Rocky Mountain Forest District Ungulate Winter Range/NDT4 Stocking Standards**

CKY MT		BGC Classification		Regeneration Guide				e				Free Growing Guide					Post Spacing	
OCKING	NAME			Species		Stocking		Min	Regen Delay	Assessment		Min. Height		Tree Height	Min	Max		
ANDARD	_			Conifer		Target MIN paMIN p		Intertree		Earliest Latest		Species Ht		To Brush				
NUMBER		Zone/SZ	Series	Preferred (p)	Acceptable (a)	(well-s	paced/ha			(Max yrs)	(yrs)	(yrs)		(m)	(min%)			
	UWROF1	ESSFdk	02	$Fd^{9,14}Lw^{9,14}PI$	Se Pa ³¹ Bl	U8	76 ^{U10}	U20	2.0 74	-	2	20	PI,Lw	1.2	125	76	400 ^{U14}	
													Fd	0.8				
													Others	0.6				
	UWROF2	ICHmk1	02	Fd Pl	$Sx^{10,13}Py^{9,14}$	U8	76 ^{U10}	U20	2.0^{-74}	-	2	20	PI	1.4	125	76	400 ^{U14}	
													Fd	1.0				
				20 20	40.42.72								Others	8.0				
	UWRMF1		01	Fd ³² Lw ³² Py	PI ^{10,13,73}	1000	500	400	2.0	7	12	20	PI, Lw	1.0	125	500	2000 ^{U1}	
		Note ^{U18}											Fd	0.8				
				E.,32 L.,.32 D.,.	PI ^{10,13}	U8	76 ^{U10}	U20	2.0 74				Py	0.6			400 ^{U14}	
	UWROF3	IDFdm2 Note ^{U19}	01	Fd ³² Lw ³² Py	PI "		76	020	2.0	-	2	20	PI, Lw	0.5	125	76	400 ^{U14}	
		Note											Fd Py	0.5 0.5				
	UWROR1	IDEdm2	02	Fd ²⁷ Py Lw ^{10,13}		U9	0 ^{U10}	U20	2.0 ⁷⁴	_	2	20	Lw,Fd,Py	0.5	125	0	75 ^{U14}	
	UWROR2		03	Fd ²⁷ Py Lw ^{10,13}	PI ^{10,13}	U9	0 ^{U10}	U20	2.0 ⁷⁴	_	2	20	PI, Lw	0.5	125		75 ^{U14}	
	OWNORZ	IDI GIIIZ	03	,					0	_	2	20	Fd	0.5	120	O		
													Ру	0.5				
	UWRMF2	IDFdm2	04	Fd ³² Lw ³² PI Sx	Ру	1000	500	400	2.0	7	12	20	PI, Lw	1.4	125	500	2000 ^{U1}	
													Fd	1.0				
				1.32									Others	0.8			1111	
	UWRMF3	IDFdm2	05	PI Sx Fd ^{1,32}		1000	500	400	2.0	7	12	20	PI, Lw	1.0	125	500	2000 ^{U1}	
				Lw ^{1,32}									Fd	0.8				
	LIVA/DA4E 4	IDE J. C		Sx ¹ Fd ^{1,32} Lw ^{1,32}	Pl ¹	4000	5 00	400	0.0	_	•	00	Sx	0.6	405	500	2000 ^{U1}	
	UWRMF4	IDFdm2 Note ^{U15}	07	SX FU LW	PI	1000	500	400	2.0	4	9	20	PI, Lw	1.0	125	500	2000	
		INOIG											Fd Sx	0.8 0.6				
	UWROF4	MSdk ^{U17}	03	Fd Lw Pl	Sx	U8	76 ^{U10}	U20	2.0 74	_	2	20	PI,Lw	1.4	125	76	400 ^{U14}	
	OWNO! 4		00	1 G LW 1 1	OX.		. •				_	20	Others	0.6	120	70		
	UWROR3	PPdh2	01	Py Fd ^{27,32}	Lw ^{10,23,32} Pl ²³	U9	0010	U20	2.0 ′4	-	2	20	All	0.5	125	0	75 ^{U14}	
	UWROR4	PPdh2	02a	Py Fd ^{27,32}		U9	0 ^{U10}	U20	2.0 74	-	2	20	All	0.5	125	0	75 ^{U14}	
	UWROR5	PPdh2	02b	Py Fd ^{27,32}		U9	0 ^{U10}	U20	2.0 74	-	2	20	All	0.5	125	0	75 ^{U14}	
	UWROF5	PPdh2	03	Fd ³² Py ¹ Sx ²⁸	Lw Pl ²³	U8	76 ^{U10}	U20	2.0 74	-	2	20	All	0.5	125	76	400 ^{U14}	

UWR

^{1,2} etc - see "Footnotes"

Rocky Mountain Forest District SOP #8 applies to the Open Range and Open Forest standards.

** Additional information or requirements may be contained in the text of the footnotes.

Rocky Mountain Forest District Ungulate Winter Range/NDT4 Stocking Standards**

	Definitions	ky Mountain Forest District Ungulate Winter Range	# Footnote
			74 Layer 1 trees may be tallied regardless of spacing providing they meet
	Conifer Tree Species	17 restricted to western portion of biogeoclimatic unit in region	free-growing damage criteria.
	"Ba" means amabilis fir;	18 restricted to eastern portion of biogeoclimatic unit in region	75 For the purposes of free growing and regeneration survey standards, minimum
	"Bg" means grand fir;	19 Not applicable to the Rocky Mountain Forest District.	horizontal intertree distance (MITD) is 2.0 m or greater for trees to be considered
	"BI" means subalpine fir;	20 Not applicable to the Rocky Mountain Forest District.	well-spaced. A reduced MITD of 1.7 metres may be used to facilitate selection of
	"Bp" means noble fir;	21 Not applicable to the Rocky Mountain Forest District.	superior planting microsites when sites have:
	"Cw" means western red cedar;	22 Not applicable to the Rocky Mountain Forest District.	Dispersed occurrence of standing water
	"Fd" means Douglas-fir;	23 restricted to trial use	Dispersed occurrence of bedrock outcrops
	"Hm" means mountain hemlock;	24 suitable (as a major species) in wetter portion of	Mechanical site preparation (including: mounding, disc trenching)
	"Hw" means western hemlock;	biogeoclimatic unit	Root disease problems
	"Lt" means tamarack;	25 Not applicable to the Rocky Mountain Forest District.	Conditions where obstacle planting for snow creep is necessary.
	"Lw" means western larch;	26 Not applicable to the Rocky Mountain Forest District.	In any instance where the MITD is reduced below 2.0m, the specific reason will be
	"Pa" means whitebark pine;	27 partial canopy cover required for successful establishment	identified in the site plan and a map showing stratum location and boundaries will
	"PI" means lodgepole pine;	28 limited by moisture deficit	be attached to the site plan. (These items will be appended to the site plan when
	"Pw" means white pine;	29 risk of heavy browsing by moose	the conditions justifying use of reduced MITD have been identified.) The area when
	"Py" means ponderosa pine;	30 risk of porcupine damage	conditions justify reduced MITD will be stratified separately. One hectare will be the
	"Sb" means black spruce;	31 risk of white pine blister rust	minimum stratum size. Planting will be conducted to target levels.
	"Se" means Engelmann spruce;	32 limited by growing-season frosts	The reduced MITD applies to planted trees only.
	"Ss" means Sitka spruce;	33 footnote retired and replaced with footnote 'a' 34 risk of snow damage	
	"Sw" means white spruce;		
	"Sx" means hybrid spruce or interior spruce; "Sxs" means hybrid Sitka spruce;	irsk of weevil damage Not applicable to the Rocky Mountain Forest District.	
	"Sxw" means hybrid white spruce;	36 Not applicable to the Rocky Mountain Forest District. 37 risk of heart rots	
	"Yc" means yellow cedar.	37 risk or neart rots 38 footnote retired	
	To means yellow cedal.	39 avoid exposed and windy sites	
	Broadleaf Tree Species	40 risk of redheart	
	"Acb" means balsam poplar;	41 limited by poorly drained soils	
	"Act" means black cottonwood;	42 restricted to fresh soil moisture regimes	
	"At" means trembling aspen;	43 Not applicable to the Rocky Mountain Forest District.	
	"Dr" means red alder;	44 Not applicable to the Rocky Mountain Forest District.	
	"Ep" means common paper birch;	45 Not applicable to the Rocky Mountain Forest District.	
	"Mb" means bigleaf maple;	46 Not applicable to the Rocky Mountain Forest District.	
	"Qg" means garry oak;	47 risk of balsam wooly adelgid	
	"Ra" means arbutus;	48 risk of heavy browsing by deer	
		49 applies only to rust resistant, planted stock.	
	"Biogeoclimatic unit" or "BGC classification" means	50 restricted to sites where the species occurs as a	
	the zone, subzone, variant and site series described	major species in a pre-harvest, natural stand	
	in the most recent field guide published by the Ministry	51 restricted to areas with proven PI performance	
	of Forests for the identification and interpretation of	52 restricted to sheltered microsites with deep soil	
	ecosystems, as applicable to a harvested area.	53 minor component	
		54 risk of unsuccessful release of advance regeneration	
	"MIN or "Min" means minimum.	55 acceptable in sx-sm portion of site series	
	"MAX or Max" means maximum		
		# Broadleaf Management Constraints	
#	<u>Footnote</u>	a productive, reliable, and feasible regeneration option	
1	elevated microsites are preferred	b limited in productivity, reliability and/or feasibility	
2	suitable on thick forest floors		
3	restricted to coarse-textured soils	# Localized Footnotes	
4	restricted to medium-textured soils	56 Footnotes 56 - 68 are not applicable to the Rocky Mountain Forest Dis	trict.
5	footnote retired		
6	restricted to nutrient-very-poor sites	69 Species is restricted to upper elevations when used in the southern portion	
7	restricted to nutrient-medium sites	of the biogeoclimatic unit.	
8	restricted to steep slopes	70 Can be considered as "preferred species" on sites where low risk of snow	
9	restricted to southerly aspects	damage is expected.	
$\overline{}$	restricted to northerly aspects	71 Can be considered as "preferred species" on sites where Armillaria is a	
10			
11	restricted to crest slope positions	serious concern.	
11 12	restricted to crest slope positions suitable on cold air drainage sites	72 Can be considered as "preferred species" on frost prone sites	
11 12 13	restricted to crest slope positions suitable on cold air drainage sites restricted to upper elevations of biogeoclimatic unit	72 Can be considered as "preferred species" on frost prone sites (footnote #1 then applies).	
11 12 13 14	restricted to crest slope positions suitable on cold air drainage sites restricted to upper elevations of biogeoclimatic unit restricted to lower elevations of biogeoclimatic unit	72 Can be considered as "preferred species" on frost prone sites (footnote #1 then applies). 73 Can be considered as "preferred species" on sites where a low risk of	
11 12 13 14 15	restricted to crest slope positions suitable on cold air drainage sites restricted to upper elevations of biogeoclimatic unit restricted to lower elevations of biogeoclimatic unit restricted to northern portion of biogeoclimatic unit in region	72 Can be considered as "preferred species" on frost prone sites (footnote #1 then applies). 73 Can be considered as "preferred species" on sites where a low risk of damage from forest health factors (in particular; stem rusts, gall rust,	
11 12 13 14	restricted to crest slope positions suitable on cold air drainage sites restricted to upper elevations of biogeoclimatic unit restricted to lower elevations of biogeoclimatic unit	72 Can be considered as "preferred species" on frost prone sites (footnote #1 then applies). 73 Can be considered as "preferred species" on sites where a low risk of	
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Rocky Mountain Forest District Unqulate Winter Range/NDT4 Stocking Standards** Rotational harvest entries using clearcut or light overstorey shelterwood. Manage for timber, ungulate winter range and approximately two decades of interim rangeland values per rotation. Maintain connectivity of retention forest and OGMA's through managed forest and open forest ecosystems. Provide winter forest cover for ungulates. Periodic entries of burning, thinning and partial cutting to maintain open forest conditions and rangeland values. Provide connectivity between Open Range areas. Provide ungulate travel corridors between winter range and winter forest cover. Periodic harvesting, prescribed burning and/or thinning to maintain open range condition, enhancing existing or potential bunchgrass sites. Maintain connectivity of rangelands. Inventory and periodic burns. As stated on the UWR Order; the stocking range is 76-400 trees/hectare which must include 20-50 trees of the largest 1/3 of existing diameter range. As stated on the UWR Order; the stocking range is 5-75 trees/hectare which must include 5-20 trees of the largest 1/3 of the existing diameter range. U10 KBLUP assumes at the landscape level Open Forest will contribute 50% of maximum timber benefits and 50% of maximum forage benefits and that Open Range contributes 10% timber benefits and 90% forage benefits. Targets of 250 stems/hectare for Open Forest and 20 stems/hectare for Open Range approximate the 50% and 10% timber contribution. It is recognized that to accomplish UWR forage objectives and subject to footnote U14, the range of stocking may vary for Open Forest from 76 to 400 stems/ha and that Open Range may vary from 0 to 75 stems/ha. N11 10% max. N12 40% max. N13 80% max. U14 Provincial Max Density Standards and Section 8 of UWR Orders U-4-006, U-4-008 are used where applicable. U15 IDFdm2 07 is not in UWR order. (In UWR objectives it is expected to be managed as Riparian Area.) U16 PPdh2 04 is Open Forest in the UWR order but is not considered part of timber harvesting base, no standard is applied. U17 Standard applies only where Fd is the leading species. U18 Applies>1000 metres except in LUs 132, 135, and 138 where normal Managed Forest standards apply. U19 Applies<1000 metres except in LUs 132, 135, and 138 where normal Managed Forest standards apply. U20 These stocking standards do not over-ride the stand structure and forest cover requirements contained in the Ungulate Winter Range Orders for the Cranbrook and Invermere TSAs. Refer to these documents when designing and harvesting UWR/NDT4 openings.