

**BIG KNIFE PROVINCIAL PARK NATURAL HISTORY THEME CLASSIFICATION (describes classification on Maps 2 and 3)**

LEVEL 1 - Landforms and Surficial Materials					LEVEL 2		LEVEL 3	Associated Field Sample Sites
Type	Theme	Landscape Types	Slope	Drainage Class	Broad Vegetation Class and Associated Soil Great Groups		Vegetation Communities (in bold) and Soil Subgroups observed during 1998 Summer Field Season	
NON SANDY UPLAND	Ground Moraine	<b>Ng1</b> Level to undulating medium textured morainal upland with occasional coarse textured glaciofluvial veneers over till.	0 to 5%	Well drained	Grasslands - <b>G</b>	Grasslands (Black Chernozems)	<b>Plains Rough Fescue - Kentucky Blue Grass</b> (Orthic Black Chernozems)	15, 23A, 59
					Shrublands	Low Shrublands - <b>LS</b> (Black Chernozems)	<b>Buckbrush</b> (Orthic Black Chernozems)	23C
							<b>Buckbrush - Wild Red Raspberry - Rose</b> (Orthic Black Chernozems)	64
							Tall Shrublands - <b>TS</b> (Black Chernozems)	<b>Silverberry</b> (Orthic Black Chernozems)
					Woodlands	Deciduous Woodlands - <b>DW</b>		
		<b>Ng2</b> Remnant morainal upland that slumped to a lower level many years ago; surface deposits are thin medium textured till veneers and blankets over bedrock with occasional bedrock at the surface.	2 to 25%	Well to moderately well drained	Grasslands - <b>G</b>	Grasslands (Solodized Solonetz's)	<b>Plains Rough Fescue - Kentucky Blue Grass</b> (Black Solodized Solonetz's)	47
					Shrublands	Low Shrublands - <b>LS</b>		
						Tall Shrublands - <b>TS</b>		
					Woodlands	Deciduous Woodlands - <b>DW</b> (Black Chernozems)	<b>Aspen - Balsam Poplar (White Spruce - Black Spruce) / Beaked Hazelnut</b> (Solonetzic Black Chernozems)	48
SANDY UPLAND	Sandy Plain	<b>Ss1</b> Level to undulating coarse textured glaciofluvial veneers over till with occasional medium textured till at the surface.	0 to 7%	Rapidly to well drained	Grasslands - <b>G</b>	Grasslands		
					Shrublands	Low Shrublands - <b>LS</b> (Black Chernozems)	<b>Buckbrush</b> (Orthic Black Chernozems)	63
						Tall Shrublands - <b>TS</b> (Black Chernozems)	<b>Silverberry</b> (Orthic Black Chernozems)	16
					Woodlands	Deciduous Woodlands - <b>DW</b> (Black Chernozems)	<b>Aspen / Choke Cherry / Saskatoon</b> (Orthic Black Chernozems)	8

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SANDY UPLAND (cont'd)	Sandy Plain (cont'd)	<b>Ss1</b> (cont'd)	0 to 7% (cont'd)	Rapidly to well drained (cont'd)	Woodlands (cont'd)	Deciduous Woodlands <b>DW</b> (cont'd)	<b>Aspen / Buckbrush - Wild Red Raspberry - Rose</b> (Orthic Black Chernozems)	17, 18, 19, 62
VALLEY/ RIDGE	Protected Slope	<b>Vp1</b>  Inclined valley slopes (primarily north-facing) overlain by medium textured till and occasionally by coarse textured glaciofluvial veneers over till. Slopes reveal evidence of old rotational slumps now stabilized by predominantly Woodland and Tall Shrubland vegetation.	10 to 60%	Rapidly to moderately well drained	Grasslands - <b>G</b>	Grasslands		
					Shrublands	Low Shrublands - <b>LS</b>		
						Tall Shrublands - <b>TS</b> (Eutric Brunisols)	<b>Chokecherry - Saskatoon</b> (Orthic Eutric Brunisols)	56
					Woodlands	Deciduous Woodlands - <b>DW</b> (Eutric Brunisols)	<b>Aspen - Balsam Poplar (White Spruce - Black Spruce) / Beaked Hazelnut</b> (Orthic Eutric Brunisols)	9, 10, 35, 44
		Mixed Woodlands - <b>MW</b> (Regosols and Eutric Brunisols)	<b>White Spruce - Aspen (Balsam Poplar) / Rose</b> (Cumulic Regosols and Orthic Eutric Brunisols)	11, 43				
			Coniferous Woodland - <b>CW</b>					
		<b>Vp2</b>  Inclined valley slopes (primarily south facing) overlain by medium textured till and occasionally by coarse textured glaciofluvial veneers over till.	25 to 70%	Very rapidly to rapidly drained	Grasslands - <b>G</b>	Grasslands (Regosols and Eutric Brunisols)	<b>Sand Grass / Muhly Grass</b> (Orthic Regosols and Orthic Eutric Brunisols)	21, 22
					Shrublands	Low Shrublands - <b>LS</b> (Dark Brown Chernozems)	<b>Buckbrush</b> (Orthic Dark Brown Chernozems)	58
						Tall Shrublands - <b>TS</b>		
		Woodlands	Deciduous Woodlands - <b>DW</b>					
<b>Vp3</b>  Vegetated coarse to fine textured fluvial aprons at the base of protected slopes overlain by till (Vp1, Vp2) and steep bedrock outcrops (Vx).	2 to 20%	Well to moderately well drained	Grasslands - <b>G</b>	Grasslands (Solodized Solonetz's, Solonetz's and Regosols)	<b>Plains Rough Fescue - Kentucky Blue Grass</b> (Black Solonetz's and Black Solodized Solonetz's)	12, 53, 57, 67		

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VALLEY/ RIDGE (cont'd)	Protected Slope (cont'd)	<b>Vp3</b> (cont'd)	2 to 20% (cont'd)	Well to moderately well drained (cont'd)	Grasslands – <b>G</b> (cont'd)	Grasslands (Solodized Solonetz's, Solonetz's and Regosols (cont'd)	<b>Kentucky Blue Grass - Western Wheat Grass</b> (Black Solodized Solonetz's and Orthic Regosols - saline phase)	49, 69
					Shrublands	Low Shrublands - <b>LS</b>		
					Shrublands (cont'd)	Tall Shrublands - <b>TS</b>		
						Wet Tall Shrublands - <b>TSW</b> (Regosols)	<b>(White Spruce) / Willow - River Alder - Red-osier Dogwood</b> (Cumulic Regosols)	20
					Woodlands	Deciduous Woodlands - <b>DW</b> (Regosols)	<b>Aspen / Choke Cherry - Saskatoon</b> (Cumulic Regosols)	34
						Mixed Woodlands - <b>MW</b> (Regosols and Black Chernozems)	<b>Aspen - Balsam Poplar / Red-osier Dogwood</b> (Cumulic Regosols and Solonetzic Black Chernozems)	50, 70
	Coniferous Woodlands - <b>CW</b> (Solodized Solonetz's)	<b>White Spruce / Rose</b> (Black Solodized Solonetz's)	13					
	<b>Vp4</b> Incised, V-shaped valley containing an intermittent stream channel flowing north into the Battle River; valley slopes are vegetated.	45 to 75%	Well to rapidly drained	Shrublands	Low Shrublands - <b>LS</b>			
	Springs	<b>Vs</b> Spring on north-facing slopes; unit includes discharge zone below the spring source; parent materials are medium textured till deposits.	10 to 20%	Very poorly drained	Wet Meadows - <b>WM</b>	Wet Meadows (Spring) (Gleysols)	<b>Water Sedge - Awned Sedge</b> (Rego Gleysols)	46
	Exposed Slope	<b>Vx</b> Steep, eroded Late Cretaceous (Horseshoe Canyon & Bearpaw formations) bedrock outcrops and occasional colluvial veneers over bedrock on upper slopes.	65 to >100%	Very rapidly drained	Non-vegetated - <b>NV</b>	Non-vegetated		
Shrublands					Low Shrublands - <b>LS</b>			
					Tall Shrublands - <b>TS</b>			

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VALLEY/ RIDGE (cont'd)	Exposed Slope (cont'd)	<b>Vx</b> (cont'd)	65 to >100% (cont'd)	Very rapidly drained (cont'd)	Woodlands	Deciduous Woodlands - <b>DW</b>		
	Floor / Stream	<b>Vf1</b>  Big Knife Creek channel and its tributaries; extensive ponding and restriction of flow due to beaver dams; recent fluvial deposits in the channels are coarse textured.	0 to 5%	Very poorly to imperfectly drained With occasional well to rapidly drained sites	Woodlands	Coniferous Woodlands - <b>CW</b> (Eutric Brunisols)	<b>White Spruce - Rose</b> (Orthic Eutric Brunisols)	40
					Open Water - <b>OW</b>	Open Water		
					Shrublands	Wet Tall Shrublands - <b>TSW</b> (Gleysols)	<b>(White Spruce) / Willow / River Alder - Red-osier Dogwood</b> (Orthic Humic Gleysols)	14
	Woodlands	Deciduous Woodlands - <b>DW</b>						
		Mixed Woodlands - <b>MW</b>						
	<b>Vf2</b>  Floodplain of Big Knife Creek and its tributaries overlain by medium to coarse textured fluvial deposits	2 to 5%	Well to rapidly drained with occasional very poorly drained conditions	Woodlands	Coniferous Woodlands - <b>CW</b> (Eutric Brunisols and Regosols)	<b>White Spruce / Rose</b> (Orthic Eutric Brunisols and Orthic Regosols)	41, 42	
					Grasslands - <b>G</b>	Grasslands (Orthic Black Chernozems)	<b>Plains Rough Fescue - Kentucky Blue Grass</b> (Orthic Black Chernozems)	68
						Shrublands	Low Shrublands - <b>LS</b> (Black Chernozems and Eutric Brunisols)	<b>Buckbrush</b> (Orthic Black Chernozems and Orthic Eutric Brunisols)
		<b>Buckbrush - Wild Red Raspberry - Rose</b> (Orthic Black Chernozems)	1, 54					
Tall Shrublands - <b>TS</b> (Black Chernozems and Eutric Brunisols)	<b>Silverberry / Buckbrush</b> (Orthic Black Chernozems)	36						
<b>Vf3</b>  Battle River fluvial terrace with shallow remnant channels eroded into the terrace surface; terraces overlain primarily with medium textured fluvial deposits.	0 to 10%	Well to moderately well drained	Shrublands	Low Shrublands - <b>LS</b> (Black Chernozems and Eutric Brunisols)	<b>Buckbrush</b> (Orthic Black Chernozems and Orthic Eutric Brunisols)	6, 25, 29, 30, 33, 37, 66		
					<b>Buckbrush - Wild Red Raspberry - Rose</b> (Orthic Black Chernozems)	1, 54		
				Tall Shrublands - <b>TS</b> (Black Chernozems and Eutric Brunisols)	<b>Silverberry / Buckbrush</b> (Orthic Black Chernozems)	36		

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VALLEY/ RIDGE (cont'd)	Floor / Stream (cont'd)	<b>Vf3</b> (cont'd)	0 to 10% (cont'd)	Well to moderately well drained (cont'd)	Shrublands (cont'd)	Tall Shrublands – <b>TS</b> (Black Chernozems and Eutric Brunisols) (cont'd)	<b>Choke Cherry / Saskatoon</b> (Orthic Eutric Brunisols)	39
					Woodlands	Deciduous Woodlands - <b>DW</b> (Black Chernozems)	<b>Aspen / Buckbrush - Wild Red Raspberry - Rose</b> (Orthic Black Chernozems)	2
							<b>Aspen / Choke Cherry - Saskatoon</b> (Orthic Black Chernozems)	27
			Coniferous Woodlands - <b>CW</b>					
		<b>Vf4</b>  Fluvial terraces overlain by varying layers of medium to fine textured fluvial apron deposits (mainly saline) located west of Big Knife Creek confluence.	0 to 5%	Well to moderately well drained	Grasslands - <b>G</b>  (Solodized Solonetz's, and Regosols)	<b>Plains Rough Fescue - Kentucky Blue Grass</b> (Orthic Regosols - saline phase)	60	
						<b>Kentucky Blue Grass - Western Wheat Grass</b> (Black Solodized Solonetz's and Orthic Regosols - saline phase)	31, 38, 61	
						Shrublands	Low Shrublands - <b>LS</b>	
							Tall Shrublands - <b>TS</b>	
						Woodlands	Deciduous Woodlands - <b>DW</b>	
		<b>Vf5</b>  Battle River floodplain; intermediate in elevation between Vf3 fluvial terraces (higher) and Wd and WdVf5 wetlands (lower); medium to coarse textured fluvial deposits overlie this floodplain.	0 to 6%	Poorly to imperfectly drained	Shrublands	Low Shrublands - <b>LS</b>		
Tall Shrublands - <b>TS</b>								
Wet Tall Shrublands - <b>TSW</b> (Gleysols)	<b>(White Spruce) / Willow - River Alder - Red-osier Dogwood</b> (Rego Gleysols and Orthic Gleysols)					4, 24, 51		
Woodlands	Deciduous Woodlands - <b>DW</b>							

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VALLEY/ RIDGE (cont'd)	Floor / Stream (cont'd)	<b>Vf5</b> (cont'd)	0 to 6% (cont'd)	Poorly to imperfectly drained (cont'd)	Wet Meadows - <b>WM</b>	Wet Meadows		
					Open Water - <b>OW</b>	Open Water		
		<b>Vf6</b>  Local medium to fine textured lacustrine deposits in remnant Battle River fluvial channels located west of the Big Knife Creek confluence.	0 to 2%	Poorly to very poorly drained	Marsh	Shallow Marsh - <b>SM</b> (Gleysols)	<b>Awned Sedge</b> (Rego Gleysols)	28
							<b>Awned Sedge - Common Tall Manna Grass</b> (Rego Gleysols)	32
		<b>Vf7</b>  Local lacustrine deposits in remnant fluvial channels located east of the Big Knife Creek confluence; these deposits have a higher salinity than Vf6 sediments.	0 to 2% with occasional slopes as high as 15%	Poorly drained to imperfectly drained	Grassland - <b>G</b>	Grasslands		
					Shrublands	Low Shrublands - <b>LS</b>		
					Woodlands	Deciduous Woodlands - <b>DW</b> (Black Chernozems and Black Solods)	<b>Apsen / Buckbrush - Wild Red Raspberry - Rose (hygric site)</b> (Gleyed Black Chernozems and Gleyed Black Solods)	7, 55
					Wet Meadows - <b>WM</b>	Wet Grass Meadows (Black Solods)	<b>Redtop - Slough Grass - Foxtail Barley - Marsh Reed Grass</b> (Gleyed Black Solods)	52
					Marsh	Shallow Marsh - <b>SM</b> (Gleysols)	<b>Awned Sedge</b> (Rego Gleysols)	65
		<b>Wd</b>  Emergent aquatic vegetation in low lying submerged areas along the Battle River; underlying fluvial floodplain deposits are medium to coarse textured.	0%	Very poorly drained	Marsh	Deep Marsh - <b>DM</b>	<b>Common Cattail</b> (Rego Gleysols)	26
<b>WIWm</b>  Pond and Wet Meadow at the base of an active spring in the eastern part of the Park; underlying lacustrine sediments are fine textured	0%	Very poorly drained	Wet Meadow - <b>WM</b>	Wet Meadow				
			Open Water - <b>OW</b>	Open Water				

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VALLEY / RIDGE (cont'd)	Floor / Stream (cont'd)	<b>WdVf5</b> Lower level of the Battle River consisting of well developed point bars and swales; most of the unit submerged under water with occasional slightly higher areas overlain with medium to coarse textured fluvial deposits.	0 to 5%	Poorly to very poorly drained	Shrublands	Tall Wet Shrublands - <b>TSW</b>		
					Wet Meadow - <b>WM</b>	Wet Meadow (Gleysols)	<b>Redtop - Slough Grass - Foxtail Barley - Marsh Reed Grass</b> (Rego Gleysols)	5
					Marsh	Deep Marsh - <b>DM</b>		
DISTURBANCE		<b>D1</b> Old gravel excavation in coarse glaciofluvial veneer over till	2 to 5%	Moderately well drained	Shrublands	Tall Shrubland - <b>TS</b> (Black Chernozems)	<b>Silverberry / Buckbrush</b> (Orthic Black Chernozems)	45
		<b>D2</b> Park road, parking lots, areas around Park buildings and campgrounds; this Level 1 subgroup crosses over areas of medium textured (Vf3) and coarse to fine textured fluvial aprons (Vp3)	0 to 2% on average with slopes as high as 40% in steep ditches along entrance road into the Park.	Imperfectly to well drained.	Anthropogenic - <b>A</b>	Anthropogenic		
		<b>D3</b> Old excavation and refuse pit on a medium textured fluvial terrace near the Battle River.	1 to 15%	Well to rapidly drained.	Shrublands	Low Shrublands - <b>LS</b>		
		<b>D4</b> Sports field in a former cultivated field currently vegetated with dense smooth brome; underlying medium textured fluvial terrace deposits have been disturbed by past cultivation.	0 to 2%	Moderately well to imperfectly drained.	Grasslands - <b>G</b>	Grasslands (Black Chernozems)	<b>Smooth Brome</b> (Orthic Black Chernozems to Gleyed Black Chernozems)	3