

Targeted Implementation Plan Lake and Sanders County, Montana

Aspen Regeneration on the Confederated Salish and Kootenai Reservation



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Overview and Background Information

Quaking aspen are one of the most ecologically important deciduous trees species throughout the Intermountain West. However, over the past 150 years, quaking aspen, hereafter called aspen, have been a species in decline. Aspen dieback and mortality is a concern throughout the western US and is particularly pronounced in some localized areas where declines have reached 100% (Worrall et al. 2008). Aspen communities provide habitat to a wide variety of wildlife species as well as a diversity of understory plant species. Aspen carry significant cultural value for many tribal people who have historically used them medicinally as well as for many uses such as paddles and bowls (Kershaw et al. 1998). This Targeted Implementation Plan will work to reduce aspen declines within the Confederated Salish and Kootenai (CSKT) Reservation, also known as the Flathead Reservation in northwest Montana and will encompass both private and tribally owned properties.

The CSKT has a long history of active forest stewardship. According to CSKT, aspen stands occupy all the mountain ranges within the reservation and aspen are experiencing decline across the entire reservation. Aspen on the reservation provide habitat to a great many wildlife species and are critical to the ecology of the region.

This TIP will work to rehabilitate many dying and decadent stands of quaking aspen on the Flathead Reservation to restore areas of lost wildlife habitat and diversity. The TIP will be completed in cooperation with multiple divisions within the Confederated Salish and Kootenai Tribes including the Wildlife, Forestry, Fire, Lands, Hydrology, Cultural and Environmental divisions as well as in partnership with the Lake County Conservation District (LCCD) and Intermountain West Joint Venture (IWJV).

Problem Statement

CSKT have highlighted aspen stands as having cultural significance as well as playing a vital role in the ecology of the reservation. Aspen declines are a concern throughout the intermountain west including within the CSKT reservation.

Within aspen communities two dominant functional community types exist: stable and seral (Rogers et al. 2014). Stable aspen community types including aspen parklands, terrain-isolated aspen stands and aspect- or elevation-limited aspen communities tend to remain stable over time. Seral aspen communities are more prone to encroachment and reduction or elimination due to conifer encroachment. Seral aspen communities are common in montane forests such as those found on the CSKT reservation. This TIP will focus primarily on seral aspen communities which have been negatively affected by conifer encroachment over time.

Aspen communities are comprised of clones. Long-lived and self-regenerating, some aspen clones have survived for thousands of years, since the last ice age (Turner et al. 2003). Aspen clones typically regenerate by root sprouting. Individual stems are relatively short-lived, normally living for between 100 and 150 years.

Fire plays a major role in aspen ecology. Aspen trees which arise from a common clone are called stems. These stems are highly susceptible to fire. Mortality of stems is high when fires are intense or enter the canopy. However, because aspen are not highly flammable fires often are not intense within stands even when surrounding coniferous stands burn intensely. Even when stem die-off occurs aspens typically sprout new stems vigorously following fire events. Many seral aspen communities often rely on periodic fire events to maintain the stand, although the role of fire within aspen communities varies greatly depending on location and associated vegetative species. Fire activity in the intermountain west has been influenced by several factors including fire suppression efforts, land use and climate change.

Targeted Implementation Plan Lake and Sanders County, Montana

Aspen dieback likely has multiple causes. Although aspen is a species that are largely adapted to disturbance, the intensity and type of disturbances can create vastly different outcomes with regards to the regeneration or mortality of the stand. For instance, when disturbance is 'too severe' or when multiple disturbances occur in close temporal proximity, mortality of aspen stands can occur. Ungulate (including livestock) browsing, lack of fire, drought and climate change are considered the primary drivers of aspen decline and die-off (Stevens-Rumann et al. 2017). For instance, excessive browsing in immature stems is a common source of aspen decline. Repeated browsing kills aspen sprouts and prevents recruitment of new stems which can lead to the loss of stable aspen community as mature stems age (Seager et al. 2013). The loss of young stems prevents replacement as older stems die out which can also exacerbate conifer encroachment. If mature stands decline and stem recruitment is interrupted aspen stands can suffer 'sudden aspen decline' (SAD) (Worrall et al. 2010; Anderegg and Anderegg. 2012). Across the western US, fire suppression has resulted in the conversion of many seral aspen stands to conifer-dominated forests (Rogers and Mittanck. 2014).

CSKT has documented widespread aspen decline throughout the reservation. Tribal members have documented the encroachment of conifers such as Douglas-fir into once thriving aspen stands as a result of modern fire regimes that are less frequent but with greater intensity due to increased fuel loading (Agee, 1994). Livestock grazing has also played a role in the decline of the reservation stands. Cattle tend to stay within the aspen groves because of the shade and browsing opportunities they present. Additionally, some aspen stands contain standing water that draws livestock. Livestock impacts can reduce the number of sucker shoots that survive to adult status, causing a decline in the entire organism (CSKT Forestry Dept, 2020).

CSKT has identified at least 16 aspen stands across the reservation that are in seral condition and could benefit from the proposed treatments. These stands vary in size from 20 acres to 70 acres and are estimated to total approximately 700 acres. Figure 3 shows several of the stands that have been prioritized for treatment by CSKT Foresters and Biologists.

Targeted Implementation Plan Lake and Sanders County, Montana

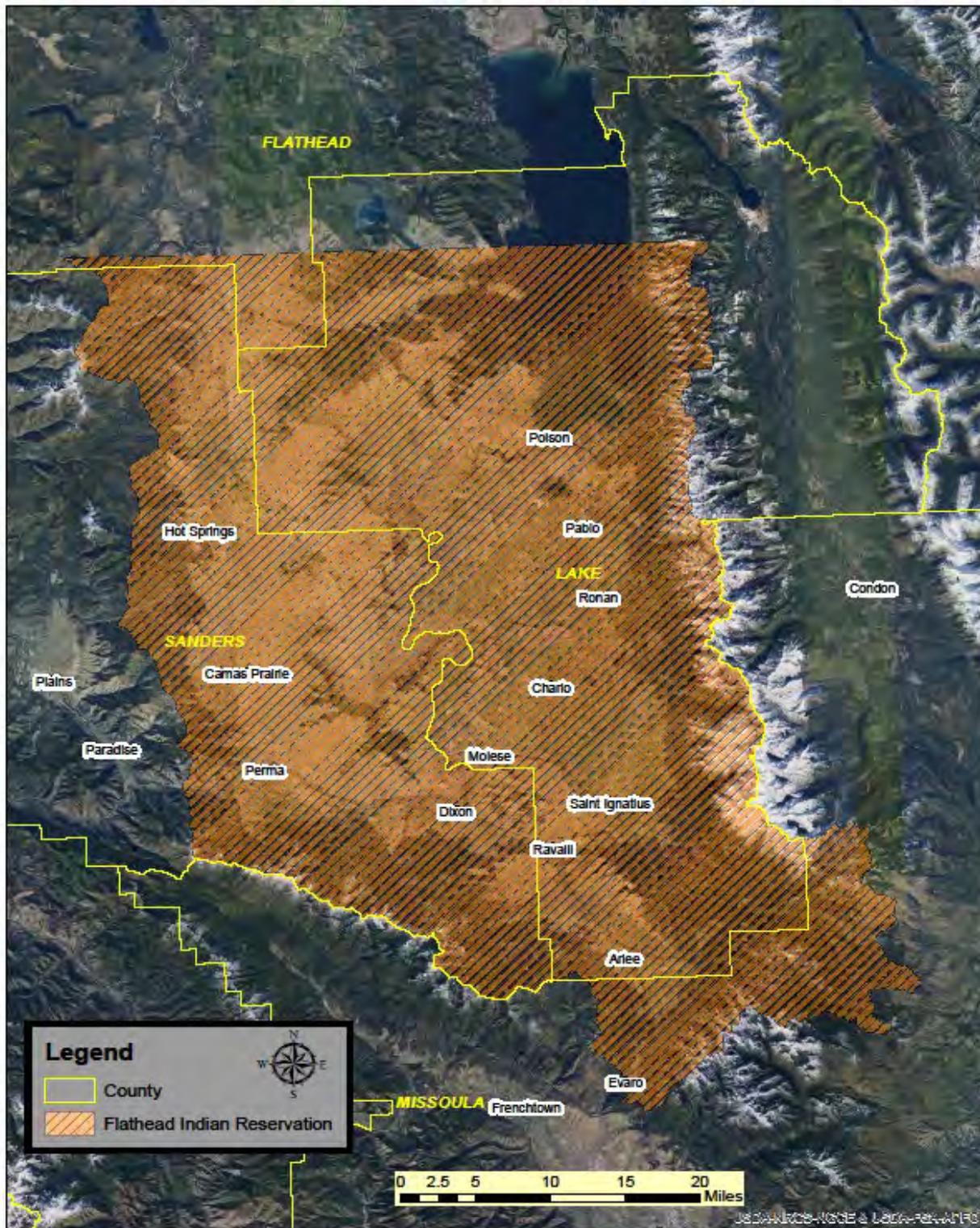


Figure 2: Extend of CSKT (Flathead) Reservation in Lake, Sanders and Flathead Counties. The boundary of this TIP is that of the Flathead Reservation.

Targeted Implementation Plan Lake and Sanders County, Montana

Aspen Habitat Enhancement Project

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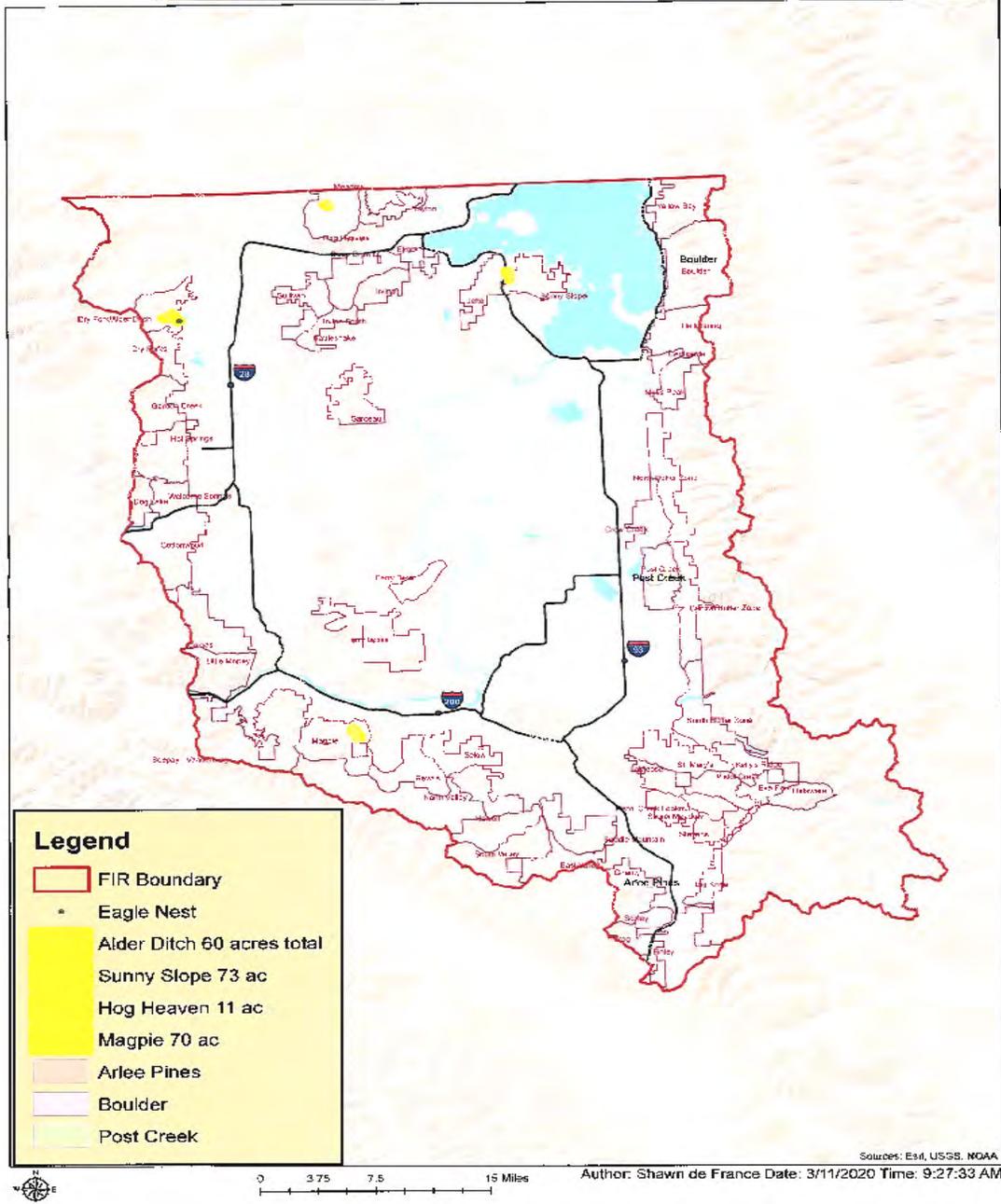


Figure 3: Identification of multiple aspen stands in need of treatment on the CSKT Reservation

Targeted Implementation Plan Lake and Sanders County, Montana

Goals and Objectives

The goals and objectives of this project will be completed jointly via NRCS, CSKT, LCCD and IWJV.

The primary goal of this TIP will be to treat approximately 700 acres of aspen stands within the CSKT reservation and that >75% of the treated acres show improvement using the 3-Step Assessment Method within five years of treatment. Treatments will include a variety of practices, many of which will be site-specific to the stand being treated. The primary practice will be Forest Stand Improvement (666). Woody Residue Treatment (384) and Prescribed Burning (338) will also be contracted on a high percentage of treated acres. Tree and Shrub Establishment (612) to replant aspen will be utilized when necessary. Where weeds are a concern Herbaceous Weed Control (315) may be contracted. Some aspen stands are heavily grazed by livestock and/or contain surface water sources that provide water for livestock. In order to reduce livestock impacts Access Control (472), Prescribed Grazing (528), Fencing (382), Stream Crossing (578), Spring Development (574), Livestock Pipeline (516) and Watering Facility (614) may be contracted.

CSKT manages their forests using comprehensive Forest Management Plans (FMPs). This project falls under the Flathead Indian Reservation Forest Management Plan, An Ecosystem Approach to Forest Management, May 2000. According to CSKT, restoring aspen stands will assist in meeting twelve written goals of this FMP:

- Strengthen Tribal Sovereignty and self-sufficiency through good forest management.
- Manage forest ecosystems to include natural processes and to balance cultural, spiritual, economic, social and environmental values.
- Adopt a process which accommodates changes in Tribal values and resources.
- Facilitate Tribal member involvement in forest stewardship.
- Provide sustained yield of forest products and maintain or enhance forest health.
- Develop options for managing land use conflict.
- Provide perpetual economic benefits of labor, profit and products to local communities.
- Manage forested ecosystems to protect and enhance biological diversity.
- Provide a variety of natural areas that Tribal members can use for solitude, cultural activities, and recreation pursuits.
- Work cooperatively with adjacent landowners and federal agencies to minimize cumulative impacts.
- Protect human life, property and forest resources through fire suppression and fuels management.
- Comply with Tribal and Federal Laws.

This TIP will address the following resource concerns:

- Plant Productivity and Health – Primary Resource Concern
- Plant Structure and Composition – Supporting Resource Concern
- Wildfire Hazard from Biomass Accumulation – Supporting Resource Concern
- Plant Pest Pressure – Supporting Resource Concern
- Terrestrial Habitat for wildlife and Invertebrates – Supporting Resource Concern

Proposed Alternatives and Actions

1. Alternative 1: No action will occur. NRCS will not provide financial or technical assistance to improve aspen stands within the CSKT reservation. Under this alternative it is likely that the aspen stands within the CSKT reservation will continue to decline in condition over the next five years.

Targeted Implementation Plan Lake and Sanders County, Montana

- Alternative 2: The preferred alternative. Under this alternative NRCS will utilize the following practices to provide both technical and financial resources to address aspen decline within the CSKT Reservation: Forest Stand Improvement (666), Prescribed Burning (338), Woody Residue Treatment (384), Herbaceous Weed Control (315) and Tree and Shrub Establishment (612), Access Control (472), Prescribed Grazing (528), Fencing (382), Stream Crossing (578), Spring Development (574), Livestock Pipeline (516) and Watering Facility (614) This alternative will provide the greatest opportunity to improve the condition of aspen stands within the CSKT reservation.

Under alternative 2 spring development, watering facilities and pipelines will only be utilized in areas where livestock are currently watering and/or loafing within aspen stands. Installation of alternative watering locations will be used to protect the aspen stands from livestock impacts. Aspen stands will most frequently also be fenced to exclude livestock when livestock impacts are a noted concern.

Alternatives will be analyzed in compliance with the National Environmental Policy Act (NEPA). All practices chosen for implementation will meet NEPA requirements. Special consideration will be given for practices affecting T/E species, such as Canada Lynx and Bull Trout, to meet all federal regulations and NRCS policy requirements. Any cultural resources present will be identified and avoided during the planning and implementation of practices involving any federal action. For practices occurring on CSKT lands CSKT will complete their own NEPA process including Cultural Resource Reviews and will provide NRCS documentation.

Partnerships

The following partners will provide both direct and indirect assistance with this Aspen Regeneration TIP:

- Natural Resources Conservation Service – Ronan, Plains and Pablo Field Offices
- Confederated Salish and Kootenai Tribes
- Lake County Conservation District
- Intermountain West Joint Venture

LCCD and the Ronan Field Office have had a longstanding partnership coordinating on conservation efforts. LCCD has received funding for a partner position with NRCS through the National Association of Conservation Districts Technical Assistant Grant as well as from the Intermountain West Joint Venture. They have hired a Resource Conservationist who works primarily on NRCS-related work including EQIP, CSP, and providing technical assistance to community members. This position also serves as a liaison between NRCS, LCCD, CSKT and private landowners and will provide 'boots-on-the-ground' assistance towards implementation of the TIP.

CSKT Wildlife, Forestry, Fire, Lands, Hydrology, Cultural and Environmental divisions will provide significant assistance with the implementation of this TIP on tribal lands. CSKT resource staff will complete the on-the-ground work and implementation on tribal lands. CSKT will use their staff for the development of forest management plans, burn plans and burning when necessary when projects occur on tribal lands. Data collected from this project can additionally provide CSKT staff valuable information regarding forest and wildlife ecology that can in turn be disseminated in outreach efforts to landowners, CSKT staff, CSKT students and others interesting in learning the benefits of aspen rejuvenation. NRCS personnel with appropriate Job Approval Authority will oversee these plans to ensure that they meet NRCS Standards and Specifications. NRCS job sheets will be completed for each practice. Private lands within the TIP are also eligible for this program and NRCS will use our conventional planning and contracting process on all eligible private lands.

Targeted Implementation Plan Lake and Sanders County, Montana

IWJV has assisted with this project by providing funding to LCCD to hire a Resource Conservationist (RC). This RC has assisted with development of this TIP. The RC position will continue to provide technical assistance to assist in implementing this TIP.

Implementation and Outreach Efforts

This TIP will last for five years. It is expected that the majority (>85%) of the treated acres will be completed on tribal properties.

Table 2: Total Anticipated Acres/Year Enrolled in the TIP

<i>Practice:</i>	2021	2022	2023	2024	2025	Total
<i>Aspen Stand Improvement</i>	80 ac	120 ac	200 ac	200 ac	100 ac	700 ac

Table 3. NRCS Budget Projections, assume average cost of \$1,000/ac

<i>CONTRIBUTIONS</i>	2021	2022	2023	2024	2025	TOTAL
<i>NRCS EQIP FA</i>	\$80,000	\$120,000	\$200,000	\$200,000	\$100,000	\$700,000

It is estimated that implementation of this TIP will require \$700,00 in total from NRCS over the course of five years. Total financial obligations will be dependent upon the practices contracted and the extent of the contract practices; the chosen suite of practices will be dictated on a site-specific basis. Some aspen stands may require forest stand improvement practices to remove encroachment from coniferous trees, some may require the development of a burn plan and implementation of prescribed burning while other stands may require grazing-related practices such as prescribed grazing, fencing and access control. It is expected that different aspen stands will require unique combinations of conservation practices in order to accomplish restoration objectives.

Table 4. Anticipated NRCS Technical Assistance (TA) Deliverables

<i>CONTRIBUTIONS (HRS)</i>	2021	2022	2023	2024	2025	TOTAL
<i>Outreach</i>	40	40	40	40	40	200
<i>Planning</i>	300	400	400	400	200	1700
<i>Implementation/Certifications</i>	100	100	100	100	100	500
<i>Totals</i>	440	540	540	540	340	2400

Table 5. Anticipated Combined LCCD Technical Assistance (TA) Deliverables

<i>CONTRIBUTIONS (HRS)</i>	2021	2022	2023	2024	2025	TOTAL
<i>Outreach</i>	40	40	40	40	40	200
<i>Planning/Implementation</i>	200	200	200	200	200	1000
<i>Totals</i>	240	240	240	240	240	1,200

Targeted Implementation Plan Lake and Sanders County, Montana

Table 6. Anticipated Combined CSKT Technical Assistance (TA) Deliverables

<i>CONTRIBUTIONS (HRS)</i>	2021	2022	2023	2024	2025	TOTAL
<i>Outreach</i>	40	40	40	40	40	200
<i>Planning/Implementation</i>	500	500	500	500	500	2000
<i>Totals</i>	540	540	540	540	540	2700

Ranking

Screening tools and ranking questions will be used to prioritize areas within the work unit based upon interest levels of potential applicants as well as the priorities of our partners.

Potential Ranking Questions (200 points total):

1. Will this project exclude livestock from the aspen stand that is being treated?
2. Will conifer encroachment within the aspen stand be treated?
3. Is the condition of the aspen stand and associated ‘suckers’ unhealthy as identified in the 3-Step Assessment Method and will the proposed treatment likely improve the current condition?

Progress Evaluation and Monitoring

Evaluation and monitoring will take place on an annual basis. NRCS and partners will analyze interest levels, implementation rates, and staff availability to plan and direct workloads. Each contracted practice will be overseen by field office staff with certifications being made upon completion, contingent on practices meeting NRCS standards and specifications. Progress will be recorded in Conservation Desktop or other appropriate databases.

All aspen stands will be assessed pre and post-treatment using the Aspen 3-Step Assessment Method outlined in ‘Land Manager’s Guide to Aspen Management in Oregon’, a publication produced in 2010 by Oregon State University in cooperation with the NRCS and the Forest Restoration Partnership. This assessment will be used to gauge the effectiveness of the treatment(s). The Aspen 3-Step Assessment Method involves multiple methods of quantification of aspen stand attributes which are used to determine the stand quality both pre and post treatment. Quantification involves the installation of both monitoring plots and transects within or near each aspen stand. Attributes such as number and condition class of trees (stems), browse and grazing levels and associated damage of regenerated ‘suckers’, level of conifer encroachment, grazing level, presence of noxious weeds and wildlife use will be collected both pre and post treatment will be collected. Photos will be taken at monitoring plots both pre and post-treatment. Progress toward meeting the stated goal of improving aspen stands on 700 acres within the CSKT Reservation will be measured by recording the number of treated acres that showed positive improvement according to the 3-Step Test during the five-year lifespan of the TIP. The goal is that >75% of all treated aspen stands will show improvement over baseline conditions within five years of treatment.

Success of this TIP will be achieved when over 700 acres of aspen stands have been treated with at least 75% showing measurable improvement between pre and post treatment using the 3-Step Assessment Method.

Targeted Implementation Plan Lake and Sanders County, Montana

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