

**NTITYIX RESOURCES LP**

**Westbank First Nation Forestry**

**Seven Generation Plan**

The Seven Generation Plan provides guidance to Ntityix staff on its responsibilities to care for the lands on which the forest tenures held by Westbank First Nation (WFN) occur. The Plan is a tactical plan and takes direction from Syilx Nation derived Forestry Principles and Objectives described in the first section of this document. We welcome continuing input from ONA and WFN community members as well as local stakeholders to help us keep this a relevant and improved plan as we move forward.

A tactical plan determines how and where the principles and goals of the plan will be met. Landscape level planning is a first step in developing this tactical plan and collects information on the resources within the area being stewarded. Second, there needs to be agreement on collective desired future forest conditions. And third, strategies to attain future forest goals need to be determined. Landscape level planning involves communication between Ntityix, the WFN community, local stakeholders and the Provincial government to identify priority areas in which to apply landscape planning strategies. Tactical planning determines where the forest planning strategies will be implemented.

This is a working plan, a plan that will continually evolve as additional knowledge becomes available, as community values change, or as our external environment changes. The plan is never intended to be “complete”, rather a plan that continually improves over time and generations.

The Ntityix Resources Seven Generation Plan consists of four parts in this document: Principles, Goals, Tactics, and Appendices. In addition this plan includes protocols and maps which form part of the plan but are not part of this document. In time, all documents will be posted to the Ntityix Resources website and will be continually updated as the plan evolves.

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## 1.0 Syilx Principles and Objectives

The foundation of the Ntityix Resources Seven Generation Plan is the Syilx Principles that are being developed with the help of the Okanagan Nation Alliance (ONA) Knowledge Keepers and Elders through the ONA's Forestry Working Group. We anticipate that these principles, at the Nation level, will evolve over time but at present provide the guidance necessary to begin the development this plan.

### **Principle 1: Syilx Rights, Responsibilities, Laws and Protocols are recognized and upheld**

- Utilize syilx law & captikw to uphold syilx law.
- Understand and uphold laws (captikw session with enowkin).
- Syilx decision making structures are used.
- Practice/operate within the context of abundance

### **Principle 2: Effective suxtem and restoration of ecosystems is demonstrated at 120 years post operations.**

- Landscape/watershed scale planning with a minimum 120-year outlook.

### **Principle 3: Water is protected**

- Syilx Forest Harvest Standards for siwłk<sup>w</sup> are established, endorsed and honored.
- Syilx Water Strategy is utilized as guiding principles for water protection, conservation and restoration.
- Planning demonstrates restoration and enhancement of water values.
- Landscape Planning will demonstrate the protection of water by avoiding disturbances on unstable slopes and sensitive soils.

### **Principle 4: Ecological integrity and resiliency of the land is maintained or enhanced at the landscape level**

- Syilx principled landscape level plans are developed throughout Syilx Territory.

### **Principle 5: Ecological integrity and resiliency of the land is maintained or enhanced at the stand level**

- Site level plans are co-developed and approved by the syilx Nation.
- Site plans demonstrate that ecosystem functions are at minimum maintained, and where possible, enhanced.
- Site planning reflects Syilx principled landscape level planning (principle 4).

### **Principle 6: Healthy ecosystems translate into Human wellbeing**

- Landscape level planning prioritizes diversification of economic opportunities and non-timber values.
- Economic opportunities include partnership agreements with Syilx communities that intend to grow capacity, economic opportunity and diversification for the Syilx Nation.
- Site plans demonstrate consideration of diverse opportunities by enhancing ecosystem values that contribute to non-timber economic and cultural values.

**Principle 7: Natural processes are restored and promoted**

- Syilx Principled landscape plans that restore and enhance ecosystem values are developed throughout the Territory.
- Site plans are designed in such a way to maximize restoration potential.
- Partnership agreements between licensees and the Nation identify mechanisms to direct revenue towards activities such as prescribed fire, cultural and sustenance harvesting and monitoring.

**Principle 8: Cultures, communities, and economies flourish within the context of healthy ecosystems**

- Syilx communities are provided opportunities to obtain area-based forest tenures that are large enough to support a viable annual cut.
- Planning and management decisions on local tenures are made locally.
- The concept of zoning is embedded in Syilx principled landscape plans and are the foundation for timber harvesting availability.

**Principle 9: Collaborative processes and accountability**

- Syilx principled landscape plans are developed and approved by the Syilx Nation. (syilx decision making/approval process)
- Syilx principled landscape level plans are supported by collaborations with licensees and BC.
- Syilx collaborative process is utilized (FWG, Tier 2 & 3, other?).
- Partnership agreements with licensees and BCTS are established.
- A Syilx forestry decision making framework is established and utilized by all decision makers (including BC).
- Syilx people are resourced, trained and involved in operations (monitoring, accountability).
- Licensees resource monitoring/auditing program.

**Principle 10: People have a fair share of the benefits from the ecosystems in which they live.**

- Syilx Communities have viable area-based tenures.
- Revenue sharing is realized through durable, long term and equitable mechanisms with BC.
- Syilx harvest royalty is enacted.

## 2.0 Goals of the Ntityix Resources Seven Generation Plan

The goals of the Seven Generation Plan are specific to the forest tenures held by WFN and are intended to reflect the values of the community and the land over which they cover. The over-riding objective for stating these goals is to bring attention to them, not to treat each in isolation. An inherent principle of the Syilx people is to understand the inter-connectiveness of life as it relates to decisions made on the land. Each goal is dependant on the others and the objectives, strategies, and tactics of each are all inter-related.

**Goal 1: Sustain the Forest as a Life Support System for Timix™ (all living things including people)**

*All living things have an inherent right to exist and to maintain a sustainable level of ecological regenerative capability.*

Our goal is to develop and document an understanding of the forested landscape as an ecological system that will sustain all living things that depend upon it, and will always provide food, water, cultural

resources, spiritual values, and economic benefit to people that depend on lands cared for by Ntityix Resources and Westbank First Nation.

Objective 1: Using Syilx Principles as the foundation, develop a Landscape Level Plan for the land within WFN-held forest tenures. This plan will consider the full range of values to maintain or enhance ecological integrity of all WFN stewarded forests over a 120+ year timeframe. The plan will adapt when values we are presently unaware of become known.

Strategies to achieve the objective:

- Assign sufficient resources to develop, maintain and improve a landscape level plan for WFN held forest tenures.
- Ensure old seral forests are well represented across the landscape.
- Provide balance between economic, environmental, and social values across the landscape.
- Plan to move the forest towards an historic ecological condition with a variety of forest life stages, opening sizes, and tree species, including old forest and new forest stands and a diversity of native plant communities and wildlife habitats.
- Promote ecological diversity and retain scattered and large diameter trees across the landscape.
- Maintain a road system that is only large enough to provide essential access for industrial, recreational, and wildfire suppression activities.
- Manage the density of young forests through pre-commercial and commercial thinning to create healthy large diameter trees in the future.

## **Goal 2: Conserve, Protect, and Improve *Siwłk<sup>w</sup>* (water) Quality and Supply.**

*Clean and abundant Siwłk<sup>w</sup> is a sacred and fundamental right of all living things.*

Our goal is to respect and honour Syilx responsibility and respect for *Siwłk<sup>w</sup>* by managing WFN's forest tenures so to ensure future generations have a permanent, continual supply of clean and abundant *Siwłk<sup>w</sup>* on the land.

Objective 2: All Ntityix's forest operational (stand level) plans, from the landscape level to the smallest cutblock or road, will include strategies to protect, conserve or restore water values.

Strategies to achieve the objective:

- Protect, enhance and maintain effective riparian areas adjacent to all *cəcwixa?* (water bodies).
- Operations that occur near or within riparian areas or *cəcwixa?* crossings will minimize or prevent adverse effects on water quality.
- Consider partnering with beaver where appropriate to restore or enhance wetlands and water supply.
- Implement a program for evaluating the effectiveness of practices on water quality and riparian ecosystems.
- Ensure permanent roads are maintained to prevent adverse impacts on water.
- Operations will be limited or prohibited on sensitive soils and slopes.

### **Goal 3: Conserve, Protect, and Improve Wildlife habitat Quality and Supply.**

*Syilx people have a sacred responsibility to care for the land and all living things. Since time immemorial, the Syilx people have been self-reliant and well supported through their own ingenuity and careful and considered use of the land and resources. Wildlife species are relatives of the people and give of themselves to provide traditional foods, goods, and cultural values; other wildlife is of spiritual significance; and some species are at-risk and in need of assistance.*

Our goal is to maintain respect and continual awareness of wildlife species present and the habitats they require on WFN-held forest tenures. This plan will be revised as required to adjust to newly added species of concern, newly gained knowledge and to changing circumstances.

Objective 3 Food: Conserve, protect and improve habitat quality and supply for SĀ'a?cínm (Deer) and Pa?pa?I᠙áca? (Moose)

Strategies to achieve this objective:

- Provide habitat connectivity between seasonal ranges, concentrating snow intercepting cover in winter habitats, riparian areas, along known travel routes, and along terrain breaks.
- Retain preferred forage (deciduous tree and shrub) species within timber harvesting areas.
- Minimize road density in important forage and movement areas, and near wetlands.
- Engage community members, contractors and the broader community in efforts to remove barriers to wildlife movement, and to restore and improve important habitats.

Objective 3 Water: Conserve, protect and improve habitat quality and supply for Stunx (beaver)

Strategies to achieve this objective:

- Restrict harvesting operations adjacent to lakes, and larger wetlands and streams.
- Protect smaller ponds, wetlands, and streams in and near harvested areas to ensure they remain a healthy and functioning component of the forest ecosystem.
- Partner with stunx where appropriate to restore or enhance wetlands and water supply.

Objective 3 Culture: Conserve, protect and improve habitat quality and supply for Skr̄xist (Black Bear), Ki?lawna? (grizzly bear), Sen'k'lip (coyote), Skək᠙aka? (birds), and Yǎwǎ'utxn (badger).

Strategies to achieve this objective:

- Maintain a reasonable balance of young, mid and old forested areas.
- Provide for areas with interior forest conditions across the landscape.
- Minimize road density in important forage and movement areas, and near wetlands.
- Retain a network of old forest conditions across the landscape.
- Exclude wetlands, wet areas, dead standing large diameter (especially cavity-bearing) snags, deciduous stands, and brushy sites from harvest areas.
- Protect dens, burrows, and the nests of eagle, osprey, heron and pileated woodpecker.
- Promote diverse food plant (especially berry) producing areas throughout the forest.
- Retain a component of existing stand structure and other biodiversity features within harvested areas.

Objective 3 Economy: Piᑭᑭᓂ (marten), Wápuᑭᓂ (lynx)

- Provide a multi-aged forest with less than 25% dense mid-seral (~40 to ~70 year old) area.
- Maximize in-block retention for connectivity corridors along riparian areas and terrain breaks, and by excluding wetlands and wet/tall understory and brushy patches from harvesting.
- Within the appropriate areas of the FOZ provide stand level habitat requirements for Piᑭᑭᓂ post-harvest.
- Employ precommercial and commercial thinning, thinning-from below (diameter limit cut), and group selection to reintroduce, where lacking, the largest diameter CWD possible to the forest floor while maintaining at least 30% overhead canopy.

**Goal 4: Conserve, Protect, and Improve culturally important and endangered plants and plant communities.**

*Syilx people have used hundreds different plants for food, medicine, materials, and in cultural rituals. Many of these species remain important to the Syilx people today. This knowledge of plants and their uses has allowed the Syilx people to thrive in the diverse environments of their territory.*

Our goal is to maintain respect and awareness of plant species and plant communities present on WFN held forest tenures and to revise this plan to adjust to newly added species of concern, newly-gained knowledge, and to changing circumstances as appropriate.

Objective 4: Maintain and enhance “at risk” and culturally important plants and plant communities throughout WFN held forest tenures.

Strategies to achieve this objective:

- Determine the range of “at risk” and culturally important plants and plant communities that have the potential to occur on WFN tenures.
- Determine the habitat and seral stage necessary to support the range of “at risk” and culturally important plants and plant communities that occur on WFN tenures.
- Maintain or improve the health of “at risk” and culturally important plants and plant communities that occur on WFN tenures.

**Goal 5: Ensure Community Benefits from the Forest are Reasonable, Fair, and Sustainable**

*Human presence is necessary to maintaining the health of the environment. Plants and animals that humans utilize, if not cared for, become overgrown and stagnate.*

Our goal is to maintain, restore, and enhance natural relationships, ecosystem services, and natural resources for all generations to come.

Objective 5 Economic: Establish, on a 5-year basis, a projected 5 year cut level based on a long term (120+ years) sustainable rate of timber harvest.

Strategies to achieve this objective:

- Use the land base within the Forest Operations Zone to determine projected sustainable timber yields.
- Plan timber harvesting to generate a consistent and sustainable revenue stream.
- Focus on value versus volume.
- Maintain an up-to-date forest inventory and conduct analyses to determine trends in forest growth, mortality, and standing trees to ensure that harvest levels are sustainable.
- Manage forests within the FOZ to maximize value generation versus volume generation.
- Delay harvest in mature managed stands within the Forest Operations Zone to provide old forest values for a period of time before harvest.
- WFN forest tenures to derive benefits for members

Objective 5 Environmental: Use both western and traditional knowledge to steward the lands in a manner that improves the health and resilience of our forests for generations to come.

Strategies to achieve this objective:

- In the FOZ, ensure the silviculture system chosen provides the greatest opportunity to address forest health, resiliency and non-timber values.
- Develop TEK and science-based information and tools to enable planning at both the landscape and stand planning levels and for adaptation in the longer term to address and prepare for climate change.
- Maintain and enhance old forests and the values they provide within the Old Forest Zone.
- Recruit young forests to provide old forest values in the future particularly in areas where old forest values are desired.
- Retain old forest attributes and the values they provide at the stand level within the Forest Operations Zone.

Objective 5 Social: Engage and empower the WFN community by raising awareness and capacity while recognizing the rights, title, and knowledge of its members. Recognize and work with local stakeholders to incorporate their values into forestry decisions.

Strategies to achieve the objectives:

- Ensure decisions made on the land reflect the values of the community and affected stakeholders.
- Involve the community and local stakeholders in all aspects of goal setting, planning and operations on WFN tenured lands.
- Raise community awareness and provide opportunities for members to re-connect with the land.
- Incorporate traditional knowledge into all aspects of forest system.



**Goal 6: Restore Damaged Ecosystems, Improve Forest Health, and Reduce Destructive Wildfire.**

*Biodiversity and ecosystems deliver crucial services to humankind – from food security to keeping our waters clean, buffering against extreme weather, providing medicines to recreation and adding to the foundation of human culture.*

Common throughout this plan is the interwoven vision of where healthy forests and ecosystems flourish throughout WFN's forest tenures. The strategies and tactics within this plan all work together towards attaining this vision.

Objective 6: To identify damaged and neglected ecosystems and develop and implement restoration plans to ensure future generations can enjoy them.

Strategies to achieve this objective:

- Manage the lands surrounding our communities to reduce the potential for destructive wildfire.
- Promote the health of forest ecosystems by minimizing the negative impact of stands that are potentially at risk or currently negatively affected by insects and disease.
- Identify damaged or neglected ecosystems that will benefit from restoration activities.

### 3.0 Tactics

| Goal   | Objective  | Strategy  | Tactic  |
|--|--|---|---|
| <p>Goal 1: Sustain the Forest as a Life Support System for Timix™ (all living things including people)</p> | <p>Objective 1: Using Sylix Principles as the foundation, develop a Landscape Level Plan for land within the WFN-held forest tenures. This plan will consider the full range of forest values to maintain or enhance ecological integrity of all WFN stewarded forests over a 120+ year timeframe.</p> | <p>Assign sufficient resources to develop a landscape level plan for WFN held forest tenures.</p> | <p>Annual budgets will provide line items for system and monitoring to ensure the plan is developed, maintained, and where required enhanced.</p>   |
|  |  | <p>Ensure the old seral stage is well represented across the landscape.</p>                       | <p>Zone the land into: 1) An Old Forest Zone (OFZ) and 2) a Forest Operations Zone (FOZ). For planning purposes, divide the landbase into geographically appropriate planning units.</p> <p>Target 30% of each BEC subzone within each planning unit to be managed for old forest values.</p> <p>Establish the OFZ along and between physical features such as watercourses, ridges and slope breaks to provide protective and connective corridors for Siw+k™ (water) and wildlife movement.</p> <p>On an annual basis, conduct ground-based verification assessments to determine stand attributes within the OFZ.</p> <p>Identify recruitment stands where old forest attributes are desired but, at this time, not present.</p> |
|  |  | <p>Provide balance between economic, environmental, and social values across the landscape.</p>   | <p>Timber harvesting will be focused in the FOZ using verifiable sustainable harvesting practices that meet the other relevant goals within this plan.</p>  |

| Goal | Objective | Strategy   | Tactic  |
|------|-----------|--|---|
|      |           |  | <p>Environmental and social values will be priorities within the OFZ. Though limited harvesting may occur, it must meet the relevant goals of this plan.</p>  |
|      |           | <p>Plan to move the forest towards an historic ecological condition with a variety of forest life stages, opening sizes, and tree species, including old forest and new forest stands and a diversity of native plant communities and wildlife habitats.</p> | <p>Establish, maintain and where necessary recruit old forests in the OFZ.</p> <p>Opening size within the FOZ will be BEC dependant as per Appendix F - Forest Operations Zone – Stand Level Practices.</p> <p>Within the FOZ regenerate harvested stands with a combination of natural regeneration and planting of diverse and site-specific climate change resilient species.</p> <p>Harvesting within the OFZ will be limited and with the objective of maintaining or enhancing social and environmental values.</p> <p>Ground-based assessments will be conducted annually to identify opportunities to enhance the production of culturally important plants, improve forest health and ecosystem functioning, and to protect or enhance wildlife habitat.</p> |
|      |           | <p>Promote ecological diversity and retain scattered and large diameter trees across the landscape.</p>  | <p>The Old Forest Zone will be stewarded for old forest values including large diameter trees, small gap openings, and coarse woody debris.</p> <p>The Forest Operations Zone will be stewarded to provide a range in age class and patch size including the retention of large diameter trees across this zone as provided in Appendix F - Forest Operations Zone – Stand Level Practices.</p>   |

| Goal   | Objective  | Strategy   | Tactic   |
|--|--|--|--|
|  |  | <p>Maintain a road system that is only large enough to provide essential access for industrial, recreational, and wildfire suppression activities.</p> | <p>By 2024 develop a plan for the rehabilitation of unnecessary or redundant roads within each Planning Unit.</p> <p>Develop a five-year km target for reducing the total length of all roads within each planning unit.</p>   |
|  |  | <p>Manage the density of young forests through pre-commercial and commercial thinning to create healthy large diameter trees in the future.</p>        | <p>By 2023 develop a stand density strategy that will recommend preferred stand densities by BEC through all seral stages.</p> <p>By 2024 produce a 5 year plan for both Pre-Commercial and Commercial Thinning treatments.</p>  |
| <p>Goal 2: Conserve, Protect, and Improve <i>Siw#k<sup>w</sup></i> (water) Quality and Supply.</p> | <p>Objective 2: All Ntityix’s forest operational (stand level) plans, from the Landscape Level to the smallest cutblock or road, will include strategies to protect, conserve or restore water values.</p> | <p>Protect, enhance and maintain effective riparian areas adjacent to all <i>cæcwixa?</i> (water bodies).</p>  | <p>At the landscape level, incorporate all readily identifiable riparian features into the Old Forest Zone. The OFZ will extend an appropriate distance from the riparian feature based on topography, vegetation and other values associated with the riparian area.</p> <p>Where riparian features are identified at the stand level, these features will be buffered as above with an appropriate distance from the feature.</p> <p>The target maximum Clearcut Equivalency is 30% in all planning units.</p> |
|  |  | <p>Operations that occur near or within riparian areas or <i>cæcwixa?</i> crossings will minimize or prevent adverse effects on water quality.</p>     | <p>In early 2023 Ntityix Resources Road Construction Standards (Appendix B) will be revised and reviewed with contractors at preworks, inspections and annual meetings.</p> <p>A prescription to undertake any activities within the OFZ or within a riparian management area within the FOZ</p>   |

| Goal  | Objective  | Strategy   | Tactic   |
|---|--|--|--|
|   |  |  | must illustrate how that activity will protect, enhance or maintain riparian features.   |
|   |  | Consider partnering with beaver where appropriate to restore or enhance wetlands and water supply.   | Conduct literature review in 2023 to determine the efficacy of introducing beaver to areas on WFN tenures where it has been extirpated.<br><br>If viable, develop an engagement process in 2023.   |
|   |  | Implement a program for evaluating the effectiveness of practices on water quality and riparian ecosystems.  | Maintain a monitoring program funded from annual operating budgets.<br><br>On an annual basis determine priorities for ground-based assessments and report out on findings and recommendations for the next year.  |
|   |  | Ensure permanent roads are maintained to prevent adverse impacts on water.   | Conduct annual road inspections and prepare a maintenance plan where required.   |
|   |  | Operations limited or prohibited on sensitive soils and slopes.  | Operations on sensitive soils, as defined in operational plans, will be constrained to prevent adverse effects on water quality and soil properties.<br><br>Continuously steep (generally >60% for 100m or more) slopes will be excluded from the FOZ. Where short steep slopes occur within the FOZ, the operational plan will identify and appropriately constrain operations. |
| Goal 3: Conserve, Protect, and Improve Wildlife habitat Quality and Supply. | <u>Objective 3 Food:</u><br>Conserve, protect and improve habitat quality and supply for Sł'a?cínm (Deer) and Pa?pa?Iśáca? (Moose) | Provide habitat connectivity between seasonal ranges, concentrating snow intercepting cover in winter habitats, riparian areas, along known travel routes, and along terrain breaks. | Incorporate wetlands, wet brushy areas, and rocky outcrops and ridges into the OFZ.<br><br>Where such habitat occurs within the FOZ, operational plans will address the maintenance of these habitat areas at the stand level.   |

| Goal | Objective | Strategy  | Tactic  |
|------|-----------|---|---|
|      |           | <p>Retain preferred forage (deciduous tree and shrub) species within harvested areas.</p> | <p>Plan for a multi-aged forest across the landscape with less than 25% of the total area in dense (&gt;5,000 sph) mid-seral (~30 to ~60 year old) stands.</p> <p>Maintain at least 15% of the landscape below 1200m in stands less than 35 years old and adjacent to mature coniferous forest.</p> <p>Maintain at least 33% of the landscape in coniferous stands taller than 19 meters (60 feet).</p> <p>Concentrate snow interception cover in locations adjacent to areas of preferred winter forage (shrubs) on known travel routes and along terrain breaks.</p> <p>Within winter range, maintain a snow intercepting canopy (Douglas-fir leading for deer) that measures at least 35% crown closure.</p> <p>Retain in-block understory patches to break up line of sight from permanent roads.</p> <p>Operational plans will identify the presence of preferred forage species if present and measures to protect or enhance their production.</p> <p>Employ Pre-Commercial and Commercial Thinning, Diameter Limit or Group Selection systems to create small canopy gaps for shrub forage production while maintaining snow intercepting canopy (min 35% crown closure).</p> |

| Goal | Objective  | Strategy   | Tactic   |
|------|--|--|--|
|      |  | Minimize road density in important forage and movement areas, and near wetlands.   | Rehabilitate and plant all in-block roads that are within 200 meters of a wetland. Revegetate these areas with a mix of grass, deciduous and coniferous species.   |
|      |  | Engage community members, contractors and the broader community in efforts to remove barriers to wildlife movement, and to restore and improve important habitats. | Encourage membership to identify and bring forward concerns that may be affecting wildlife health or restricting movement.<br><br>Develop solutions and, if needed, partnerships to address identified concerns. |
|      | <u>Objective 3 Water:</u><br>Conserve, protect and improve habitat quality and supply for <b>Stunx</b> (beaver). | Restrict harvesting operations adjacent to lakes, and larger wetlands and streams.   | Incorporate lakes, wetlands, and streams into the OFZ. The primary objective of any prescribed activity that occurs within the OFZ is to maintain or enhance the values associated with old forests.             |
|      |  | Protect smaller ponds, wetlands, and streams in and near harvested areas to ensure they remain a healthy and functioning component of the forest ecosystem.        | Where smaller wetlands and/or streams occur within the FOZ, operational plans will state how the riparian areas will be managed to maintain or enhance habitat quality and supply.                               |
|      |  | Partner with stunx where appropriate to restore or enhance wetlands and water supply.  | Determine viability of introducing stunx to the landscape.   |
|      | <u>Objective 3 Culture:</u><br>Conserve, protect and improve habitat quality and supply for Skm̓xist             | Maintain a reasonable balance of young, mid and old forested areas.  | Target approximately 1/3 <sup>rd</sup> early, mid and seral stages across the landscape.   |

| Goal | Objective  | Strategy  | Tactic  |
|------|--|---|---|
|      | (Black Bear), Ki?lawna? (grizzly bear), Sen'k'lip (coyote), Skak?aka? (birds), Y?w?y?utxn (badger) | Provide for areas with interior forest conditions across the landscape.   | Identify preferred areas on the landscape for Interior Forest Conditions within the OFZ.<br><br>If inadequate interior forest conditions occur within the OFZ as provided, develop a plan for developing interior forest conditions by supplementing area from within the FOZ.  |
|      |  | Minimize road density in important forage and movement areas, and near wetlands.  | Identify potential control points in the road network in the Upper and Lower West Kettle and Derickson Planning Units to establish road barriers.<br><br>Rehabilitate all temporary roads.<br><br>Develop a plan within each planning unit to identify opportunities to reduce road density.  |
|      |  | Retain a network of old forest conditions across the landscape.   | Establish the OFZ along and between physical features such as watercourses, ridges and slope breaks to provide protective and connective corridors for Siw?k? (water) and wildlife movement.  |
|      |  | Exclude wetlands, wet areas, dead standing large diameter (especially cavity-bearing) snags, deciduous stands, and brushy sites from harvest areas. | Incorporate wetlands, wet brushy areas, and rocky outcrops and ridges into the OFZ.<br><br>Where such habitat occurs within the FOZ, operational plans will address the maintenance of these habitat areas at the stand level.  |
|      |  | Protect dens, burrows, and the nests of eagle, osprey, heron and pileated woodpecker.   | If a badger burrow is found between January 1 and August 15, provide the burrow(s) a minimum of a 20 meter radius that is kept free of all machinery, human intrusion and soil disturbance pending confirmation that it is not an active maternal den site. If it is a maternal den site, provide the burrow(s) with a 100+ meter radius protected area until August 15. The protected area need only be maintained for the current season. |



| Goal | Objective   | Strategy  | Tactic   |
|------|---|---|--|
|      |   |   | <p>Identified bear dens in the FOZ will be protected by including the den within a Wildlife Tree Retention Area of a suitable size to prevent potential blowdown from impacting the den, or by excluding the location of the den outside of the harvest area in a location that could potentially be included within the OFZ.</p> <p>Management tactics for migratory birds can be found within Ntityix Resources Migratory Bird Protocol.</p>   |
|      |   | <p>Promote diverse food plant (especially berry) producing areas throughout the forest.</p>                   | <p>Conduct Pre-Commercial and Commercial Thinning treatments across the landscape to reduce stand density and increase forage production.</p> <p>Within the FOZ where Black Huckleberry exceeds 10% ground cover, harvest only during the winter months.</p> <p>Where Black Huckleberry exceeds 50% ground cover within the FOZ, only selection or diameter limit harvesting systems are permitted.</p> <p>Continue working with our partners in researching culturally important berries and methods to maintain or improve their health and supply across the landscape.</p> |
|      |   | <p>Retain a component of existing stand structure and other biodiversity features within harvested areas.</p> | <p>Within the FOZ, retain large diameter trees within proposed harvest openings to provide various wildlife species with future habitat requirements.</p>  |
|      | <p>Objective 3 Conserve, protect and improve habitat quality and supply for Economy: Piłóqs</p> | <p>Provide a multi-aged forest with less than 25% dense mid-seral (~50 to ~100 year old) area.</p>            | <p>Target 1/3<sup>rd</sup> early, mid and seral stages across the landscape.</p>   |

| Goal | Objective                    | Strategy  | Tactic  |
|------|------------------------------|---|---|
|      | (marten) and Wápupxn (lynx). |   | Conduct Pre-Commercial and Commercial Thinning treatments across the landscape to reduce stand density and increase the size of individual trees.   |
|      |                              | Maximize in-block retention for connectivity corridors along riparian areas and terrain breaks, and by excluding wetlands and wet/tall understory and brushy patches from harvesting. | In harvest areas, maximize in-block retention of forested connectivity corridors along riparian areas and terrain breaks, and by excluding wetlands, healthy understory, and brushy patches from harvesting.  |
|      |                              | Within the appropriate areas of the FOZ provide stand level habitat requirements for Pipqs post-harvest   | <p>Within the ESSF BEC zone in harvested openings &gt;5 ha's:</p> <p>1) create loose, rough-bunched "windrows" of piled slash in 2+ meter height "chains" roughly 5-6 meters wide extending into and preferably across the opening starting and ending within 10 meters of a forested edge. Leave large animal (i.e. pa?pa?I?áca?, s?a?cínm, skm?xist) movement gaps up to 10 meters wide in the "windrowed" debris piles at least once every 50 meters.</p> <p>2) Retain one debris pile for every 2 hectares of harvested opening size. In each pile, leave several angled poles extending upward to be above the expected snowpack to provide small animal access to under snow hollows in winter.</p> <p>3) Throughout each harvested opening create at least 10 three- to five-meter tall stub trees per hectare, leave as many other "vertical" objects (e.g. root wads, limby young conifers, deciduous trees and shrubs) as practical, and retain the largest available diameters of CWD scattered on the ground where more than 50 meters from a debris pile or windrow.</p> |

| Goal  | Objective   | Strategy  | Tactic   |
|---|---|---|--|
|   |   |   | <p>Where wetlands or brushy areas occur within or adjacent to a harvest area, retain debris piles within 10 meters of such features.</p>   |
|   |   | <p>Employ precommercial and commercial thinning, thinning-from below (diameter limit cut), and group selection to reintroduce, where lacking, the largest diameter CWD possible to the forest floor while maintaining at least 30% overhead canopy.</p> | <p>When conducting pre-Commercial and Commercial Thinning or wildfire mitigation treatments, refrain from fully sanitizing forest stands of 30+ cm diameter snags and elevated windfalls, and witches' brooms or other platforms which may be used for denning and resting by piñons.</p>  |
| <p>Goal 4: Conserve, Protect, and Improve culturally important and endangered plants and plant communities.</p> | <p><u>Objective 4:</u> Maintain and enhance "at risk" and culturally important plants and plant communities throughout WFN held forest tenures.</p> | <p>Determine range of "at risk" and culturally important plants and plant communities that occur on WFN tenures.</p>  | <p>Complete an inventory of "at risk" and culturally important plants and plant communities that occur on WFN tenures.</p>   |
|   |   | <p>Determine the habitat and seral stage necessary to support the range of "at risk" and culturally important plants and plant communities that occur on WFN tenures.</p>   | <p>Incorporate rich sites of culturally important and "at risk" plant communities that require old forest values within the OFZ or within Special Management Zones within the FOZ.</p> <p>Culturally important and "at risk" plant communities that require early seral conditions will be managed for within the FOZ or in locations in the OFZ where appropriate habitat exists.</p> |
|   |   | <p>Maintain or improve the health of "at risk" and culturally important plants</p>  | <p>Through partnerships, enhance knowledge of the health of culturally important and "at risk" plants and plant communities and determine solutions.</p>   |

| Goal  | Objective  | Strategy  | Tactic  |
|---|--|---|---|
|   |  | and plant communities that occur on WFN tenures.  | <p>Develop opportunities to reintroduce cultural burning practices onto the land for those species dependent on fire.</p> <p>Restore or enhance culturally important and “at risk” plants by developing a program for collecting site appropriate seed or plant material to develop a regular planting program for these species.</p>   |
| Goal 5: Ensure Community Benefits from the Forest are Reasonable, Fair, and Sustainable | <u>Objective 5 Economic:</u><br>Establish, on a 5-year basis, a projected 5 year cut level based on a long term (120+ years) sustainable rate of timber harvest and optimal community benefit. | Use the land base within the Forest Operations Zone to determine projected sustainable timber yields.   | <p>Define the area of the FOZ within each planning unit and delineate it into polygons with similar attributes.</p> <p>Define the silviculture regime associated with each polygon and the objectives associated with each.</p> <p>Utilize a variety of silviculture systems and opening sizes across the landscape.</p> <p>Use this information to determine sustainable harvest levels.</p> |
|   |  | Plan timber harvesting to generate a consistent and sustainable revenue stream.   | Maintain a sustainable year-to-year even flow of harvest that avoids the “ups and downs” associated with economic cycles as much as possible.   |
|   |  | Maintain an up-to-date forest inventory and conduct analyses to determine trends in forest growth, mortality, and standing trees to ensure that harvest levels are sustainable. | Continue gathering and analyzing field data on young developing forests in the FOZ.   |
|   |  | Manage forests within the FOZ to maximize value   | Conduct Pre-Commercial and Commercial Thinning programs to generate larger tree (piece) size at harvest.  |

| Goal | Objective  | Strategy  | Tactic   |
|------|--|---|--|
|      |  | generation versus volume generation.  | Maintain an annual pruning program to develop higher quality timber.   |
|      |  | Delay harvest in mature managed stands within the Forest Operations Zone to provide old forest values for a period of time before harvest.  | Determine culmination age (age at which the growth rate of the stand starts to decline) and add 20 to 30 years for intended harvest age.   |
|      |  | WFN forest tenures to derive benefits for members.  | Provide employment and contract opportunities to community members.  |
|      | <u>Objective 5 Environmental:</u><br>Use both western and traditional knowledge to steward the lands in a manner that improves the health and resilience of our forests and the values they produce for generations to come. | In the FOZ, ensure the silviculture system chosen provides the greatest opportunity to address forest health, resiliency and non-timber values.   | Prescribe the most appropriate silviculture system based on Biogeoclimatic Ecosystem Classification, terrain and access, harvest treatment objectives, environmental impacts, economic feasibility, and other resource concerns. Refer to Appendix F - Forest Operations Zone – Stand Level Practices. |
|      |  | Develop TEK and science-based information and tools to enable planning at both the landscape and stand planning levels and for adaptation in the longer term to address and prepare for climate change. | Work with traditional firekeepers to re-introduce cultural fires to manage fuels, improve vegetation health and forest resilience.<br><br>Model FOZ polygons for climate change to determine appropriate species to manage for in the future.  |
|      |  | Maintain and enhance old forests and the values they provide within the Old Forest Zone and recruit younger forests where   | Monitor forests in the OFZ and identify opportunities to maintain or enhance old forests.<br><br>Consider tools such as wildfire mitigation, cultural burning, or selection/diameter limit silviculture systems as potential treatments in the OFZ.  |

| Goal | Objective  | Strategy   | Tactic   |
|------|--|--|--|
|      |  | required to produce those values as well.  | Unless unable to do so for forest health reasons, all treatments within the OFZ will be conducted with the objective of increasing the size, health, and resiliency of the post-treatment trees and maintaining a closed canopy (>35% crown closure) forest whenever possible.                         |
|      |  | Retain old forest attributes and the values they provide at the stand level within the Forest Operations Zone.             | Refer to Appendix F - Forest Operations Zone – Stand Level Practices.  |
|      | <u>Objective 5 Social:</u> Engage and empower the WFN community by raising awareness and capacity while recognizing the rights, title, and knowledge of its members. Recognize and work with local stakeholders to incorporate their values into forestry decisions. | Ensure decisions made on the land reflect the values of the community and affected stakeholders.                           | Provide opportunities for the WFN membership to be part of the planning process through field trips, newsletters, meetings, etc. and encourage feedback on the Seven Generation Plan.<br><br>Share plans with local and affected stakeholders and provide them with opportunities to provide feedback. |
|      |  | Involve the community and local stakeholders in all aspects of goal-setting, planning and operations on WFN tenured lands. | Annually review the goals and accomplishments with the community.<br><br>Provide monitoring information to the community.  |
|      |  | Raise community awareness and provide opportunities for members to re-connect with the land.                               | Provide opportunities to the membership through the elders group, families group, youth group or individuals to participate in field trips.<br><br>Discuss with membership the protocols for placing nsyilxcən place names on mapping products.  |
|      |  | Incorporate traditional knowledge into all aspects of suxtem.  | Continue to involve Elders and Knowledge Keepers both at the ONA and community levels to help refine practices.  |

| Goal  | Objective   | Strategy  | Tactic   |
|---|---|---|--|
| Goal 6: Restore Damaged Ecosystems, Improve Forest Health, and Reduce Destructive Wildfire. | <u>Objective 6:</u> To identify damaged and neglected ecosystems and develop and implement restoration plans to ensure future generations can enjoy them. | Manage the lands surrounding our communities to reduce the potential for destructive wildfire.  | The 2020 Ntityix Wildfire Hazard Report has prioritized areas for mitigation treatments. Continue to source funding to complete these areas and utilize our forestry crew to conduct the mitigation work.  |
|   |   | Manage forests at the landscape level to reduce the potential for large catastrophic wildfire.  | Develop a network of fuel breaks at the landscape level that provide an opportunity to contain wildfire.<br><br>Conduct ongoing mitigation work on these fuel breaks using internal and, if available, external funding sources.   |
|   |   | Promote the health of forest ecosystems by minimizing the negative impact of stands that are potentially at risk or currently negatively affected by insects and disease. | Conduct Pre-Commercial and Commercial Thinning, manage stand structure, and provide a diverse species composition when regenerating stands to make our forests more resistant insects, diseases, and wildfire.<br><br>Use annual overflight insect and disease monitoring data provided by the Province to identify and address potential problem areas.<br><br>Monitor for blowdown in partial cuts and maintain an active insect trapping program. |
|   |   | Identify damaged or neglected ecosystems that will benefit from restoration activities.   | Ntityix will monitor the area within WFN’s forest tenures to identify sites with existing, or the potential to have, damaged ecosystems and encourage community members to do the same.<br><br>Sites that require restoration will be prioritized, remediation prescriptions developed, and operations completed.  |





## Appendix A - Water

**“Water is our responsibility, Syilx Nation Siwłk” Declaration**. Siwłk (water) is the lifeblood of our existence and that of the plants and animals that depend on it. Managing for water is of paramount importance to the Syilx people and is the over-riding value throughout our planning and operation phases.

Most identifiable water features within the tenure area have been incorporated into the OFZ. Forests in the OFZ will be stewarded to provide old forest values associated with protecting water. Any harvesting that occurs within the riparian areas of this zone will be done to ultimately protect water in the long-term.

Water features within the FOZ are smaller features that have not been identified on maps but no less important. These features will be identified during ground-based assessments before harvest. They will be mapped and an appropriate prescription put in place at that time. Effectiveness monitoring will be conducted on all such areas help determine the effectiveness of the prescription. The objective for all water features identified within the FOZ is to ensure they function as well after harvest as they did before harvest.

At the watershed level, practices must consider impacts to peak flow. As all areas within our tenures are considered snow-dominated watersheds, spring peak flows are a key hydrologic concern. Equivalent Clearcut Area (ECA) within each Planning Unit will be calculated based on BC Extension Note 118 and will not exceed 35% in any planning unit.

Roads are our highest environmental risk on our forest tenures. Our intent is to minimize the amount of road required across our tenures while providing adequate access for wildfire management, forestry activities, and recreation.

- **Permanent Roads** – the construction of new permanent roads will be minimized. Existing permanent roads deemed unnecessary will be rehabilitated. Roads where vegetation has successfully regenerated and are no longer accessible for pick-up trucks will be evaluated to determine environmental risk and if there are any environmental benefits gained through rehabilitation. Those roads remaining will be maintained and inspected at a frequency determined by our Road Risk Rating Matrix.
- **Temporary roads** – most new roads constructed on the tenures will be temporary and designed for a single season use. Temporary roads for summer use may be built one year in advance while winter use temporary roads may be constructed concurrent with winter harvest. In all cases temporary roads will be rehabilitated within two years of use, grass-seeded and planted with the appropriate tree species and/or culturally important plant species where appropriate.

Our intent is to gradually reduce the number (and length) of roads on WFN’s forest tenures and maintain those that are remaining.

## Appendix B - Wildlife

Syilx people have a sacred responsibility to care for the land and all living things. Since time immemorial, the Syilx people have been self-reliant and well provided for through their own ingenuity and careful and considered use of the land and resources.

Wildlife are relatives of the people and give of themselves to provide traditional foods, goods and cultural values; other wildlife are of spiritual significance; and some are species-at-risk in need of assistance. Skm̓xist (black bear) is the eldest food chief of all living things, Sł'aʔcínm (deer) and Paʔpaʔlɪʔačáʔ (moose) are significant as food and for their cultural values. Kíʔlawnaʔ (grizzly bear), Sen'k'lip (coyote) and pəlqłgín (eagle) are spiritual relatives. Piʔp̓qs (marten) and wápupxn (lynx) are valued for their fur and as indicators of a healthy forest environment. Yx̓w̓yx̓w̓utxn (badger) is at-risk.

Ntityix acknowledges the relationship of wildlife to the people and the importance of caring for the land and all living things by careful and considered management of all its forest operations. Ntityix will maintain respect for and continual awareness of wildlife present in the forest and the needs of the tkwəniwt (Westbank) people and the broader community. Ntityix will revise its wildlife strategies to adjust to newly-gained knowledge and to changing circumstances as appropriate.

Ntityix also considers advice and direction from other agencies also engaged in wildlife management. There is no Critical Habitat identified within WFN's forest tenures for any at-risk species listed under Canada's *Species at Risk Act* (SARA). Ntityix has a protocol to prevent disturbance of migratory birds and destruction of their nests during the breeding season, in accordance with Canada's *Migratory Birds Convention Act*. Wildlife Habitat Areas or Wildlife Habitat Features have been identified on WFN's forest tenures for any wildlife species listed under British Columbia's *Forest and Range Practices Act* (FRPA).

Some species of forest wildlife are dependent on young forest. Other species rely on old forest, and many species need a mixture of forest ages and site conditions. Historically, the range of forest age and stand conditions were provided through wildfires, other natural disturbances, and indigenous burning. Today, forest harvesting plays the primary role in forest disturbance.

To provide a diversity of habitats that meet the needs of most forest wildlife, Ntityix will work to move the forest towards an historic ecological condition with a variety of forest ages, opening (patch) sizes, and tree species. Each planning unit will be divided into two zones: An Old Forest Zone and a Forest Operations Zone. Both zones will be managed to provide and retain important wildlife habitats, travel-ways, and habitat features within the landscape and around harvested areas.

Some wildlife species are of particular importance to the community. We learn from captikwł that wildlife are relatives of the people, and that some give of themselves to provide foods, goods and cultural values, that others are of spiritual significance, and that some are at-risk and in need of assistance. Ntityix's aim is to manage WFN's forest tenures such that it will always provide food, water, cultural and spiritual values, and economic benefit to the whole community and, in reciprocity, will always sustain *tmix*<sup>w</sup>.

Ntityix has developed protocols to help sustain mule deer winter habitat, to protect migratory bird populations, and to help maintain biodiversity in harvested areas. Provincial and federal legislation, guidance from the former BC Forest Practices Code, and the Okanagan-Shuwsap Land and Resource Management Plan provide further forest management advice for wildlife. Elder consultation guides the

need for management strategies and special protocols for certain species or species groups. A few examples are:

**Sk̓m̓xist (Black Bear)** can be found in any habitat type across WFN tenures seeking out all manner of available foods. Dense forest stands produce little bear food, so sk̓m̓xist home ranges typically include several seasonal feeding areas (e.g. spring meadows, fall berry patches) connected by travel routes. Travel routes need to be secure because sk̓m̓xist, especially mothers with cubs, tend to avoid openings when moving between feeding areas. Denning may occur in large tree cavities, under root wads or in brush piles, in excavated pits in older forests on flatter terrain, or in rock cavities on steep slopes.

**Paʔpaʔlɪsácaʔ (Moose)** occur in portions of WFN's forest tenures at any time. In summer, paʔpaʔlɪsácaʔ require wetlands, openings, and riparian areas, with adjacent forest cover to escape the summer heat. In winter, paʔpaʔlɪsácaʔ require coniferous forest with limited snow depth (generally less than 60 cm) near areas of high forage (shrub) availability. Paʔpaʔlɪsácaʔ are vulnerable to over-hunting so require forage areas and travel ways between seasonal habitats that provide visual screening and/or limited human access. More specific information about important paʔpaʔlɪsácaʔ foraging areas, travel routes and winter habitat is required.

**S̓l'aʔcínm (Deer)** are common across the landscape in the snow free months. Both mule deer and white-tailed deer move to lower elevations as snow begins to accumulate in winter. Both deer species are important to Syilx communities for their food and cultural values.

**Y̓x̓w̓y̓x̓w̓utxn (Badger)** are classified endangered under the Species at Risk Act (SARA); there are fewer than 250 left in BC. Although expanding somewhat into mountain areas, y̓x̓w̓y̓x̓w̓utxn numbers are declining. Y̓x̓w̓y̓x̓w̓utxn burrows are easy to identify by their oval shape with flat top. Y̓x̓w̓y̓x̓w̓utxn are on the move frequently dig security burrows that are used for only a short time, perhaps a few hours to a day or two. Road edges and cutbanks are frequently used because of the easy to dig soils but there is risk of being struck by a vehicle. Hunting (and burrowing) sites are typically in open areas with diggable soils where prey species such as Columbian ground squirrel, yellow-bellied marmot, or voles are found. Female y̓x̓w̓y̓x̓w̓utxn with young establish maternal dens used from May through August. Abandoned y̓x̓w̓y̓x̓w̓utxn burrows are valuable to other wildlife species as dens or for temporary cover and security.

**Piʔq̓s (Marten)** requires a complex coniferous forest with closed canopy, elevated windfallen trees or tall shrubs, and considerable coarse woody debris (CWD) on the forest floor, along with sufficient prey such as squirrel, voles, grouse and snowshoe hare. The main consideration in managed forest stands is to provide suitable habitat for piʔq̓s in the earliest possible timeframe following timber harvesting. Piʔq̓s avoid open clearcuts with no CWD or slash piles but may use regenerating cutblocks and younger forests provided specific habitat structural components for movement, hunting and security are retained or enhanced in the appropriate locations.

**Kiʔlawnaʔ (Grizzly Bear)** are common in the eastern portion of WFN forest tenures and occur periodically, in low numbers, in the western areas. In 2014, the Syilx Nation declared kiʔlawnaʔ at-risk and protected within Syilx Territory. kiʔlawnaʔ is an important part of Syilx creation stories that remind us of our responsibilities to our tmuxlawx (land) and its presence is an indicator of the health of the land and people. Managing access and road density is likely the most effective way to ensure a health population of kiʔlawnaʔ is maintained.

**Stunx** (beaver) is a keeper of waters and was once more abundant in the forested wetlands and wet meadows of WFN's forest territory. Qaqx<sup>w</sup>l'x (fish), Sw'ar'ák'xən (frog), k'<sup>w</sup>síx<sup>w</sup> (goose), other water creatures, and people all depend on stunx to help maintain diverse and connected aquatic habitats and to store water for *tmix<sup>w</sup>* in times of drought.

**Songbirds, waterfowl, raptors and other birds** occur throughout WFN's forest tenures. Federal and provincial laws protect bird nests containing eggs or nestlings, and the nests of some bird species that reuse their nest structures, active or not. Ntityix will conduct its forest operations to avoid damage or disturbance to protected birds and nests in accordance with the Ntityix Resources Migratory Bird Protocol.

## Appendix C - Plants

Animals and plants coexist in specific areas because the conditions are suitable. They thrive there because they have the right climate, land type and more. Caring for the land ensures that these relationships continue, and that animals and plants can coexist with humans.

s̄x̄ōł̄amīp (Trappers Tea): is a stout evergreen shrub that flowers in early summer in clumps of cream to white petals. It is found throughout WFN's forest tenures on moist acidic soils within both old and young forests.

sk̄w̄ək̄w̄īp (Prickly Rose): is a deciduous shrub up to 1.5m tall the blooms in early summer. Flowers range from white, cream to pink. Red and orange rose hips develop over the summer and early fall. It is generally found on open forested sites, south aspects, and recent cutblocks.

sk̄w̄isīt̄əm̄lx (Kinnickinnick): is a trailing evergreen shrub usually less than 20cm tall. It produces pinkish flowers in the spring that develop into bright red berries in late summer. It is found on dry rocky outcrops and open dry forests.

s̄x̄w̄usm̄īp (Soopolallie): is a spreading deciduous shrub 1 – 2m tall with inconspicuous flowers that develop into bright translucent red berries in the summer. It is found predominantly in dry open areas and recent clearcuts.

Siya (Saskatoon Berry): is a twiggy deciduous shrub growing up to 5m tall with white flowers turning into purple blue berries in the summer. It is found at the lower elevations of the planning area, often occurring on dry rocky slopes. It requires full sun.

s̄t̄q̄īt̄əm̄lx (Black Huckleberry): is a densely branched deciduous shrub up to 1.5m tall. Its urn-shaped pinkish flowers develop into purplish large, round berries without bloom. It is common on moister sites both within mature forests and recent cutblocks.

t̄q̄īm̄t̄q̄m (Wild Strawberry): is a low growing perennial with runners. Its white flowers develop into small red berries. Found on both moist and dry sites throughout much of the planning area where there is sufficient sunlight.

nt̄ət̄m̄l̄psīt̄m̄lx (Gooseberry): is a spreading deciduous shrub ranging from 0.5 to 2m tall. Its reddish flowers develop into dark purple berries. It is found on moist sites both within a mature forest and in recent cutblocks.

stk̄m̄x̄st̄īt̄m̄lx (Black Twinberry): is often a straggly deciduous shrub 0.5 to 2m tall. Its yellow trumpet-like flowers develop into shiny black "twin" berries. It is found predominantly on moist to wet forests, seepage areas, valley bottoms and near the edge of streams.

pūñ̄p (Common Juniper): is a spreading evergreen shrub less than 1m tall forming clumps up to 3m across. It produces bluish-black berry-like cones that mature in their second season. It is found on dry rocky sites or dry open forests throughout the planning area.

## Appendix D – Old Forest Zone

The primary objective of the Old Forest Zone (OFZ) is to retain, protect or enhance values associated with old forests. An underlying Syilx principle states that caring for the forest requires ongoing activities to maintain or enhance those values. Failure to do so may result in unwanted large scale and catastrophic disturbances. Forests can be defined by attributes such as tree species composition, tree size, age, volume, or number of trees per hectare and occur on a variety of soils and topographical or geologic features. This combination of physical and biological elements has evolved into diverse plant and animal communities (or ecosystems). The management and protection of these forest ecosystems activities that maintain the environmental conditions necessary to ensure diverse plant and animal populations.

Some species tend to live longer than others, the oldest trees within our operating area tend to be Ponderosa Pine, some of which exceed 350 years of age. Douglas-fir, too, may live just as long under the right conditions. Spruce and Balsam, if they escape wildfire, can remain healthy for up to 200 years before they start to exhibit signs of declining health, then continuing living for perhaps another century before finally succumbing. Lodgepole Pine is relatively short-lived and tends to fall into decline after about age 120 but can live up to 200 years.

Approximately 60% of WFN’s forest tenure is within the OFZ. Site specific strategies and treatments will be developed over time through discussions with the community and other stakeholders. It is anticipated that between 1 and 5% of Ntityix’s annual harvest will come from within this zone.

To maintain healthy stands of old forests across WFN’s forest tenures will require practices that will:

- maintain or enhance forest health such as removing small pockets or individually affected trees or blowdown,
- maintain or enhance wildlife habitat such as thinning, and possibly pruning, to enhance forage production, or cultural burning,
- expedite hydrologic recovery by salvage harvesting and planting appropriate species,
- provide temporary access structures for completing an activity,
- provide for traditional harvesting practices for hunting camps and ceremonies, and,
- reduce wildfire hazard through thinning, pruning and removing surface fuels.

The intent is to, wherever possible, retain a forested canopy after the completion of activities. Silviculture systems permitted within the OFZ include:

| BEC                             | Silviculture System  |
|---------------------------------|--|
| IDF (Fd leading stands in MDWR) | 1) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. The threshold is intended to be at a level that retains a minimum crown closure of 35% post-treatment.<br>2) <u>Single Tree Selection</u> – for areas outside of the Forest Fuel Management Zone, manage for a multi-aged stand with a multi-layered forest canopy. |
| IDF (outside MDWR)              | 3) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. The threshold is intended to be at a level that retains a minimum crown closure of 35% post-treatment.  |

|      |   |
|------|---|
|      | 1) <u>Single Tree Selection</u> - manage for a multi-aged stand with a multi-layered forest canopy.   |
| MSdm | 4) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. The threshold is intended to be at a level that retains a minimum crown closure of 35% post-treatment.<br>1) <u>Stand Conversion</u> – removing shorter-lived Lodgepole Pine and converting the stand to a late seral spruce-balsam stand. |
| ESSF | 1) <u>Single Tree Selection</u> - manage for a multi-aged stand with a multi-layered forest canopy.<br>5) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. The threshold is intended to be at a level that retains a minimum crown closure of 35% post-treatment.                              |

Limitations:

- Ground-based harvesting equipment not permitted on continuous slopes (100m+) greater than 40%.
- In areas that are known to have high cultural significance (i.e. spiritual sites) the only treatment permitted is fuel mitigation (hand treatments only) or cultural burns.
- Sensitive Soils:
  - very wet soils (>6 on the edaphic grid) – no treatments unless it’s a rehabilitation project.
  - very dry soils (<2 on the edaphic grid) – hand treatment wildfire mitigation only.
  - very thin soils (<20cm to bedrock) – hand treatment wildfire mitigation only

Any treatment in the OFZ is intended to be “light” with the primary objective of maintaining, restoring or enhancing old forest values.

### Appendix E – Forest Operations Zone

The primary objective of the Forest Operations Zone (FOZ) is to steward the land for multiple values including timber harvesting. There are approximately 27,000 hectares of forest within the FOZ, delineated into more than 7,000 distinct forest stands.

Approximately 40% of the total area of WFN's forest tenures lie within the FOZ. Ntityix has and is continuing to develop practices that provide further direction on how they can take place in this zone while protecting other values on the land. Just because we manage for timber in this zone does not mean that every tree within this zone gets cut. Every harvest opening we create will retain mature trees at densities based on a site-specific prescription.

Ntityix has undertaken a forest inventory system that consists of developing and maintaining a spatially referenced database on the status of the forest stands within this zone. The system is built from utilizing the technology of LiDar and complemented with ground-truthed inventory plots. Field data collection is an ongoing part of the program and the data collected from these plots describe the forest type and plant community, and tree condition, site series and forest health. These plots also help in determining the timing of proposed treatments, such as pre-commercial thinning, pruning, commercial thinning, and harvesting activities and provides the stand-level operational detail needed to plan and implement the operational schedule. This schedule in turn supports the sustainable, long-term rate of harvest in the FOZ.

The FOZ will be cared for to provide a balanced mix of seral stages across the landscape.

Ntityix uses the BC Biogeoclimatic Ecosystem Classification (BEC) system to determine plant communities used in assessing forest site productivity. This system provides guidelines that indicate which forest cover type is best suited to that site, regardless of the tree species or tree quality currently growing there. Plant communities are used to evaluate forest productivity (from a tree growth perspective) based on associations of understory plants, rather than on the trees currently occupying the site. Barring severe site disturbance, understory plants establish themselves on sites in recognizable combinations according to site productivity. Site productivity directly reflects the combination of available soil moisture and nutrients. Within the FOZ, 70 Analysis Units (AU's) have been identified across the spectrum of forest sites within WFN's forests, ranging from the dry, nutrient poor sites (i.e. Py/Fd – Balsam Root, Pinegrass) to the moist, nutrient rich sites (i.e. Sx – Oak Fern, Ladyfern). These AU's are summarized in Appendix J.

The BEC system also provides guidelines for which tree species are best suited to a given plant community. The matching of tree species to a particular plant community is based upon the species potential (quality and quantity), its ecological suitability to the site, and its relative competitiveness with other tree species commonly associated with it.

### **1.0 Silviculture Systems:**

Silviculture systems describe the planned treatments that occur during the entire life of a stand including harvesting, regeneration and stand tending. Choosing a silviculture system depends, in large, on the management objectives for the site.

#### **1.1 Even-Aged Silviculture systems:**

Even-aged management systems are normally used to harvest, regenerate and tend sun-loving (shade intolerant) forest species that grow poorly when not exposed to direct sunlight and will normally not regenerate in their own shade. The species adapted to these systems are generally those accustomed to rapid regeneration of a site following a large-scale disturbance, such as a wildfire or major windstorm. Because pioneer species (such as pines, aspen or larch) are adapted to colonize a recently disturbed site,



these stands normally consist of trees at or near the same age that require full sunlight to ensure complete regeneration and optimum development.

Variations on even-aged management within WFN's forests include: Variable Retention, Group Selection, and intermediate thinnings. A brief summary of these cutting methods follow:

**Variable Retention:** A method used to regenerate a stand of shade intolerant species by the removal of most trees during the harvest. This creates an open area with scattered trees and/or patches of mature trees within, leading to the establishment of a new even-aged stand with individual and/or patches of veteran trees. Depending on the species being regenerated, the regeneration can be from natural seed produced by adjacent stands, seed from trees remaining in the harvest opening, seed from cones of trees cut in the harvesting process, planting, or a combination of all. This method of harvest somewhat simulates a major disturbance that naturally occurs to stands, often by wind or fire.

**Group Selection:** A method similar to variable retention used to regenerate a stand of shade-intolerant tree species. This method normally involves the removal of small groups of trees in patches usually less than 1 hectare in size often in two or three passes. Over time, the area becomes a multi-aged mosaic of even-aged groups.

**Intermediate Thinnings:** These treatments are designed primarily as a form of managing tree density in younger stands. Within WFN stewarded forests we have two types of intermediate thinnings:

Pre-Commercial Thinning – these are treatments made in a stand between regeneration and final harvest to reduce stand density for the purpose of stimulating the growth of the remaining trees, enhancing forest health and wildlife habitat, and reducing wildfire hazard. Its primary focus is on growth redistribution. It is done when the stand is young (15 – 25 years old) so no merchantable timber is removed. Individual prescriptions are developed for each stand, and desired spacing is targeted at approximately 2.5 meters to meet a target density of approximately 2,400 stems per hectare.

Commercial Thinning – these treatments as well are made in stands between regeneration and final harvest to accomplish the same objectives as Precommercial Thinning although these treatments are done when the stand is older and tree diameters are large enough to harvest commercially. These treatments entail the removal of trees to reduce stocking and concentrate growth on fewer trees. Density after treatment is targeted between 900 and 1000 stems per hectare depending on species. Most of the trees removed in this treatment will be merchantable.

## 1.2 Uneven Aged Silviculture Systems

Uneven-aged management systems are normally used to harvest, regenerate and tend forests with species that will regenerate and grow under their own shade. Stands managed under uneven-aged systems are normally comprised of two or more age classes. These forests are adapted to regenerate under a forest canopy, often after a minor disturbance that creates a small gap in the canopy such as a tree falling over, or a moderate disturbance such as a windstorm or a low intensity wildfire that damages a small portion (generally <30%) of the stand. Uneven-aged systems are designed to mimic such disturbances. Despite being shade-tolerant, these species grow most vigorously in conditions with full sunlight, assuming other growth requirements like soil moisture are met. As a result, regeneration and

most vigorous growth typically occur in small- to medium-sized canopy gaps (small openings). The number and size of gaps created through uneven-aged management are dependent upon species, forest health, terrain and a variety of other site conditions. Normally, these systems are used to manage stands containing mixed trees of all ages, from seedlings to mature trees. They can also be used to convert even-aged stands into an uneven-aged structure. The harvested trees are essentially replaced with growth on the younger trees left in the stand. These silvicultural systems are designed to maintain an uneven-aged stand condition by managing the multi-age and multi-size structure of the overstory to facilitate continual recruitment of young trees. With uneven-aged silvicultural systems, the tree selection decision (to cut or leave) considers a number of factors. Generally, trees targeted for removal include:

1. Trees that pose a high risk of imminent mortality,
2. Blowdown,
3. Trees exhibiting low vigour,
4. Trees with poor form and quality,
5. Species (some species are favored over others as determined by objectives)
6. Spacing (to reduce wildfire hazard risk)
7. Size (to ensure a multi-age and multi-size stand)

Essentially the stand is thinned to a target density for optimal growth by removing the high risk, low quality trees first. Over several entries, the stand should increase in overall quality, and growth will be optimized.

Within designated cutblocks in the FOZ, stand level planning considers how various treatments will contribute to the overall vision of what the block will look like and the resources and values it will provide post-harvest and in generations to come.

Silviculture Systems within the FOZ:

| BEC                             | Silviculture System   |
|---------------------------------|---|
| IDF (Fd leading stands in MDWR) | <ol style="list-style-type: none"> <li>1) <u>Variable Retention</u> - openings generally &lt;3 ha's (range 1 – approx. 5 ha's). Retain deciduous, all large diameter Py (dbh&gt;60cm), and a minimum of 25 Fd (min diameter 30cm) per hectare including 5 of the largest diameter Fd trees per hectare (these will be marked in the field).</li> <li>2) <u>Group Selection</u> – openings generally &lt;1 ha. Retain deciduous, Py, and a minimum of the largest 5 Fd per hectare.</li> <li>3) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. The diameter limit will be set to retain post-harvest mature crown closure of at least 35%.</li> <li>4) <u>Single Tree Selection</u> – outside of the Forest Fuel Management Zone manage for a multi-aged stand with a multi-layered forest canopy.</li> </ol> |
| IDF (outside MDWR)              | <ol style="list-style-type: none"> <li>1) <u>Variable Retention</u> – average opening size over 5 year period is &lt;5 ha's (range 1 to approx. 10 ha's). Retain deciduous and a minimum of 25 Fd/Py leave trees per hectare (min dbh</li> </ol>  |

|      |   |
|------|---|
|      | <p>30cm) including 5 of the largest diameter Fd trees per hectare.</p> <p>2) <u>Group Selection</u> – openings generally &lt;1 ha. Retain deciduous and a minimum of the largest 5 Fd/Py leave trees per hectare.</p> <p>3) <u>Diameter Limit</u> – retain all trees over a specified diameter and only harvest those below that threshold. Threshold intended to be at a level that retain a minimum crown closure of 35% post-harvest.</p> <p>4) <u>Single Tree Selection</u> – outside of the Forest Fuel Management Zone manage for a multi-aged multi-layered forest canopy.</p>   |
| MSdm | <p>1) <u>Variable Retention</u> - average opening size over 5 year period is &lt; 10 ha's (range 1-15 ha's). Retain one ~20 tree patch of mature trees for every hectare of NAR and 5 of the largest diameter Fd , if available, per hectare. These patches may be partially or fully grouped (ie. 10 ha block and one 200 tree patch) outside of what would normally be set aside as WTRA's.</p> <p>2) <u>Group Selection</u> – openings generally &lt;1 ha.</p>   |
| ESSF | <p>1) <u>Variable Retention</u> - average opening size over 5 year period is &lt; 5ha's (range 1-10 ha's). Retain 25 leave trees (BI 20-25cm dbh) per hectare .</p> <p>2) <u>Group Selection</u> – openings generally &lt;1 ha. Retain a minimum of 15 leave trees (BI 20-25cm dbh) per hectare.</p> <p>3) <u>Overstorey Removal</u>– remove the largest, windthrow-prone trees, retain a specified number of healthy merchantable stems under a specified diameter (target 800-1000sph). Use designated trails and possibly thin post-harvest.</p> <p>4) <u>Single Tree Selection</u> - manage for a multi-aged stand and a multi-layered forest canopy.</p> |

Notes:

- \* Where safe and operationally feasible, stub up to 50% of standing dead trees.
- \* Retention targets in openings <3 ha's may be adjusted to accommodate operational constraints.
- Retention trees/patches should consider the potential for blowdown. Dispersed retention should only include trees with a Ht (m)/Dia (cm) ratio of <0.9 (i.e. 20 m tall tree with a diameter >22 cm).
- Advanced Regeneration Retention Patches - where available retain one clump of healthy advanced regen (0.01 to 0.05 ha) for every 1 ha of NAR. Merchantable stems within may be stubbed (except for Sx and Fd which will be fully removed). Machine traffic within these patches is prohibited.
- Coarse Woody Debris retention– particularly important in the MS and ESSF where one wildlife pile will be created for every 2 ha's of NAR, 1 pile for every 5 ha's of NAR in the IDF, and no wildlife piles will be retained in the Forest Fuel Management Zone.
- Big Trees – unless used for ceremonial purposes, any tree larger than 120cm dbh will be retained. Where such trees are found, they will be protected with a 75 meter radius buffer of supporting trees around it. Only wildfire mitigation work may be completed within this buffer.

- Riparian areas – creeks (ephemeral or permanent) or small ponds/wetlands not captured within the OFZ will be protected utilizing appropriate practices for the site. The objective is to ensure these areas remain a healthy and functioning component of the ecosystem post-harvest.
- Stubs – stubs provide perching habitat, and over time habitat for cavity nesters. Dispersed stubs will occur across all openings where dead trees will be stubbed between 3 and 5 meters in height.
- Deciduous Trees – aspen, cottonwood and birch will be retained from harvest unless they need to be removed for access or safety purposes, or in some rare and specific cases where deciduous trees are being managed for timber production. If deciduous trees are encountered during intermediate thinnings a component of these trees will be retained post-treatment.

### **1.3 Wildlife Tree Retention Areas**

The primary purpose of Wildlife Tree Retention Areas (WTRA's) is to provide stand-level biodiversity and wildlife habitat in harvesting areas within the FOZ. WTRA's are located around anchor points such as riparian features or other features that may be unique to the block and located in a manner such as there is no location within a harvested opening more than 150 meters from forest cover more than 3 meters tall.

### **2.0 Reforestation**

All areas that are harvested for timber will be regenerated at the appropriate density and tree species. Our silviculture program is designed to manage our new forests to achieve a target density of approximately 2,400 stems per hectare 15 years after harvest. We plant every area we harvest at a density appropriate to the site and rely on natural regeneration to supplement the planted trees to reach this target.

It is anticipated that the impact of climate change will alter our BEC zones and the species presently best adapted to them. Climate change models predict a warmer, moister climate for areas within our tenures. Temperature predictions are considered more reliable than precipitation predictions and though more precipitation may occur, it's likely that warmer temperatures may offset the benefits of additional moisture. Whether these models are accurate, time will tell, but given the timeframe between a young seedling and a mature tree, we have adopted an approach to gradually supplement the trees we presently plant with other species which may be more suited to the climate of the future. To prepare for this change in the short-term (up to the year 2035) we will:

- Gradually introduce Western Red Cedar (Cw) and Western White Pine (Pw) and increase the numbers of Douglas-fir we plant into the lower elevations of the MSdm1 and dm2 (<1500m) where appropriate. Cw and Pw will not exceed 5% of the trees planted and Fd will not exceed 25% of the trees planted in the MS.
- Increase the component of Ponderosa Pine (Py) in the IDFdk2 and introduce Py (5% maximum) into the lowest elevations of the MS dm2 (<1300m).
- Monitor the performance of these species.

Monitoring the success of Ntityix Resources reforestation program will be completed through a comprehensive survey schedule and annual internal audits. The survey schedule is as follows:

- Post-harvest Plantability/Fire Hazard Assessment – the hazard assessment portion of this survey is a legal requirement and is conducted within 6 months of harvest or snow-free conditions if winter logged. The objective of this survey is to determine if further treatment is required to reduce wildfire hazard and if site prep is required to ensure sufficient plantable spots exist to meet planting targets.
- Regen Survey – is conducted 2 growing seasons after harvest to determine the condition and survival of the planted stock. If the survey shows that the plantation, or strata within the plantation > 1 ha, contains less than 75% of the target density then a fill plant will be prescribed.
- Stocking survey – is conducted five growing seasons after harvest to determine the progress of the planted stock, ingress of natural regeneration, and the condition and survival of stock planted if a fill-plant. This survey will also evaluate the brush potential of site and possibly recommend another stocking survey in a specified timeframe to evaluate the brushing potential.
- Pre-Free Growing Survey – conducted one year prior to the early Free-to-Grow date to determine if the plantation is on track to meet the early Free Growing window.
- Free-to-Grow Survey – conducted within the Free Growing window to determine if the stand has met all Free-to-Grow criteria and to provide recommendations for post-Free Growing treatments.

### **3.0 Brushing**

Brushing will occur when a newly established stand is in danger of not having a sufficient number of trees to meet target density (2,400 sph) at 15 years of age because of competing vegetation. In this case brushing will be conducted by hand within one year of this finding. The intent is not to eradicate, but to manage, the competing vegetation to achieve the target density objective. No chemical treatments will be permitted.

### **4.0 Stand Tending**

Often natural regeneration is prolific and stand densities may exceed 5,000 or even 10,000 stems per hectare. In these cases, Pre-Commercial Thinning (PCT) will be conducted when the average height of a stand is approximately 7 meters tall and when there are more than 3,000 live stems per hectare. Pre-Commercial Thinning will reduce the density to approximately 2,400 stems per hectare. Trees targeted for removal are diseased trees, trees <2 meters apart, and trees of poor form. This treatment is also intended to provide a more balanced mix of species and to retain a component of deciduous species as well, where available.

Commercial Thinning (CT) will be conducted when the stand is of an age when conditions permit an average tree removal piece size of 0.10m<sup>3</sup> and total volume removed of at least 80m<sup>3</sup> per hectare. CT will reduce PI leading stands to a target density of 1,000 stems per hectare and non-PI leading stands to 900 stems per hectare with some variability in inter-tree spacing. As with PCT, CT will target stems that are diseased, trees < 3 meters apart, and trees of poor form. Where the stand contains a component of deciduous trees, at least 50 stems per hectare (if available) will be retained post-treatment.

Provided appropriate densities are maintained, pioneer species such as Lodgepole Pine or Western Larch will self-prune. Stands where the densities are insufficient for self-pruning and where intermediate thinnings are not likely to occur will be evaluated for pruning opportunities.

#### **4.2.3.8 Rate of Timber Harvest**

The amount timber available for harvest is based on the rate in which stands in the FOZ are growing. The rate of harvest will not exceed the rate of growth of these stands. A robust inventory and monitoring program will provide the data necessary to monitor forest growth. Each Planning Unit will have a projected five year cut to ensure no planning units are overcut. In the event of an unexpected event such a wildfire or insect outbreak, some flexibility in this cut level is required.

Individual stands will be planned for harvest when the stand reaches Culmination Age (the point when the rate of a stand's growth begins to slow) plus an appropriate period of time (usually 20-25 years) to allow the stand to provide old forest values before being harvested. These extra years of retaining mature forests on the land will provide ecological services for wildlife and water, in addition to increasing the value of the timber.

## Appendix F - Succession

In the absence of any disturbance, the forests in most stands will tend to change over time through the natural process of forest succession.

Following a major disturbance such as a large-scale wildfire, widespread insect infestation, windstorm or a human-made disturbance such as a harvested opening, a pioneer (early seral) community normally becomes established on a site. These communities (or stand types) are made up of shade intolerant species able to rapidly establish themselves on an open, relatively competition-free, disturbed site. Over time, the canopy begins to close and limit available sunlight, which results in other more shade-tolerant species becoming established beneath the canopy where the original shade intolerant pioneer species are no longer able to reproduce. A gradual transition to different stand types may occur in succession as each species gains a reproductive edge on the continually changing site conditions. At some point, after a long period free of disturbance, sites will transition to a climax community of shade tolerant species that are self-regenerating. This climax community will occupy the site until another disturbance creates conditions favouring re-establishment of a pioneer community (a major disturbance) or one of the earlier successional communities (a lesser disturbance).

Shade tolerance of tree species with WFN stewarded forests.

| Species   | Shade Tolerance |
|---|-----------------|
| Aspen, Cottonwood   | Very Low        |
| Larch, Lodgepole Pine, Ponderosa Pine, Western White Pine | Low             |
| Douglas-fir, Spruce                                       | Moderate        |
| Western Red Cedar, Spruce, Western Hemlock                | High            |
| Sub-alpine Fir, Grand Fir                                 | Very High       |

The three phases of succession we use in this plan are:

- Early Seral: (1- approx. 25 years old) - abundant sunlight reaches the soil allowing new plants to establish or existing ones to grow. Although different plants will become more dominant over time, most become established during this phase.
- Mid Seral: (approx. 25- 80 years) - sunlight and soil resources become limiting, competition results in some plants gaining an advantage over others which eventually die.
- Old Seral: (approx. 80 years+) - as some trees die, the potential for a new understory of shade tolerant species develop. As the stand ages, the early successional dominants have died and the upper canopy species are able to reproduce with limited light.

Landscapes are always changing. An open meadow will eventually become a forest if disturbances (such as wind, fire, flood, or insect/disease) are removed or limited. An old seral forest will eventually be affected by a disturbance, which, depending on the type and scale of the disturbance will revert to an earlier successional stage. Through succession and disturbances every landscape is constantly changing, filled with natural variation and diversity.

## Appendix G – Planning Units

WFN’s forest tenures have been delineated into eight Planning Units (PU’s) ranging in size from approximately 4,400 to 12,600 ha’s. Each PU has its unique values and characteristics described as follows:

Table 1: Planning Unit Feature Summary

| Planning Unit     | FOZ (ha's)    | OFZ (ha's)    | # Lakes   | Lakes (ha's) | # Wetlands | Other           |                   |              | Total (ha's)  |
|-------------------|---------------|---------------|-----------|--------------|------------|-----------------|-------------------|--------------|---------------|
|                   |               |               |           |              |            | Wetlands (Ha's) | Industrial (ha's) | Roads (ha's) |               |
| Pennask           | 3,210         | 2,784         | 6         | 55           | 143        | 193             | 159               | 58           | 6,459         |
| Upper Trepanier   | 2,904         | 4,567         | 16        | 25           | 67         | 26              | 28                | 248          | 7,798         |
| Westside          | 2,838         | 5,756         | 0         | 0            | 11         | 25              | 31                | 158          | 8,808         |
| Peachland         | 1,846         | 5,199         | 12        | 26           | 55         | 38              | 8                 | 280          | 7,397         |
| Hidden            | 3,680         | 8,770         | 6         | 37           | 47         | 14              | 0                 | 144          | 12,645        |
| West Kettle North | 3,226         | 3,412         | 6         | 33           | 189        | 329             | 0                 | 54           | 7,054         |
| Derickson         | 7,165         | 3,002         | 3         | 13           | 190        | 146             | 85                | 326          | 10,737        |
| West Kettle South | 2,188         | 1,962         | 7         | 29           | 65         | 20              | 130               | 93           | 4,422         |
| <b>Total</b>      | <b>27,057</b> | <b>35,452</b> | <b>56</b> | <b>218</b>   | <b>767</b> | <b>791</b>      | <b>441</b>        | <b>1,361</b> | <b>65,320</b> |
| <b>Percent</b>    | <b>41%</b>    | <b>54%</b>    |           | <b>0%</b>    |            | <b>1%</b>       | <b>1%</b>         | <b>2%</b>    |               |

Table 2: BEC subzones by Planning Unit

| Planning Unit     | ICH<br>mk1 | IDF          |            |               | ESSF       |               |              |            |            | PP<br>xh1  | MS           |               |            | Total         |
|-------------------|------------|--------------|------------|---------------|------------|---------------|--------------|------------|------------|------------|--------------|---------------|------------|---------------|
|                   |            | xh1          | dk1        | dk2           | dc1        | dc2           | dcw          | xc1        | xc2        |            | dm1          | dm2           | xk1        |               |
| Pennask           | 0          | 0            | 0          | 0             | 0          | 3,601         | 0            | 739        | 0          | 0          | 0            | 704           | 950        | 5,994         |
| Upper Trepanier   | 0          | 0            | 0          | 1,178         | 0          | 2,105         | 0            | 0          | 0          | 0          | 0            | 4,188         | 0          | 7,471         |
| Westside          | 0          | 1,748        | 0          | 4,698         | 0          | 0             | 0            | 0          | 0          | 97         | 0            | 2,051         | 0          | 8,594         |
| Peachland         | 0          | 3,030        | 458        | 2,889         | 0          | 0             | 0            | 0          | 0          | 294        | 0            | 374           | 0          | 7,045         |
| Hidden            | 0          | 2,086        | 0          | 5,670         | 0          | 0             | 0            | 0          | 0          | 60         | 0            | 4,634         | 0          | 12,450        |
| West Kettle North | 0          | 0            | 0          | 0             | 63         | 4,356         | 1,577        | 0          | 588        | 0          | 54           | 0             | 0          | 6,638         |
| Derickson         | 0          | 0            | 0          | 0             | 383        | 5,769         | 81           | 0          | 0          | 0          | 3,934        | 0             | 0          | 10,167        |
| West Kettle South | 45         | 0            | 0          | 0             | 0          | 925           | 0            | 0          | 0          | 0          | 3,180        | 0             | 0          | 4,150         |
| <b>Total</b>      | <b>45</b>  | <b>6,864</b> | <b>458</b> | <b>14,435</b> | <b>446</b> | <b>16,756</b> | <b>1,658</b> | <b>739</b> | <b>588</b> | <b>451</b> | <b>7,168</b> | <b>11,951</b> | <b>950</b> | <b>62,509</b> |
| <b>Percent</b>    | <b>0%</b>  | <b>11%</b>   | <b>1%</b>  | <b>23%</b>    | <b>1%</b>  | <b>27%</b>    | <b>3%</b>    | <b>1%</b>  | <b>1%</b>  | <b>1%</b>  | <b>11%</b>   | <b>19%</b>    | <b>2%</b>  |               |



Table 3: OFZ Attributes by Planning Unit

| Planning Unit                  | BEC and Subzone | Area (ha's) in OFZ by BEC subzone and Seral Stage (ha's) |            |            |              |              |               |                 | Total         |
|--------------------------------|-----------------|--|------------|------------|--------------|--------------|---------------|-----------------|---------------|
|                                |                 | Dec/Brush  | Rock       | Meadows    | Early        | Mid          | Old           | Old Open Forest |               |
| Pennask                        | MSxk1           | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 309           |
|                                | MSdm2           | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 180           |
|                                | ESSFdc2         | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 2,093         |
|                                | ESSFxc1         | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 202           |
| <b>Total Pennask</b>           |                 |  |            |            |              |              |               |                 | <b>2,784</b>  |
| Upper Trepanier                | IDFdk2          | 2  | 52         | 0          | 22           | 3            | 861           | 10              | 950           |
|                                | MSdm2           | 0  | 92         | 0          | 46           | 85           | 2,352         | 73              | 2,648         |
|                                | ESSFdc2         | 1  | 39         | 0          | 85           | 84           | 758           | 2               | 969           |
| <b>Total Upper Trepanier</b>   |                 | <b>3</b>   | <b>183</b> | <b>0</b>   | <b>153</b>   | <b>172</b>   | <b>3,971</b>  | <b>85</b>       | <b>4,567</b>  |
| Westside                       | PPxh1           | 0  | 23         | 0          | 9            | 0            | 15            | 49              | 96            |
|                                | IDFxh1          | 2  | 134        | 0          | 83           | 0            | 1,017         | 218             | 1,454         |
|                                | IDFdk2          | 0  | 226        | 0          | 86           | 8            | 3,158         | 99              | 3,577         |
|                                | MSdm2           | 1  | 63         | 4          | 61           | 10           | 489           | 1               | 629           |
| <b>Total Westside</b>          |                 | <b>3</b>   | <b>446</b> | <b>4</b>   | <b>239</b>   | <b>18</b>    | <b>4,679</b>  | <b>367</b>      | <b>5,756</b>  |
| Peachland                      | PPxh1           | 0  | 7          | 0          | 44           | 0            | 86            | 124             | 261           |
|                                | IDFxh1          | 0  | 97         | 0          | 0            | 0            | 2,048         | 424             | 2,569         |
|                                | IDFdk1          | 0  | 8          | 0          | 0            | 0            | 347           | 6               | 361           |
|                                | IDFdk2          | 0  | 59         | 0          | 22           | 3            | 1,660         | 83              | 1,827         |
|                                | MSdm2           | 0  | 0          | 0          | 14           | 3            | 146           | 18              | 181           |
| <b>Total Peachland</b>         |                 | <b>0</b>   | <b>171</b> | <b>0</b>   | <b>80</b>    | <b>6</b>     | <b>4,287</b>  | <b>655</b>      | <b>5,199</b>  |
| Hidden                         | PPxh1           | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 56            |
|                                | IDFxh1          | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 1,993         |
|                                | IDFdk2          | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 4,457         |
|                                | MSdm2           | tbd  | tbd        | tbd        | tbd          | tbd          | tbd           | tbd             | 2,264         |
| <b>Total Hidden</b>            |                 |  |            |            |              |              |               |                 | <b>8,770</b>  |
| West Kettle North              | MSdm1           | 0  | 0          | 0          | 2            | 2            | 19            | 0               | 23            |
|                                | ESSFdc1         | 0  | 0          | 0          | 2            | 0            | 22            | 0               | 24            |
|                                | ESSFdc2         | 0  | 9          | 23         | 81           | 14           | 1,253         | 0               | 1,380         |
|                                | ESSFxc2         | 0  | 0          | 10         | 0            | 0            | 492           | 0               | 502           |
|                                | ESSFdcw         | 0  | 0          | 426        | 0            | 0            | 1,057         | 0               | 1,483         |
| <b>Total West Kettle North</b> |                 | <b>0</b>   | <b>9</b>   | <b>459</b> | <b>85</b>    | <b>16</b>    | <b>2,843</b>  | <b>0</b>        | <b>3,412</b>  |
| Derickson                      | MSdm1           | 3  | 4          | 0          | 145          | 430          | 724           | 0               | 1,306         |
|                                | ESSFdc2         | 0  | 0          | 2          | 250          | 154          | 1,141         | 0               | 1,547         |
|                                | ESSFdc1         | 0  | 0          | 0          | 4            | 0            | 94            | 0               | 98            |
|                                | ESSFdcw         | 0  | 0          | 0          | 0            | 0            | 51            | 0               | 51            |
| <b>Total Derickson</b>         |                 | <b>3</b>   | <b>4</b>   | <b>2</b>   | <b>399</b>   | <b>584</b>   | <b>2,010</b>  | <b>0</b>        | <b>3,002</b>  |
| West Kettle South              | ICHmk1          | 0  | 0          | 0          | 0            | 0            | 15            | 0               | 15            |
|                                | MSdm1           | 3  | 150        | 0          | 148          | 259          | 1,032         | 0               | 1,592         |
|                                | ESSFdc2         | 0  | 0          | 0          | 31           | 89           | 235           | 0               | 355           |
| <b>Total West Kettle South</b> |                 | <b>3</b>   | <b>150</b> | <b>0</b>   | <b>179</b>   | <b>348</b>   | <b>1,282</b>  | <b>0</b>        | <b>1,962</b>  |
| <b>Total</b>                   |                 | <b>12</b>  | <b>963</b> | <b>465</b> | <b>1,135</b> | <b>1,144</b> | <b>19,072</b> | <b>1,107</b>    | <b>35,452</b> |

Note: Work is presently ongoing within the Pennask and Hidden Planning Units. Tables 3-5 will be updated when this information becomes available.

Table 4: OFZ Attributes by Planning Unit

| Planning Unit                  | BEC and Subzone       | Area (ha's) in FOZ by BEC subzone and Seral Stage (ha's) |              |              |              |               |
|--------------------------------|-----------------------|--|--------------|--------------|--------------|---------------|
|                                |                       | Early  | Mid          | Old          | Open Forest  | Total         |
| Pennask                        | MSxk1                 | tbd  | tbd          | tbd          | tbd          | 641           |
|                                | MSdm2                 | tbd  | tbd          | tbd          | tbd          | 524           |
|                                | ESSFdc2               | tbd  | tbd          | tbd          | tbd          | 1,508         |
|                                | ESSFxc1               | tbd  | tbd          | tbd          | tbd          | 537           |
| <b>Total Pennask</b>           |                       |  |              |              | <b>3,210</b> |               |
| Upper Trepanier                | IDFdk2                | 123  | 0            | 105          | 0            | 228           |
|                                | MSdm2                 | 619  | 324          | 597          | 0            | 1,540         |
|                                | ESSFdc2               | 217  | 259          | 660          | 0            | 1,136         |
| <b>Total Upper Trepanier</b>   |                       | <b>959</b>   | <b>583</b>   | <b>1,362</b> | <b>0</b>     | <b>2,904</b>  |
| Westside                       | PPxh1                 | 1  | 0            | 0            | tbd          | 1             |
|                                | IDFxh1                | 130  | 0            | 164          | tbd          | 294           |
|                                | IDFdk2                | 472  | 51           | 598          | tbd          | 1,121         |
|                                | MSdm2                 | 752  | 132          | 538          | tbd          | 1,422         |
|                                | <b>Total Westside</b> |  | <b>1,355</b> | <b>183</b>   | <b>1,300</b> | <b>0</b>      |
| Peachland                      | PPxh1                 | 0  | 0            | 0            | 33           | 33            |
|                                | IDFxh1                | 9  | 9            | 406          | 37           | 461           |
|                                | IDFdk1                | 0  | 26           | 71           | 0            | 97            |
|                                | IDFdk2                | 271  | 45           | 742          | 4            | 1,062         |
|                                | MSdm2                 | 144  | 1            | 48           | 0            | 193           |
| <b>Total Peachland</b>         |                       | <b>424</b>   | <b>81</b>    | <b>1,267</b> | <b>74</b>    | <b>1,846</b>  |
| Hidden                         | PPxh1                 | 0  | 0            | 4            | 0            | 4             |
|                                | IDFxh1                | tbd  | tbd          | tbd          | tbd          | 93            |
|                                | IDFdk2                | tbd  | tbd          | tbd          | tbd          | 1,213         |
|                                | MSdm2                 | tbd  | tbd          | tbd          | tbd          | 2,370         |
| <b>Total Hidden</b>            |                       |  |              |              | <b>3,680</b> |               |
| West Kettle North              | MSdm1                 | 9  | 16           | 6            | 0            | 31            |
|                                | ESSFdc1               | 14   | 13           | 12           | 0            | 39            |
|                                | ESSFdc2               | 1,276  | 205          | 1,495        | 0            | 2,976         |
|                                | ESSFxc2               | 13   | 0            | 73           | 0            | 86            |
|                                | ESSFdcw               | 1  | 0            | 93           | 0            | 94            |
| <b>Total West Kettle North</b> |                       | <b>1,313</b>   | <b>234</b>   | <b>1,679</b> | <b>0</b>     | <b>3,226</b>  |
| Derickson                      | MSdm1                 | 815  | 1,720        | 93           | 0            | 2,628         |
|                                | ESSFdc2               | 1,358  | 1,442        | 1,422        | 0            | 4,222         |
|                                | ESSFdc1               | 6  | 43           | 236          | 0            | 285           |
|                                | ESSFdcw               | 0  | 0            | 30           | 0            | 30            |
| <b>Total Derickson</b>         |                       | <b>2,179</b>   | <b>3,205</b> | <b>1,781</b> | <b>0</b>     | <b>7,165</b>  |
| West Kettle South              | ICHmk1                | 9  | 0            | 21           | 0            | 30            |
|                                | MSdm1                 | 617  | 760          | 211          | 0            | 1,588         |
|                                | ESSFdc2               | 207  | 296          | 67           | 0            | 570           |
| <b>Total West Kettle South</b> |                       | <b>833</b>   | <b>1,056</b> | <b>299</b>   | <b>0</b>     | <b>2,188</b>  |
| <b>Total</b>                   |                       | <b>7,063</b>   | <b>5,342</b> | <b>7,688</b> | <b>74</b>    | <b>27,057</b> |

Table 5: Old Forest Representation

| Planning Unit                  | BEC and Subzone | Total Forested Area (ha's) | 30% Target Old Forest (ha's) | Over/Under Target Old Forest 2022 | % Managed as Old Forests Today | % Managed as Old Forests in Seven Gens |
|--------------------------------|-----------------|----------------------------|------------------------------|-----------------------------------|--------------------------------|--|
| Pennask                        | MSxk1           | 950                        | 285                          |                                   |                                |  |
|                                | MSdm2           | 704                        | 211                          |                                   |                                |  |
|                                | ESSFdc2         | 3,601                      | 1,080                        |                                   |                                |  |
|                                | ESSFxc1         | 739                        | 222                          |                                   |                                |  |
| <b>Total Pennask</b>           |                 | <b>5,994</b>               | <b>1,798</b>                 | <b>tbd</b>                        | <b>tbd</b>                     | <b>tbd</b>                             |
| Upper Trepanier                | IDFdk2          | 1,124                      | 337                          | 534                               | 77%                            | 80%                                    |
|                                | MSdm2           | 4,096                      | 1,229                        | 1,196                             | 59%                            | 62%                                    |
|                                | ESSFdc2         | 2,065                      | 620                          | 141                               | 37%                            | 45%                                    |
| <b>Total Upper Trepanier</b>   |                 | <b>7,285</b>               | <b>2,186</b>                 | <b>1,871</b>                      | <b>56%</b>                     | <b>60%</b>                             |
| Westside                       | PPxh1           | 74                         | 22                           | 42                                | 86%                            | 99%                                    |
|                                | IDFxh1          | 1,612                      | 484                          | 751                               | 77%                            | 82%                                    |
|                                | IDFdk2          | 4,472                      | 1,342                        | 1,915                             | 73%                            | 75%                                    |
|                                | MSdm2           | 1,983                      | 595                          | -105                              | 25%                            | 28%                                    |
| <b>Total Westside</b>          |                 | <b>8,141</b>               | <b>2,442</b>                 | <b>2,604</b>                      | <b>62%</b>                     | <b>65%</b>                             |
| Peachland                      | PPxh1           | 287                        | 86                           | 124                               | 73%                            | 89%                                    |
|                                | IDFxh1          | 2,933                      | 880                          | 1,592                             | 84%                            | 84%                                    |
|                                | IDFdk1          | 450                        | 135                          | 218                               | 78%                            | 78%                                    |
|                                | IDFdk2          | 2,830                      | 849                          | 894                               | 62%                            | 62%                                    |
|                                | MSdm2           | 374                        | 112                          | 52                                | 44%                            | 48%                                    |
| <b>Total Peachland</b>         |                 | <b>6,874</b>               | <b>2,062</b>                 | <b>2,880</b>                      | <b>72%</b>                     | <b>73%</b>                             |
| Hidden                         | PPxh1           | 60                         | 18                           |                                   |                                |  |
|                                | IDFxh1          | 2,086                      | 626                          |                                   |                                |  |
|                                | IDFdk2          | 5,670                      | 1,701                        |                                   |                                |  |
|                                | MSdm2           | 4,634                      | 1,390                        |                                   |                                |  |
| <b>Total Hidden</b>            |                 | <b>12,450</b>              | <b>3,735</b>                 | <b>tbd</b>                        | <b>tbd</b>                     | <b>tbd</b>                             |
| West Kettle North              | MSdm1           | 54                         | 16                           | 3                                 | 35%                            | 43%                                    |
|                                | ESSFdc1         | 63                         | 19                           | 3                                 | 35%                            | 38%                                    |
|                                | ESSFdc2         | 4,324                      | 1,297                        | -44                               | 29%                            | 31%                                    |
|                                | ESSFxc2         | 578                        | 173                          | 319                               | 85%                            | 85%                                    |
|                                | ESSFdcw         | 1,151                      | 345                          | 712                               | 92%                            | 92%                                    |
| <b>Total West Kettle North</b> |                 | <b>6,170</b>               | <b>1,851</b>                 | <b>992</b>                        | <b>46%</b>                     | <b>48%</b>                             |
| Derickson                      | MSdm1           | 3,927                      | 1,178                        | -454                              | 18%                            | 33%                                    |
|                                | ESSFdc2         | 5,767                      | 1,730                        | -589                              | 20%                            | 27%                                    |
|                                | ESSFdc1         | 383                        | 115                          | -21                               | 25%                            | 26%                                    |
|                                | ESSFdcw         | 81                         | 24                           | 27                                | 63%                            | 63%                                    |
| <b>Total Derickson</b>         |                 | <b>10,158</b>              | <b>3,047</b>                 | <b>-1,037</b>                     | <b>20%</b>                     | <b>29%</b>                             |
| West Kettle South              | ICHmk1          | 45                         | 14                           | 2                                 | 33%                            | 33%                                    |
|                                | MSdm1           | 3,027                      | 908                          | 124                               | 34%                            | 48%                                    |
|                                | ESSFdc2         | 925                        | 278                          | -43                               | 25%                            | 38%                                    |
| <b>Total West Kettle South</b> |                 | <b>3,997</b>               | <b>1,199</b>                 | <b>83</b>                         | <b>32%</b>                     | <b>45%</b>                             |
| <b>Total</b>                   |                 | <b>61,069</b>              | <b>12,788</b>                | <b>7,392</b>                      | <b>33%</b>                     | <b>37%</b>                             |

## Appendix H – Cultural Burning and Wildfire Management

Cultural burning and wildfire management, though related, are two separate topics. Historically, fire has played a prominent role in influencing the landscape in large parts of WFN's forest tenures. Traditionally wildfire (either lightning or human caused) had a significant impact on the composition and structure of the forests managed today.

Fire management activities over the past 100 years (primarily fire suppression) have impacted the ecological role fire played historically creating a need to re-introduce fire as a restoration tool particularly in the low elevation fire-dominated ecosystems. Fire is a culturally connected ecological process, so to learn about fire in pre-European times we need to understand how people were living, what foods were eaten, where people were living, hunting, and gathering. Cultural burning, *Cikilax<sup>™</sup>*, is not the same as prescribed burning and cultural burns may be different depending on the objectives which could range from community protection, wildlife habitat enhancement and food production, to forest health. They are usually low intensity slow burns that occur in either early spring or late fall. There weren't boundaries for whose property ended here or there, no one was putting fires out. Certain areas such as the lower elevations near the valley bottom may have been burned almost annually as a way to stimulate good berry production for the following years. Knowledge that was passed from one generation to the next created landscapes that had been intensively managed through the use of fire.

WFN fire keepers are those best qualified to determine where cultural burning is best to occur, though initially it is thought most cultural burns will take place in the low to mid elevation ecosystems of WFN's forest tenures particularly in areas where wildfire hazard mitigation treatments have recently occurred.

Wildfire management incorporates the practice of cultural burning but can also include other methods to prevent catastrophic wildfires. Some of these methods include:

1. Underburning - very much in-line with cultural burning, underburning is a low intensity fire under a timber canopy. Underburning is used primarily for fuel reduction and enhancing vegetation and wildlife habitat where these objectives can be met with a low intensity fire. Proper firing methods and a very good knowledge of weather and fire behavior are requirements to prevent damage to the overstory. This technique is anticipated to be the most common practice throughout WFN's forest tenures.
2. Broadcast Burning - Applying fire to a designated unit of land where the fuel has not been piled or windrowed. Broadcast burning is used for fuel reduction, site preparation, and vegetation manipulation. Proper unit layout (size and shape), firing methods, and safety considerations are requirements of this kind of burning and it usually occurs on recently harvested clearcut cutblocks. We don't anticipate planning any broadcast burning on WFN's forest tenures.
3. Pile and Burn – Surface fuels are piled by mechanical means or by hand and then usually burned in the fall when fine fuels outside the piles are too moist to burn or covered with snow. This has been one of the primary practices done over the past several years and we plan to slowly phase this practice out in favour of chipping.
4. Thinning – is a silvicultural practice designed to reduce the density of existing stands, one objective of which is to lower the risk of rapidly spreading crown fires.

5. Pruning - branches are cut from trees and left in place or scattered. As well as enhancing timber quality, reducing vertical fuel continuity (i.e. ladder fuels) is a primary objective. This is most effective with light surface fuel loadings.
6. Landscape Level Fuel Breaks – Ntityix has developed a plan to introduce landscape level fuel breaks throughout WFN’s forest tenures. Once in place these fuel breaks will help slow the spread of potential catastrophic wildfires, provides points where these fires may be actioned and provide opportunities to maintain these fuel breaks by incorporating cultural burning practices in areas outside of the valley bottom.

### **Forest Fuel Management Zone:**

A third layer within our plan that overlaps the other two is the Forest Fuel Management Zone. This zone is located immediately adjacent to communities and important infrastructure within and adjacent to WFN’s forest tenures, and within our network of landscape level fuel breaks and accounts for approximately 1/6<sup>th</sup> the area within our forest tenures. The objective within this zone is to reduce fuel loading, using either hand or mechanical methods, to slow the rate of spread of wildfire in a manner that addresses other important values in these areas, whether within the OFZ or the FOZ. A secondary objective within this zone is to provide opportunities to re-introduce cultural burning practices onto the land after primary fuel mitigation treatments have been completed.

Treatments within this zone will consist of:

- 1) Thinning the existing stand, pruning the residual trees and removing surface fuels;
- 2) Where appropriate choosing trees that can survive low intensity ground fires such as Douglas-fir, Western Larch, and Ponderosa Pine to occupy these areas;
- 3) Incorporate deciduous species such as Aspen into the species mix;
- 4) Manage fuels by conducting regular low intensity surface fuel burns where feasible; and,
- 5) Where trees adapted to survive low intensity fires are not suitable to the site (i.e. ESSF), regularly remove surface fuels from the site through means other than fire.

## Appendix I – Operational Monitoring

Operational monitoring is the ongoing assessment of the impacts of forest practices on the objectives contained within this plan. Monitoring is done to ensure that our stated tactics are meeting the goals of the plan and highlights the opportunities to improve present practices and identify areas where corrective or remedial action is required. Most of the monitoring will occur within the FOZ as this is where most of the operational decisions will be made. There is, however, a monitoring program designed exclusively for the OFZ designed to evaluate the effectiveness of the forests in this zone in providing for the values associated with old forests.

Ntityix's monitoring program is presently focussed on the following area:

- **Forest Inventory** – in the FOZ, once a stand has successfully regenerated monitoring will continue to evaluate forest health, stand development and to determine Pre-Commercial and Commercial Thinning schedules up to a time when the stand is ready for its next harvest. Ecosystem and wildlife use data will be collected.
- **Riparian Practices Effectiveness** – though most riparian management areas have been captured within the OFZ, there will be small riparian features found within the FOZ. Baseline data will be collected within these riparian areas, management strategies developed, and post-harvest monitoring conducted to determine effectiveness.
- **Wildlife Practices Effectiveness** – some of the most valuable wildlife habitat has been incorporated at the landscape level within the OFZ, however important habitat exists across the FOZ as well. Monitoring will occur mainly within the FOZ focusing on collecting baseline data and then following up with collecting post-treatment data to determine effectiveness of the tactics employed.
- **Roads** – all permanent roads are risk-rated. Based on the Risk Rating (Low, Moderate, High or Very High), roads are inspected at a frequency of at least one inspection per year to one inspection every three years for low risk roads. The inspections will determine whether maintenance is required.
- **Old Forests** – approximately 60% of the landbase within WFN's tenures is being stewarded for old forest values. Stands within the OFZ will be monitored to determine key characteristics that define old forests such as stand composition and structure, stream function and wildlife habitat. Monitoring will help identify whether any interventions are required to maintain healthy, persistent old forests well into the future.

### Appendix J – Plant Associations on WFN Forest Tenures

| Eco Unit    | Site Series        | Grid    | Plant Community  |
|-------------|--------------------|---------|--|
| ESSFdc1-D   | 103,104            | 2-4/B-C | <b>BIPI – Falsebox-Grouseberry (Rhododendron 104)</b> (Black Huckleberry, Rhododendron, Lupine, Arnica, Bramble, Violet).  |
| ESSFdc1-DZ  | 104/101            | 3-4/B-C |  |
| ESSFdc1-ZD  | 101/104            | 3-4/B-C | <b>BISx – Rhododendron-Valerian</b> (Black Huckleberry, Arnica, Bramble, Foamflower, Queens Cup)   |
| ESSFdc1-Z   | 101                | 3-4/B-D |  |
| ESSFdc1-ZM  | 101/110            | 3-4/B-D |  |
| ESSFdc1-MZ  | 110/101            | 3-4/B-D | <b>BISx – Rhododendron – Hellebore</b> (Black Huckleberry, Utah honeysuckle, Gooseberry, Sitka Valerian, Mountain Arnica, Twisted Stalk, Foamflower, Queens Cup, Heart Leaved Twayblade, Bramble, Oak Fern). |
| ESSFdc1-M   | 110                | 4-5/C-D |  |
| ESSFdc1-DMZ | Upper-lower slopes | 3-6/B-D |  |
| ESSFdc2-D   | 103,104            | 2-3/A-C | <b>BIPI-Grouseberry-Clad Lichen</b> (Black Huckleberry, Falsebox, Utah Honeysuckle, Lupine)  |
| ESSFdc2-DZ  | 104/101            | 3-4/A-C |  |
| ESSFdc2-ZD  | 101/104            | 3-4/B-C | <b>BISx – Rhododendron-Valerian</b> (Grouseberry, Arnica, Bramble, Falsebox, Utah Honeysuckle, Wintergreen, Rounded Leaf Violet)   |
| ESSFdc2-Z   | 101                | 3-4/C-D |  |
| ESSFdc2-ZM  | 101/111            | 4-6/C-E |  |
| ESSFdc2-MZ  | 111/101            | 4-6/C-E | <b>BISx – Valerian – Globeflower</b> (Black Huckleberry, Rhododendron, Gooseberry, Arrow-leaved Groundsel, Globeflower, Mountain Arnica, Bramble, Hellebore)   |
| ESSFdc2-M   | 111                | 5-6/C-E |  |
| ESSFdc2-MP  | 110                | 4-5/A-B | <b>SxBI – Trapper’s Tea – Grouseberry</b> (Mountain Arnica, Bramble, Bunchberry, Valerian, Utah Honeysuckle, Blackberry)   |
| ESSFdc2-DMZ | Upper-lower slopes | 3-6/B-D |  |
| ESSFxc2-D   | 103                | 2-3/B-C | <b>BIPI – Huckleberry-Clad Lichen</b> (Grouseberry, Arnica, Bramble, Round-leaved Violet)  |
| ESSFxc2-DZ  | 103/101            | 2-4/B-C |  |
| ESSFxc2-ZD  | 101(110)/103       | 2-4/B-C | <b>BISx – Grouseberry-Valerian</b> (Rhododendron 110) (Black Huckleberry, Arnica, Bramble)   |
| ESSFxc2-Z   | 101(110)           | 3-4/B-D |  |
| ESSFxc2-ZM  | 101(110)/111       | 4-5/C-E |  |
| ESSFxc2-MZ  | 111/101(110)       | 4-5/C-E |  |

| Eco Unit    | Site Series        | Grid    | Plant Community   |
|-------------|--------------------|---------|---|
| ESSFxc2-M   | 111                | 5/C-E   | <b>BISx – Valerian-Globeflower</b> (Black Huckleberry, Gooseberry, Valerian, Arnica, Bramble, Grouseberry, Hellebore, Arrow Leaved Groundsel)   |
| ESSFxc2-DMZ | Upper-lower slopes | 3-6/B-E |   |
| IDFdk2-D    | 104                | 2-3/B-C | <b>Fd(Pl) – Pinegrass-Kinnickinnick</b> (Soopalallie, Falsebox, Saskatoon Berry, Birch-leaved Spirea, Arnica, Aster)  |
| IDFdk2-DZ   | 104/101            | 3-4/B-C |   |
| IDFdk2-ZD   | 101/104            | 3-4/B-C | <b>FdPI – Pinegrass-Feather Moss (Grouseberry 105)</b> (Rose, Soopalallie, Falsebox, Saskatoon, Birch-leaved Spirea, Twinflower, Aster, Princes Pine, Rattlesnake plantain)   |
| IDFdk2-Z    | 101                | 3-4/B-D |   |
| IDFdk2-ZM   | 101/110            | 3-4/B-D |   |
| IDFdk2MZ    | 110//101           | 3-4/B-D | <b>Sx(Fd) – Dogwood- Gooseberry</b> (Twinberry, snowberry, Rose, Western meadowrue, Baneberry, Sweet Cicely, Bunchberry, Bedstraw, Twinflower)  |
| IDFdk2M     | 110                | 5/C-D   |   |
| IDFdk2-DMZ  | Upper-lower slopes | 3-6/B-D |   |
| IDFhx1-D    | 104, 105           | 2-3/B-C | <b>FdPy – Wheatgrass, Balsam Root (Pinegrass 105)</b> (Saskatoon, Snowberry, Birch Leafed Spirea, Oregon Grape, Yarrow, Kinnickinnick)  |
| IDFhx1-DZ   | 105/101            | 3-4/B-D |   |
| IDFhx1-ZD   | 101/105            | 3-4/B-D | <b>Fd(Py) –Spirea-Pine Grass</b> (Oregon Grape, Snowberry, Birch Leafed Spirea, Saskatoon, Yarrow, Arnica, Kinnickinnick)   |
| IDFhx1-Z    | 101                | 3-4/B-D |   |
| IDFhx1-ZM   | 101/110            | 4-5/B-D |   |
| IDFhx1-MZ   | 110/101            | 4-5/B-D | <b>Fd(Py) – Snowberry-Oregon Grape</b> (Birch Leafed Spirea, Saskatoon, Douglas Maple, Roses, Pine Grass, Arnica, Solomons Seal, Sweet Cicely)  |
| IDFhx1-M    | 110                | 4-5/C-D |   |
| IDFhx1-DMZ  | Upper-lower slopes | 3-6/B-D |   |
| MSdm1-D     | 103,104            | 2-3/A-B | <b>Fd(Lw) – Pinegrass-Kinnickinnick (103), Pl(Lw)-Pinegrass-Grouseberry (104)</b> (Juniper, Saskatoon, Falsebox, Birch-Leaved Spirea, Oregon Grape, Soopalallie, arnica, Twinflower, Princes Pine, wild strawberry) |
| MSdm1-DZ    | 104,103/101        | 3-4/B-C |   |
| MSdm1-ZD    | 101/104,103        | 3-4/B-C | <b>Sx – Falsebox – Feathermoss</b> (Sitka alder, Black Huckleberry, Gooseberry, Twinberry, Utah Honeysuckle, Thimbleberry, Bunchberry, Twinflower, Grouseberry)   |
| MSdm1-Z     | 101                | 3-4/B-C |   |
| MSdm1-ZM    | 101/111            | 4-5/C-D |   |
| MSdm1-MZ    | 111/101            | 4-5/C-D | <b>SxBI – Gooseberry</b> (Thimbleberry, Black Huckleberry, Bunchberry, Bramble, Foamflower, Baneberry, Sweet Cicely, Bedstraw, Western Meadowrue)   |
| MSdm1-M     | 111                | 5-C-D   |   |
| MSdm1-MP    | 110                | 5-6/B   | <b>SxBI - Trappers Tea – Grouseberry</b> (Gooseberry, Twinberry, Sitka alder, Black Huckleberry, Bramble, Foamflower, Queens Cup, Bunchberry, Twinflower, Arnica, Wintergreen)                                      |



| Eco Unit  | Site Series        | Grid    | Plant Community   |
|-----------|--------------------|---------|---|
| MSdm1-DMZ | Upper-lower slopes | 3-6/B-D |   |
| MSdm2-D   | 104                | 2-3/B-D | <b>PI – Pinegrass-Grouseberry</b> (Falsebox, Black Huckleberry, Utah honeysuckle, Soopalallie, Birch Leaved Spirea, Lupine, Heart Leaved Arnica, Kinnickinnick, Twinflower, Prince’s Pine, Wintergreen) |
| MSdm2-DZ  | 104/101            | 2-4/B-D |   |
| MSdm2-ZD  | 101/104            | 3-4/B-D |   |
| MSdm2-Z   | 101                | 3-4/B-D |   |
| MSdm2-ZM  | 101/111            | 3-5/B-D |   |
| MSdm2-ZP  | 105                | 4/A-B   | <b>PISx – Trappers Tea-Grouseberry</b> (Falsebox, Utah honeysuckle, Black huckleberry, Pinegrass, Lupine, Twinflower, Bramble, Queens Cup, Bunchberry)  |
| MSdm2-MZ  | 111/101            | 3-5/B-D | <b>SxBI – Gooseberry (Devils Club 112)</b> (Twinberry, Utah Honeysuckle, Bunchberry, Bramble, Valerian, Foamflower, Twisted Stalk, Sweet Cicely)  |
| MSdm2-M   | 111/112            | 5-6/C-E |   |
| MSdm2-MP  | 110                | 5/A-C   | <b>SxBI – Trappers Tea-Bunchberry</b> (Gooseberry, Falsebox, Black huckleberry, Twinberry, Grouseberry, Twisted Stalk, Bramble, Valerian, Foamflower)   |
| MSdm2-DMZ | Upper-lower slopes | 3-6/B-D |   |
| MSxk1-D   | 103                | 2-3/C   | <b>PI – Grouseberry-Kinnickinnick-Clad Lichen</b> (Pinegrass, Soopolallie, Birch Leaved Spirea)   |
| MSxk1-DZ  | 103/101,104        | 2-4/B-D |   |
| MSxk1-ZD  | 101,104/103        | 2-4/B-D | <b>PI – Pinegrass-Grouseberry-Feathermoss</b> (Falsebox, Birch Leaved Spirea, Kinnickinnick, Twinflower, Lupine) (Pinegrass 104)  |
| MSxk1-Z   | 101,104            | 2-4/B-D |   |
| MSxk1-ZM  | 101,104/111        | 3-5/B-E |   |
| MSxk1-ZP  | 105                | 3-4/A-B | <b>PISx – Trappers Tea-Grouseberry</b> (Twinflower, Bunchberry, Lupine, Wintergreen, Pinegrass)   |
| MSxk1-MZ  | 111/101,104        | 3-5/B-E | <b>SxBI- Gooseberry</b> (Twinberry, Utah Honeysuckle, Grouseberry, Bunchberry, Arnica, Foamflower, Bramble, Valerian)   |
| MSxk1-M   | 111                | 5-6/C-E |   |
| MSxk1-MP  | 110                | 5-6/A-C | <b>Sx- Trappers Tea-Bunchberry-Glow Moss</b> (Utah Honeysuckle, Black Huckleberry, Twinberry, Grouseberry, Arnica, Twinflower, Wintergreen, Bramble, Valerian)  |
| MSxk1-DMZ | Upper-lower slopes | 2-6/A-E |   |