

MORGAN NESBIT FOREST RESTORATION PROJECT: RESULTS FROM A PUBLIC ENGAGEMENT WEB-APPLICATION



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1. Introduction

The Wallowa-Whitman National Forest (WWNF) identified forest conditions in the Morgan Nesbit area that are at high risk of loss from disturbances (insects, disease wildlife). By applying a landscape approach, the WWNF has identified 87,000 acres where management will aim to move forest, riparian and grassland conditions toward an ecologically resilient landscape. Potential management actions include: To achieve this we will:

- Reducing stand densities to improve vigor and increase resilience to insects, disease, drought, and wildfire
- Maintaining and promoting fire and drought tolerant species
- Protection and promotion of late, old structure
- Reduction in fuel loads and reintroduction of fire on the landscape
- Restoring ecological function of riparian areas

Since members of the public may derive various benefits from this area, and may have differing opinions about how the project is carried out, there was a clear need for public engagement.

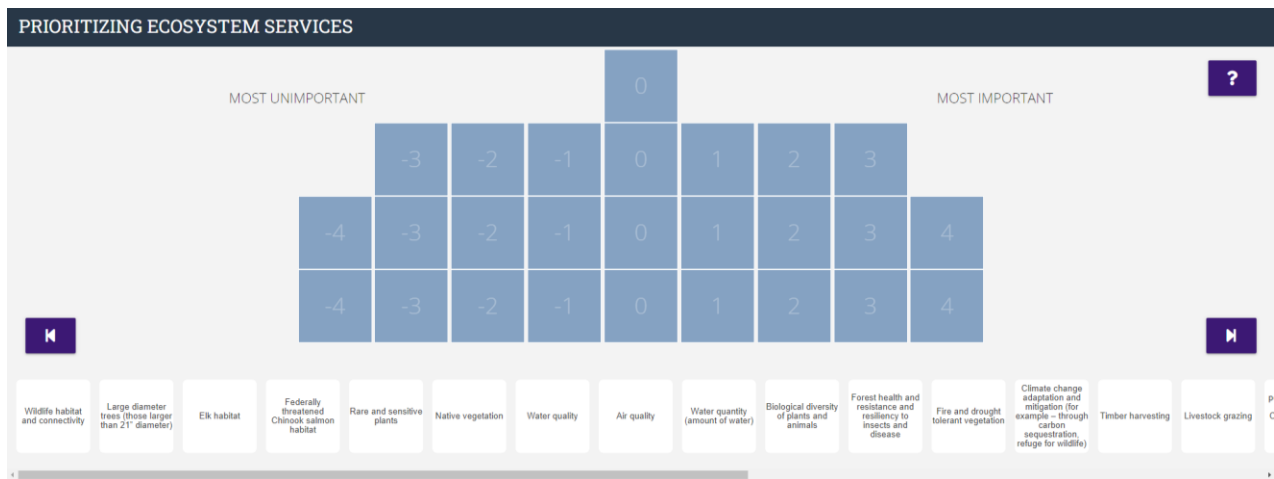
With limited opportunities for in-person gathering, the WWNF, in collaboration with USFS research and development, developed an online application to engage the public about the importance of ecosystem services, as well as the management actions that are considered influential to those ecosystem services. The online application was advertised to the public, via a press release, on March 15, 2021 (<https://www.fs.usda.gov/detail/wallowa-whitman/news-events/?cid=FSEPRD894705>). This brief report outlines the results of the online public engagement activity, which is a part of the broader public engagement campaign.

2. Methods

The methodological details presented herein are limited, for full details (particularly for analysis procedures) see: Armatas et al. (2021; 2019). Generally, the goal of this public engagement approach is to understanding public input on: (1) how people relate to the Morgan Nesbit area (i.e., what ecosystem services are important) and; (2) understand what management actions are influential to people's relationship with the area. More specifically, the public engagement activity included a three-step process.

First, members of the public engaged with a prioritization exercise, which included the sorting of 26 ecosystem services along a quasi-normal distribution (Figure 1), from most important (+4) to most unimportant (-4). Ecosystem services are generally defined as those benefits derived from nature. The ecosystem services were identified through consultation with research related to benefits flowing from public land, and further refined for local context through consultation with the WWNF.

Figure 1. A screen shot of the web-application for the ecosystem services prioritization exercise



Note: Members of the public were asked to place all 26 ecosystem services on this board, whereby the columns denote different values but the rows do not (i.e., there was a need to select two ecosystem services as +4 importance, three as +3 importance, and so on until the distribution was complete).

Second, immediately following the prioritization of ecosystem services, members of the interested public selected up to three management actions that were considered relevant to one's human-nature relationship (as expressed through the ecosystem services prioritization). The three management actions were selected from a list of 17, as shown in Figure 2. The list of management actions was developed through consultation with the WWNF around potential actions being considered within the context of the Morgan Nesbit project.

Third, to simply understand if a broad range of people provided input, we asked members of the public their age, zip code, length of connection to the Morgan Nesbit area, whether they had previously participated in a public engagement activity related to Forest Service planning and, finally, whether they had any additional comments. This report now turns to a brief overview of what we learned from the public input.

Figure 2. A screen shot of the web-application for the management action activity

CONSIDERING RELEVANT MANAGEMENT ACTIONS

Below are a list of different management actions or approaches being considered for the Morgan-Nesbit Resiliency Project. Please choose the three that you feel could have the most influence (positively or negatively) on your prioritization of ecosystem services.

Reduce stand densities (thinning of trees) to promote development of old growth trees, and to improve vigor and increase resilience to insects, disease, drought, and wildfire.	Remove shade tolerant species between 21" and 30" diameter to increase resilience to insects, disease, drought, and wildfire.	Reducing fuels (for example, woody debris removal, thinning of small diameter trees) for reduction of wildfire risk (generally trees up to 14" diameter).	Treatments in riparian areas to conserve and promote old-growth ponderosa pine.	Fish passage and improvement and enhancement of water resources and cycle (for example, removing and/or replacing culverts, de-commissioning un-needed roads).	Early Seral Restoration – promoting pioneer species (western larch and ponderosa pine) through intensive cutting of trees to make room for seedling trees.
Aspen restoration through the removal of encroaching conifers, creation of conifer snags (dead trees still standing), and/or protection from animals.	Use of prescribed fire to restore appropriate fire regimes.	Allowing naturally started wildfires to strategically burn to restore appropriate fire regimes.	Active management that focuses on reducing the potential for wildfire impacts to private lands (creating defensible space along high volume roads and private property).	Maintaining and/or promoting areas of dense canopy cover, downed woody debris, and snags (dead trees still standing) to improve or expand wildlife habitat.	Forest management objectives and actions that align with the Hells Canyon National Recreation Area comprehensive management plan.
Active management that uses heavy equipment.	Active management that uses hand-thinning techniques and less heavy equipment.	Reducing roads density.	Temporary road construction for purposes of active management during resiliency project.		

3. Results

This section on results provides an overview of who provided input, followed by a discussion of the importance ecosystem services (both overall and with regard to different perspectives) and management actions considered most relevant to members of the public.

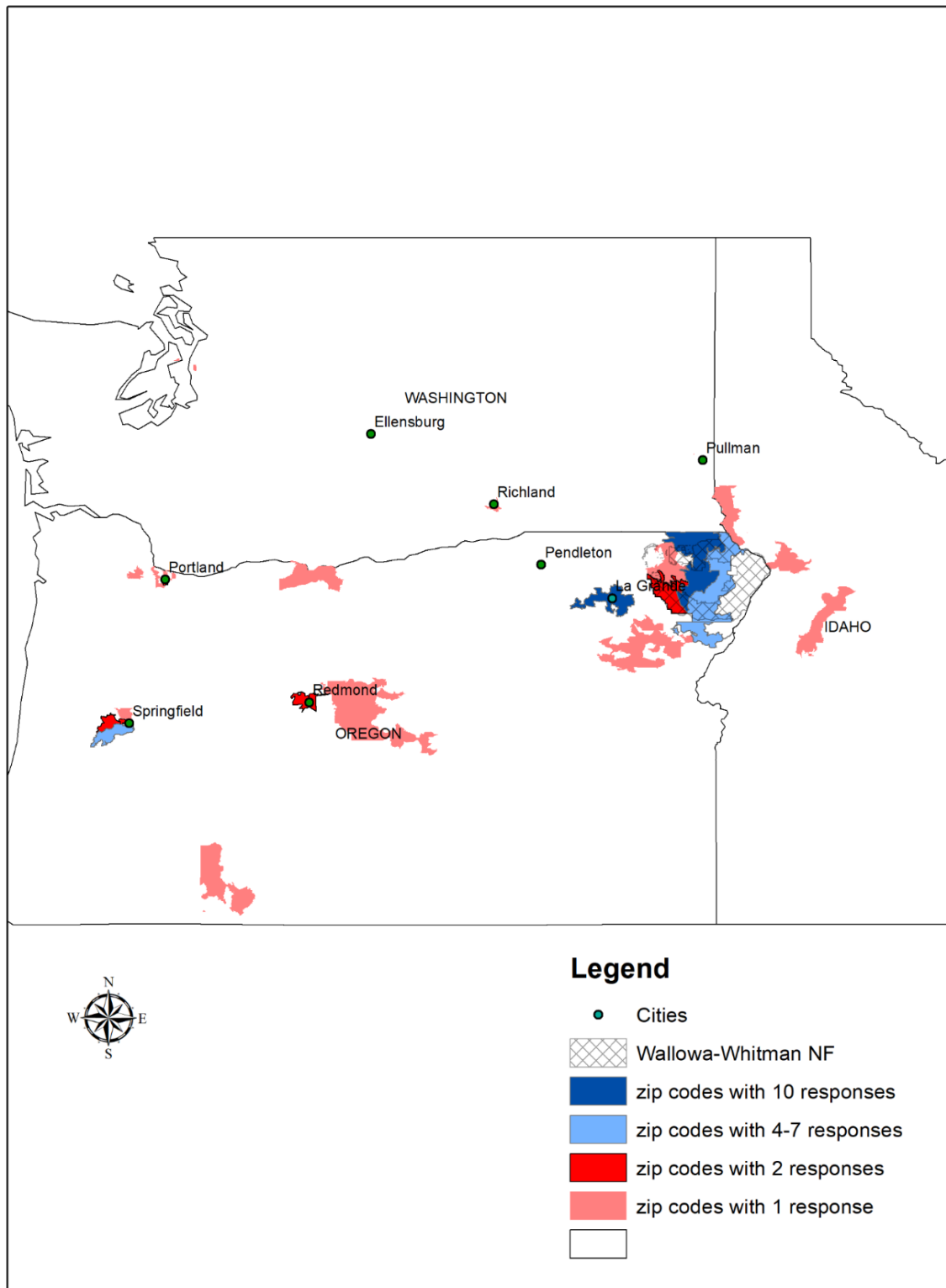
3.1. *An overview of who participated in the public engagement activity*

In total, 74 people provided input through the web-based application and, highlighted in yellow, we provide a summary of how people responded.

1. What is your age? (range of 20-70+ years; median of 50-60 years)
2. Please enter the zip code of your primary residence. (see Figure 3 for # of responses by zip code)
3. Have you ever participated in public engagement activity related to a Forest Service planning project? (Yes 41; No 32)
4. How long has the Morgan Nesbit area been important to you for any reason? (range 0-45 years; average 14 years)
5. Please provide any additional comments. If possible, please be specific about your concerns or thoughts. (32 comments, which are integrated into the results below related to the ecosystem services prioritization exercise)

Overall, the results related to demographics highlight diverse participation in terms of age, as well as connection to the Morgan Nesbit area. Primary residence of respondents, while mostly located in close proximity to the WWNF, were spread across three states. Given this limited knowledge, we can assume that a diverse range of opinions were heard during this public engagement activity.

Figure 3. Map of public responses, by zip code



Note: There were two responses from zip code 97002, which are not reflected on the map

3.2. *An overview of ecosystem service priorities and relevant management actions*

The primary goal of this public engagement activity was to understand what ecosystem services are most important to members of the interested public, within the context of the Morgan Nesbit area. We provide an overview of how people responded in two ways. First, we highlight, overall, the range of importance assigned to each ecosystem service, within the context of all 74 responses (Table 1). As shown in Table 1, there was wide variation across all 26 ecosystem services. In other words, most ecosystem services in Table 1 are highly important, relative to the other ecosystem services, to at least one person in the sample. This reflects a major challenge for the Morgan Nesbit project decision-makers, as all of the ecosystem services in Table 1 are derived from the Morgan Nesbit area and, to the greatest extent practicable, are meant to be protected. And yet, as shown in Table 1, any change within the Morgan Nesbit area that negatively influences the ecosystem services will have a meaningful impact on at least one person in the sample of 74 people and, it stands to reason, additional people in the population at large.

Table 1 provides a sense of how important ecosystem services were to the 74 members of the interested public, in aggregate. Similarly, Table 2 provides an understanding of how people perceived different management actions. As noted above, the management actions activity was framed within on the context of an individual's ecosystem services prioritization; that is, members of the public were asked to indicate which three management actions, either positively or negatively, are most relevant to their ecosystem service priorities. Overall, Table 2 highlights that free passage, reducing stand densities, maintaining and promoting areas of dense canopy cover were among the most relevant management actions. Prescribed fire, and allowing fires to burn, were also viewed as relevant management actions.

Table 1 and Table 2 provide summaries of how members of the public viewed ecosystem services and drivers of change. However, statistical analysis (discussed in Armatas et al. (2021; 2019)) of the 74 prioritization exercises, and the associated management actions selections, yields a limited number of shared, general viewpoints, or archetypes. Figures 4-6 illustrate the three archetypes that resulted from statistical analysis of the ecosystem service prioritizations. The ecosystem services are categorized into provisioning, cultural, and regulating services, which is a common typology developed by Hein et al. (2006). Provisioning services are those that directly support people through the extraction of physical natural resources, such as timber and forage for livestock. Cultural ecosystem services represent a broad category of benefits encompassing recreation, cultural and spiritual use, and the scientific value of natural resources. The final category of regulating services refers to those benefits that support human health and well-being through the maintenance of ecosystem functions. These benefits may be thought of in terms of regulating environmental benefits, such as biological diversity, air quality, and wildlife habitat.

Each of the three archetypes, which are named to facilitate communication, are briefly described in turn, with a detailing of associated management actions (derived through regression analysis). Further, using some of the 32 comments provided by members of the public, additional nuance is added to the description of the colorful figures. When referencing the priority of

specific ecosystem services for the respective archetypes, italics are used, and the value is also included in parentheses.

Table 1. Ecosystem services maximum and minimum value

Ecosystem Service	Max value	Min. value
Wildlife habitat and connectivity	4	-4
Biological diversity of plants and animals	4	-3
Water quality	4	-3
Climate change adaptation and mitigation (for example – through carbon sequestration, refuge for wildlife)	4	-4
Federally threatened Chinook salmon habitat	4	-4
Forest health and resistance and resiliency to insects and disease	4	-4
Native American use of the area (for example – exercising treaty rights, collection of culturally relevant plants)	4	-4
Large diameter trees (those larger than 21” diameter)	4	-4
Water quantity (amount of water)	4	-3
Native vegetation	4	-4
Air quality	4	-4
Rare and sensitive plants	4	-4
Fire and drought tolerant vegetation	4	-3
Elk habitat	4	-4
Non-motorized Recreation	4	-4
Archeological and paleontological sites	4	-4
Dispersed camping	4	-4
Economic value from recreation and tourism	3	-3
Fishing	3	-4
Materials for personal use (for example – Christmas trees, firewood, mushroom picking)	3	-4
Hunting	4	-4
Developed camping	4	-4
Economic value from forest products and/or active management (for example – timber harvesting, livestock grazing, fuel reduction, commercial firewood)	4	-4
Timber harvesting	4	-4
Motorized Recreation	3	-4
Livestock grazing	3	-4

Table 2. Driver of change selected as relevant to members of the public (overall selections and percentage of the sample)

Management Actions presented to members of the public	Number of selections and percentage of sample
Fish passage and improvement and enhancement of water resources and cycle (for example, removing and/or replacing culverts, de-commissioning un-needed roads).	27 (38%)
Reduce stand densities (thinning of trees) to promote development of old growth trees, and to improve vigor and increase resilience to insects, disease, drought, and wildfire.	26 (36%)
Maintaining and/or promoting areas of dense canopy cover, downed woody debris, and snags (dead trees still standing) to improve or expand wildlife habitat.	25 (35%)
Use of prescribed fire to restore appropriate fire regimes.	22 (31%)
Allowing naturally started wildfires to strategically burn to restore appropriate fire regimes.	19 (26%)
Reducing roads density.	18 (25%)
Forest management objectives and actions that align with the Hells Canyon National Recreation Area comprehensive management plan.	13 (18%)
Active management that uses hand-thinning techniques and less heavy equipment.	12 (17%)
Remove shade tolerant species between 21” and 30” diameter to increase resilience to insects, disease, drought, and wildfire.	10 (14%)
Treatments in riparian areas to conserve and promote old-growth ponderosa pine.	10 (14%)
Active management that uses heavy equipment.	9 (13%)
Reducing fuels (for example, woody debris removal, thinning of small diameter trees) for reduction of wildfire risk (generally trees up to 14” diameter).	9 (13%)
Early Seral Restoration - promoting pioneer species (western larch and ponderosa pine) through intensive cutting of trees to make room for seedling trees.	6 (8%)
Aspen restoration through the removal of encroaching conifers, creation of conifer snags (dead trees still standing), and or protection from animals	5 (7%)
Active management that focuses on reducing the potential for wildfire impacts to private lands (creating defensible space along high volume roads and private property).	3 (4%)
Temporary road construction for purposes of active management during resiliency project.	2 (3%)

3.2.1. The Traditional Use Archetype

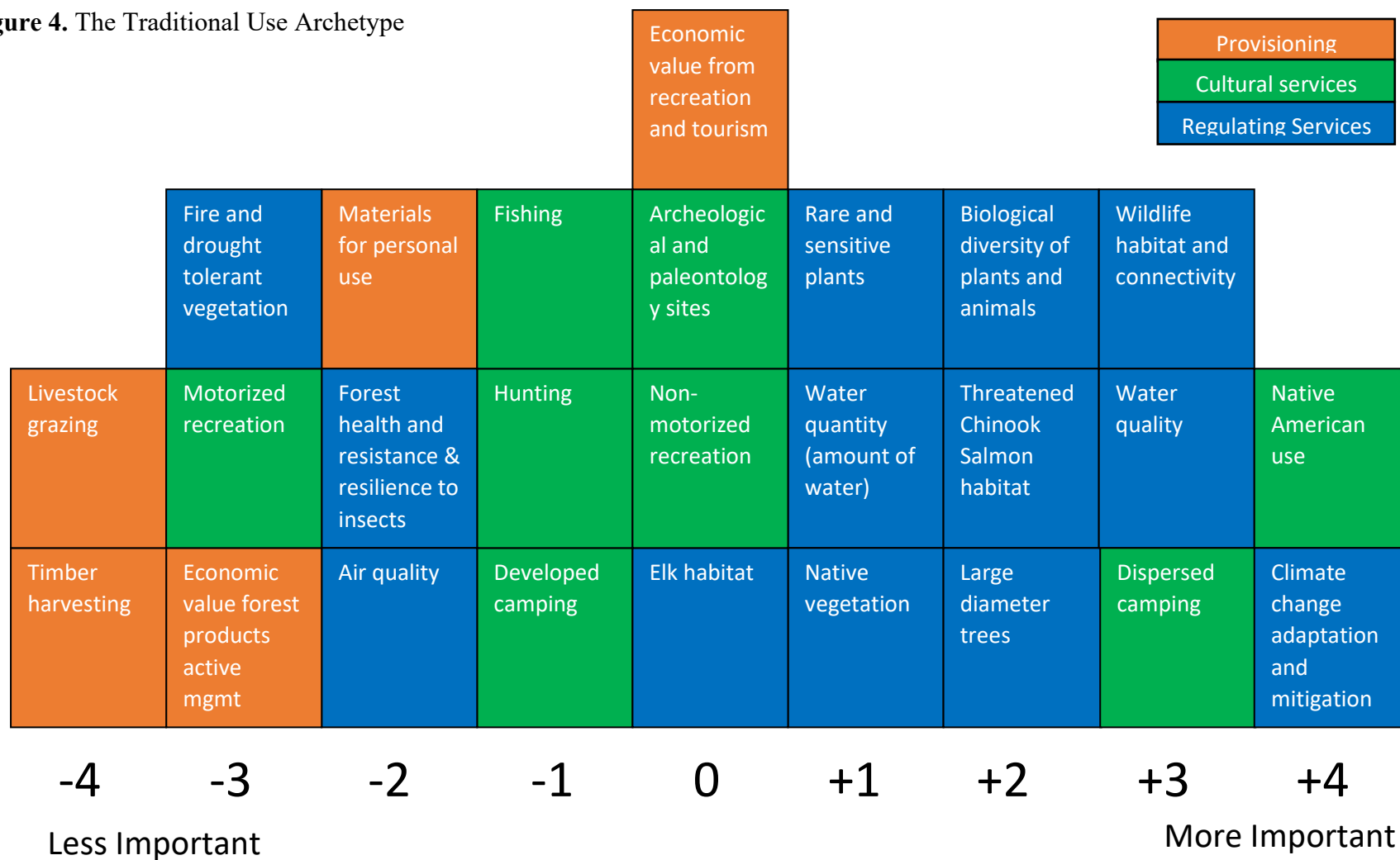
Figure 4 illustrates the ‘traditional use’ archetype, named for the high level of importance assigned to *Native American use* (+4) of the Morgan Nesbit area, as well as *dispersed camping* (+3), and a suite of regulating ecosystem services (e.g., *wildlife habitat and connectivity* (+3), *climate change adaptation* (+4)). Public Member #46 noted that they valued huckleberry picking, and comment by Public Member #2 reflects the importance of these ecosystem services, more generally:

This is precious land that has been inhabited by humans over 16,000 years, it is an integral part of who we are. This is phenomenally important habitat for many species. Its loss would be a tragedy on every level. It's vital we find ways to protect this precious ecosystem for generations to come and honor the ancient human heritage it holds by maintaining biodiversity and its wildness.

Additionally, the 'traditional use' perspective potentially views extractive uses such as timber harvesting (-4) and livestock grazing (-4) as potentially threatening to their human-nature relationship. For instance, Public Member #25 commented that this is an area that "I love and do not want to see harmed by logging". Public Member #27 also emphasized a desire to "limit commercial logging", as well as the desire to the retention of "all large trees of all species for their value in local forest ecology as well as their value for carbon sequestration." Specifically related to grazing, Public Member #45 suggested: "Preserving natural corridors for migration of large wildlife is necessary for genetic mixing. Large spaces without domestic livestock and roads are needed for wolves to live with fewer conflicts with humans. Perhaps provide habitat for reintroduction of wolverines."

These sentiments both underscore the importance of ecosystem services for the traditional use perspective, as well as an association with the selection of particular management actions, including "fish passage", "maintaining and/or promoting areas of dense canopy cover", "allowing naturally started wildfires to strategically burn", "reducing roads density", and aligning the efforts in the Morgan Nesbit area with the "Hells Canyon National Recreation Area comprehensive management plan".

Figure 4. The Traditional Use Archetype



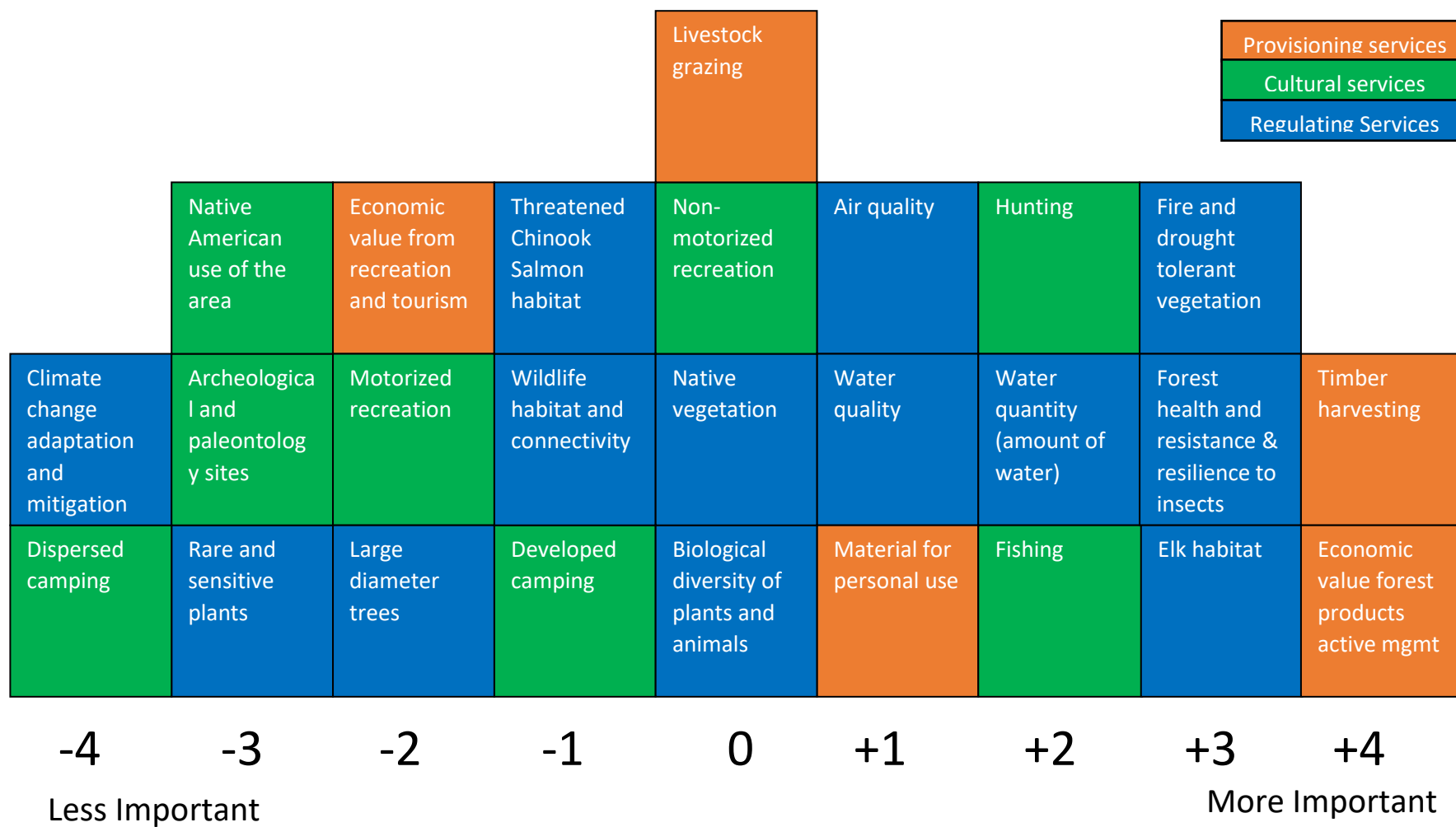
3.2.2. The Wood Products Archetype

Figure 5 illustrates the ‘wood products’ archetype, named for the high level of importance assigned to *timber harvesting (+4)* and *economic value of forest products and active management (+4)*, which are provisioning ecosystem services. A comment made by Public Member #13 concisely captures the sentiment of this perspective: “All of our forests should be thinned. Logging is also acceptable.” For the wood products archetype, the ecosystem services that are considered more unimportant include regulating services such as *climate change adaptation and mitigation (-4)*, *rare and sensitive plants (-3)*, as well as several cultural ecosystem services.

While those people who align with the wood products archetype, generally, have a somewhat opposite view to those held by people who align with the traditional use archetype (indeed, statistically the two perspectives come from a bi-polar factor; one where people load positively and negatively onto the same factor), there appears to be agreement around the need for active management and intervention. As Public Member #26 stressed: “we need to be very worried about the ground fuels that Policy has allowed to develop. These are PUBLIC LANDS I have a vested interest in seeing the destruction mitigated through intervention!”

For those who aligned with the wood products archetype, statistically, they were less likely to select the following management actions: “fish passage”, “maintaining and/or promoting areas of dense canopy cover”, “allowing naturally started wildfires to strategically burn”, “reducing roads density”, and aligning the efforts in the Morgan Nesbit area with the “Hells Canyon National Recreation Area comprehensive management plan”. While not statistically significant, there was some evidence that those who aligned with this archetype were more interested in the use of heavy equipment for intervention actions, the reduction of stand densities, reduction of shade tolerant trees, and the reduction of fuels to reduce wildfire risk.

Figure 5. The Wood Products Archetype

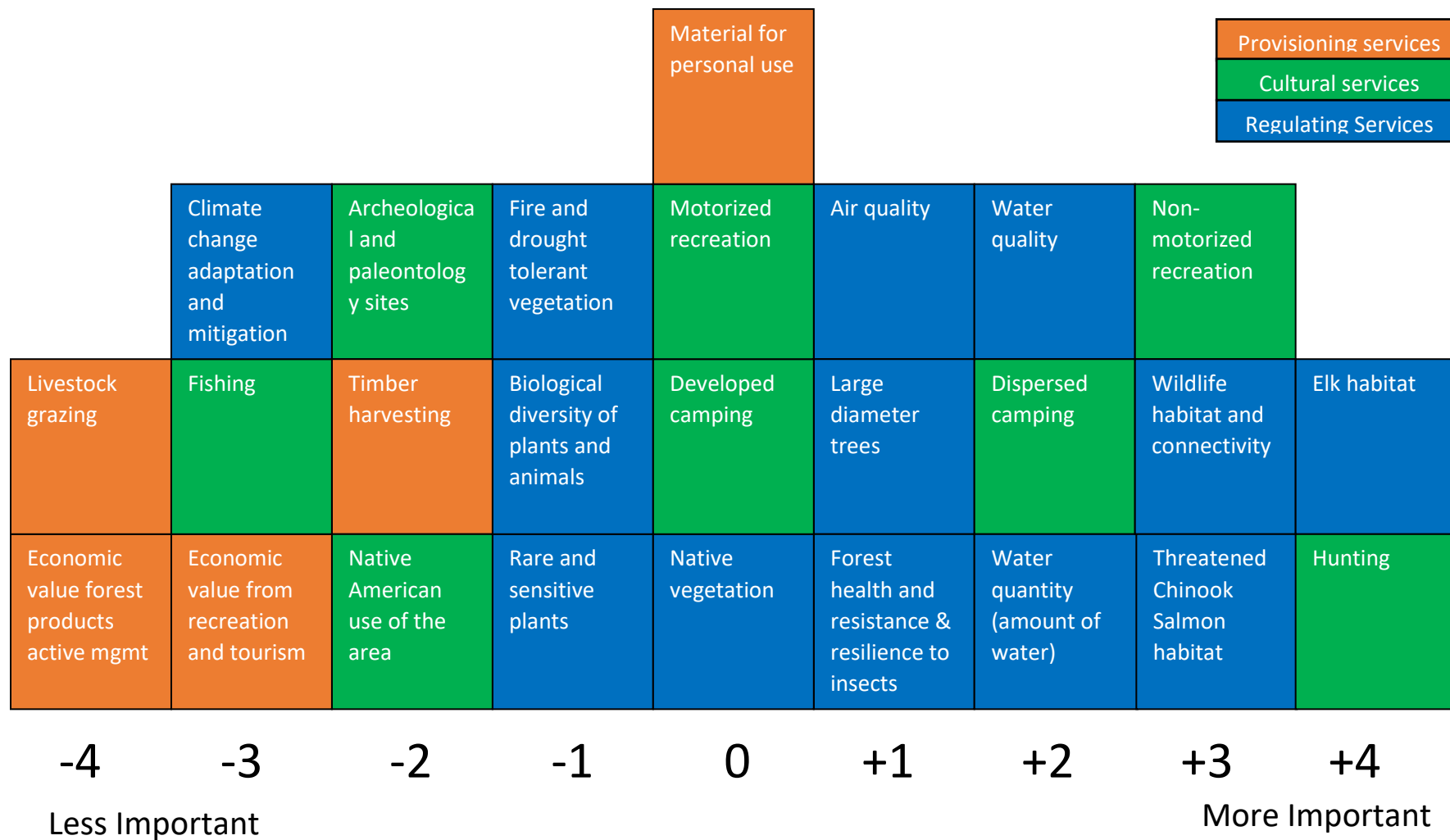


3.2.3. The Onsite Use Archetype

Figure 6 illustrates the ‘onsite use’ archetype, named for the high level of importance assigned to *hunting* (+4), *dispersed camping* (+2), and *non-motorized recreation* (+3), as well as regulating services that support these benefits such as *elk habitat* (+4), *wildlife habitat and connectivity* (+3), and *water quality* (+2). Those ecosystem services less important to the onsite use archetype include the provisioning ecosystem services of *livestock grazing* (-4), *economic value of forest products and active management* (-4), and *economic value from recreation and tourism* (-3). Cultural and regulating services that are on the unimportant side of Figure 6 include *fishing* (-3), *Native American use of the area* (-2), and *climate change adaptation and mitigation* (-3).

There were limited comments from people who align with this archetype, but Public Member #72 highlighted the importance of the ecosystem in the Morgan Nesbit area, which supports some of the onsite uses such as hunting: “Eagle Cap is our largest reserve, but it is primarily surrounded by private land. This corridor is critical for wildlife movement. It is one of the key corridor between the Blue Mountains and Rocky Mountains. The ecology of the area should be the top priority here.” The management actions that were commonly selected by those people aligning with this archetype include “reducing road density”, “active management that uses hand-thinning techniques and less heavy equipment”, and “use of prescribed fire”.

Figure 6. The Onsite Use Archetype



4. Discussion

This public engagement approach provided an opportunity for public input related to the importance of ecosystem services and the management actions relevant to those benefits. Illustrated and briefly discussed above are three different typified perspectives, or archetypes, that highlight the challenging task facing decision-makers on the WWNF. This public input can help to support communication to members of the interested public about the variety of human-nature relationships related to the Morgan Nesbit area. Further, this public input can support an understanding of tradeoffs among different, potential alternatives, by highlighting how a change in the provision of various ecosystem services may influence member of the public. While it may be challenging to establish a decision that all members of the public will agree on, a collaborative approach can provide understanding and confidence in the process, and it can provide opportunities for members of the public, as well as decision-makers, understand one another. There is support for a collaborative approach, as Public Member #66 suggested: “I strongly recommend that the USFS utilize a robust ‘collaborative approach’ that actively engages local, regional and national stakeholders, in its NEPA review for this project.”

REFERENCES:

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