land Management Plan for the Colville National Forest. Draft Programmatic Environmental Impact Statement.

First, I want to commend you for an excellent and informative website. The graphics in particular do an excellent job of distinguishing between the various proposals and making the material much easier to comprehend.

I have an MS degree in analytical chemistry from Colorado State with undergraduate degrees in geology and chemistry from Eastern Washington University. Cheney, Washington was my home in childhood and for years thereafter. I am familiar with these areas of the Colville National Forest and have visited, camped in, and hiked many of them in the past. I currently reside in Colorado. However, I believe that these areas are of global as well as regional ecological importance and that their significance does not depend on my own personal ability to access them for recreation. It is true that enhancing areas with which I am familiar with appropriate additions to protect and expand the wilderness would give me impetus to return for repeat visits!

I favor Alternative P, with it's landscape approach, with some expansions and modifications as described below.

I. Resilience and Climate Change

lines 2564-2566

"Resilience has been defined as "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks"

In my opinion, the overriding need driving elements for consideration for a new National Forest Plan is the threat posed by climate change as described here:

Draft Programmatic Environmental Impact Statement Chapter 3 p66 lines 2111-2114:

The key area of risk identified and related to this analysis is the expected forest mortality and long-term transformation of forest landscapes, caused by the combined effects of increasing wildfire risk, changing precipitation patterns, insect outbreaks, and increased spread of tree diseases.

In that regard, the current state of the forest is not sustainable, and as noted, poses obvious threat of insect infestation and catastrophic fire:

Draft Programmatic Environmental Impact Statement Chapter 3 p76 lines 2401-2405 and p 77 line 2418:

For all vegetation types except subalpine fir/lodgepole pine, there is an abundance of mid structural stage and a lack of late stages. This reflects the effects of fire exclusion, as well as the widespread stand-replacing fires of the early 1900s and past timber management. The majority of forest stands are in a mid-closed structure condition, showing smaller tree sizes than

would be expected historically, and for the dry type, more canopy cover.

In most cases the scale of recent insect outbreaks are unprecedented

I favor forestry management largely as given in alternative P as described here, with several caveats:

2546-2548 The proposed action and P alternative would promote structural and landscape complexity. The overarching emphasis would be moving the landscape toward HRV by modifying structure to increase resilience and adaptability.

Inadequate statement:

2496 The recent and projected insect and disease-related mortality show a need to move the forest structure across the landscape toward HRV.

Proposed change: Restoration to HRV should be a near term metric with an eye towards long term sustainability and elevation/ecological niche migration as necessary. It is important to establish methods for forest management and resiliency that allow for movement from HRV patterns while still retaining ecosystem integrity. Coming up with a statement that both protects the integrity of habitats such as old growth forests and provides the needed flexibility to allow for climate directed change will take the expertise of a skilled forester (which I am not). To do so in a definitive enough manner to preserve intentions through various governmental changes and to successfully navigate those changes will take considerable political savvy as well.

I agree that a reserve system such as that proposed in alternative R is likely to:

2835-2838 result in less likelihood of having resilient forests in the long term. Late forest structure presence on the landscape is likely to be cyclical, with long time periods required to move from early to late structure. There is also limited flexibility to respond to climate change or other landscape-scale changes.

This is a big reason why I favor P over R.

II. Fish and Wildlife

Fish: I was happy to see that:

5492-5493 The re-licensing terms for the Boundary Hydroelectric Project include the construction and operation of a hatchery to produce native salmonids to outplant into tributaries draining into Boundary Reservoir.

Proposed Change: I would like to see fish passage and road culverts addressed.

Woodland Caribou:

Caribou are well-known for their ability to use tree growing (arboreal) lichens as a major food source. As a result they are most often associated with mature coniferous forests that provide substantial quantities of tree lichens.

This is dated, but I think still applicable:

<http://www.umich.edu/~esupdate/library/95.10-11/zager.html>

"rethinking the temporal scale of recovery. Decision-makers, managers, and the public typically expect recovery programs to demonstrate highly visible, high-profile progress over a relatively short time frame. This is unrealistic because recovery programs are designed to reverse long-term population declines often resulting from decades of habitat loss or degradation. It is unreasonable to expect populations to respond quickly to recovery efforts that do not first consider habitat restoration that may take decades. Simply stopping or mitigating further habitat loss or degradation may not be sufficient."

"In our view, conservation efforts should be based on the biology of the species applied at much broader spatial and temporal scales than we typically use. This will require increased cooperation between Canadian and U.S. biologists and political bodies."

Predators such as cougar and wolves are also a problem

<https://www.theguardian.com/world/2016/may/13/caribou-endangered-species-act-us-canada>

Proposed change: I would like to see some specific language that protects specific habitat areas needed by specific species, including the old growth forests needed by woodland caribou and goshawk. But this should be dynamic, and promote not only the retention of key habitat areas at present, but also forest management leading to retention and development of such areas in the future.

Proposed change: The habitat restoration emphasis of alternative P needs to be enacted with species protective guidelines for policy implementation.

III. Water Resources

In facing climate change, conservation and ecological enhancement of water resources is imperative. Forests both require appropriate water resources and act to purify and retain it in the ecosystem.

Specific attention needs to be paid to riparian zones and to the retention of forest cover that aids snow retention and hydrological function of the ecosystem.

As noted:

3872-3873 Basins with a significant groundwater component may be less responsive to climate change than indicated by other research literature (Tague et al. 2008).

The current conditions should be an item of grave concern:

6270-6272 The Aquatic Ecological Condition, or AEC, for most subwatersheds on the Forest is rated as functioning at risk or not properly functioning.

The local population's Management indicator species, MIS/focal species status is rated functioning at risk or not properly functioning in most subwatersheds.

Riparian and aquatic resource management needs to be addressed at the landscape and watershed level, as given in Alternative P.

In the document, the section on rare plants has language such as:

3595-3599 Most of these sensitive plant occurrences are found in wetlands, moist meadows, and riparian habitats where this habitat element frames conservation concerns. This threat includes activities that affect the amount, timing, or quality of water maintaining sensitive plant habitat

within this group, including maintenance of ecosystem services from beavers. The risk rating is related to the exposure of plant sites to potential change.

Proposed change: Plant-centric sections such as the one in line 3872 above need to connect to sections deeper in the report, devoted to the importance of the maintenance of timing, quality and quantity of the water resources as a source for other life at that altitude as well as downstream to better reflect the interdependence of water and life.

Based on what I've read in Chapter and the material given in this table:

http://colvilleplanrevision.publicmeeting.info/Media/Default/Water/2016_0222_Water_Strategies_Table.pdf, I largely support the ARCS modified key watershed network, and Alternative P.

Proposed Change: I believe that the INFISH key watersheds, as given here,

http://colvilleplanrevision.publicmeeting.info/Media/Default/Water/2016_0222_Colville_Table1.pdf, and not covered under Alternative P should also be included therein.

IV. Carbon Storage

3748-3749 Recognize carbon sequestration as one of many ecosystem services. Carbon sequestration is one of the many benefits provided by forests, grasslands, and forest products, now and in the future

Proposed change: This section should include soil fungi and humic materials in soils.

V. Human Interactions with the forest

A. Economic Activities. Historically, this has focused on timber harvesting and grazing.

Proposed change; In my opinion, a transition can be made in which local communities develop a strong vested economic interest in ecosystem management. Selective timber harvesting can be a part of this, but within a context of retention of ecosystem function. In my opinion, livestock grazing should be phased out over time, in favor of wildlife enhancement.

B. Population Growth and Recreation. Human population growth leads to differing and frequently incompatible demands for recreational activities. Any of these activities (including hiking by foot) can be ecologically damaging if done inappropriately and/or in numbers that are too great.

3354-3355 Two species in this group, *Carex proposita* and *Eurybia merita*, occur in meadow habitats that are favored for recreational use or trails development.

3362-3363 Establishing trails and camping areas in locations that avoid these populations in addition to monitoring and initiating further surveys in suitable habitat are management actions that would improve conservation outcomes for these two species.

Proposed change: Efforts should include educational outreach, appropriate signage and closure of the areas if necessary.

Analogous methods should be utilized for other species including seasonal nesting and denning of endangered or threatened animals and birds.

C. Native American Rights and Interests.

Draft Programmatic Environmental Impact Statement Chapter 3 p68 lines 2168-2176

Desired conditions for American Indian Rights and Interests, for all action alternatives, would be for the Colville National Forest to: recognize and maintain culturally significant species and the habitat necessary to support healthy, sustainable, and harvestable plant and animal populations to ensure that rights reserved by tribes are not significantly impacted or diminished; recognize, ensure, and accommodate tribal member access to the Forest for the exercise of tribal rights and cultural uses consistent with law, policy, and regulation; and recognize and protect traditional cultural areas as associated with the traditional beliefs of a Tribe about its cultural history.

Proposed change: In the statement regarding Native American rights the word "desired" should be changed to something more definitive like "it is imperative that".

VI. Wilderness and Backcountry Areas

In my opinion, the provisions of Alternative P which allow for a "backcountry" designation, and the specific designation of Kettle Crest as a special interest area is a calculated risk predicated on the sound management of future Colville National Forest personnel to preserve ecological systems.

The Colville National Forest is one of the very significant areas where I developed my own love of nature. I would like to see future generations have those same opportunities. Without loving it to death.

Proposed change: I would like to see specific language that limits public access in areas and times key to wildlife or plant survival, and that limits the number of people that can access sensitive areas at any one time. Colville National Forest should actively encourage ecological ethics that foster self policing by interest groups (such as mountain bicyclists), so that a culture is developed that actively discourages or stops off trail and other abuse.

VII. Conclusion

I believe that Alternative P (with modifications and accountability) is potentially the best route to achieving these goals. However, in governmental policies, it is true that sometimes a plain "Just say NO!" is the policy which can most easily be implemented. In this case that would involve the straightforward preservation as opposed to P which offers more opportunities for thoughtful actions but also more "wiggle room" to evade such actions.

I am counting on the Colville National Forest personnel to follow through with thoughtful actions.

Gaythia Weis