

Project Proposal Form (PPF)

Project Name: Lynx Mountain 2024

Proponent Program: Forestry

Date: March 1st, 2023

Contact Name: Levi Simmons

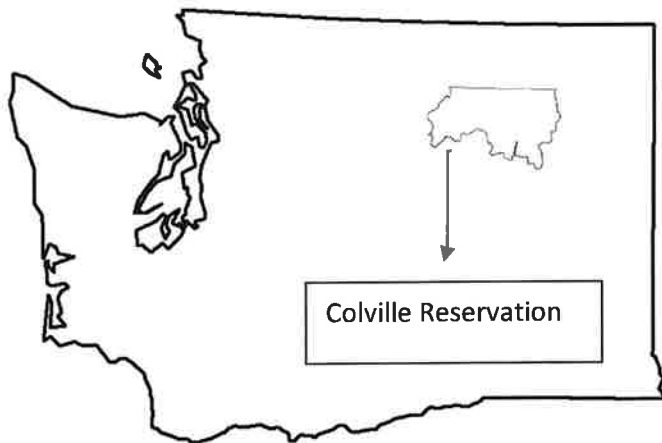
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The Lynx Mountain Project Area is on the Inchelium District of the Colville Indian Reservation, located in Northeastern area of Washington State. This area encompasses Lower Lynx Creek and part of Upper Lynx Creek watersheds. Multiple unnamed drainages flow from the North of the project from Lynx Mountain and from the south coming from Carson Mountain. The project area stops when Lynx Creek connects to Hall Creek.

The project area itself is located in the Northern central part of the Inchelium District. Local landmarks include Carson Mountain, Lynx Mountain, and Bitterroot Ridge. Access to the area is from Hall Creek Road following Lynx Creek Road towards Carson Mountain. Lynx Creek road eventually ties in with 21 Mile and Summit trail roads

The entire area encompassed by the project boundary is approximately 10,511 acres. There are approximately 278 acres are of Indian Allotments within the boundary. There is approximately 1178 acres are in FEE land ownership within Lynx Mountain Project area. Approximately 9055 acres are in the commercial timber base area.



Latitude: 48.352081877651386 **Longitude:** -118.36113947651094

Legal Description (does not need to be full description):

Township: 33 **Range:** 35 and 36 **Section:**

R35 Section: 7,8,9,10,11,12,13,14,15,16,17,18,20,21,22,23,24,25,26,27

R36 Section: 17,18,19,20,21,28,29,30

Desired Project Start Date and Estimated Duration:

March 2024 through September 2027

What is the proposed project?

Timber Management

The Inchelium Forestry – a portion of the Tribal Government of the Confederated Tribes of the Colville Indian Reservation – proposes harvest of approximately 23 million measured board feet (mmbf) of timber from about 1,751 acres of tribally owned land on the Inchelium District. In addition to the proposed harvest, another approximately 800 acres is proposed for site preparation to counteract the brush encroachment preventing regeneration of new trees. The project area includes the Lower Lynx Creek and part of Upper Lynx Creek watersheds. There are approximately multiple smaller un-named streams, which drain into the Lynx Creek watershed. This harvest will require approximately 2.77 proposed miles of new road construction and approximately 34.68 miles of road reconstruction.

Harvest activities include those necessary to manage and regenerate stands of timber to increase their vigor, growth, and resistance to insect & disease. The management activities include; broadcast burning to dispose of slash and prepare sites for planting. Excavator piling/burning will also prepare planting sites and provide scarification of the soil. Pre-commercial thinning and lop/scatter of slash is also a key management activity. The specific locations of these management activities can be ascertained by pursuing the Proposed Action Map, individual Silvicultural prescriptions or by examining the summaries provided with this document or available in electronic form.

In addition to harvest activity, we propose a number of stand-improvement, non-commercial treatments. These are: Herbicide application, Mastication, and/or weeding within the project area.

Herbicide Applications

Across the reservation there is a need to manage the land for species which are hindering desired forest habitat. Brush species are outcompeting any potential form of regeneration of the forested stands. Forest stands are degrading into brush/shrub communities which converts forest habitats to shrub steppe. Herbicide use is a means to be able to restore and/or maintain forested habitats to continue providing flora species biodiversity.

The Integrated Resource Management Plan (IRMP) has outlined multiple times on the maintaining of cultural biodiversity as a goal (IRMP pg. 29 point number 5, pg. 37), the need for control of weeds and invasive species (pg. 70-72, pg. 77,) as well as the need for reducing wildfire risk (IRMP pg. 36, pg. 85, pg. 95)

As stated in the goals of Forestry, the top priority of Forestry is to improve the health of the Forest (pg. 92). In part, the management of brush species is tied to multiple points within this goal. Improving of the health, managing composition, improving resistances to insect & disease, reducing wildfire risk. All of these aspects can be assisted by the use of herbicides.

There are current Standard Operating Procedures in place through the Integrated Weed Management

Plan (IWMP) which outline the use of Herbicides on the reservation (pg. 32-37). See Appendix A. for Standard Operating Procedures and Appendix B. for the list of potential herbicides which could be used.

Therefore, it is through the goals of the IRMP and SOPs of the IWMP all designated blocks within the Lynx Mountain project are to be treated with herbicide post-harvest as a method of site prep to prepare the block for either broadcast burning or mastication to reduce the competitive brush growth and restore the Forested stands back to forest habitat types.

Why is the project necessary?

Timber Management

A large share of the Colville Reservation's revenue, for the past 60 years has been from the sale of timber. In addition, a large share of the employment in this area is from logging, transporting, and processing timber. In turn, much of the economy of the Reservation – and people and communities near the reservation – has depended to a great extent from the demands of workers and families directly involved in timber harvest and lumber manufacture. The Colville Reservation is in the business of growing and harvesting timber for profit. Plans for FY 2024 call for a harvest of 23 million board feet of timber from the Lynx Mountain Project area based on site productivity and stand maturity.

The conditions of the forest in this Project Area are poor to good depending on which block you are in. Areas have upwards of negative 39% growth. The Lynx Mountain project area was previously harvested in the early 2000s. A majority of the entries at this time were regeneration and intermediate cuts. This entry will focus on the Douglas-fir and Grand-fir habitat types. Some of the areas in this type were harvested prior in the mid-1960s using an Individual Tree Selection method.

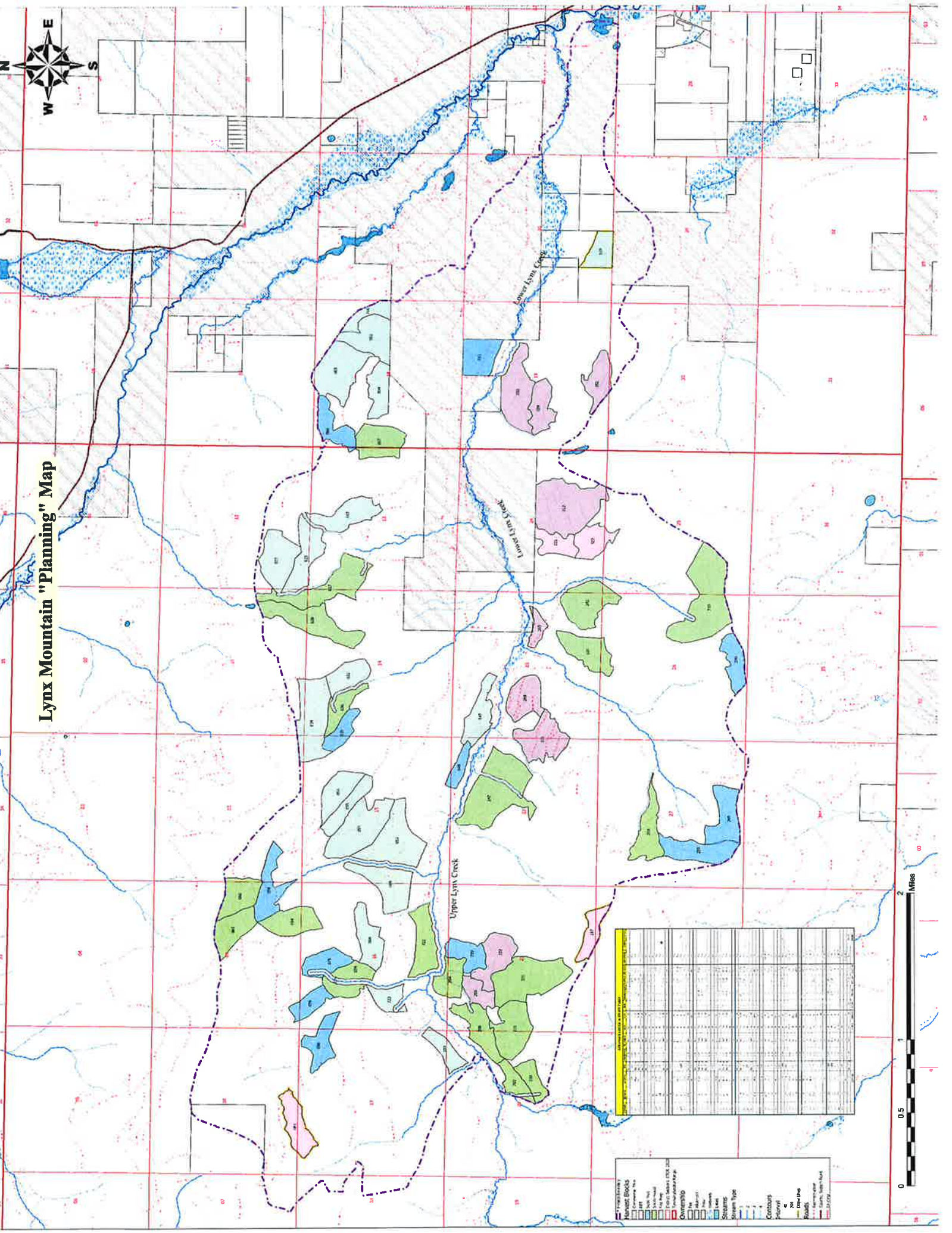
It is evident that a majority of the larger Ponderosa pine, Douglas-fir, and Western larch were harvested. The current stand structures are out of balance due to an absence of fire within the last couple of decades. This overstocking of mixed species could lead to insect/disease attacks and stand replacing fires if ignition were to take place. There is also some evidence of Root disease (*Armillaria*) in a significant portion of the stands. Dwarf mistletoe is found to be in many of the stands. By managing the most unstable stands from which to harvest, the proposal will contribute to the wood stream and respond to the declining health of the forest.

The Proposed Action also fulfills the need for forest regulation. The previous PIRM (Klock, 2000) cites the National Indian Forest Resources Management Act (P.L. 101-630, Title III) which requires that Reservation lands be managed for sustained yield. Sustained yield is accomplished through regulation of the forest. Forest regulation is the establishment and maintenance of size classes in such proportions and consistent growth such that an approximately equal annual yield is obtained (Davis, 1966). This goal is attained by harvesting timber, providing for regeneration and subsequent stand culture activities.

Figure 1. Activity Table

Lynx Mountain ACTIVITY TABLE													
COMP	BLOCK	ACRES	RX	SKID SYS	W. TREE	ACC.	L/S	B/B	Mastication	EX PILE	PLANT	RESTRICT	FIRELINE FT.
435	47	35.4	Site Prep	GB	Null	Null	Null	0	35.4	Null	35.4	No	0
435	48	14.9	ST	GB	Yes	0	0	0	0	14.9	14.9	No	0
435	53	60.25	Site Prep	GB	Null	Null	Null	0	60.25	Null	60.25	No	0
435	54	68.2	Site Prep	GB	Null	Null	Null	0	68.2	Null	68.2	No	0
435	55	27.2	Site Prep	GB	Null	Null	Null	0	27.2	Null	27.2	No	0
435	56	32.83	Site Prep	GB	Null	Null	Null	0	32.83	Null	32.83	No	0
435	58	38.5	ST	CA	Yes	0	0	0	0	38.5	38.5	No	0
435	60	34.9	SW	GB	No	0	34.9	0	0	0	34.9	No	0
435	61	35.7	SW	CA	No	0	35.7	0	0	0	35.7	No	0
435	64	37.03	SW	CA	No	0	37.03	0	0	0	37.03	No	0
435	68	35.2	Site Prep	GB	Null	Null	Null	0	35.2	Null	35.2	No	0
435	69	50.7	Site Prep	CA	Null	Null	Null	0	50.7	Null	50.7	No	0
435	74	35.74	SW	CA	No	0	35.74	0	0	0	35.74	No	0
435	75	27.8	ST	CA	Yes	0	0	0	0	27.8	27.8	No	0
435	76	20.96	ST	CA	Yes	0	0	0	0	20.96	20.96	No	0
435	81	35.5	RRT	CA	Yes	0	0	35.5	0	35.5	35.5	No	6374
435	86	29.8	ST	CA	Yes	0	0	0	0	29.8	29.8	No	0
435	100	21.6	Site Prep	GB	Null	Null	Null	0	21.6	Null	21.6	No	0
435	722	40.3	SW	CA	No	0	40.3	0	0	0	40.3	No	0
435	723	21.5	Site Prep	GB	Null	Null	Null	0	21.5	Null	21.5	No	0
436	2	45.24	Site Prep	GB	Null	Null	Null	0	45.24	Null	45.24	No	0
436	3	63.3	Site Prep	GB	Null	Null	Null	0	63.3	Null	63.3	No	0
436	4	29.62	Site Prep	GB	Null	Null	Null	0	29.62	Null	29.62	No	0
436	6	29.3	ST	GB	Yes	0	0	0	0	29.3	29.3	No	0
436	7	41	SW	CA	No	0	41	0	0	0	41	No	0
436	11	36.1	ST	GB	Yes	0	0	0	0	36.1	36.1	No	0
436	15	39.42	Site Prep	CA	Null	Null	Null	0	39.42	Null	39.42	No	0
436	21	43.3	Site Prep	GB	Null	Null	Null	0	43.3	Null	43.3	No	0
436	22	48.4	Site Prep	GB	Null	Null	Null	0	48.4	Null	48.4	No	0
436	27	63.2	SW	GB	No	0	63.2	0	0	0	63.2	No	0
436	28	59.53	SW	GB	No	0	59.53	0	0	0	59.53	No	0
436	32	29.3	Site Prep	GB	Null	Null	Null	0	29.3	Null	29.3	No	0
436	34	68.21	Site Prep	GB	Null	Null	Null	0	68.21	Null	68.21	No	0
436	35	20.66	ST	CA	Yes	0	0	0	0	20.66	20.66	No	0
436	36	25.8	SW	GB	No	0	25.8	0	0	0	25.8	No	0
436	716	18.52	Site Prep	GB	Null	Null	Null	0	18.52	Null	18.52	No	0
439	104	40.6	SW	GB	No	0	40.6	0	0	0	40.6	No	0
439	202	19.2	SW	GB	No	0	19.2	0	0	0	19.2	No	0
439	204	28.6	SW	GB	No	0	28.6	0	0	0	28.6	No	0
439	205	18.7	CT	GB	No	18.7	0	0	0	0	0	8/15-4/15	0
439	208	38.07	SW	GB	No	0	38.07	0	0	0	38.07	No	0
439	209	27.59	ST	GB	Yes	0	0	0	0	27.59	27.59	No	0
439	210	20.22	SW	GB	No	0	20.22	0	0	0	20.22	No	0
439	215	50	SW	CA	No	0	50	0	0	0	50	No	0
439	217	22.9	RRT	GB	Yes	0	0	22.9	0	22.9	22.9	No	5623
439	221	75.9	SW	CA	No	0	75.9	0	0	0	75.9	No	0
439	222	39.8	CT	GB	No	39.8	0	0	0	0	0	8/15-4/15	0
439	247	102.5	SW	CA	No	0	102.5	0	0	0	102.5	No	0
439	254	40.6	SW	GB	No	0	40.6	0	0	0	40.6	No	0
439	255	42.9	ST	GB	Yes	0	0	0	0	42.9	42.9	No	0
439	260	41.2	ST	GB	Yes	0	0	0	0	41.2	41.2	No	0
439	269	36.3	CT	GB	No	36.3	0	0	0	0	0	8/15-4/15	0
439	271	48.1	CT	GB	No	48.1	0	0	0	0	0	8/15-4/15	0
439	299	28	ST	GB	Yes	0	0	0	0	28	28	No	0
439	305	12.2	CT	GB	No	12.2	0	0	0	0	0	No	0
440	310	104	SW	CA	No	0	104	0	0	0	104	No	0
440	312	93	CT	CA	No	93	0	0	0	0	0	8/15-4/15	0
440	322	30	RRT	GB	Yes	0	0	0	30	30	30	No	0
440	323	25.17	RRT	GB	Yes	0	0	0	25.17	25.17	25.17	No	0
440	329	30.3	CT	GB	No	30.3	0	0	0	0	0	8/15-4/15	0
440	332	61.63	CT	GB	No	61.63	0	0	0	0	0	8/15-4/15	0
440	342	52.3	SW	CA	No	0	52.3	0	0	0	0	No	0
440	352	30.27	CT	CA	No	30.27	0	0	0	0	0	8/15-4/15	0
440	519	24.98	Site Prep	GB	Null	Null	Null	24.98	0	Null	24.98	No	4609
		2549.94				370.3	945.19	83.38	793.36	471.28	2127.34		16606

Lynx Mountain "Planning" Map



Parcel ID	Owner	Area (Acres)	Notes
1	State	1.2	Forest Reserve
2	Private	0.8	Residential
3	State	2.5	Wildlife Habitat
4	Private	1.5	Commercial
5	State	3.0	Forest Reserve
6	Private	0.5	Residential
7	State	1.8	Wildlife Habitat
8	Private	1.0	Commercial
9	State	2.2	Forest Reserve
10	Private	0.7	Residential
11	State	1.5	Wildlife Habitat
12	Private	1.2	Commercial
13	State	2.0	Forest Reserve
14	Private	0.9	Residential
15	State	1.7	Wildlife Habitat
16	Private	1.1	Commercial
17	State	2.3	Forest Reserve
18	Private	0.6	Residential
19	State	1.9	Wildlife Habitat
20	Private	1.3	Commercial
21	State	2.1	Forest Reserve
22	Private	0.8	Residential
23	State	1.6	Wildlife Habitat
24	Private	1.4	Commercial
25	State	2.4	Forest Reserve
26	Private	0.7	Residential
27	State	1.8	Wildlife Habitat
28	Private	1.0	Commercial
29	State	2.2	Forest Reserve
30	Private	0.9	Residential
31	State	1.7	Wildlife Habitat
32	Private	1.1	Commercial
33	State	2.3	Forest Reserve
34	Private	0.6	Residential
35	State	1.9	Wildlife Habitat
36	Private	1.3	Commercial
37	State	2.1	Forest Reserve
38	Private	0.8	Residential
39	State	1.6	Wildlife Habitat
40	Private	1.4	Commercial
41	State	2.4	Forest Reserve
42	Private	0.7	Residential
43	State	1.8	Wildlife Habitat
44	Private	1.0	Commercial
45	State	2.2	Forest Reserve
46	Private	0.9	Residential
47	State	1.7	Wildlife Habitat
48	Private	1.1	Commercial
49	State	2.3	Forest Reserve
50	Private	0.6	Residential

- Legend
- Parcel Boundary
- Water Body
- Stream
- Road
- Contour
- Property Line
- Survey Point
- Other

Figure 2. Map of Project Area

APPENDIX A. STANDARD OPERATING PROCEDURES, BEST MANAGEMENT PRACTICES, AND DESIGN FEATURES

There are a number of standard operating procedures, best management practices, and design features that can be employed to prevent unintended consequences to other resources or to increase the effectiveness of noxious weed treatments. The discussion below is intended for informational purposes and may be considered by CCT when implementing integrated weed management activities. Some or all of these may also be considered for adoption as policy for the Colville Reservation.

SOPs and Special Design Features

Standard Operating Procedures (SOPs) are the management controls and performance standards intended to protect and enhance natural resources that could be affected by vegetation treatments including the use of herbicides. Following SOPs can ensure that risks to human health and the environment from herbicide treatment actions and other vegetation treatments are kept to a minimum.

CCT would comply with changes in label directions and with all applicable federal, state, or tribal registration requirements. The active ingredients and formulations approved for use would only be applied for uses, and at application rates, specified on the label directions.

Herbicide application schedules would be designed to minimize potential impacts to non-target plants and animals, while remaining consistent with the objective of the vegetation treatment program. The application rates depend upon the target species, the presence and condition of non-target vegetation, soil type, depth to the water table, presence of other water sources, and the label requirements. The application method chosen depends upon the treatment objective (removal or reduction); accessibility, topography, and size of the treatment area; characteristics of the target species and the desired vegetation; location of sensitive areas and potential environmental impacts in the immediate vicinity; anticipated costs; equipment limitations; and meteorological and vegetative conditions of the treatment area at the time of treatment.

Where applicable, special design features and best management practices (BMPs) would be incorporated for the prevention and treatment of noxious weeds when authorizing new permitted/authorized activities. These practices or combinations of practices are considered to be the most effective means of preventing or reducing the amount of disturbance or impact to a resource.

Standard Operating Procedures for Herbicide Use

- Review, understand, and conform to the “Environmental Hazards” section on the herbicide label. This section warns of known herbicide risks to the environment and provides practical ways to avoid harm to organisms or to the environment.
- Avoid accidental direct spray and spill conditions to reduce the largest potential impacts.
- Use the application rate for that particular site for the most effective control of the target weed and stage of growth to reduce potential risk to off target species for most herbicides.
- Minimize application areas where possible but ensure large enough to control seedlings/rosettes not always readily visible in order to contain spread..
- Include pre-treatment surveys for sensitive habitat and species listed under the ESA within or adjacent to proposed treatment areas.
- Notify landowner(s) prior to treatment.
- Clean equipment, vehicles, and clothing of personnel to remove weed seeds/materials.

- Emphasize the use of native and/or non proliferating species for revegetation and restoration projects.
- Use weed-free feed for horses and pack animals involved in weed control efforts and weed-free straw and mulch for stabilization and rehabilitation activities.
- Only those herbicides approved for use by the Washington State Department of Agriculture will be used on the Colville Reservation and on Public Domain lands.
- All approved herbicides would be handled and applied in strict accordance with all label restrictions and precautions, as well as applicable Tribal policy. In instances where herbicide labels, federal, or state stipulations overlap, the more restrictive criteria would be adhered to. Selection of a herbicide for site-specific weed control would depend on its effectiveness on a particular weed species, success in previous similar applications, habitat types, soil types, and nearness of water and any sensitive plant species.
- Application of any herbicide to treat weeds would be performed by or directly supervised by a Washington state or federally licensed applicator. These applicators are responsible for complying with all applicable Federal and Tribal laws, codes, and regulations connected with the use of weed control herbicides.
- All applicators would comply with safety requirements, including personal protective equipment, spray equipment, herbicide labels and rates, and environmental concerns. All contractors and county agreement applicators are responsible for the cleanup of hazardous materials spilled or improperly disposed of on CCT lands, if they are at fault.
- Only the quantity of herbicides needed for each day's operation should be transported from storage/mixing areas to application sites.
- Mixing of concentrate into spray tank should be delayed till at spray site when possible to minimize chance for spills enroute.
- Spraying of any herbicide during windy conditions will not occur if identified and marked sensitive plant species are at risk Under no situation shall spraying be conducted beyond wind speed restrictions on the label..
- Any aerial herbicide applications would be conducted in a manner that minimizes application overlap and drift.
- Aerial herbicide application would only be used to control or eradicate large infestations of weeds or in areas that have steep slopes, rock soils, and are difficult to access.
- Dyes approved for use in herbicides may be used to obtain uniform coverage. This would help prevent under or over treatment/application and help with detection of drift. It would also reduce the risk of treating non-target species.
- Herbicide applications would be implemented in a manner to minimize off site movement of herbicides either through the air, through soil, or along the soil surface. Project site terrain, soil type, and vegetation would be taken into consideration when selecting herbicide type, application method, and application timing.
- Areas that pose exposure risk, such as near homes or other public use facilities, would be posted to warn the public of herbicide use and hazards.
- Ground-based herbicide application would include broadcast "block" spraying or spot spraying with backpack pumps, spraying from a pumper unit on the back of a pickup truck or an OHV, or pack animals to transport and apply herbicides in more rugged terrain. Ground based application would occur in smaller, fragmented patches of weeds where herbicide treatment is the most effective means of controlling or eradicating weeds.

- A combination of herbicides may be used when it is determined that this is the most effective way to control multiple weed species, or when mixing of herbicides are more effective on weed species. All herbicide combinations would conform to label guidelines for mixing.

Standard Operating Procedures for Using Biological Agents

The use of biological control agents would be conducted in accordance with applicable federal and tribal regulations. Only those biological agents that have been tested and approved by the USDA would be released on tribal lands.

Biological control using cattle or other livestock may be used as desired. When considering the use of grazing animals as an effective biological control measure, several factors will be taken into consideration including:

- Target weed species present
- Size of the infestation of target weed species
- Other plant species present
- Stage of growth of both target and other plant species present
- Palatability of all plant species present
- Selectivity of all plant species present by the grazing animals species that is being considered for use as a biological control agent
- The availability of that grazing animal within the treatment site area
- Type of management program that is logical and realistic for the specific treatment site
- Grazing animal's potential to spread seed, may need to quarantine animals prior to moving to a new site.

Design Features to Protect Cultural Resources

- Signage will be posted when spraying along roadsides as well as in public areas. Signage will not be posted along main roadsides and highways. The intent of signage along less traveled roadways is to alert the membership whom might gather cultural plants or berries from roadsides. Signage will include spot spraying as well as signs for begin and end roadside spraying. Signs will include information on amount of spraying buffer, length of time in hours to avoid treated area, date of application, time of application, herbicide used and contact information for any questions. Examples of signage are shown on the following page.
- Land Operations would work with the Tribal Historic Preservation Officer to develop and complete appropriate mitigation measures prior to planned surface disturbing activities, to ensure protection of cultural plants if weed treatments cannot avoid cultural resource sites.

Example spray signs

<p>WARNING</p> <p>This Roadside Has Been Spot Treated For Noxious Weeds Allow A 20 Foot Buffer From End Of Asphalt</p> <p>Please Avoid This Area For _____ Hours From Application Date And Time: Date: _____ Time: _____ Herbicide Used: _____</p> <p>BEGIN SPRAY</p> <p>For Further Information Please Call: Land Operations @ 509-634-2338</p>	<p>WARNING</p> <p>This Roadside Has Been Spot Treated For Noxious Weeds Allow A 20 Foot Buffer From End Of Asphalt</p> <p>Please Avoid This Area For _____ Hours From Application Date And Time: Date: _____ Time: _____ Herbicide Used: _____</p> <p>END SPRAY</p> <p>For Further Information Please Call: Land Operations @ 509-634-2338</p>
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<p>WARNING</p> <p>This Area Has Been Spot Treated For Noxious Weeds Please Allow A _____ Buffer Around Sign</p> <p>Please Avoid This Area For _____ Hours From Application Date And Time: Date: _____ Time: _____ Herbicide Used: _____</p> <p>For Further Information Please Call: Land Operations @ 509-634-2338</p>
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Design Features to Protect Special Management Areas

Protection of non-target species and soils is critical for the management of Special Management Areas (e.g., wildlife preserves, religious sites, etc.). Any treatments within Special Management Areas would maintain the values for designation.

Design Features for Protecting Riparian Areas

- No aerial application of herbicides would occur within riparian areas.
- Disking, plowing, or blading would not occur within appropriate buffer zones surrounding riparian areas.
- Soils that are fully saturated would not be disturbed or only minimally disturbed.
- In locations adjacent to streams where sediment has been identified, through the Total Maximum Daily Load (TMDL) process, as an instream pollutant, CCT would determine whether additional BMPs for erosion control would be required.
- Off road vehicle use for treatments such as herbicide use within riparian areas would be limited to non-ground disturbing actions.
- Non-target plant mortality in riparian areas would be monitored to determine if mortality of non-target plants is affecting riparian functions.
- Utilization limits on non-target vegetation and monitoring protocols would be developed for biological treatments utilizing domestic grazing animals in riparian areas.

Design Features to Protect Sensitive Plants

- Surveys for sensitive plants would ideally be conducted in non vehicle corridor areas prior to herbicide broadcast and ground disturbing mechanical treatments to determine the presence or absence of sensitive plants. Sensitive plants may be so defined because of their rarity or by their use for cultural or medicinal purposes.
- Selective treatment methods and appropriate mitigation measures would ideally be identified as part of the 3P process prior to manual, herbicide, and/or biological agent treatments in sensitive plant habitat.
- Individual sensitive plant needs would be addressed by incorporating protective and/or beneficially designed features into treatment actions in or near sensitive plant habitat.
- Individual sensitive plant susceptibility would be considered when selecting herbicides and application methods.
- In addition, the following management efforts would be employed as necessary to protect sensitive plants and to help prevent harm to insects in the vicinity:
Designate buffer zones around rare plants.
- Manage/prevent herbicide drift.
- Use appropriate herbicide rates to minimize off-target damage to sensitive plants.
- Choose herbicide formulations that are not easily carried by social insects to hives, hills, nests and other “homes” in areas with rare plants.
- Choose herbicides that degrade quickly in the environment when herbicides must be used in rare plant habitat.
- Time any highly “insect unfriendly” herbicide applications when pollinators are least active, such as in the early mornings or evenings or after blooming has occurred in rare plant habitat, and if necessary divide the rare plant habitat into several treatments rather than one large treatment to keep from treating all blooming species at one time.

APPENDIX B. HERBICIDES AND SURFACTANTS

The table below lists a number of herbicides that may be considered for use on the Colville Reservation, subject to existing laws, regulations, and the management direction of the CCT. Other active ingredients or trade names may also be used as they become available and are approved for use. The information here is provided for informational purposes only. Use of a trade name is not intended to endorse the use of that product.

Active Ingredient	Trade Names	General Effects to Vegetation
Aminopyralid	Milestone, Capstone, Forefront, Opensight, Chaparral	Broadleaf herbicide used to control many emerged and post-emerged broadleaf weeds in CRP, rangelands, non-irrigation ditch banks, natural areas, wildlands, non-crop, rights of ways, grazed areas and more.
Bromacil	Hyvar X; Hyvar XL	Bromacil is a non-selective, "broad spectrum" systemic herbicide, which is most effective against annual and perennial weeds, brush, woody plants, and vines. Poses high risk to non-target species in the immediate area of treatment.
Bromacil + Diuron	Kroval I DF; DiBro 2+2; Weed Blast 4G; DiBro 4+2; DiBro 4+4	See Bromacil description of effects above for this chemical. Diuron is a non-selective, broad-spectrum herbicide, effective as both pre- and post-emergent.
Chlorsulfuron	Telar DF	A selective herbicide used on perennial broadleaf weeds and grasses.
Clopyralid	Reclaim; Stinger; Transline	A selective post-emergence herbicide used to control broadleaf weeds.
2,4-D Clopyralid +	Curtail	See 2,4-D and Clopyralid for effects of these chemicals.
2,4-D	Agrisolution 2,4-D LV6; Agrisolution 2,4-D Amine 4; Agrisolution 2,4-D LV4; 2,4-D Amine 4; 2,4-D LV 4; Solve 2,4-D; 2,4-D LV 6; Five Star; D-638; Aqua-Kleen; 2,4-D LV6; 2,4-D Amine; Opti-Amine; Aqua-Kleen; Esteron 99C; Weedar 64; Weedone LV-4; Weedone LV-4 Solventless; Weedone LV-6; Hi-Dep; Formula 40; 2,4-D LV 6 Ester; 2,4-D 4 Amine IVM; Weedstroy AM-40; 2,4-D Amine; Barrage LV Ester; 2,4-D LV4; Clean Crop Amine 4; 2,4-D LV6; Clean Crop Low Vol 6 Ester; Salvo LV Ester; 2,4-D 4# Amine Weed Killer; Clean Crop LV-4 ES; Savage DF; Cornbelt 4 lb. Amine; Cornbelt 4# LoVol Ester; Cornbelt 6#	2,4-D is a plant growth regulator and acts as a synthetic auxin hormone. Broad-leaved plants are more susceptible than narrow-leaved plants like grasses.

	LoVol Ester; Amine 4; Lo Vol-6 Ester ; Lo Vol-4	
Dicamba	Dicamba DMA; Clarity; Vanquish; Diablo; Veteran CST; Veteran 10G	A growth-regulating herbicide readily absorbed and translocated from either roots or foliage. This herbicide produces effects similar to those found with 2,4-D.
Dicamba + 2,4-D	Outlaw; Range Star; Weedmaster; Veteran 720	See <i>Dicamba</i> and 2,4-D for effects of these chemicals.
Diflufenzopyr	This active ingredient is approved as a formulation with dicamba and is labeled as Distinct® and Overdrive®	Diflufenzopyr, which is used in combination with dicamba for weed control, is a postemergent that inhibits the transport of auxin in the plant resulting in an abnormal accumulation of auxin or auxin-like compounds in the growing points of susceptible plants and an imbalance in growth hormones in the plant. Works well on broadleaf weeds.
Diquat	Reward, Diquat, Midstream, Reglone	Diquat is a post-emergence, nonselective herbicide that can be applied directly to vegetation or to ponds, lakes, or drainage ditches for the management of aquatic weed species. Diquat is a cell membrane disrupter whose mode of action intercepts electrons from photosynthesis and transfers the energy from photosynthesis to various free radicals that damage cell membranes.
Diuron	Diuron 80DF; Karmex DF; Direx 80DF; Direx 4L; Direx 4L-CA; Diuron-DF; Diuron 80WDG	Diuron is a non-selective, broad-spectrum herbicide, effective both pre- and post-emergence.
Fluridone	Avast, Sonar	Fluridone is a systemic, selective, aquatic herbicide that can be applied to the water surface or subsurface, or as a bottom application just above the floor of the water body. Fluridone is absorbed from the water by the plant shoots and taken up from the soil by the roots. In susceptible plants, fluridone inhibits the formation of carotene, which is essential in maintaining the integrity of chlorophyll.
Fluroxypyr	Vista	For treatments in industrial sites, fallow areas, rangelands within rights of ways and pine plantations. Best results when applied to rapidly growing plants. Typically used as a tank mix with other active ingredients.
Glyphosate	Aqua Star; Forest Star; Gly Star Original; Gly Star Plus; Gly Star Pro; Glyfos; Glyfos PRO; Glyfos Aquatic; ClearOut 41; ClearOut 41 Plus; Accord SP; Glypro; Glypro Plus; Rodeo; DuPont Glyphosate; DuPont	A nonselective systemic herbicide that can damage all groups or families of non-target plants to varying degrees.

	Glyphosate VMF; Aquamaster; Roundup Original; Roundup Original II; Roundup Original II CA; Honcho; Honcho Plus; Roundup Pro; Roundup RT; GlyphoMate 41; Aqua Neat; Foresters; Razor; Razor Pro; Rattler; Mirage; Mirage Plus	
Dicamba Glyphosate +	Fallowmaster	See <i>Dicamba</i> and <i>Glyphosate</i> for effects of these chemicals.
Hexazinone	Velpar ULW; Velpar L; Velpar DF; Pronone MG; Pronone 10G; Pronone 25G; Pronone Power Pellet	A foliar-or soil-applied herbicide with soil activity. It is used for broadleaf weed, brush, and grass control in non-cropland and in forest lands.
Imazapic	Plateau	This is a selective, systemic herbicide that can be applied both pre-emergence and post-emergence for the management of selective broadleaf and grassy plant species. Its mode of action is associated with the synthesis of branch-chained amino acids.
Imazapyr	Arsenal Railroad Herbicide; Chopper; Arsenal Applicators Concentrate; Arsenal; Arsenal Technical; Stalker; Habitat; SSI Maxim Arsenal 0.5G	This broad-spectrum herbicide can be applied pre or postemergence to weeds. Stable for at least 18 months. Kills plants within two to four weeks with residual activity. It is currently registered for use in non-crop areas such as industrial sites and rights-of-ways.
Imazapyr + Diuron	TopSite; Sahara DG; SSI Maxim Topsite 2.5G	See <i>Imazapyr</i> and <i>Diuron</i> for effects of these chemicals.
Indaziflam	Marengo G	Pre-emergent herbicide, for control of annual grasses, annual sedges and annual broadleaf weeds in production ornamentals, hoophouses and hardscapes.
Isoxaben	Gallery	Pre-emergent herbicide to control broadleaf weeds in established turfgrass, landscape ornamentals, field grown ornamentals, non-cropland, non-bearing fruit and nut trees
Metsulfuron methyl	Escort; Escort XP; Patriot; Cimarron	Metsulfuron methyl is a selective herbicide used pre- and post-emergence in the control of many annual and perennial weeds and woody plants.
Pendimethalin	Pendulum, Pendulum Aquacap	Pre-emergent weed control in landscape, grounds maintenance, non-cropland areas and ornamental production.
Picloram	Tordon K; Tordon 22K; Grazon PC	Picloram is selective in control of broadleaf weeds, and less effective on broadleaf woody plants, and has minimal affect on members of the grass family.
2,4-D Picloram +	Tordon 101M; Tordon 101 R Forestry; Pathway; Grazon P+D; Tordon RTU	See <i>2,4-D</i> and <i>Picloram</i> for effects of these chemicals.
Sulfometuron	Oust; Oust XP; Spyder	Broad-spectrum herbicide with preemergence

Methyl		and postemergence activity. It is phytotoxic at very low rates.
Tebuthiuron	Spike 20P; Spike 80W; Spike 1G; Spike 40P; Spike 80DF; SpraKil S-5 Granules	A soil-applied herbicide used for control of woody plants and vegetation. Tebuthiuron has a two to four year residual on dry sites depending on application rates.
Tebuthiuron + Diuron	SpraKil SK-13 Granular; SpraKil SK-26 Granular	See <i>Tebuthiuron</i> and <i>Diuron</i> for effects of these chemicals.
Triclopyr	Garlon 3A; Garlon 4; Remedy; Pathfinder II; Tahoe 4E; Tahoe 3A	A growth-regulating herbicide for control of woody and broadleaf perennial weeds in non-cropland, forest lands, and lawns.
Triclopyr + 2,4-D	Crossbow	See <i>Triclopyr</i> and <i>2,4-D</i> for effects of these chemicals.
Triclopyr + Clopyralid	Redeem	See <i>Triclopyr</i> and <i>Clopyralid</i> for effects of these chemicals.

The following table lists additives and adjuvants (i.e., ingredients that improve herbicide effectiveness) that may be available for use on the Colville Reservation. Other formulations of these chemicals may become available and be cleared for use through the CCT.

Surfactant Or Colorant	Company	Product Name	EPA Registration Number
Colorant	Precision	Signal	N/A
Colorant	Becker-Underwood	Hi-Light	N/A
Colorant	Becker-Underwood	Hi-Light WSP	N/A
Deposition & Retention Agent	Wilbur-Ellis	Bivert	CA St. Reg. 2935-50157AA
Penetrator Activator	Wilbur-Ellis	R-900	N/A
Spreader Activator	Wilbur-Ellis	R-11	CA St. Reg. 2935-50142
Organic Based Buffer	Wilbur-Ellis	Trifol	CA St. Reg. 2935-50152
Absorption Activator	Wilbur-Ellis	Cayuse	N/A
Defoaming Agent	Wilbur-Ellis	No foam	CA St. Reg. 2935-50137
Spray Tank Cleaner	Wilbur-Ellis	Neutral-Clean	N/A
Foam Concentrate for Marker	Wilbur-Ellis	R-160	N/A
Surfactant (for insecticide & fungicide)	Wilbur-Ellis	R-56	CA St. Reg. 2935-50144
Crop Oil Concentrate	Wilbur-Ellis	ROC- Rigo Oil Concentrate	N/A
Crop Oil Concentrate	Wilbur-Ellis	Mor-Act	CA St. Reg. 2935-50098
Penetrating Surfactant	Loveland	LI-700	CA St. Reg. 36208-50022
Standard nonionic surfactant	Loveland	Ortho X-77	CA St. Reg. 36208-50023
Nonionic penetrating surfactant	Loveland	Activator 90	CA St. Reg. 36208-50014
Silicone Surfactant	Loveland	Silwet L-77	CA St. Reg. 36208-50025
Compatibility Agent	Loveland	E Z - MIX	CA St. Reg. 36208-50006
Spreader Sticker	Loveland	Bond	CA St. Reg. 36208-50005
Nonionic surfactant with Nitrogen solution.	Loveland	Dispatch	N/A
Nonionic Surfactant	Setre	Induce	N/A
Nonionic Surfactant	Setre	Induce pH	N/A
Nonionic Surfactant	Setre	Kinetic	CA St. Reg. 38167-50012
Spreader Sticker	Setre	Lastick	N/A
Deposition Aid	Setre	Sta Put	N/A
Water Conditioning Agent	Setre	Quest	N/A
Compatibility & Stabilizing Agent	Setre	Blendex	N/A
Silicone Defoamer	Setre	Foam Buster	N/A
Nonionic Surfactant	Cornbelt	Spray Fuse 90	N/A
Nonionic Surfactant	Cornbelt	X-90	N/A
Surfactant	Cornbelt	Access Penetrator	N/A
Defoaming Agent	Cornbelt	Defoamer	N/A
Tank Cleaner & Neutralizer	Cornbelt	Tank-Aid	N/A
Esterfied Vegetable Oils + Emulsifier	Wilbur-Ellis	HASTEN	N/A

Surfactant Or Colorant	Company	Product Name	EPA Registration Number
Paraffin & Mineral Oils + Emulsifier	Wilbur-Ellis	REDI-VERT	N/A