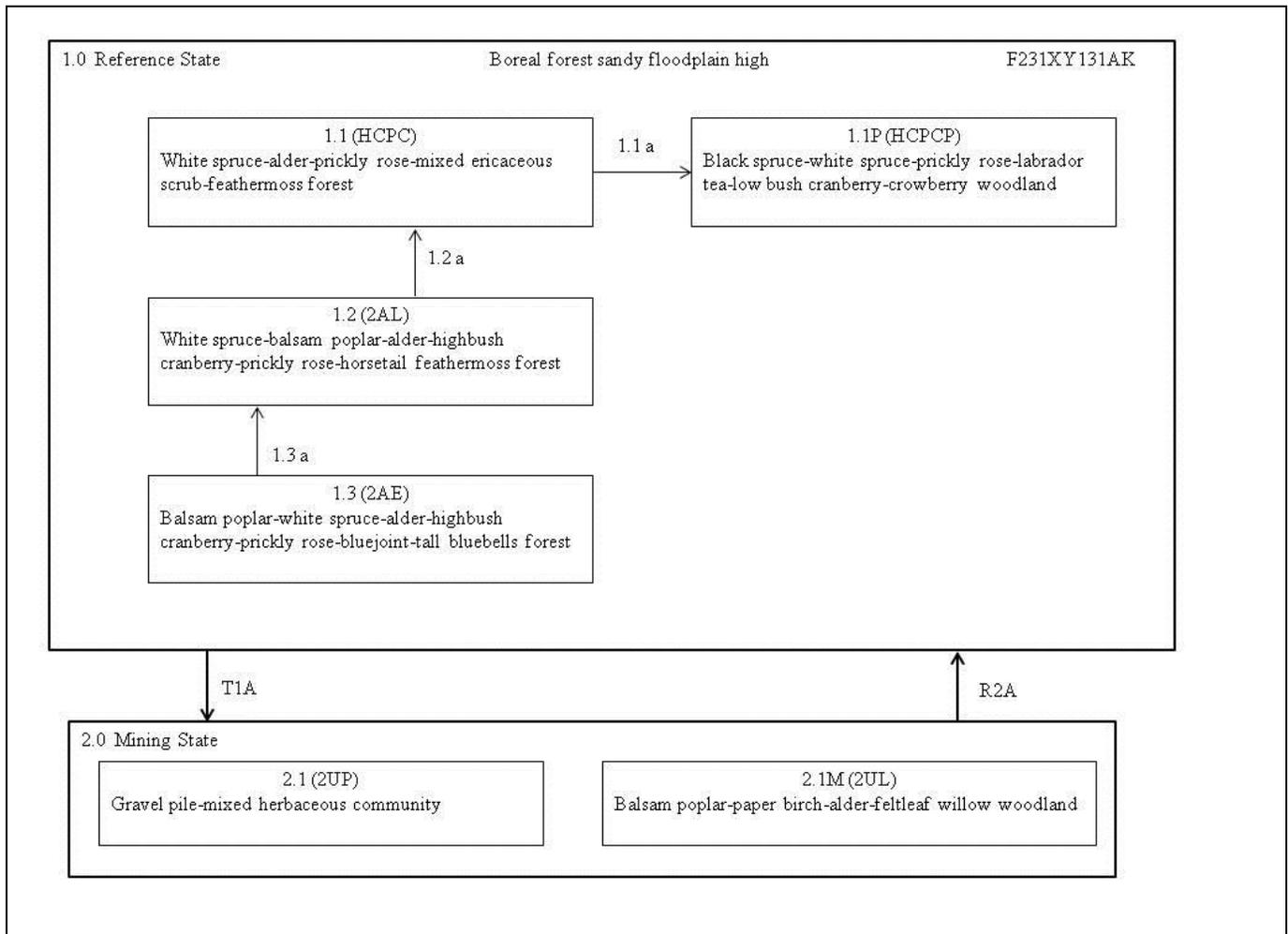


Ecological Site Description ID:	F231XY131AK
Ecological Dynamics of the Site:	
<p>This boreal ecological site is associated with all river systems that experience occasional to very rare flood events with the exception of the Yukon River. Decreased flood intensity and frequency favors the replacement of tall scrubs with tree species marking a successional progression from F231XY130AK (i.e. starting with community phase 1.3). As sites progress from community phase 1.3 to 1.1, surface organic matter increases and tree composition shifts from deciduous to coniferous dominance. For community phase 1.1, soils were classified as cryorthents being composed of organic matter over sandy and gravelly alluvium.</p> <p>As flooding becomes very rare, this ecological site begins to shift towards that of a floodplain terrace (e.g. F231XY169AK). Indicators for this shift were decreases in white spruce size and density, increases in frequency and density of ericaceous vegetation and black spruce, and increased likelihood of fire disturbance. Sites that display these indicators were described as post-climax for this ecological site (i.e. community phases 1.1P).</p> <p>Mining was observed to occur within this ecological site. It was believed that the degree of disturbance transitioned the reference state into two separate and unique community phases.</p>	
State and Transition Diagram:	



<b>State ID Number:</b>	1	<b>State Name:</b>	Reference
<b>State Narrative:</b>	<p>If flood intensity were to increase removing the tree canopy, then area transitions to ecological site F231XY130.</p> <p>Fire is a disturbance regime believed to occur in the post-climax community phase. While unique community phases would occur with a fire regime, limited sampling occurred for post-climax plant communities. As a result, no fire related plant community phases were created.</p> <p>Tall trees are defined as growing &gt;40' in height, medium trees are defined as growing 15-40' in height, while stunted and regenerative trees are defined as growing less than 15' in height. Tall shrubs are defined as growing &gt;10' in height, medium shrubs are defined as growing 3-10' in height, low shrubs are defined to grow 8" – 3' in height, and dwarf shrubs are defined to grow less than 8" in height.</p>		

Photo 1.1



Community Phase Number:	1.1	Community Phase Name:	White spruce-alder-prickly rose-mixed ericaceous scrub-feathermoss forest
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Community Phase Narrative:

Tree cover primarily occurs in the tall tree stratum and was largely *Picea glauca* (i.e. total mature tree cover was ~50% averaging 152 years of age). However, trace amounts of *Betula neoalaskana* and *Populus balsamifera* were also observed. Shrubs are evenly split between tall, medium, low, and dwarf strata (~50% cover) and commonly observed species include *Alnus viridis* ssp. *fruticosa*, *Rosa acicularis*, *Vaccinium vitis-idaea*, and *Linnaea borealis*. Forb and graminoid diversity is high with ground cover totalling ~25%. Commonly observed species include *Geocaulon lividum*, *Calamagrostis canadensis*, *Lupinus arcticus*, and *Cornus canadensis*. Moss is an abundant ground cover (~80%) and the most common species were *Hylocomium splendens* and *Pleurozium schreberi*. This phase had four observations.

Community Pathways

Pathway Number	Pathway Name & Description
1.1a	Normal time and growth without flooding. White spruce forest declines in productivity. Meanwhile, frequency and density of ericaceous plants and black spruce increases. Site begins transition to floodplain terrace.

Photo 1.1P



Community Phase Number:	1.1P	Community Phase Name:	Black spruce-white spruce-prickly rose-labrador tea-low bush cranberry-crowberry woodland
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Community Phase Narrative:

When compared to phase 1.1, community phase 1.1p has a less dense white spruce canopy and reduced basal area. The tree canopy was evenly split between *Picea glauca* and *Picea mariana* with *Betula neoalaskana* occurring as a codominate (~30% total mature tree cover). Tree cover was split between the tall, medium, and stunted tree strata and average basal area was 43 (e.g. community phase 1.1 average basal area was 142). Shrub cover was ~50% and commonly observed species were *Rosa acicularis*, *Ledum sp.*, *Vaccinium uliginosum*, *Empetrum nigrum*, and *Vaccinium vitis-idaea*. Forbs and graminoids were diverse but not abundant (~10% cover). *Hylocomium splendens* was the most abundant moss species (~20% cover) but *Sphagnum sp.* were also commonly observed. This phase had 3 observations.

Community Pathways

Pathway Number	Pathway Name & Description
	No observed pathways.

Photo 1.2



Community Phase Number:

1.2

Community Phase Name:

White spruce-balsam poplar-alder-highbush cranberry-prickly rose-horsetail feathermoss forest

Community Phase Narrative:

*Picea glauca* is the dominant species in the tree canopy but *Populus balsamifera* and *Betula neoalaskana* are still abundant. Deciduous trees will often be observed as standing dead or will be a component of litter on the forest floor. Tree cover primarily occurs in the tall tree stratum (i.e. total mature tree cover was ~60% with *Picea glauca* averaging 59 years of age). Shrub cover was approximately 20% and observed species were *Alnus viridis* ssp. *fruticosa*, *Viburnum edule*, *Rosa acicularis*, and *Linnaea borealis*. Forbs cover was ~50% and the most abundant species were *Equisetum arvense*, *Mertensia paniculata*, and *Geocaulon lividum*. Graminoids, lichens, and moss were minor vegetative components. This phase had one observation.

Community Pathways

Pathway Number

Pathway Name & Description

1.2a

Normal time and growth. White spruce forest matures and dominates tree canopy.

Photo 1.3



Community Phase Number:

1.3

Community Phase Name:

Balsam poplar-white spruce-alder-highbush cranberry-prickly rose-bluejoint-tall bluebells forest

Community Phase Narrative:

*Picea glauca*, *Populus balsamifera*, and *Betula neoalaskana* are all dominant species within the tree canopy. Tree cover primarily occurs in the medium tree stratum (i.e. total mature tree cover was ~65% with *Picea glauca* averaging 42 years of age). Shrub cover was ~60% and the most abundant species observed were *Alnus viridis* ssp. *fruticosa*, *Salix bebbiana*, *Rosa acicularis*, and *Viburnum edule*. Graminoid and forbs combined for ~40% cover and the most abundant species were *Calamagrostis canadensis*, *Artemisia tilesii*, *Mertensia paniculata*, and *Pyrola grandiflora*. This phase had one observation.

Community Pathways

Pathway Number

Pathway Name & Description

1.3a

Normal time and growth. Deciduous trees begin to be outcompeted by white spruce and begin to be replaced in the tree canopy.

Photo 2.1



Community Phase Number:

2.1

Community Phase Name:

Gravel pile-mixed herbaceous community

Community Phase Narrative:

This community was sparsely vegetated (<15% combined vegetative cover) comprised mostly of surface rock fragments. The most abundant species observed were *Populus balsamifera*, *Populus tremuloides*, *Betula neoalaskana*, *Salix alaxensis*, *Chamerion angustifolium*, and *Calamagrostis canadensis*. This phase had one observation.

Community Pathways

Pathway Number

Pathway Name & Description

No observed pathways.

Photo 2.1m



Community Phase Number:

2.1M

Community Phase Name:

Balsam poplar-paper birch-alder-feltleaf willow woodland

Community Phase Narrative:

*Picea glauca*, *Betula neolaskana*, and *Populus balsamifera* were documented growing primarily in the medium and regenerative tree strata (total mature tree cover ~25%). Tall shrubs were the dominant shrub stratum and the most common species were *Alnus viridis* ssp. *fruticosa*, *Alnus incana* ssp. *tenuifolia*, and *Salix alaxensis* (total shrub cover was ~50%). Graminoids, forbs, lichen, and moss were all minor vegetative components. This phase had one observation.

Community Pathways

Pathway Number

Pathway Name & Description

No observed pathways.

**Transition**

Transition Number:

T1A

To State/Community Phase:

2.1 and/or 2.1M

**Transition Narrative:**

Community phase 2.1 and 2.1M are associated with mining activities. It appears that during mining, gravels were deposited in separate piles then loamy alluvium. Gravel piles are considered a unique plant community and may never support a typical floodplain community. When compared to gravel piles (community 2.1), loamy piles (community 2.1M) support greater abundances of vegetation.

**Restoration Pathway**

<b>Restoration pathway number:</b>	R2A
<b>To state/community phase:</b>	1.3
<b>Restoration pathway narrative:</b>	
<p>Community phase 2.1 likely is altered beyond restoration back to the reference state, which is believed due to xeric growth conditions. Community phase 2.1M resembles areas on many low floodplain positions (e.g. F231XY130AK). With normal time and growth, community phase 2.1M may develop a white spruce-mixed deciduous forest.</p>	