Appendix 1 - Fuel Type Descriptions

Fuel Type Descriptions

The following is a general description of the dominant fuel types within the study area

C2 fuel type

Structure Classification	Regeneration to Pole sapling
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), *Tsuga heterophylla* (western hemlock), *Thuja plicata* (western redcedar), *Larix occidentalis,* (western larch), *Pinus contorta* (lodgepole pine) and *Abies lasiocarpa* (subalpine fir)
Tree Species Type	> 80% Coniferous
Understory Vegetation	Sparse – None (< 10% cover)
Age	10-20 yrs
Height	<10 m
Stand Density	>2000 stems/ha
Crown Closure	80 – 100 %
Height to Live Crown	Average 2 m
Surface Fuel Loading	< 3 kg/m^2
Burn Difficulty	Moderate to high; however, if fire is wind driven then there is a high potential for extreme fire behaviour and active crown fire.

Figure 1. Example of a high-density pole sapling western hemlock-amabilis fir stand – classified as a C2 fuel type.

C3 fuel type

Structure Classification	Late Pole sapling to late young forest
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), *Tsuga heterophylla* (western hemlock), *Thuja plicata* (western redcedar), *Larix occidentalis,* (western larch), *Pinus contorta* (lodgepole pine) and *Abies lasiocarpa* (subalpine fir)
Tree Species Type	> 80% Coniferous
Understory Vegetation	Low (< 50% cover)
Age	40 – 80 yrs
Height	20 – 33 m
Stand Density	700 – 1,200 stems/ha
Crown Closure	40 – 100 %
Height to Live Crown	Average 8 m
Surface Fuel Loading	< 5 kg/m^2
Burn Difficulty	Moderate; however, if fire is wind driven then there is a high potential for extreme fire behaviour and active crown fire.

Figure 2. Example of evenly stocked, moderate density second growth stand – classified as a C3 fuel type.

C4 fuel type

Structure Classification	Pole sapling
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), *Tsuga heterophylla* (western hemlock), *Thuja plicata* (western redcedar), *Larix occidentalis,* (western larch), *Pinus contorta* (lodgepole pine) and *Abies lasiocarpa* (subalpine fir)
Tree Species Type	> 80% Coniferous
Understory Vegetation	Low (< 25% cover)
Age	20 – 40 yrs
Height	10 – 20 m
Stand Density	700 – 2000 stems/ha
Crown Closure	40 – 80 %
Height to Live Crown	Average 4 m
Surface Fuel Loading	< 5 kg/m^2
Burn Difficulty	Moderate to high; however, if fire is wind driven then there is a high potential for extreme fire behaviour and active crown fire.

Figure 3. Example of a moderate to high-density second growth stand of hemlock and Douglas-fir classified as a C4 fuel type.

C5 fuel type

Structure Classification	Mature and old forest
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), *Tsuga heterophylla* (western hemlock), *Thuja plicata* (western redcedar), *Larix occidentalis,* (western larch), *Pinus contorta* (lodgepole pine), *Abies lasiocarpa* (subalpine fir) and *Pinus ponderosa* (ponderosa pine)
Tree Species Type	> 80% Coniferous
Understory Vegetation	Moderate (> 40% cover)
Average Age	> 80 yrs
Average Height	30 – 40 m
Stand Density	700 – 900 stems/ha
Crown Closure	40 – 100 %
Height to Live Crown	Average 18 m
Surface Fuel Loading	< 5 kg/m^2
Burn Difficulty	Low; however, if fire is wind driven then there is a moderate potential for active crown fire.

Figure 4. Example of mature forest of Douglas fir, western hemlock and western red cedar – classified as a C5 fuel type

C7 fuel type

Structure Classification	Young forest to mature forest
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), (western larch), *Pinus contorta (*lodgepole pine) and *Pinus ponderosa* (ponderosa pine)
Tree Species Type	> 80% Coniferous
Understory Vegetation	Variable depending on site quality and moisture availability
Average Age	20 – 80 yrs
Average Height	10 – 30 m
Stand Density	Variable, typically less than 600 stems/ha
Crown Closure	20 – 40 %
Height to Live Crown	Average 4 m
Surface Fuel Loading	< 5 kg/m^2
Burn Difficulty	Low; however, if fire is wind driven then there is a moderate potential for active crown fire.

Figure 5. Example of a low density Douglas-fir and lodgepole pine stand – classified as C5 fuel type.

D1 fuel type

Structure Classification	Pole sapling to Mature forest
Dominant Tree Species	*Populus trichocarpa* (cottonwood), *Populus tremuloides* (Aspen) and *Betula papyrifera* (paper birch)
Tree Species Type	> 80% Deciduous
Understory Vegetation	High (> 90% cover)
Average Age	> 20 yrs
Average Height	>10 m
Stand Density	600 – 2,000 stems/ha
Crown Closure	20 – 100 %
Height to Live Crown	< 10 m
Surface Fuel Loading	< 3 kg/m^2
Burn Difficulty	Low

Figure 6. Moist rich site dominated by cottonwood and trembling aspen – classified as a D1 fuel type.

M2 fuel type

Structure Classification	Pole sapling, young forest, mature and old forest
Dominant Tree Species	*Pseudotsuga menziesii* (Douglas-fir), *Tsuga heterophylla* (western hemlock), *Thuja plicata* (western redcedar), *Larix occidentalis,* (western larch), *Pinus contorta* (lodgepole pine), *Abies lasiocarpa* (subalpine fir), *Populus trichocarpa* (cottonwood), *Populus tremuloides* (Aspen) and *Betula papyrifera* (paper birch)
Tree Species Types	Coniferous 10-80% / Deciduous
Understory Vegetation	variable
Average Age	> 20 yrs
Average Height	> 10 m
Stand Density	600-1500 stems/ha
Crown Closure	40 – 100 %
Height to Live Crown	6 m
Surface Fuel Loading	< 5 kg/m^2
Burn Difficulty	Moderate; however, if fire is wind driven then there is a high potential for extreme fire behaviour and active crown fire.

Figure 7. Mixed fir/lodgepole-pine site with a deciduous component of aspen and paper birch – classified as an M2 fuel type.