


BIG KNIFE PROVINCIAL PARK

1:5000

 Park Boundary





Air photo mosaic created using 1998 photography.

Plot Generated, Dec. 13, 1999
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MAP 1 BIG KNIFE PROVINCIAL PARK 1998 SITE LOCATIONS

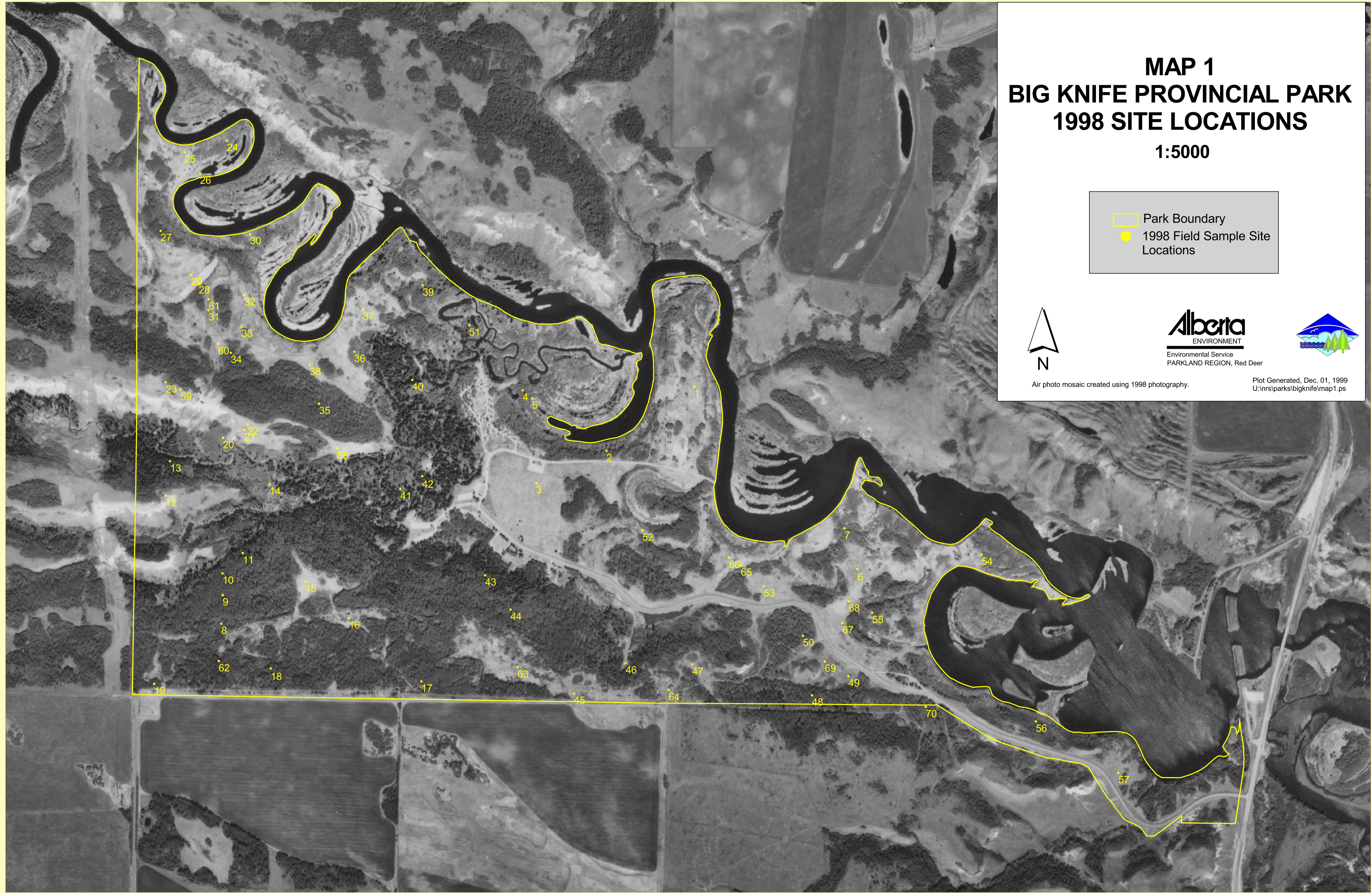
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-  Park Boundary
-  1998 Field Sample Site Locations



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MAP 2 BIG KNIFE PROVINCIAL PARK LEVEL 1 NATURAL HISTORY THEMES - LANDSCAPE TYPES

1:5000

Refer to Table entitled "Big Knife Provincial
Park Natural History Theme Classification"
for Descriptions of Landscape Types



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MAP 3 BIG KNIFE PROVINCIAL PARK LEVEL 2 NATURAL HISTORY THEMES - VEGETATION TYPES

1:5000

Legend:

- | | |
|------------------------|------------------------|
| A Anthropogenic | NV Non Vegetated |
| CW Coniferous Woodland | OW Open Water |
| DM Deep Marsh | SM Shallow Marsh |
| DW Deciduous Woodland | TS Tall Shrubland |
| G Grassland | TSW Tall Wet Shrubland |
| LS Low Shrubland | WM Wet Meadow |
| MW Mixed Woodland | |

Definition of Proportional Symbols:

- | | |
|---|---------------------------------------|
| LS7G3
70% covered by Low Shrubland
30% covered by Grassland | LS10
100% covered by Low Shrubland |
|---|---------------------------------------|








Air photo mosaic created using 1998 photography.

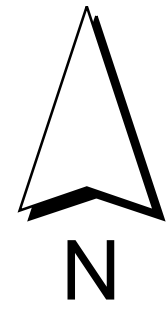
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MAP 4 BIG KNIFE PROVINCIAL PARK SIGNIFICANT FEATURES

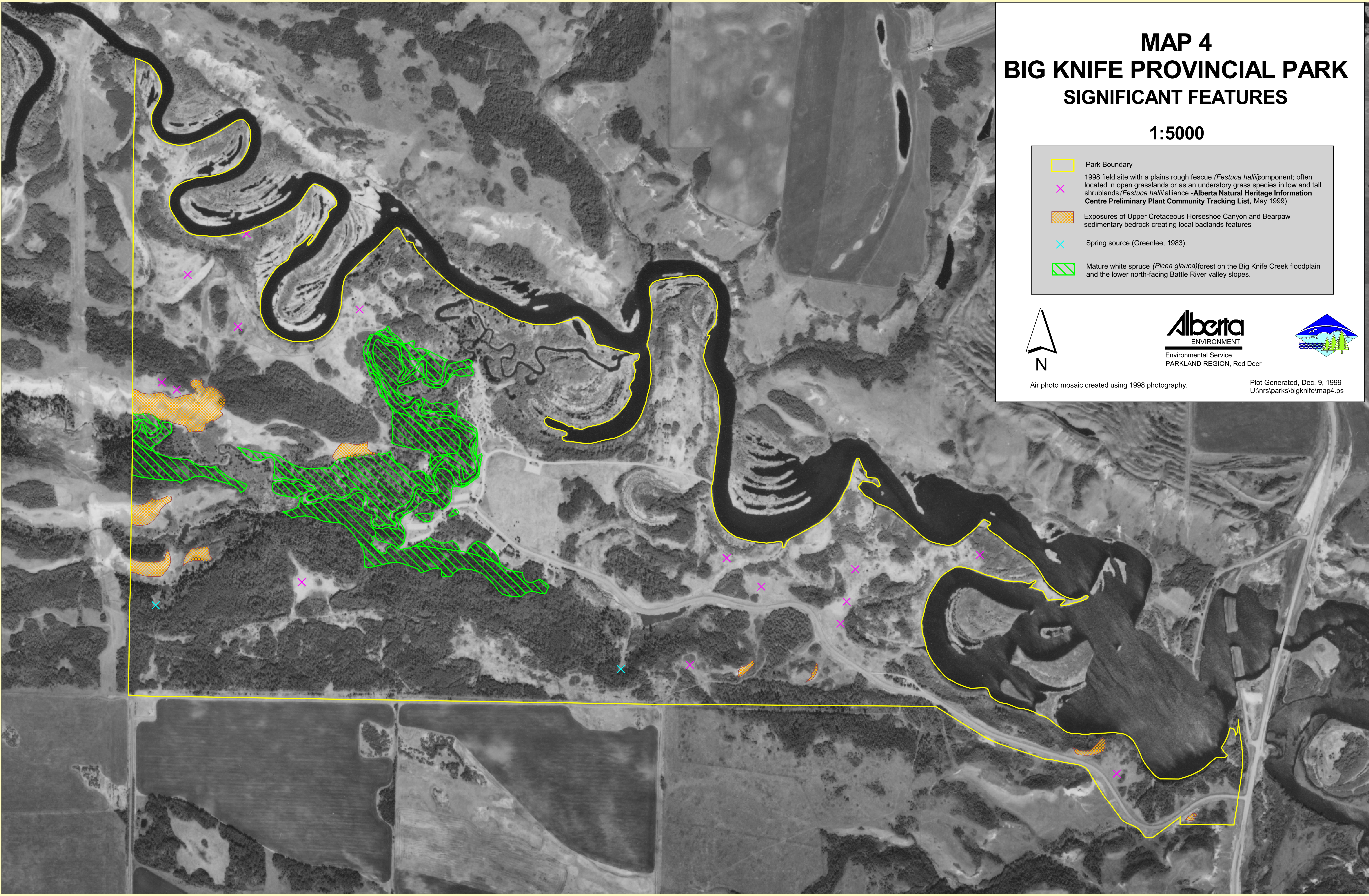
1:5000

-  Park Boundary
-  1998 field site with a plains rough fescue (*Festuca hallii*) component; often located in open grasslands or as an understory grass species in low and tall shrublands (*Festuca hallii* alliance - Alberta Natural Heritage Information Centre Preliminary Plant Community Tracking List, May 1999)
-  Exposures of Upper Cretaceous Horseshoe Canyon and Bearpaw sedimentary bedrock creating local badlands features
-  Spring source (Greenlee, 1983).
-  Mature white spruce (*Picea glauca*) forest on the Big Knife Creek floodplain and the lower north-facing Battle River valley slopes.



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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	Ng1 Level to undulating medium textured morainal upland with occasional coarse textured glaciofluvial veneers over till.	0 to 5%	Well drained	Grasslands - G	Grasslands (Black Chernozems)	Plains Rough Fescue - Kentucky Blue Grass (Orthic Black Chernozems)	15, 23A, 59
					Shrublands	Low Shrublands - LS (Black Chernozems)	Buckbrush (Orthic Black Chernozems)	23C
							Buckbrush - Wild Red Raspberry - Rose (Orthic Black Chernozems)	64
							Tall Shrublands - TS (Black Chernozems)	Silverberry (Orthic Black Chernozems)
					Woodlands	Deciduous Woodlands - DW		
		Ng2 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 - G	Grasslands (Solodized Solonetz's)	Plains Rough Fescue - Kentucky Blue Grass (Black Solodized Solonetz's)	47
					Shrublands	Low Shrublands - LS		
							Tall Shrublands - TS	
					Woodlands	Deciduous Woodlands - DW (Black Chernozems)	Aspen - Balsam Poplar (White Spruce - Black Spruce) / Beaked Hazelnut (Solonetzic Black Chernozems)	48
SANDY UPLAND	Sandy Plain	Ss1 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 - G	Grasslands		
					Shrublands	Low Shrublands - LS (Black Chernozems)	Buckbrush (Orthic Black Chernozems)	63
							Tall Shrublands - TS (Black Chernozems)	Silverberry (Orthic Black Chernozems)
					Woodlands	Deciduous Woodlands - DW (Black Chernozems)	Aspen / Choke Cherry / Saskatoon (Orthic Black Chernozems)	8

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	
SANDY UPLAND (cont'd)	Sandy Plain (cont'd)	Ss1 (cont'd)	0 to 7% (cont'd)	Rapidly to well drained (cont'd)	Woodlands (cont'd)	Deciduous Woodlands DW (cont'd)	Aspen / Buckbrush - Wild Red Raspberry - Rose (Orthic Black Chernozems)	17, 18, 19, 62
VALLEY/ RIDGE	Protected Slope	Vp1 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 - G	Grasslands		
					Shrublands	Low Shrublands - LS		
						Tall Shrublands - TS (Eutric Brunisols)	Chokecherry - Saskatoon (Orthic Eutric Brunisols)	56
					Woodlands	Deciduous Woodlands - DW (Eutric Brunisols)	Aspen - Balsam Poplar (White Spruce - Black Spruce) / Beaked Hazelnut (Orthic Eutric Brunisols)	9, 10, 35, 44
		Mixed Woodlands - MW (Regosols and Eutric Brunisols)	White Spruce - Aspen (Balsam Poplar) / Rose (Cumulic Regosols and Orthic Eutric Brunisols)	11, 43				
			Coniferous Woodland - CW					
		Vp2 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 - G	Grasslands (Regosols and Eutric Brunisols)	Sand Grass / Muhly Grass (Orthic Regosols and Orthic Eutric Brunisols)	21, 22
					Shrublands	Low Shrublands - LS (Dark Brown Chernozems)	Buckbrush (Orthic Dark Brown Chernozems)	58
						Tall Shrublands - TS		
		Woodlands	Deciduous Woodlands - DW					
Vp3 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 - G	Grasslands (Solodized Solonetz's, Solonetz's and Regosols)	Plains Rough Fescue - Kentucky Blue Grass (Black Solonetz's and Black Solodized Solonetz's)	12, 53, 57, 67		

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	
VALLEY/ RIDGE (cont'd)	Protected Slope (cont'd)	Vp3 (cont'd)	2 to 20% (cont'd)	Well to moderately well drained (cont'd)	Grasslands – G (cont'd)	Grasslands (Solodized Solonetz's, Solonetz's and Regosols (cont'd)	Kentucky Blue Grass - Western Wheat Grass (Black Solodized Solonetz's and Orthic Regosols - saline phase)	49, 69
					Shrublands	Low Shrublands - LS		
					Shrublands (cont'd)	Tall Shrublands - TS		
						Wet Tall Shrublands - TSW (Regosols)	(White Spruce) / Willow - River Alder - Red-osier Dogwood (Cumulic Regosols)	20
					Woodlands	Deciduous Woodlands - DW (Regosols)	Aspen / Choke Cherry - Saskatoon (Cumulic Regosols)	34
	Woodlands	Mixed Woodlands - MW (Regosols and Black Chernozems)	Aspen - Balsam Poplar / Red-osier Dogwood (Cumulic Regosols and Solonetzic Black Chernozems)	50, 70				
		Coniferous Woodlands - CW (Solodized Solonetz's)	White Spruce / Rose (Black Solodized Solonetz's)	13				
		Shrublands	Low Shrublands - LS					
		Vp4 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 - LS		
		Springs	Vs 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 - WM	Wet Meadows (Spring) (Gleysols)	Water Sedge - Awned Sedge (Rego Gleysols)
Exposed Slope	Vx 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 - NV	Non-vegetated			
				Shrublands	Low Shrublands - LS			
					Tall Shrublands - TS			

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	
VALLEY/ RIDGE (cont'd)	Exposed Slope (cont'd)	Vx (cont'd)	65 to >100% (cont'd)	Very rapidly drained (cont'd)	Woodlands	Deciduous Woodlands - DW		
	Floor / Stream	Vf1 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 - CW (Eutric Brunisols)	White Spruce - Rose (Orthic Eutric Brunisols)	40
					Open Water - OW	Open Water		
					Shrublands	Wet Tall Shrublands - TSW (Gleysols)	(White Spruce) / Willow / River Alder - Red-osier Dogwood (Orthic Humic Gleysols)	14
	Woodlands	Deciduous Woodlands - DW						
		Mixed Woodlands - MW						
	Vf2 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 - CW (Eutric Brunisols and Regosols)	White Spruce / Rose (Orthic Eutric Brunisols and Orthic Regosols)	41, 42	
					Grasslands - G	Grasslands (Orthic Black Chernozems)	Plains Rough Fescue - Kentucky Blue Grass (Orthic Black Chernozems)	68
						Shrublands	Low Shrublands - LS (Black Chernozems and Eutric Brunisols)	Buckbrush (Orthic Black Chernozems and Orthic Eutric Brunisols)
		Buckbrush - Wild Red Raspberry - Rose (Orthic Black Chernozems)	1, 54					
Tall Shrublands - TS (Black Chernozems and Eutric Brunisols)	Silverberry / Buckbrush (Orthic Black Chernozems)	36						
Vf3 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 - LS (Black Chernozems and Eutric Brunisols)	Buckbrush (Orthic Black Chernozems and Orthic Eutric Brunisols)	6, 25, 29, 30, 33, 37, 66		
					Buckbrush - Wild Red Raspberry - Rose (Orthic Black Chernozems)	1, 54		
				Tall Shrublands - TS (Black Chernozems and Eutric Brunisols)	Silverberry / Buckbrush (Orthic Black Chernozems)	36		

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	
VALLEY/ RIDGE (cont'd)	Floor / Stream (cont'd)	Vf3 (cont'd)	0 to 10% (cont'd)	Well to moderately well drained (cont'd)	Shrublands (cont'd)	Tall Shrublands – TS (Black Chernozems and Eutric Brunisols) (cont'd)	Choke Cherry / Saskatoon (Orthic Eutric Brunisols)	39
					Woodlands	Deciduous Woodlands - DW (Black Chernozems)	Aspen / Buckbrush - Wild Red Raspberry - Rose (Orthic Black Chernozems)	2
							Aspen / Choke Cherry - Saskatoon (Orthic Black Chernozems)	27
			Coniferous Woodlands - CW					
		Vf4 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 - G Grasslands (Solodized Solonetz's, and Regosols)	Plains Rough Fescue - Kentucky Blue Grass (Orthic Regosols - saline phase)	60	
						Kentucky Blue Grass - Western Wheat Grass (Black Solodized Solonetz's and Orthic Regosols - saline phase)	31, 38, 61	
						Shrublands	Low Shrublands - LS	
							Tall Shrublands - TS	
						Woodlands	Deciduous Woodlands - DW	
		Vf5 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 - LS		
Tall Shrublands - TS								
Wet Tall Shrublands - TSW (Gleysols)	(White Spruce) / Willow - River Alder - Red-osier Dogwood (Rego Gleysols and Orthic Gleysols)					4, 24, 51		
Woodlands	Deciduous Woodlands - DW							

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	
VALLEY/ RIDGE (cont'd)	Floor / Stream (cont'd)	Vf5 (cont'd)	0 to 6% (cont'd)	Poorly to imperfectly drained (cont'd)	Wet Meadows - WM	Wet Meadows		
					Open Water - OW	Open Water		
		Vf6 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 - SM (Gleysols)	Awnead Sedge (Rego Gleysols)	28
							Awnead Sedge - Common Tall Manna Grass (Rego Gleysols)	32
		Vf7 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 - G	Grasslands		
					Shrublands	Low Shrublands - LS		
					Woodlands	Deciduous Woodlands - DW (Black Chernozems and Black Solods)	Apsen / Buckbrush - Wild Red Raspberry - Rose (hygric site) (Gleyed Black Chernozems and Gleyed Black Solods)	7, 55
					Wet Meadows - WM	Wet Grass Meadows (Black Solods)	Redtop - Slough Grass - Foxtail Barley - Marsh Reed Grass (Gleyed Black Solods)	52
					Marsh	Shallow Marsh - SM (Gleysols)	Awnead Sedge (Rego Gleysols)	65
		Wd 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 - DM	Common Cattail (Rego Gleysols)	26
WIWm 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 - WM	Wet Meadow				
			Open Water - OW	Open Water				

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	
VALLEY / RIDGE (cont'd)	Floor / Stream (cont'd)	WdVf5 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 - TSW		
					Wet Meadow - WM	Wet Meadow (Gleysols)	Redtop - Slough Grass - Foxtail Barley - Marsh Reed Grass (Rego Gleysols)	5
					Marsh	Deep Marsh - DM		
DISTURBANCE		D1 Old gravel excavation in coarse glaciofluvial veneer over till	2 to 5%	Moderately well drained	Shrublands	Tall Shrubland - TS (Black Chernozems)	Silverberry / Buckbrush (Orthic Black Chernozems)	45
		D2 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 - A	Anthropogenic		
		D3 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 - LS		
		D4 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 - G	Grasslands (Black Chernozems)	Smooth Brome (Orthic Black Chernozems to Gleyed Black Chernozems)	3