

TABLE 4.1. Subzone/variant names, tree species and elevation

Biogeoclimatic zone	Climate region	Map symbol	Subzone/variant	Tree species ^a	Elevation ranges S=South aspect N=North aspect
PP Ponderosa Pine	Dry	PPdh1	Kettle Dry Hot Ponderosa Pine Variant	Py, Fd At, Ac, Sxw, (Lw ^b), [-Pl ^c]	500-950m ^S
	Dry	PPdh2	Kootenay Dry Hot Ponderosa Pine Variant	Py, Fd Sxw, At, Ac, (Lw, Pl)	700-950m ^S
IDF Interior Douglas-fir	Dry	IDFxm1 ^d	Okanagan Very Dry Hot Interior Douglas-fir Variant	Fd, Py At, Ep, (Lw), [-Pl]	500-1200m ^S 500-1050m ^N
	Dry	IDFun	Undifferentiated Interior Douglas-fir Subzone	Fd	
	Dry	IDFdm1	Kettle Dry Mild Interior Douglas-fir Variant	Fd Lw, Pl, Py, Sxw, At, Ac, Ep, (Cw)	500-1370m ^S 500-1280m ^N
	Dry	IDFdm2	Kootenay Dry Mild Interior Douglas-fir Variant	Fd Py, Lw, Pl, Sxw, At, Ac, (Ep)	800-1200m ^S 800-1100m ^N
ICH Interior Cedar - Hemlock	Moist	ICHxw	Very Dry Warm Interior Cedar - Hemlock Subzone	Cw, Bg Lw, Fd, Pl, Py, Sxw, At, Ac, Ep, Hw, Pw	450-1100m ^S
	Moist	ICHdw	Dry Warm Interior Cedar - Hemlock Subzone	Hw, Cw, Ac, (Bl) Lw, Fd, Pl, Py, Sxw, Pw, Bg, Ep, At	450-1200m ^S 450-1000m ^N
	Moist	ICHmw1	Golden Moist Warm Interior Cedar - Hemlock Variant	Hw, Cw Fd, Pl, Sxw, Pw, Ep, Ac, (Bl), [-Lw]	750-1550m ^S 750-1500m ^N
	Moist	ICHmw2 ^e	Columbia-Shuswap Moist Warm Interior Cedar - Hemlock Variant	Hw, Cw Fd, Pl, Pw, Sxw, At, Lw, Ac, Ep, Bl [-Bg, -Py]	500-1450m ^S 500-1400m ^N

TABLE 4.1. (Concluded)

Biogeoclimatic zone	Climate region	Map symbol	Subzone/variant	Tree species ^a	Elevation ranges S=South aspect N=North aspect
AT Alpine Tundra	Dry, Moist, Wet	AT			Min. Elev. 2600 m in Dry Region; 2400 m in Moist Region; 2300 m in Wet Region

^a Species in bold type are zonal climax, other species are seral or non-zonal species.

^b () Bracketted species are rare species.

^c [-] Square brackets and minus sign denote diagnostic absence of species.

^d Please refer to Kamloops Forest Region Fieldguide (Lloyd *et al.*, 1990) for site identification and management interpretations for the IDFxh1, ICHmw3, and ESSFwc2. These variants are of limited extent in the Nelson Region.

^e The southern portion of this variant is found above the ICHdw, i.e., at elevations of 1200-1550 m.

^f These species occur in the lower elevations of the subzone/variant.

IDF_{xh1}

Variant Summary

Okanagan Very Dry Hot Interior Douglas-fir Variant

Location: In the Nelson Forest Region, the IDF_{xh1} occurs in valley bottoms and lower slopes from Christina Lake to Grand Forks, including the Granby River, from Midway to Rock Creek, and up the Kettle River to Westbridge. It also occurs south of Rock Creek along Myers Creek to the U.S. border.

This subzone occurs more extensively in the Kamloops Forest Region. Please refer to "A Guide to Site Identification and Interpretation for the Kamloops Forest Region" (Lloyd et al. 1990) for a detailed description of vegetation and environmental features and management interpretations.

Elevation range: 500 to 1200 m (south aspect); 500 to 1050 m (north aspect).

Zonal vegetation: Zonal climax sites have stands of Fd and Py. Birch-leaved spirea and snowberry are the most common shrubs. Pinegrass is the dominant herb.

Distinguishing the IDF_{xh1} from adjacent subzones/variants

In the PPdh1	- bluebunch wheatgrass
zonal sites have:	- less Fd, birch-leaved spirea, and tall Oregon-grape
	- no pinegrass

In the IDFdm1	- Pl
most sites have:	- more Lw
dry sites have:	- less arrow-leaved balsamroot and Idaho fescue

TABLE 6.1 Selected wildlife species by subzone and variant^a

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
AMPHIBIANS															
Coeur d'Alene salamander	B									y ^d					
Ensatina salamander	G	a					y								
Tailed frog	B	a									y				
Tiger salamander	B						Y	Y							
REPTILES															
Gopher snake	B		Y				Y								
Night snake	B						y								
Western rattlesnake	B		Y				Y			y					
Painted turtle	Y		Y	Y			Y	Y	Y	Y	Y	Y	y		
MAMMALS															
Badger	B		y	y	y	y	Y	Y	Y	y	y	y	y	y	y
Big brown bat	G	a	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bighorn sheep	Y			pw	y	Psaw	PW	Y	Y	y	s			Y	s
Black bear	Y	a	y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bobcat	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Caribou	B	d				w						sW	Y	PsAW	Y
Cascade mantled ground squirrel	R	a			y		y	y						y	
Cougar	Y		y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Coyote	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Elk	Y		Y	Y	s	Y	y	Y	Y	Y	Y	Sy	y	PSAw	SA
Fisher	B	a			Y	Y	Y		Y		y	y	y	Y	Y

TABLE 6.1. (Continued)

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
MAMMALS															
Gray wolf	Y		y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Great Basin pocket mouse	B		Y												
Grizzly bear	B	a			y	PSAw	p	p	p	Psaw	y	y	Y	SAW	SAW
Long-legged myotis	G	a	S	S			S	S	S	S	S	S	S	S	S
Lynx	Y		y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Marten	Y	d	y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Moose	Y	a			Y	Y	PsAW		Y	y	Y	Y	y	pSAw	pSAw
Mountain goat	Y	a			y	PsAW	y		w			Y		Y	Y
Mule deer	Y	a	PsAW		PSAW	Y	Y	Y	Y	Y	S	Sw	S	SA	SA
Northern flying squirrel	G	a			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Northern long-eared myotis	B	a										s	s		S
Porcupine	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red-tailed chipmunk	B					Y				Y	y	Y			
River otter	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Silver-haired bat	Y	a	S	S	S	S	S	S	S	Y	Y	Y	Y	S	S
Southern red-backed vole	G	a			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Townsend's big-eared bat	R		S				S	S		y	y	y			
White-tailed deer	Y		Y	Y	PSA	Y	Y	Y	Y	Y	S	S	s	PSA	PSA
Wolverine	Y	a	y	y	y	y	Y	Y	Y	y	y	y	y	y	y

TABLE 6.1. (Continued)

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
BIRDS															
American Avocet	B		p			p			ps	p	p				
American White Pelican	R		sm				sM	sM	sm		sm				
Anna's Hummingbird	B						aw	sw	w		pw				
Arctic Tern	B						sa	a							
Bald Eagle	B	a	swM		ps	ps	swM	swM	swM	sM	swM	Psa	ps	ps	
Barn Owl	Y						y	s			psw				
Barred Owl	G	a	pw				y	y	y	a	y	a			
Barrow's Goldeneye	Y	a	SwM		sm	sm	SwM	SwM	SwM	sm	y	y	sm	sm	
Black-backed Woodpecker	G	a	y	y	y	y	y	y	y	y	y	y	y	y	y
Black-chinned Hummingbird	B						ps	ps	ps		ps				
Black-crowned Night Heron	B						sm			s	ps				
Blue Grouse	Y	a	y	y	y	y	y	y	y	y	y	y	y	y	y
Bobolink	B		ps			s	ps	ps	ps	ps	ps				
Boreal Owl	G	a			a	a				p		p		y	y
Brewer's Sparrow	B		ps				ps	ps	ps	ps					
Brown Creeper	G	a	y	y	y	y	y	y	y	y	y	y	y	y	y
Bufflehead	Y	a	SwM	SwM	SwM	SwM	SwM	SwM	SwM	sm	SwM	ps	ps	ps	ps
Burrowing Owl	R		wm				y	a							
California Gull	B		sa				Y	ps	sm	sm	PSa w	sa			
Canyon Wren	R		y				sm			y					

TABLE 6.1. (Continued)

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
BIRDS															
Caspian Tern	B						ps			ps					
Chestnut-backed Chickadee	G	a			y	y				Y	y	Y	Y		
Clark's Nutcracker	G	a	AW		psAW	psAW	sMW		sMW	psAW	psAW	psAW	y	y	y
Common Merganser	Y	a	SwM		sm	sm	SwM		SwM	PSaw	SwM	SwM	sm	ps	ps
Common Poorwill	R		s				sm		s	ps					
Flammulated Owl	B	a	a		ps		s		sm					s	
Forster's Tern	R						sm			PSa					
Grasshopper Sparrow	B						sm		ps						
Gray Jay	G	a	w		y	y	y		y	y	y	y	y	y	y
Great Blue Heron	B	a	Y		s	s	Y		Y	SwM	sa	SwM	sa		
Great Gray Owl	G	a	y		s		y		y		w	w			
Green-backed Heron	B								s	p					
Gyrfalcon	B						wm		wm		a				
Hairy Woodpecker	G	a	y		y	y	y		y	y	y	y	y	ps	ps
Hermit Thrush	G	a	sm		sa	sa	sm		sm	sm	sm	sm	sm	s	s
Hooded Merganser	Y	a	SwM		sm	sm	SwM		SwM	PSaw	SwM	SwM	sm	ps	ps
Hudsonian Godwit	B					s	a		p						
Least Sandpiper	B		sm		a	a	sm		sm	a	a	a	a	a	a
Le Conte's Sparrow	B								s						

TABLE 6.1. (Continued)

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
BIRDS															
Lesser Golden-plover	B		m				m	m		a		a			
Lewis' Woodpecker	B	a	sm				SwM	sm		sm	sm	sm	a		
Long-billed Curlew	B		ps				psa	ps		ps					
Merlin	G	a	y	sm	sm	y	y	y	y	y	y	sm	sm	sm	
Northern Goshawk	G	a	y	y	y	y	y	y	y	y	y	y	y	y	y
Northern Shrike	B		mw	mw	mw	y	y	y		mw	mw	mw	mw	a	a
Olive-sided Flycatcher	G	a		ps	ps	sm	sm	sm		ps	ps	ps	ps	s	s
Osprey	Y	a	PSa	ps	ps	PSaw	PSa	SwM		ps	PSaw	sm			
Pacific Loon	B		swm	s		swm	swm	swm		swm	swm	swm	sm	sm	sm
Peregrine Falcon	B		sm	m	sm	y	sm	sm		sm	sm	sm	ps	ps	ps
Pileated Woodpecker	Y	a	y		y	y	y	y		y	y	y			ps
Prairie Falcon	R		m			y	sm	sw		y	s				
Pygmy Nuthatch	G	a	y			y	y								
Red-breasted Nuthatch	G	a	y	y	y	y	y	y		y	y	y	y	y	y
Red-breasted Sapsucker	G	a				s						ps			
Red Crossbill	G	a		Y	Y	Y	Y	Y		Y	Y	Y	Y	y	y
Red-throated Loon	B					aw	a								
Ring-billed Gull	B		sm			Y	sm	swM		sm	sM	s			
Short-billed Dowitcher	B		p		ps	a	m	s			s				
Spruce Grouse	Y	a	y	y	y	y	y	y		y	y	y	y	y	y
Three-toed Woodpecker	G	a	y	y	y	y	y	y		y	y	y	y	y	y
Townsend's Warbler	G	a		sm	sm	sm	sm	sm		sm	sm	sm	sm	sa	sa

TABLE 6.1. (Continued)

Species	Status ^b	Degree of old-growth need ^c	PP dh1	PP dh2	MS dm	MS dk	IDF xh	IDF dm1	IDF dm2	ICH dw, xw	ICH mk	ICH mw	ICH wk	ESSF dk, dc	ESSF wm, wc, vc
BIRDS															
Varied Thrush	G	a	w		sm	sm	y		y	psAW	smw	psA W	psA W	sm	sm
Vaux's Swift	B	a	PS				PSa	PSa	PSa	ps	PSa	s			
Western Bluebird	B		ms				sm			sm	sm	sm			
Western Flycatcher	G	a			sm	sm				sm	sm	sm	sm		
Western Grebe	B					m	SwM	sm	SwM	sm	sm	sm	sm		
White-breasted Nuthatch	G	a	y				y	y	y	y	y	m			
White-headed Woodpecker	B	a					y	ps							
White-throated Swift	B		ps				ps			ps					
White-winged Crossbill	G	a			sm	sm	sm	sm	sm	sm	sm	sm	sm	sa	sa
Williamson's Sapsucker	B	a	ps		sm		ps								
Wood Duck	Y	a	sm				w	ps		sm	ps	ps			
Yellow-breasted Chat	B									s					
Yellow-headed Blackbird	Y		PSaw		ps	ps	PSaw	PSaw	PSa	sm	PSa	ps			
TOTAL^e AMPHIBIANS			4	4	5	8	7	6	7	6	6	3	3		
TOTAL REPTILES			6	0	0	10	3	7	6	6	4	0	0		
TOTAL MAMMALS			51	54	57	62	63	58	57	63	57	57	56		
TOTAL BIRDS			220	154	172	281	250	262	205	234	188	114	108		

See footnotes next page

TABLE 6.1. (Concluded)

- a** The following subzones and variants are grouped to match the level of information available for the species listed. IDFxh includes data from IDFxh, xw, and xm; IDFdm includes data from IDFdm and dk; ICHmk includes data from ICHmk and dk; ESSFdk and dc includes data from ESSFdk, dc, and dv; and ESSFwm, wc, vc includes data from ESSFwm, wc, vc, vv, vw, and wk. The IDFxw, xm, and dk, ICHdk, and ESSFdv, vv, vw, and wk are not found in the Nelson Forest Region.
- b** R=red; B=blue; Y=yellow; G=green.
- c** a=attribute dependent. Species requires old-growth forest attributes such as large dead trees or coarse woody debris (stand level).
d=forest dependent. Species requires intact old-growth forests (landscape level).
- d** Abundance is indicated by a lower or upper case letter. Common or abundant is an upper case letter. Uncommon, scarce, rare, or casual is a lower case letter. An upper case letter does not indicate abundance throughout a subzone variant, but nearly always refers to local abundance. However, if a species has a known abundance in only a small locality in a subzone or variant a lower case letter is used. Seasonality is indicated by a letter code.
P - spring (March-May); S - summer (June -August); A - autumn (September-November); W - winter (December-February); M - migratory (Spring and Autumn);
Y - yearlong. Some cases do not fit neatly into this scheme. For instance, a species which is known to be migratory, but has on occasion been seen in December in a particular subzone, would still be listed as M. All entries are based on the provincial wildlife data base prepared by Stevens (1992) for the Wildlife Interpretation Subgroup.
- e** Totals refer to the total number of species known to occur in each subzone.

TABLE 5.3.1 Distribution of Marsh Site Associations by biogeoclimatic zone

	BG PP	BWBS SWB	ESSF	ICH	IDF	MS	SBPS SBS	CDF	CWH	MH
Wm01 Beaked sedge – Water sedge	x	xx	x	xxx	xxx	xx	xx		x	
Wm02 Swamp horsetail – Beaked sedge		x		x	x	x	xx			
Wm03 Awned sedge	x				x					
Wm04 Common spike-rush	x	x		xx	x	x	xx		x	
Wm05 Cattail	xxx	x		xx	xx	x	xx	xx	x ^s	
Wm06 Great bulrush	xxx	x		x	xx	xx	x	x	x	
Wm07 Baltic rush	x				xx					
Wm50 Sitka sedge – Hemlock-parsley								xx	xx	
Wm51 Three-way sedge				x				x	x	

x = incidental; < 5% of wetlands

xx = minor; 5–25% of wetlands

xxx = major; >25% of wetlands

s = southern subzones only

TABLE 5.3.2 Marsh Species Importance Table

Species		Wm01	Wm02	Wm03	Wm04	Wm05
Herbs and Dwarf Shrubs	<i>Carex utriculata</i>					
	<i>Carex aquatilis</i>					
	<i>Equisetum fluviatile</i>					
	<i>Comarum palustre</i>					
	<i>Sium suave</i>					
	<i>Carex exsiccata</i>					
	<i>Carex atherodes</i>					
	<i>Polygonum amphibium</i>					
	<i>Eleocharis palustris</i>					
	<i>Potamogeton richardsonii</i>					
	<i>Typha latifolia</i>					
	<i>Schoenoplectus acutus</i>					
	<i>Menyanthes trifoliata</i>					
	<i>Utricularia macrorhiza</i>					
	<i>Juncus balticus</i>					
	<i>Hordeum jubatum</i>					
	<i>Potentilla anserina</i>					
	<i>Calamagrostis canadensis</i>					
	<i>Cicuta douglasii</i>					
	<i>Lysichiton americanus</i>					
	<i>Oenanthe sarmentosa</i>					
	<i>Galium trifidum</i>					
	<i>Spiraea douglasii</i>					
	<i>Carex sitchensis</i>					
	<i>Nuphar lutea</i> ssp. <i>polysepala</i>					
	<i>Dulichium arundinaceum</i>					
Mosses	<i>Drepanocladus</i> spp.					
	<i>Wamstorfia</i> spp.					

Wm06	Wm07	Wm50	Wm51	Common Name
				beaked sedge
				water sedge
				swamp horsetail
				marsh cinquefoil
				hemlock water-parsnip
				inflated sedge
				awned sedge
				water smartweed
				common spike-rush
				Richardson's pondweed
				common cattail
				great bulrush
				buckbean
				greater bladderwort
				Baltic rush
				foxtail barley
				common silverweed
				bluejoint
				Douglas' water-hemlock
				skunk cabbage
				Pacific water-parsley
				small bedstraw
				pink spirea
				Sitka sedge
				yellow pond-lily
				three-way sedge
				hook-mosses: intermediate
				hook-mosses: poor

