

Fire management stocking standards for Selkirk Resource Amendment for Boundary Wildland Urban Interface Areas

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Background

These standards are based on the original WUI standards for South Arrow and Kootenay Lake Timber Supply Areas which in turn was based on the Chief Forester's Guidance document and a collaborative exercise with 2 licensee members and review by additional government experts and Licensee recommendations.

As per the original document the objectives are to:

- Reduce the risk of wildfire within the WUI while protecting social and ecological values;
- Consult widely with local stakeholders to maintain the social license with communities in the WUI;
- Reduce the unit costs of wildfire risk reduction while providing economic benefits and access to timber in the WUI; and
- Develop guidelines for best management practices to align wildfire risk reduction, timber harvesting and biodiversity maintenance.

Application

These stocking standards are designed to achieve fire management objectives as identified in a fire management plan. They would be available for application the 2 km Wildland Urban Interface zone as designated by the BC Wildfire Service. They could also potentially be applied within landscape-level fuel break areas as designated in a landscape-level fire management plan.

The stocking standards for each BEC site series or grouping has been assigned their own unique SSID and can be included in any forest licensee's FSP or WLP. The prescribing forest professional would decide whether to apply the WUI standard on any given harvest site or portions of a harvest site.

The following sections describe the standards to be used for fire management partial cut and even-aged stocking standards.

Post-harvest fuel hazard abatement

Post-harvest logging debris is expected to be carefully managed in all areas where fire management stocking standards are applied. Post-harvest fire hazard must be assessed and abated as required by the Wildfire Act and Regulation.

Proposed fire management partial cut (shaded fuel break) stocking standard

Intent and Guidance

There are no changes to the existing WUI partial cut standard other than allowing its application in Boundary. Geographically this standard is currently expanded to include Boundary TSA, TFL8 and other area-based tenures within these areas. Refer to the original WUI partial cut standards for Arrow and Kootenay Lake for specifications and application recommendations.

These fire management partial cut stocking standards are designed to be applied where sufficient healthy, larger diameter, fire resistant trees (e.g., Lw, Py, Fd, Pw, At, Act, Ep) are present in the pre-harvest stand and can be retained to function effectively as a 'shaded fuel break'.

Geographically this standard is currently expanded to include Boundary TSA, TFL8 and other area-based tenures within the Boundary area.

Proposed fire management even-aged stocking standards

Intent and Guidance

These fire management even-aged stocking standards are designed to be applied in areas that have <12 m²/ha of basal area of acceptable trees and thus cannot meet the partial cut/ shaded fuel break

standard¹. These areas thus incur a regeneration obligation. To address fire management objectives, the even-aged standards promote lower conifer stocking, include deciduous species, and indicate a preference for fire resistant species and consider climate change. The primary focus for treatment in each of the BGC units listed here should be on drier than mesic sites (102, 103, 104 / 02, 03, 04). Standards are provided for 101 and 110 (05, 01, 06) site series as a means of providing ecologically suitable species for these sites when they occur within broader fire treatment areas. The intent is that these site series are not targeted for fuel treatments since in many cases, it will be difficult and costly to prevent regeneration of trees (conifer and broadleaf species) and challenging to meet maximum conifer densities.

Deciduous species have been added to acceptable in these proposed standards. Although deciduous species may often be preferred from a strict fire management perspective, only conifers have been listed here as legally preferred in order to ensure a minimum conifer stocking in all stands. The minimum conifer standard is in place to address forest health and longevity issues associated with deciduous species in our District and to address (modest) timber objectives. Due to the much lower target stocking for these standards, an M-value limits of 4 is set for these standards². Some clumpiness is thus permitted, especially considering that deciduous trees are acceptable this standard.

Spruce, Lodgepole Pine, Cedar, Western White Pine and Hemlock have been demoted in these standards in recognition of the higher fuel hazards and lower fire resilience associated with these species. While they are still listed as acceptable on mesic and moist sites, more fire-resistant species such as Py, Fd, and Lw are clearly preferred over Sx, Pli, Pw, Cw and Hw.

Rationale:

Broadleaf species are included as they are generally less flammable than other coniferous species and as a result may reduce fire behaviour. TSS/MSS have all been lowered by 33-67% the various sites series from non-WUI District standards to reduce future fuel amounts by less trees and ideally wider spaced trees. MITD minimum has been set to 2.0 metres as this should be readily achievable with the much lower stocking and assist with increasing distance between well spaced crop trees and future fire spread. Ideally spacing should be targeted to a higher inter tree distance based on the target planting density if implementing artificial regeneration.

Approach used to modify current default District stocking standards to WUI stocking standards

1. **Start** with designated preferred and acceptable species in the DSE South Columbia Default Stocking Standards (April 2018)- based on existing & new BEC in LMH 70 and existing WUI standards prepared for South Arrow and Kootenay Lake
2. **Demote** CW, HW, PLI and SX on all site series listed
3. **Promote** PY from acceptable to preferred
4. **Add** AT and EP to acceptable on all site series where ecologically suitable. Add ACT to acceptable on -110 and 06 site series. Broadleaf species are included as they are generally less flammable than other coniferous species and as a result may reduce fire behaviour.
5. **Reduce target and minimum stocking** from 1200/ 700/ 600, 1000/ 500/ 400, 800/400/400 and 600/ 400/ 400 to 400/ 250/ 200 sph
6. **Add new requirement** for maximum 800 sph coniferous stocking at FG (i.e., may require conifer spacing prior to FG declaration)
7. **Revise countable conifer methodology** to require counting all conifers >50cm for purposes of assessment of maximum conifer stocking.

¹ The partial cut (shaded fuel break) fire management standard should be preferentially used wherever pre-harvest stands have ≥ 12 m²/ha of acceptable leave trees.

² A low M-value could make achievement of these standards impracticable. MITD limits still apply however.

Fire management even-aged stocking standards

SSID	BGC	Site Series	Preferred species	Acceptable Species	Target WS/ ha	MIN pa	MIN p	MAX conifer at FG	M-value	Regen Delay	FG early	FG late	FG Min tree height (m)
1066249	ICHmk1	01	Fd ^{32,58} Lw ³²	Pli Sx Cw At Ep	400	250	200	800	4	7	12	20	Lw,Pli,At,Ep=2.0 Fd=1.4 Others=1.0
1066250		02	Fd ⁵⁸ Py	Pli	400	250	200	800	4	7	12	20	Pli=1.4 Fd =1.0 Py=0.8
1066251		03	Fd ⁵⁸ Lw Py	Pli At	400	250	200	800	4	7	12	20	Lw,Pli,At=2.0 Fd =1.0 Py=0.8
1066252		04	Fd ⁵⁸ Lw Py	Cw ²⁸ Sx ^{13,28} Pli At Ep	400	250	200	800	4	7	12	20	Lw,Pli,At,Ep=2.0 Fd=1.4 Others=1.0
1066253		05	Fd ^{32,58} Lw ³²	Cw Pli BI ⁵⁰⁰ At Ep Act	400	250	200	800	4	7	12	20	Lw,Pli,At,Act,Ep=2.0 Fd=1.4 Others=1.0
1066254		06	Fd ^{32,58} Lw ^{1,32}	Cw Sx Pli BI ⁵⁰⁰ At Ep Act	400	250	200	800	4	7	12	20	Lw,Pli,At,Ep,Act=2.0 Fd=1.4 Others=1.0
1066255	IDFdm1	01	Fd ³² Lw ³² Py	Pli At	400	250	200	800	4	7	12	20	Lw,Pli,At=1.0 Fd=0.8 Py=0.6
1066256		03	Fd ²⁷ Py	Pli ²⁰⁴	400	250	200	800	4	7	12	20	Pli=1.0

													Fd=0.8 Py=0.6
1066257		04	Fd ³² Lw ³² Py	Pli	400	250	200	800	4	7	12	20	Lw,Pli=1.0 Fd=0.8 Py=0.6
1066258		05	Fd ³² Lw ³²	Py Sx Pli At Ep	400	250	200	800	4	7	12	20	Lw,Pli,At,Ep=1.4 Fd=1.0 Others=0.8
1066259		06	Fd ³² Lw ³²	Sx Pli At Act Ep	400	250	200	800	4	7	12	20	Lw,Pli,At,Act,Ep=1.4 Fd=1.0 Others=0.8
1066260	IDFxh4	01	Fd Lw Py	None	400	250	250	800	4	7	12	20	Lw =1.0 Others=0.6
1066261		02	Fd ²⁷ Py ²⁷	None	400	250	250	800	4	7	12	20	All=0.6
1066262		03	Fd Lw Py	Pli Sx	400	250	200	800	4	7	12	20	Lw,Pli =1.0 Others=0.6
1066263		04	Fd ³² Lw ³²	Sx At	400	250	200	800	4	7	12	20	Lw,At=1.0 Others=0.6
1066264	MSdm1	01	Fd ³² Lw ³²	Sx Pli B ⁵⁰⁰ At	400	250	200	800	4	7	12	20	Lw,Pli,At=1.4 Others=0.8
1066265		02	Fd Lw	Py	400	250	200	800	4	7	12	20	Lw=1.0 Others=0.6
1066266		03	Fd ³² Lw ³²	Sx ²⁸ Pli Py	400	250	200	800	4	7	12	20	Lw,Pli=1.0 Others=0.6

1066267		04	Fd ³² Lw ³²	Sx ²⁸ Pli Py	400	250	200	800	4	7	12	20	Lw,Pli=1.4 Others=0.8
1066268		05	Fd ³² Lw ³²	Sx Pli BI ⁵⁰⁰ At	400	250	200	800	4	7	12	20	Lw,Pli,At=1.4 Others=0.8
1066269		06	Fd ³² Lw ³²	Sx Pli Cw BI ⁵⁰⁰ At Act	400	250	200	800	4	7	12	20	Lw,Pli,At,Act=1.4 Others=0.8
1066290	PPdh1/ PPxh3	01	Fd ²⁷ Py	None	400	250	250	800	4	7	12	20	All=0.6
1066291		04	Fd Py	None	400	250	250	800	4	7	12	20	All=0.6
1066292		05	Fd ^{1,32} Py ¹	None	400	250	250	800	4	7	12	20	All=0.6

Minimum Inter Tree distance is 2.0 metres for all sites

Crop tree over Brush Height % is 150% for all ICH sites, 125% for all IDF, MS & PP sites

Post maximum density is set at TSS+200 sph as Maximum and MSSpa as minimum

Footnotes for species are as per current Selkirk District Default Stocking Standards

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