

## **APPENDIX E**

### **Ecosite Characteristics**

APPENDIX E Ecosite Characteristics

Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
<i>Montane Ecoregion</i>							
AT1 3c  AT1 5c	Slope: 3 (0-5%) complex 5 (5-15%) complex Landform: Fluvial, calcareous, Texture: coarse, Soils: Orthic and Eluviated Eutric Brunisols	(C3) Lodgepole pine/juniper/ bearberry  (C6) Lodgepole pine/ buffaloberry/ showy aster  (C19) Lodgepole pine/buffaloberry/ twin flower	Highly important at all times of the year, especially deer and elk.	Highly important to wolf, coyote, and cougar and low importance to mustelids.	Highly important especially to bat survival in the park. High density and diversity of small mammals make ecosite important.	Medium density and diversity of species. <i>Western Tanager, prefers old coniferous forest and mixed- wood.</i>	
FR1 3  FR1 5	Slope: 3 (0-5%) 5 (5-15%) Landform: Fluvial fans and aprons, calcareous, Texture: coarse stratified, Soils: well drained Orthic and Eluviated Eutric Brunisols	(C6) Lodgepole pine/buffaloberry/ showy aster  (C19) Lodgepole pine/ buffaloberry/ twin flower  [(C9) Lodgepole pine/dwarf bilberry between Banff and Johnston Canyon]	Highly important, especially to deer, moose and elk in the winter used as a bedding area.	Highly important, especially to wolf, coyote, cougar and lynx because of high density of prey species- especially in the winter.	High density and diversity of small mammals; the presence of the little brown bat and the bushy-tailed woodrat make ecosite important.	High number of species at high densities. <i>Cooper's hawk, clearing of parkland aspen bluffs threatens nesting habitat</i>	
GA1 6c  GA1 7c	Slope: 6 (15-30%) complex 7 (30-45%) complex Landform: hummocky colluvial landslide, calcareous, Texture: medium, Soils: rapidly/well drained Orthic Eutric Brunisols, Orthic Regosol	(C6) Lodgepole pine/buffaloberry/ showy aster  (C9) Lodgepole pine/ buffaloberry/twin flower  (C3) Lodgepole pine/ juniper/ bearberry  [(C1)Douglas fir/hairy wild rye, (C16) Aspen/hairy wild rye – peavine]  <i>Steep exposed slopes – (H19) Bluebunch wheatgrass – hairy wild rye – showy aster</i>	Highly important year round – very highly important to deer year round, and elk in the summer. Varied topography provides a mosaic of open south facing slopes with coniferous cover	Highly important to wolf, coyote and cougar in the summer	Low number of species here. <i>Flying squirrels</i> known to occur – dependant on old- growth forest cavities	High diversity and density of species. <i>Pileated Woodpecker require up to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests Western Tanager, prefers old coniferous forest and mixed- wood.</i>	

- [ ] - accessory vegetation types
- B only within 500 m buffer
- R exposed bedrock
- A Snow Avalanched
- X Lithic

Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
HD1 3 HD1 5 HD1 6	Slope: 3 (0-5%) 5 (5-15%) 6 (15-30%) Landform: Fluvial fans and aprons, material B, calcareous, Texture: coarse, stratified, Soils: Orthic and Cumulic Regosols	(C16) Aspen/hairy wild rye – peavine (C17) Balsam poplar/ buffaloberry	Highly important especially to elk and deer in the winter – snow accumulation is low	Highly important especially coyote, wolf, cougar, and marten. Moderately important to lynx.	High number of species, high density of Columbian ground squirrels, red squirrels, and meadow voles	Very high diversity and density of species. Cooper's hawk, clearing of parkland aspen bluffs threatens nesting habitat Clay-coloured sparrow, declining numbers Pileated Woodpecker require up to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests Western Tanager, prefers old coniferous forest and mixed-wood.	Ponds are important breeding sites for wood frogs and long-toed salamander in this ecosite. Long toed salamander vulnerable to habitat destruction/alteration associated with industrial, recreational and transportation development.
HD2 3c (and 3)	Slope: 3 (0-5%) complex Landform: level fluvial fans or aprons, floodplains, material B, calcareous, Texture: coarse, stratified, Soils: Orthic and Cumulic Regosols	(O3) White spruce/shrubby cinquefoil/ bearberry [(O17) White spruce/juniper/ bearberry, (H8) Yellow dryad – willow herb]	Highly important to ungulates year round, especially deer and elk.	Highly important to wolf, coyote, cougar, and lynx	High diversity of species – only record of northern pocket gopher at Ghost Lakes area in Banff	High diversity and density of species Northern Goshawk, require maintenance of mature forest breeding habitat. Western Tanager, prefers old coniferous forest and mixed-wood.	
HD3 3	Slope: 3 (0-5%) Landform: fluvial fans and aprons, calcareous, often channelled Texture: coarse, stratified, Soils: Orthic and Cumulic Regosols	(C2) white spruce/fern moss (C27) White Spruce/prickly rose/ fern moss (C5) white spruce-Douglas fir/ feather moss (C26) white spruce/buffaloberry/ fern moss	Highly important in autumn and winter	Highly important in autumn and winter to wolf, cougar, coyote and lynx	Moderate number of species	Medium number of species at high densities. Pileated Woodpecker require up to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests	
HD4 3	Slope: 3 (0-5%) Landform: Fluvial fans or aprons, material B, calcareous, Texture: coarse, stratified, Soils: Orthic and Cumulic Regosols	Grassland>subxeric pine (H6) Junegrass pasture – sage – wild blue flax [(C3) Lodgepole pine/juniper/ bearberry]	Highly important, especially to deer and elk all year round, snow accumulation is low and forage and cover are abundant.	Highly important to wolf and coyote	Moderate number of species including the little brown bat – high densities of red squirrels and deer mouse	Medium number of species at medium densities. Western Tanager, prefers old coniferous forest and mixed-wood. Clay-coloured Sparrow breeding bird surveys indicate sharp population declines	

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
NY1 7c (and 7) NY1X 7 NY1 8	Slope: 7 (30-45%) complex 8 (45-70%) Landform: Morainal, calcareous, Texture: medium, till C Soils: Orthic Eutric Brunisol > Orthic Regosol	(C1) Douglas fir/hairy wild rye,  (C6) Lodgepole pine/buffaloberry/ showy aster	Highly important to deer, elk and bighorn sheep. Provides valuable early spring forage in April and May	High importance especially coyote, wolf and cougar which prey on ungulates	Moderate diversity of species – bushy tailed woodrat recorded here	Low number of species at low densities <i>Western Tanager, prefers old coniferous forest and mixed- wood.</i>	
NY3 6c NY3 8	Inclined, gullied, hummocky terrain. Southern Aspects are the warmest and driest in Banff, free of snow most of the year. Slope: 6 (15-30%)complex 8 (45-70%) Landform: stratified drift material B, calcareous, Texture: varied Soils: Northerly – Brunisol Southerly - Regosol	<i>Strongly influenced by aspect</i> Northerly: <i>Spruce – Douglas Fir, pine/buffaloberry</i> (C5) White spruce/Douglas fir/feather moss, (C19) Lodgepole pine/ buffalo berry/twin flower [(C6) Lodgepole pine/buffalo berry/ showy aster, (C1)Douglas fir/hairy wild rye]  Southerly: <i>open Douglas fir, low shrub-herb meadow, Douglas fir</i> (O5) Douglas fir/juniper/bearberry, (L1) Shrubby cinquefoil/bearberry – northern bedstraw [(C1) Douglas fir/hairy wild rye, (C3) Lodgepole pine/juniper/bearberry, (O2) Limber pine – Douglas fir juniper/bearberry]	Highly important particularly to deer, elk and bighorn sheep. Valuable winter range (low snow accumulation, abundant forage and cover) and critical early spring forage.	Highly important to cougar, coyote, wolf and marten	High number of species at high densities	Very high number of species at high densities <i>Northern Goshawk, require maintenance of mature forest breeding habitat.</i> <i>Western Tanager, prefers old coniferous forest and mixed- wood.</i>	

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
PT1 3  PT1 5c  PT1 6c	Common on broad valley floors and benchlands and sometimes on lower slopes of valley walls. Ridged or hummocky moraine blankets Slope: 3 (0-5%) 5 (5-15%) complex 6 (15-30%) complex Landform: Morainal, calcareous, Texture: medium till C, Soils: Brunisol, Luvisol	(C6) Lodgepole pine/buffaloberry/ showy aster,  (C19) Lodgepole pine/buffaloberry/twin - flower  (C1) Douglas fir/ hairy wild rye  (C5) White Spruce/ Douglas fir/feather moss  (C3) Lodgepole pine/juniper/ bearberry,  (C10) Lodgepole pine – white spruce/green alder/ feather moss	Moderately important in the summer and highly important in the winter. Low snow accumulation and abundant forage make it important to elk and deer year round	Very highly important to coyote and cougar in the summer – highly important to coyote and cougar in the winter and to wolf year round. All other species of carnivores have been recorded here.	High number of species occur here including the bushy tailed woodrat, and bats	High number of species in high numbers common raven.	Wandering garter snake (uncommon) has been recorded near Vermillion lakes and the cave and basin; ponds are important breeding areas for long-toed salamander and wood frog. Long toed salamander vulnerable to habitat destruction/alteration associated with industrial, recreational and transportation development. Wandering garter snake require, stable populations dependant on habitat protection and public education.
VL1 3	Pools and ponds dot the landscape, poorly to very poorly drained Slope: 3 (0-5%) Landform: ponded fluvial lacustrine, Fluvial, fen, backwater floodplains, calcareous, Texture: fine, stratified fluvialacustrine material B Soils: Gleysol, Organic	<i>Sedge fen &gt; wet shrubby meadow, wet shrub thicket</i> (S1) Dwarf birch – shrubby cinquefoil – willow/brown moss,  (S7) Willow/horsetail  [(O6) Engelmann spruce – subalpine fir/willow/ribbed bog moss, (O11) Spruce/Labrador tea/brown moss]  <i>S1 – surface peat layers</i> <i>S7 – active depositional localities</i>	Highly important especially in winter to elk and moose, in summer its of low importance	Moderately important overall, highly important to weasels, and in winter to wolf and coyotes	Highly important because of density of species, the presence of bats, muskrats and beavers. Moderate diversity of species – Beaver found in high densities, wetlands areas (like this ecosite) are critical to muskrat survival in the mountains)	Very high diversity and density. Many wetland species. Including the American bittern, relies on permanent/semi-permanent wetlands with well-developed emergent vegetation. Pileated Woodpecker require up to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests Clay-coloured sparrow, declining numbers Osprey require protection of site-specific nests	Highly important breeding sites for wood frogs, long-toed salamander and western toad. Long toed salamander vulnerable to habitat destruction/alteration associated with industrial, recreational and transportation development.

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
VL3 3c	Wet level floodplains forest and shrub vegetation Slope: 3 (0-5%) complex Landform: Fluvial, calcareous, Texture: fine, fluvialacustrine and coarse stratified, Soils: Poorly drained Regogleysol	<i>White spruce &gt; wet shrubby meadow, wet shrub thicket</i> (C4) White spruce/prickly rose/horsetail,  (S1) Dwarf birch – shrubby cinquefoil – willow/ brown moss,  (S7) Willow/horsetail	High importance in winter, medium importance in summer	Highly important especially to wolf, coyote, cougar, weasel and lynx.	One of the most important ecosites for small mammals given the density and diversity of species, the presence of bats, beaver and muskrat	Very high diversity and density including the American bittern, relies on permanent/semi-permanent wetlands with well-developed emergent vegetation. Pileated Woodpecker require up to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests Clay-coloured sparrow, declining numbers Osprey require protection of site-specific nests	Highly important breeding sites for wood frogs, long-toed salamander and western toad. Long toed salamander vulnerable to habitat destruction/alteration associated with industrial, recreational and transportation development.
VL4 3c (and 3)	Encompasses wet level/gently sloping floodplains, aprons, and fans dominated by forest vegetation. Floodplain surfaces are often eroded (channelled) with slightly elevated gently sloping levees bordering the channels. Slope: 3(0-5%) complex Landform: stratified fluvialacustrine material B, calcarous Texture: fine Soils: imperfectly to poorly drained Rego Gleysols with surface peat layers	(C4) White spruce/prickly rose/horsetail, (C28) Balsam Poplar/horsetail (O3) White spruce/shrubby cinquefoil/bearberry accessory	Highly important in the winter and moderately important in the summer – provides important cover (dense spruce stands) for wintering ungulates	Highly important to carnivores, especially to wolf, coyotes, cougar and lynx	High density of small mammals, including muskrats and pygmy shrew, moderate number of species	High number of species at very high densities	
<b>Lower Subalpine Ecoregion</b>							
AL1 3c (and 3)  AL1 5	Slope: 3 (0-5%) complex 5 (5-15%) Landform: glaciofluvial material B, calcareous, Texture: stratified, Soils: well drained Orthic and Eluviated Eutric Brunisols	(C19) Lodgepole pine/buffaloberry/twin- flower  [(C6) Lodgepole pine/buffaloberry/showy aster (C18) Lodgepole pine/buffaloberry/ grouseberry]  [(C11)Lodgepole pine/feather moss, (C20) Lodgepole pine/false azalea/grouseberry, (C29) Lodgepole pine/Labrador tea (C9) Lodgepole pine/dwarf bilberry is in southern Banff]	Highly important year round especially to deer and elk in the summer	Highly important to wolf, coyote and cougar in the summer, and to lynx and wolverine year round	Moderate number of species occur at moderate densities	High number of species occur at medium densities	

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
BK1 5c  BK1 6c  BK1 R 6c	Slope: 5 (5-15%) complex 6 (15-30%) complex Landform: Till (C) morainal, calcareous, Texture: medium, Soils: Dry - Brunisol > well drained mesic Luvisol Wet – Gleysol, organic poorly drained	(70% dry) <i>Pine/buffalo berry complexes</i>  (C18) Lodgepole pine/buffaloberry/ grouseberry, (C19) Lodgepole pine/ buffaloberry/ twin- flower  [(C6)Lodgepole pine/buffaloberry/showy aster, (C20) Lodgepole pine/false azalea/grouseberry]  (30% wet) <i>open spruce, wet shrubby meadow, birch fen</i> (S1) Dwarf birch – shrubby cinquefoil – willow/brown moss, (O11) Spruce/Labrador tea/ brown moss, (S3) Dwarf birch – shrubby cinquefoil/needlerush	Highly important in the summer, especially to deer, moose and elk. Winter snow depth is too deep for most ungulates except moose in the winter – wet areas especially are highly important to moose in the winter	Highly important to large carnivores especially in the summer – also high number of small mammals make the site important to small carnivores	High number of species	High number of species at high densities <i>American bittern, relies on permanent/semi-permanent wetlands with well-developed emergent vegetation.</i> <i>Clay-coloured sparrow, declining numbers</i> <i>Osprey require protection of site-specific nests</i>	Important to western toad for foraging and breeding (ponds)
BV1 3c (and 3)	Common on floors, lower benchlands of broad valleys Slope: 3 (0-5%) complex Landform: occurs on terraces of glaciofluvial, calcareous, Texture: coarse, Soils: Orthic and Eluviated Eutric Brunisols	(C18) Lodgepole pine/buffalo berry/ grouseberry,  (C19) Lodgepole pine/ buffalo berry/twin flower  [(C9) Lodgepole pine/dwarf bilberry]	Moderately important to deer, elk and moose primarily because of low elevation and association with other more open habitats.	High importance to carnivores although only coyote and <i>lynx</i> are expected to occur in high densities.	Moderate number of species, red squirrel, varying hares, meadow vole and porcupine occur in high densities	Medium number of species at high densities	
BV2 5c	Common on floors, lower benchlands of broad valleys that accommodate large volumes of glacial meltwater Slope: 3 (0-5%) complex Landform: occurs on terraces of glaciofluvial, calcareous Texture: coarse Soils: Orthic and Eluviated Eutric Brunisols	(C20) Lodgepole pine/false azalea/grouse berry (C29) Lodgepole pine/Labrador tea	Low importance despite low snow accumulation – dense forest offers little forage	Moderate importance overall. Highly important to marten.	High number of species, but not at high densities	Low number of species at high densities	

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
HC1 3c	Slope: 3 (0-5%) complex Landform: wet Fluvial material B >fen, variable calcareousness Texture: coarse stratified Soils: Gleysol>Regosol, Organic Rego Gleysols are dominant Gleyed Cumulic Regosols and Terric Mesisols are subdominant	<i>Engelmann spruce, open spruce, &gt; wet shrubby meadow, birch fen, sedge fen</i> Dominant vegetation types: (C32) Engelmann spruce/horsetail/ feather moss, (O6) Engelmann spruce – subalpine fir/willow/ ribbed bog moss  Subdominant vegetation types: (S1) Dwarf birch – shrubby cinquefoil – willow/brown moss, (S3) Dwarf birch – shrubby cinquefoil/ needlerush  [(O11) Spruce/Labrador tea/brown moss, (H11) Water sedge – beaked sedge]	<i>(open spruce &amp; birch willow bogs, some ponds and springs)</i> moderate importance overall, but high importance to moose – shrub lands offer ample forage  <i>(sedge meadow, willow)</i> low importance – elk graze meadows in all seasons, winter use depends on snow depth	Moderately important to mustelid species but low importance to other carnivores	A few species occur here at low to moderate densities	<i>(open spruce &amp; birch willow bogs, some ponds and springs)</i> high number of species at high numbers  <i>(sedge meadow, willow)</i> medium number of species at high densities	Bog/pond areas are important breeding habitat for wood frogs and Western toad. Sedge meadow areas important breeding habitat for spotted frog and western toad. Columbia <b>spotted frog</b> , <i>extremely limited in distribution</i>
HC4 3	These ecosites are usually mantled in thin fen peat deposits < 1.2 m thick) with gentle linear slopes on level floodplains, aprons and fans Slope: 3 (0-5%) Landform: wet Fluvial material B>fen, variable calcareousness Texture: coarse stratified Soils: imperfectly, poorly to very poorly drained soils Gleysol>Regosol, Organic	<i>Wet shrubby meadow, birch fen, wet shrub thicket, sedge fen</i> (S1) Dwarf birch – shrubby cinquefoil – willow/brown moss  (S3) Dwarf birch – shrubby cinquefoil/needlerush  (S11) Willow/timber oat grass  (H11) Water sedge – beaked sedge  <i>In ponded locations:</i> (S4) Willow – dwarf birch/ fleabane (S8) Willow/cinquefoil, (S9) Dwarf birch – willow/ Kobresia (H3) Sedge – saxifrage	Highly important to ungulates especially moose, elk – winter use depends on snow depth	Highly important to carnivores, especially wolf, coyote, <b>cougar</b> and weasels. Moderately important to marten and <b>lynx</b>	High diversity and density of small mammals – Beaver, northern bog lemming, meadow vole and porcupine are important	Very high density of species at high densities. <b>American Bittern</b> relies on <i>permanent/semi-permanent wetlands with well-developed emergent vegetation.</i> <b>Osprey</b> require protection of <i>site-specific nests</i> <b>Clay-coloured Sparrow</b> breeding <i>bird surveys indicate sharp population declines</i> <b>Pileated Woodpecker</b> require up <i>to 40 hectares for foraging, preferring undisturbed mature conifer or mixed wood forests</i> <b>Harlequin duck</b> habitat <i>degradation on breeding streams is a significant threat long-term survival</i>	Important breeding habitat for the wood and spotted frogs and western toad. Columbia <b>spotted frog</b> , <i>extremely limited in distribution</i>

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			Ungulates	Carnivores	Small Mammals	Breeding Birds	Amphibians
PP1 3c (and 3)	Slope: 3 (0-5%) (complex) Landform: Fluvial fans and aprons Material (B), calcareous Texture: coarse, stratified Soils: well drained but subject to some flooding - Orthic and Cumulic Regosol	<i>Pine/buffalo berry, subxeric pine</i> (C19) Lodgepole pine/buffaloberry/ twin flower  (C3) Lodgepole pine/ juniper/bearberry  (C6) Lodgepole pine/buffaloberry/ showy aster	Moderately important to elk, deer and moose.	Highly important to wolf, coyote, cougar and lynx	High number of species occurs, some in high densities.	Medium number of species at medium densities.	
PP3 6	Slope: 6 (15-30%) Landform: fluvial fans and aprons, calcareous Texture: coarse stratified fluvial material Soils: Orthic and Cumulic Regosols	(C13) Engelmann spruce subalpine fir/feather moss - most frequent (C31) Engelmann spruce – subalpine fir/hairy wild rye – heart leaf arnica – twin flower/feather moss – some tracts dominated by this vegetation type. (C26) White spruce/buffalo berry/fern moss (C32) Engelmann spruce/horsetail/feather moss	Moderately important, especially to moose, elk and deer	Highly important, especially to lynx, moderately important to wolf, coyote, marten, weasels, wolverine and cougar	High number of species and high densities of varying hare, golden mantled ground squirrels, deer mice and porcupines	High number of species at medium densities	
PR1 3c  PR1 5c	Inclined bedrock on valley walls Slope: 3 (0-5%) complex 5 (5-15%) complex Landform: Morainal blanket calcareous Texture: medium till Soils: Orthic & Eluviated Eutric Brunisols > Brunisolic grey luvisols	(C11) Lodgepole pine/feather moss  (C20) Lodgepole pine/ false azalea/ grouseberry  (C29) Lodgepole pine/ Labrador tea	Low importance overall, but of high importance to deer in the winter	Highly important overall since all carnivore species occur here and high densities of wolverine tracks were recorded	High diversity of species including the bushy tailed wood rat and the flying squirrel ( <i>dependant on old-growth forest cavities</i> )	Medium number of species occur at high densities	
PR2 6c  PR2 F 7c	Slope: 6 (15-30%) complex 7 (30-45%) complex Landform: Fluvial fans and aprons, calcareous Texture: coarse stratified material B Soils: Orthic and Cumulic Regosols	(C17) Balsam poplar/buffaloberry,  (C16) Aspen/hairy wild rye – peavine	Moderately important year round although snow can limit winter use. All ungulate species have been reported in this ecosite – elk and bighorn sheep most frequent.	Very highly important to carnivores, highly important to marten, weasel and lynx – less important to larger species in the winter because deep snow can limit ungulate use.	High number of species occurs, including the rare pygmy shrew.	Very high number of species at high densities <i>Western Tanager, prefers old coniferous forest and mixed-wood</i>	

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Ecosite	Soils and Terrain	Vegetation	Wildlife				
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PR4 5c  PR4 8c (and 8)  PR4 R 8c	Linear inclined slopes Slope: 5 (5-15%) complex 8 (45-70%) complex  Landform: Slopes are erosional and were formed by the down and side cutting action of creeks and rivers following glacial deposits, calcareous  Texture: medium texture till or varied ice contact stratified drift Soils: Orthic, Eluviated Dystric Brunisols	<i>Northerly aspects</i> (C13) Engelmann spruce subalpine fir/feather moss (C14) Engelmann spruce – subalpine fir/false azalea (C21) Engelmann spruce – subalpine fir/tall bilberry/liverwort (C30) Engelmann spruce – subalpine fir/Labrador tea/crowberry (C31) Engelmann spruce – subalpine fir/hairy wild rye – heart leaf arnica – twin flower/feather moss <i>Southerly aspects</i> (C3) Lodgepole pine/juniper/bearberry – drier, less stable (C6) Lodgepole pine/buffaloberry/showy aster (C19) Lodgepole pine/buffaloberry/twin flower – drier, less stable (C18) Lodgepole pine/buffaloberry/grouseberry (O4) Engelmann spruce-subalpine fir – whitebark pine – lodgepole pine	Moderately important in winter, low importance in the summer	Highly important to carnivores overall, especially to coyote, marten and <b>wolverine</b>	Important diversity of species including the bushy tailed wood rat and <b>flying squirrel</b> ( <i>dependant on old-growth forest cavities</i> ).	Medium number of species at medium densities.	
SB4 9  SB4X 9	Slope: 9 (>70%) Landform: Discontinuous colluvial blankets and veneers overlying inclined bedrock, calcareous Texture: medium textured colluvium C Soils: Orthic, Eutric Brunisols, Orthic Regosols and orthic humic Rogosols	Vegetation types reflect exposed bedrock and unstable soils (O4) Engelmann spruce-subalpine fir – whitebark pine – lodgepole pine (O17) White spruce/juniper /bearberry (C3) Lodgepole pine/juniper/bearberry (L1) Shrubby cinquefoil/bearberry – northern bedstraw	Highly important in fall and winter, but in summer – low importance	Low importance	High number of species, high densities of pika, least chipmunk – bushy tailed wood rat present	Medium number of species at medium densities <b>Northern Goshawk</b> , <i>require maintenance of mature forest breeding habitat.</i>	
VD2 3	Slope: 3 (0-5%) Landform: Fluvial fans and aprons, fluvial material A, non-calcareous Texture: coarse, stratified Soils: Orthic, Eluviated Dystric Brunisols	(C19) Lodgepole pine/buffaloberry/ twin flower  (C20) Lodgepole pine/ false azalea/ grouseberry  (C9) Lodgepole pine/dwarf bilberry – <i>Bow river valley between Lake Louise and Eisenhower Junction</i> )	Low importance overall, but some tracts are highly important to moose	Highly important to carnivores, especially weasel, marten and <b>wolverine</b> . Moderately important to wolf, <b>cougar</b> , and <b>lynx</b>	High number of species, but none occur at high densities.	Medium number of species occur at low densities	

[ ] - accessory vegetation types  
B only within 500 m buffer  
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A Snow Avalanched  
X Lithic

Additional Ecosites within the Zone of influence

Ecosite	Soils and Terrain	Vegetation	Wildlife				Sensitivities Amphibians
			Ungulates	Carnivores	Small Mammals	Breeding Birds	
IB1 7c	Slope: 7(30-45%) complex Landform: Hummocky colluvial landslide deposits, very stony and bouldery Texture: variable calcareous or non- calcareous Soils: well drained Orthic and Eluviated Eutric Brunisols and Eluviated Dystric Brunisols	(C18) Lodgepole pine/buffaloberry/ grouseberry (C19) Lodgepole pine/buffaloberry/ twin- flower (C29) Lodgepole pine/ Labrador tea minor amounts of (C1) Douglas Fir hairy wild rye between Johnson creek and Hillsdale	In autumn and winter this ecosite is highly important to deer, moose and elk.	Moderately important to wolf, cougar, <b>wolverine</b> and weasels	High number of species but not at high densities	Low number of species at medium densities	
PR6 R 7c	Found on lower valley floors or benchlands or lower valley wall slopes - hummocky Slope: 7 (30-45%) complex Landform: ice contact stratified drift B, calcareous Texture: variable Soils: Eluviated Eutric Brunisol > Luvisol	(C11) Lodgepole pine/feather moss,  (C18) Lodgepole pine/buffalo berry/ grouseberry  (C19) Lodgepole pine/ buffaloberry/ twin flower  (C29) Lodgepole pine/ Labrador tea	Low importance overall, highly important to deer in the summer	Highly important to marten and lynx and to wolf, coyote and <b>cougar</b> in the summer.	Moderate number of species found	High number of species at low densities	
PT5 5c	Common on Broad benchlands throughout montane 60% well drained mesic, 40% wet (poorly drained hygric) Slope: 5 (5-15%) Landform: ridged moraine, calcarous Texture: medium till (interridge depressions frequently mantled in organic deposits (horizontal fens) Soil: (dry) Orthic and eluviate Eutric Brunisols and Brunisolic Grey Luvisols (Wet) Rego gleysols and terric mesisols	<i>Dry</i> (C6) Lodgepole pine/buffaloberry /showy aster (C11) Lodgepole pine/feather moss (C19) Lodgepole pine/ buffaloberry/ twin- flower  <i>Wet</i> (C8) Black spruce – Lodgepole pine/willow/sedge (O11) Spruce/Labrador tea/brown moss	Highly important in the winter and moderately important in the summer	Highly important to carnivores, particularly coyote, <b>cougar</b> and <b>lynx</b>	Moderate number of species including varying hares, red squirrels, meadow voles and <b>flying squirrels</b> (dependant on old-growth forest cavities).	High number of species at high densities <b>American Bittern</b> relies on permanent/semi-permanent wetlands with well-developed emergent vegetation. <b>Western Tanager</b> , prefers old coniferous forest and mixed- wood	

- [ ] - accessory vegetation types
- B only within 500 m buffer
- R exposed bedrock
- A Snow Avalanched
- X Lithic

Ecosite	Soils and Terrain	Vegetation	Wildlife				Sensitivities Amphibians
			Ungulates	Carnivores	Small Mammals	Breeding Birds	
SB2A+R 8	Inclined bedrock on steep valley walls and aprons at major slope breaks Slope: 8 (45-70%) Landform: colluvial material blankets, calcareous Texture: medium textured colluvium C Soils: Orthic, Eluviated Eutric Brunisols and Orthic Regosols	(C13) Engelmann spruce subalpine fir/feather moss (C14) Engelmann spruce – subalpine fir/false azalea (C21) Engelmann spruce – subalpine fir/tall bilberry/liverwort (C30) Engelmann spruce – subalpine fir/Labrador tea/crowberry (C31) Engelmann spruce – subalpine fir/hairy wild rye – heart leaf arnica – twin flower/feather moss	Moderately important – coniferous forest offers limited forage opportunities, but valuable cover where tracts are adjacent to unforested slopes. Moose and elk most abundant.	Low importance	Low number of species, only the western jumping mouse is in high densities	Medium number of species in medium densities	
VD1 5	Relatively stable fluvial fans and aprons. Slope: 5 (5-15%) Landform: noncalcareous, stratified fluvial material Texture: coarse, Fluvial A Soils: Orthic and Eluviated Dystric Brunisols	(C13) Engelmann spruce subalpine fir/feather moss (C14) Engelmann spruce – subalpine fir/false azalea	Low importance to ungulates due to deep snow in winter and little forage.	Highly important, especially to weasel and <b>lynx</b> . Moderately important to wolf, coyote, martin and <b>wolverine</b> .	Moderate number of species on this ecosite. Varying hares, red squirrels and red-backed voles occur in high densities.	Low number of species occurs at low densities.	

Source: Holland and Coen (1982) and Holroyd and Van Tighem; Alberta Environment (AENV). 2000. The General Status of Alberta Wild Species 2000. Alberta Environment/Alberta Sustainable Resource Development. Edmonton. Available at [www.gov.ab.ca/env/fw/status](http://www.gov.ab.ca/env/fw/status) (Accessed April 5th, 2002); COSEWIC, 2002. Canadian Species at Risk, May 2002. Committee on the Status of Endangered Wildlife in Canada. Available at: [http://www.cosepac.gc.ca/pdf/English/Species\\_at\\_risk\\_may\\_02\\_e.pdf](http://www.cosepac.gc.ca/pdf/English/Species_at_risk_may_02_e.pdf) (Accessed September 17th, 2002)

According to The General Status of Alberta Wild Species 2000:

Species listed **blue** “May be at risk”.

Species listed in **gold** are “Sensitive”.

Species listed in **purple** are “Secure”, however, are considered a valued ecosystem component in the river valleys of the montane ecoregion as the grasslands it prefers are rare in BNP.

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