



**Confederated Tribes
of the Colville Reservation**

**Soil & Water
Management Plan**



PUBLIC REVIEW

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COMMENTS DUE: October 23, 2014



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Confederated Tribes of the Colville Reservation

Soil & Water Management Plan

2015 - 2029



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Acronyms

Bureau of Indian Affairs	BIA
Best Management Practice	BMP
Colville Department of Transportation	CDOT
Colville Tribal Code	CTC
Confederated Tribes of the Colville Reservation	CTCR
Detrimental Soil Disturbance	DSD
Environmental Protection Agency	EPA
Federal Insecticide, Fungicide, and Rodenticide Act	FIFRA
Integrated Resources Management Plan	IRMP
Light Detection and Ranging imagery	LIDAR
Lake Management Area	LMA
National Pollutant Discharge Elimination System	NPDES
Natural Resource Conservation Service	NRCS
Ordinary High Water Mark	OHWM
Open Ground Equivalency	OGE
Riparian Management Zone	RMZ
Watershed Management Unit	WMU



Introduction

Program Collaboration

Emerging Issues

Monitoring

Introduction

This Soil & Water Management Plan is an integral part of the 2015-2029 Integrated Resources Management Plan (IRMP). It is the over-arching document that guides and directs all soil and water management activities on all properties that the Confederated Tribes of the Colville Reservation (CTCR) has jurisdiction over. Applicable properties include Tribal Trust lands, Allotments, and Tribally-owned Fee properties.

This management plan is based on the Tribal Holistic Goal (1996) as well as the Phase II Draft IRMP (2001) and has been reviewed by: Environmental Trust, Forestry, Land Operations, Realty, Fire Management, Wildlife Program, Anadromous Fish Program, Resident Fish Program, Colville Department of Transportation (CDOT), Planning Department, and the Colville Business Council.



Owhi Flats

As part of the IRMP, the Goals, Objectives, and Tasks identified in this document provide unified, holistic direction for soil and water management as well as management for all activities that impact soil and water resources.

Program Collaboration

The Tribal Holistic Goal states:

“We are and continue to be a self-sustaining sovereign entity; have flourishing enterprises; having healthy productive landscapes including rangelands, croplands, forests, riparian areas, streams and lakes; tribal decisions will include protection of tradition, culture, and aesthetic values; we will continue to provide improved/enhanced opportunities to communities/schools/workplace to increase understand and awareness of our culture, values, tradition, language, sovereignty, and history. The Reservation remains as a rural life-style and the population is in balance with effective water, mineral, and energy cycle with biodiversity resulting in an abundance of culture, medicinal and edible plants, clean air and water, springs and streams that flow year round, large trees, wildlife, fish, and insects.”

Programs and departments throughout the Colville Tribal Government and the Bureau of Indian Affairs (BIA) have an influence on Reservation soils and waters. All such programs have a responsibility to conserve and protect soil and water as an active part of everyday management. Holistic soil and water management is necessary to maintain a healthy balance between social/economic needs and robust water, mineral, and energy cycles.

All Tribal Programs and BIA Programs will collaborate to ensure that the Goals, Objectives, and Tasks of this Soil & Water Management Plan are met.

Emerging Issues

Climate change is a global phenomenon, influencing hydrologic processes, atmospheric conditions and weather patterns. Globally, the last decade was the warmest for at least 1,500 years (Marcott et al. 2013). Temperatures in the U.S. have increased gradually over the last 100 years, with the top ten warmest years occurring since 1990 (NOAA, 2012). The Washington average annual air temperature has increased 1.3 degrees Fahrenheit from 48.5 in 1970 to 49.8 in 2012 (Tebaldi et al, 2013). Increasing air temperatures result in higher evaporation rates. The combined effect of warming temperatures (higher evaporation), drier conditions (less precipitation) brought on by climate change can offset the hydrologic cycle and contribute to reduced streamflows, lake and wetland water levels and to an extent, and groundwater recharge.

Additionally, CTCR has been exploring options to diversify the Tribal economic base. Potential projects have included commercial-scale agriculture, biomass energy production, and wind energy production. Should these potential projects (or other unforeseen ventures) come to fruition, they will likely affect soil and water resources.

This management plan incorporates opportunities for adaptive management in order to act proactively to the changing social, economic, and environmental climates.

Monitoring

Monitoring is necessary to determine if management goals and objectives are being achieved and management directives are being complied with. This plan calls for water quality monitoring and compliance monitoring.

Water Quality Monitoring: As part of this plan, Environmental Trust is implementing on-going water quality monitoring that provides CTCR with the trend data necessary to determine if Colville Tribal Code (CTC) and IRMP Goals/Objectives are being met. Environmental Trust develops bi-annual reports summarizing surface- and groundwater quality as well as wetland and watershed conditions.

Compliance Monitoring: Responsible CTCR and BIA Programs will ensure that Tasks and associated timelines are met (throughout pages 4 - 13, summarized on page 14). All CTCR and BIA Programs with identified responsibilities under this plan must complete required reporting to Environmental Trust.

All CTCR and BIA Programs are responsible for ensuring that within-Program activities meet Tribal Code. Programs responsible for administering Tribal Code are responsible for implementing regular compliance checks.



Camas, Friedlander Meadows

Environmental Trust and Planning will complete and distribute a “report card” by December 31 in years 2019, 2024, and 2029. This report card will:

- Assess which tasks with identified actions have been/are being achieved on schedule;
- Assess which tasks with identified actions are incomplete/behind schedule and provide an adjusted timeline for completion;
- Assess which tasks specifying standards are being met;
- Assess which tasks specifying standards are not being met;
- Provide recommendations and timelines for achieving tasks specifying standards; and
- Evaluate current management plan and make recommendations for adaptive management.



Goal 1: Surface Water. Protect and restore surface waters and aquatic ecosystems to promote ecological, cultural, subsistence, recreational, and economic functions.

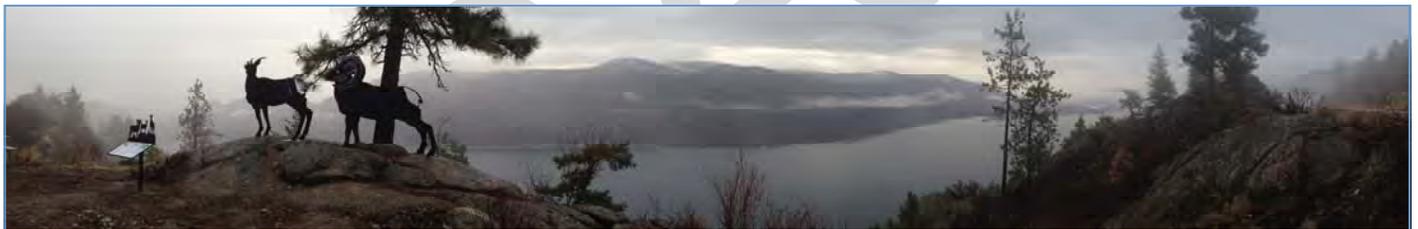
Objective 1.1: Water Quality. Water quality of all surface waters will meet Tribal Water Quality Standards. Objective 1.1 Tasks:

- 1.1.1** Attain water quality standards (increase the frequency that stream water quality sampling results satisfy CTCR Water Quality Standards) (ongoing).
- 1.1.2** Environmental Trust will monitor recreational areas on Omak Lake, Buffalo Lake, Twin Lakes, Owhi Lake, and Keller Park for bacterial contamination and will post warning notices when necessary (ongoing).
- 1.1.3** Environmental Trust will conduct a program of water quality monitoring for streams, lakes, and wetlands on the Reservation, providing a biennial assessment of results and attainment of Tribal Water Quality Standards (ongoing).
- 1.1.4** Environmental Trust will require point source dischargers of wastewater on the Reservation to obtain National Pollution Discharge Elimination System (NPDES) permits from the Environmental Protection Agency (EPA) (ongoing).
- 1.1.5** Environmental Trust will administer permitting and compliance associated with Tribal Onsite Wastewater, Mining Practices, Forest Practices, Hydraulic Projects, Hazardous Substances Control Act, and Water Quality Standards codes within the jurisdiction of the Tribes (ongoing).
- 1.1.6** Environmental Trust will provide all pesticide permits or plans for application to the EPA pesticide circuit rider supporting improved monitoring of pesticide use and investigation of all possible violations of FIFRA (ongoing).

Objective 1.2: Water Quality. Prevent or minimize delivery of runoff, sediment, and contaminants to lakes, streams, and wetlands. Objective 1.2 Tasks:

- 1.2.1** Environmental Trust will administer permitting and compliance associated with Tribal Onsite Wastewater, Mining Practices, Forest Practices, and Hydraulic Projects codes within the jurisdiction of the Tribes (ongoing).
- 1.2.2** Planning will administer the Tribal Shoreline Management and Land Use codes within the jurisdiction of the Tribes (ongoing).
- 1.2.3** CDOT will develop a forest road management plan that establishes maintenance responsibilities as well as standards for road runoff management and erosion control for forest roads by December 31, 2015.
- 1.2.4** Environmental Trust and CDOT will upgrade approximately 850 undersized or eroding stream crossings by June 30, 2023.

- 1.2.5** Environmental Trust, Fish & Wildlife, and Planning will review water and soil BMPs related to agricultural activities and revise code requirements as needed to provide adequate resource protection by September 30, 2017.
- 1.2.6** Environmental Trust, Fish & Wildlife, Land Operations and Realty will conduct a review of rangeland management BMP effectiveness for meeting Tribal Water Quality Standards by September 30, 2017, and Environmental Trust and Land Operations will revise the Rangeland Management code as needed by December 31, 2018.
- 1.2.7** Forestry will assure all current timber sale roads, landings, and skid trails comply with BMP requirements of the Forest Practices and Hydraulic Projects codes and any permit conditions of approval. Forestry will provide compliance reports to Environmental Trust on an annual basis (ongoing).
- 1.2.8** Land Operations and Realty will administer permitting/contracting and compliance (including BMP compliance) associated with grazing activities and the Tribal Rangeland Management Code (ongoing).
- 1.2.9** Environmental Trust will require proponents of development greater than one (1) acre on the Reservation to obtain General Construction permits from the EPA (ongoing).
- 1.2.10** Land Operations, Fish & Wildlife, Realty, Planning, and Environmental Trust will work with livestock owners to relocate all corrals and livestock holding areas away from surface waters, and install off-stream watering points where feasible by December 31, 2025.
- 1.2.11** Environmental Trust will update and revise the Mining Practices code by December 31, 2015.
- 1.2.12** Environmental Trust will revise the Forest Practices code by December 31, 2015.



Omak Lake

Objective 1.3: Water Quantity. Prevent or minimize management or development activities that alter seasonal water flow patterns. **Objective 1.3 Tasks:**

- 1.3.1** Environmental Trust and Planning will assure no net loss of wetland acres and function through permitting and administration of the Tribal Forest Practices, Hydraulic Projects, and Shoreline Management codes (ongoing).
- 1.3.2** Environmental Trust and Fish & Wildlife will partner with other programs, seek funding, and implement wetland restoration projects throughout the Reservation (ongoing). Environmental Trust and Fish & Wildlife will collaborate and identify key wetlands for restoration by September 30, 2015.
- 1.3.3** Environmental Trust and CDOT will improve road runoff management by installing approximately 1,825 cross drain culvert or dips at stream crossing approaches or other locations where needed by June 30, 2023.
- 1.3.4** Forestry will assure all current timber sale roads, landings, and skid trails comply with BMP requirements of the Forest Practices and Hydraulic Projects codes and any permit conditions of approval. Forestry will provide compliance reports to Environmental Trust on an annual basis (ongoing).

Objective 1.4: Ecosystem Functions. Stream, lake, and wetland physical and biological processes, cycles, and conditions fall within the range of natural expected parameters. **Objective 1.4 Tasks:**

- 1.4.1** Environmental Trust will develop monitoring procedures to assess wetland function and condition by September 30, 2015.
- 1.4.2** Environmental Trust will monitor wetland and stream condition using biotic indicators to determine ecological conditions. In 2018 Environmental Trust will use these data to evaluate BMP effectiveness.
- 1.4.3** The catchment areas of Omak, Buffalo, Owhi, McGinnis, Rebecca, and Twin Lakes will be established as **lake management areas** with additional measures taken to limit and filter runoff from roads, development, forestry operations, and grazing management. Environmental Trust, Planning, Forestry, Land Operations, and Fish & Wildlife will accomplish this cooperatively (ongoing).

Lake Management Areas (LMAs):

Planning will require 200ft setbacks from OHWM of surface waters for all new development (ongoing).

Planning will ensure that all new development (driveways, structures, etc.) shall incorporate stormwater management measures to keep stormwater within the development and out of surface waters (ongoing).

Range Unit Permittees and Grazing Lessees within LMAs will develop and implement measures in order to limit livestock access to surface waters and wetlands to no more than two (2) weeks in an annual grazing period. Land Operations, Realty/Leasing, and Environmental Trust will oversee completion of this task by December 31, 2018.

Realty will develop runoff management plans for livestock winter feeding sites to ensure runoff does not reach surface waters by December 31, 2017.

Environmental Trust will update water type maps within LMAs using LIDAR and aerial photography by December 31, 2018.

Tribal Roads, Forestry, and Environmental Trust will upgrade all LMA roads to meet the revised Tribal Code by December 31, 2020.

Objective 1.5: Boundary Waters. In cooperation with other management agencies in the U.S. and Canada, enhance water quality and quantity in the Reservation boundary waters to support human health, cultural values, and aquatic resources for existing and future uses. **Objective 1.5 Tasks:**

- 1.5.1** Environmental Trust will participate in Columbia Basin and State water quality and watershed forums, councils, and other venues supporting water quality protection and water resource management in Reservation boundary waters beneficial to CTCR, and review and comment on land use and discharge permitting affecting waters throughout the Upper Columbia Basin (ongoing).
- 1.5.2** Environmental Trust and Fish & Wildlife will maintain involvement in the Columbia River Treaty process to ensure adequate water of good quality for all beneficial uses including the reintroduction of anadromous fish above Grand Coulee Dam (ongoing).
- 1.5.3** Environmental Trust will continue to work with Washington State, EPA, and other entities to clean up mining pollution between Trail, B.C. and Grand Coulee Dam (ongoing).
- 1.5.4** Environmental Trust will continue to work with Washington State and other entities in the Okanogan and Similkameen Rivers to address legacy pollution issues (ongoing).
- 1.5.5** Environmental Trust will monitor, prioritize and act on sources of potential pollution to the Reservation boundary waters (ongoing).



Goal 2: Groundwater. Sustain safe, high-quality aquifer and groundwater supplies to meet ecological, cultural, subsistence, and economic needs.

Objective 2.1: Water Quality. Management and development activities will not reduce groundwater quality. Objective 2.1 Tasks:

- 2.1.1** Environmental Trust will review proposals and permit applications for land use and other projects that discharge wastewater to maintain contamination source restrictions in wellhead protection zones (ongoing).
- 2.1.2** Environmental Trust will administer CTC 4-5 On-site Wastewater Treatment & Disposal code to maintain regulatory restrictions on septic systems (types, condition, distance from well, etc.) (ongoing).
- 2.1.3** Environmental Trust will collaborate with EPA to assure underground storage and above ground tank regulations are observed on the Reservation (ongoing).
- 2.1.4** Environmental Trust will provide all pesticide permits or plans for application to the EPA pesticide circuit rider supporting improved monitoring of pesticide use and investigation of all possible violations of FIFRA (ongoing).
- 2.1.5** Environmental Trust will administer the CTC: 4-16 Hazardous Substance Control code requiring specified cleanup standards for groundwater, soil, and sediment contamination (ongoing).

Objective 2.2: Water Quantity. Minimize activities and projects that cause a net reduction of groundwater supplies necessary to sustain beneficial use by Tribal Members and organizations. Objective 2.2 Task:

- 2.2.1** Environmental Trust will monitor groundwater levels using field and/or analytical methods and, if necessary, will regulate groundwater withdrawals (such as pumping) to ensure adequate groundwater supplies for future beneficial water use (ongoing).



Stepstone Falls



Goal 3: Watersheds. Ensure watershed conditions that sustain water cycle function to promote productive soils, plants, and habitat.

Objective 3.1: Water Cycle. Watersheds will capture, store, utilize, and safely release water within the natural range of variability; management activities will avoid causing undesirable watershed conditions. Objective 3.1 Tasks:

3.1.1 Forestry will designate skid trail locations outside swales and draws, and locate landings and roads outside riparian management zones except where approved by Environmental Trust and with special mitigation parameters (ongoing).

3.1.2 CDOT and Forestry will design, reconstruct, maintain, and decommission roads to minimize or eliminate groundwater interception, prevent soil erosion, keep intercepted water within its natural drainages, and minimize delivery of runoff to surface waters (ongoing).

3.1.3 Forestry will ensure that harvest activities will not increase watershed open ground equivalency (OGE) beyond the sensitivity class thresholds except where approved by Environmental Trust and with additional mitigation to reduce accelerated runoff (ongoing):

Very High:	20%
High:	25%
Moderately High:	30%
Moderate:	30%
Moderately Low:	30%
Low:	35%
Very Low:	35%

3.1.4 Environmental Trust will administer permitting and compliance associated with Tribal Onsite Wastewater, Mining Practices, Forest Practices, and Hydraulic Projects codes within the jurisdiction of the Tribes (ongoing).

3.1.5 Environmental Trust and CDOT will decommission over 300 miles of Reservation roads that are negatively impacting the water quality of streams, lakes, and wetlands and not needed for infrastructure—restoring about 1,000ac of riparian and forest habitat—as directed by the Natural Resource Restoration Plan by June 30, 2023.

3.1.6 New road will not be constructed in watershed management units if total (open and closed) forest road densities are (or will be) greater than 4mi/mi² unless the project includes decommissioning of an equal or greater length of road in the WMU. Road density will be calculated on a WMU basis (ongoing).

3.1.7 Open forest road density will not exceed 1.5mi/mi². Road density will be calculated on a WMU basis (ongoing).

3.1.8 Forestry will ensure a “no net increase” of forest road miles at a Reservation-wide scale. Achievement of this target will be required at five-year intervals, that is by year-end 2019, 2024, and 2029. Decommissioned roads or those roads meeting the criteria for “abandoned road” as defined in CTC 4-7-61 and approved as abandoned by Environmental Trust will not count toward the total (ongoing).

Objective 3.2: Soils. Management activities will protect natural, site-specific soil processes and conditions including: water cycling, nutrient cycling, plant productivity, and inherent characteristics. Objective 3.2 Tasks:

3.2.1 By September 30, 2018, Environmental Trust will map known unstable slope locations (landslides, mass-wasting) based on past records, LIDAR, the NRCS Soil Survey and other available technologies.

3.2.2 Environmental Trust and Planning will limit land clearing, development, and forest operations in areas of soil/slope/streambank instability and channel migration zones to prevent triggering additional erosion or increasing slope movement (ongoing).

3.2.3 Forestry and Fire Management will ensure that post-treatment Coarse Woody Debris/Large Woody Debris densities meet the following minimums to sustain soil/plant productivity, hydrologic functions, and habitat:

Dry ponderosa pine/Douglas-fir forest = 5 – 10 tons/ac

Cool Douglas-fir forest = 10 – 20 tons/ac

Cool lodgepole pine/lower subalpine fir forest = 8 – 24 tons/ac

Coarse Woody Debris is defined as downed woody material \geq 4in. in diameter (ongoing).

3.2.4 Forestry and Fire Management will ensure that the total (%) area impacted by detrimental soil disturbance (DSD) within each timber harvest block will not exceed 25% (ongoing).



Soil profile

Detrimental Soil Disturbance (DSD) thresholds

Disturbance Type	Detrimental Threshold Value
Compaction	Change from natural bulk density detectable by penetrometer
Puddling	Ruts \geq 6in
Displacement	Removal of \geq 1in of any surface horizon from a contiguous area greater than 100ft ²
Surface erosion	Rills, gullies, pedestals, and soil deposition
Severely burned soil	Physical and biological changes to the soil resulting from high-intensity burns of long duration as described in the Burned-Area Emergency Rehabilitation Handbook (FSH 2509.13)

Objective 3.3: Riparian Areas. Riparian area management and protection will preserve watershed functions and habitat as well as support critical cultural and spiritual values. Objective 3.3 Tasks:

- 3.3.1** Between 2014 and 2029, Environmental Trust will complete Riparian Rapid Condition Surveys at all stream monitoring sites. Data will be summarized for each WMU and used to assess RMZ effectiveness, project planning, and prioritize restoration efforts..
- 3.3.2** As part of the project planning process Natural Resource Department programs may decide to expand Riparian Management Zones as special mitigation or to provide additional protection in major lake watersheds and stream headwater areas (ongoing).
- 3.3.3** Forestry and Fire Management will incorporate riparian BMPs from CTC 4-7 into projects located along or within riparian management zones (ongoing).
- 3.3.4** Environmental Trust, Fish & Wildlife, and Land Operations will develop appropriate riparian grazing and water quality BMPs, procedures, and practices, and draft language for adding water resource protection requirements to CTC 4-11 Rangeland Management by December 31, 2017. Land Operations will incorporate these requirements into range permits beginning in 2018.
- 3.3.5** Planning will administer CTC 4-15 Shoreline Management to uphold riparian setbacks and buffers in land use and shoreline decisions and permitting (ongoing).

Objective 3.4: Flood Plains. Protect natural drainage ways including floodplain and channel migration zones to maintain natural storage/runoff rates and patterns.

Objective 3.4 Tasks:

- 3.4.1** Restrict non-essential building development, draining, filling, diking, road/landing construction, and other management activities within mapped flood hazard areas. Planning and Environmental Trust will regulate this through administration of CTC 4-15, 4-7, and 4-9 (ongoing).
- 3.4.2** Subject to funding availability, Environmental Trust will perform flood hazard mapping for the Nespelem River and collaborate with Planning to assure this and other mapped and approved floodplain areas are incorporated into land use decisions (ongoing).



Beaver Pond in Capoose Creek watershed



Goal 4: Water Use. Manage water use to protect tribal water rights and sovereignty as well as support beneficial uses.

Objective 4.1: Tribal Water Rights. Maximize Tribal and individual Indian water rights and extend Tribal jurisdiction and control to all applicable water uses on and off Reservation to the maximum extent permitted under Tribal law and any federal law that may be applicable. Objective 4.1 Task:

4.1.1 Environmental Trust will administer permitting and compliance associated with Tribal Water Resources Use code within the jurisdiction of the Tribes (ongoing). This will further the objective for which the Colville Reservation was created, to provide a permanent home and abiding place for the Colville Tribes and their members both now and in the future (ongoing).

Objective 4.2: Promote the Beneficial Use of Water. Encourage water use for any and all purposes necessary to benefit Tribal cultural, social, and economic conditions. Objective 4.2 Tasks:

4.2.1 Environmental Trust will communicate with other Tribal/BIA departments and outside parties that water use within the Reservation and all other Tribal lands is for beneficial purposes as defined by CTC 4-8 and 4-10 (ongoing).

4.2.2 Environmental Trust will collaborate with other Tribal and Federal programs to develop and promote current and future agricultural projects and water delivery systems necessary for irrigation within the Reservation and all other Tribal lands (ongoing).

Objective 4.3: Tribal Sovereignty. Maintain and enforce Tribal policies and procedures to document water use on all Tribal lands. Objective 4.3 Tasks:

4.3.1 All water users within the Reservation and all other Tribal lands will obtain permits through Environmental Trust. All applications will be routed for review (ongoing).

4.3.2 Environmental Trust will maintain a record of all issued water permits using both paper and electronic means to assist tracking overall water use within the Reservation and all other Tribal lands (ongoing).

Objective 4.5: In-Stream Flows. Manage water use to conserve minimum in-stream flows necessary for natural processes and conditions. Objective 4.5 Tasks:

4.5.1 Environmental Trust will determine if a water supply common to a particular area is, or will be, used beyond its capacity or otherwise adversely affected by water withdrawal and use. Environmental Trust will manage use levels to preserve wildlife, fish, scenic, aesthetic, and other environmental values and navigational values (ongoing).

4.5.2 Environmental Trust and Fish & Wildlife will determine minimum in-stream flows for streams affected by water use by December 31, 2015.



Little Owhi Lake (upper left); Elbow Lake (upper right); Cody Lake (lower left); Rat Lake (lower right)



Goal 5: Climate Change. Consider, and manage for, long-term alterations in ecological processes due to global Climate Change.

Objective 5.1: Adaptive Management. Carry out a program of adaptive management to address predicted and realized climate-driven effects on the Reservation watersheds and water resources. Objective 5.1 Tasks:

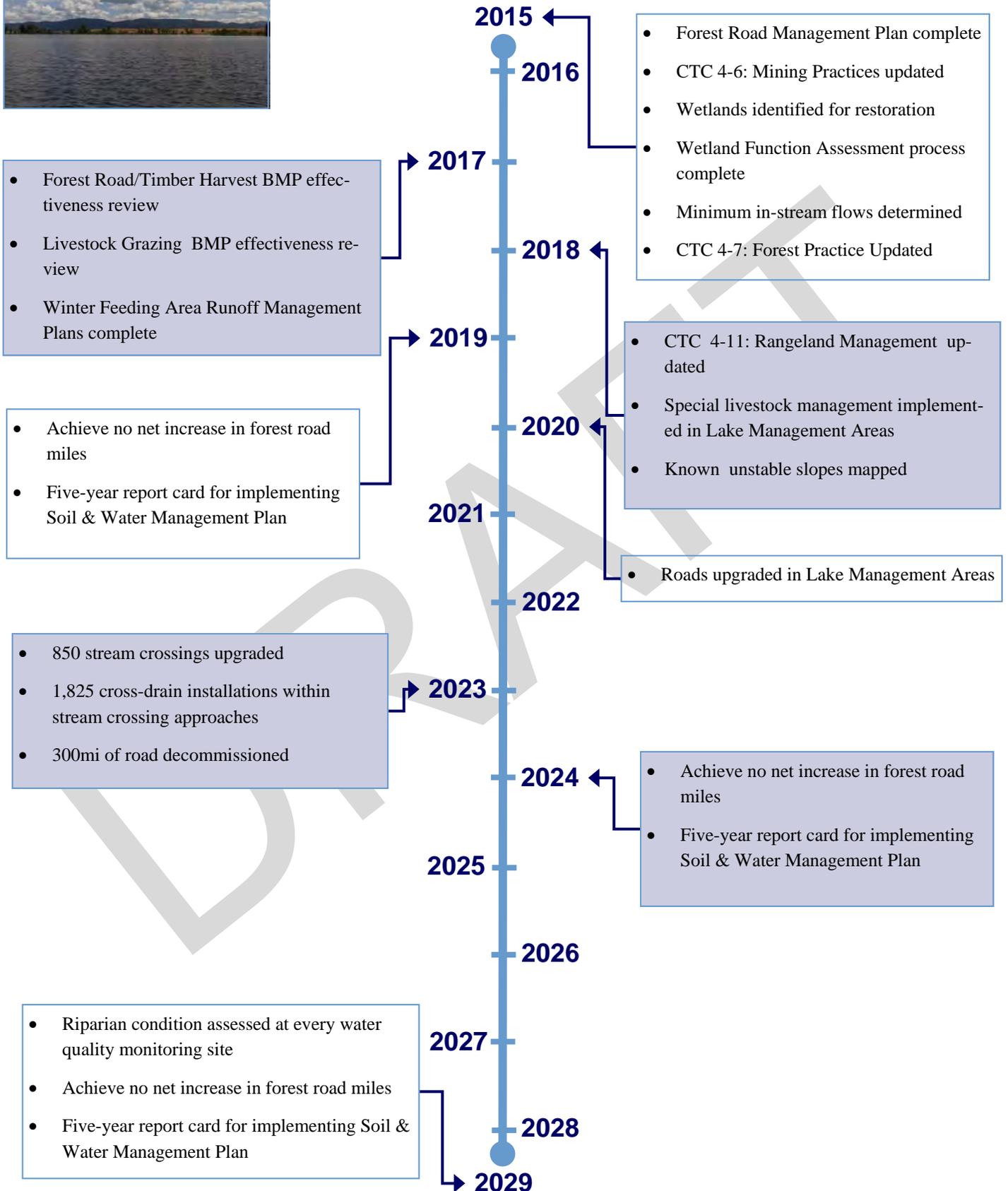
- 5.1.1 Environmental Trust will conduct an annual review of regional climate change forecasts, analyses, and water resource trends to determine prudent changes in watershed management that should be taken (ongoing).
- 5.1.2 Planning and Environmental Trust will codify conservation of land and resources necessary to protect homes and communities from climate-driven threats such as flooding, rain-on-snow events, and channel migration (ongoing).
- 5.1.3 Environmental Trust will regulate conservation in water use to maintain and safeguard water for drinking, cultural, spiritual or religious practices, and other beneficial uses (ongoing).
- 5.1.4 Environmental Trust and Planning will implement increased protection and adaptive management for wetlands, riparian areas, groundwater recharge areas and floodplains which may experience significant stress and play a key role in ameliorating effects of climate change on the water resource (ongoing).
- 5.1.5 The Natural Resources Department will evaluate mitigation practices or programs that CTCR may choose to implement to reduce the magnitude of climate change (ongoing).



21 Mile Creek



Compliance Timeline for Tasks with Deadlines





References

CTCR. 1999. Integrated Resources Management Plan: Goals, Objectives, Standards, & Guidelines. Phase II Draft. Confederated Tribes of the Colville Reservation. Nespelem, WA.

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