APPENDIX 7

Terrestrial Environment

LIST OF APPENDICES

APPENDIX 7A

Species List

Table 7A-1
List of Some of the More Common Plant Species/Genera Expected to Be Found in the Flood Study Region

Scientific Name	Common Name
Trees	
Acer negundo	Manitoba Maple
Fraxinus pennsylvanica	Green Ash
Populus balsamifera	Balsam Poplar
Populus tremuloides	Trembling Aspen
Quercus macrocarpus	Bur Oak
Tilia americana	Basswood
Ulmus americana	American Elm
Shrubs	
Amelanchier spp.	Saskatoon
Amorpha fruticosa	False Indigo
Cornus stolonifera	Red-osier Dogwood
Crataegus spp.	Hawthorn
Prunus spp.	Chokecherry
Salix spp.	Willow
Viburnum spp.	Cranberry
Grasses/Sedges	
Agropyron repens	Couch Grass
Andropogon gerardi	Big Bluestem
Bromus inermis	Smooth Brome
Calamagrostis spp.	Reedgrass
Carex spp.	Sedge
Eleocharis spp.	Spikerush
Hordeum jubatum	Foxtail
Phalaris arundinacea	Reed Canary Grass
Phragmites australis	Common Reed Grass
Poa spp.	Bluegrass
Scirpus spp.	Bullrush
Typha latifolia	Cattail
Forbs	
Antennaria spp.	Pussytoes
Aster spp.	Aster
Erigeron spp.	Fleabane
Helianthus spp.	Sunflower
Rumex spp.	Dock
Solidago spp.	Goldenrod
Sonchus spp.	Sow Thistle
Taraxacum officinale	Dandelion
Vicia spp.	Vetch
Melilotus spp.	Sweet Clover
Trifolium spp.	Clover

Table 7A-2

Bird Species Potentially Utilizing the Red River Floodway Study Areas

Scientific name	Common name	Regional	Flood Study Region	Floodway & West Dyke
		Status[a]		
Gavia immer	Common Loon	B	B	B
Podilymbus podiceps	Pied-billed Grebe	B	B	B
Podiceps auritus	Horned Grebe	B	B	B
Podiceps grisegena	Red-necked Grebe	B	B	B
Podiceps nigricollis	Eared Grebe	B	B	B
Aechmophorus occidentalis	Western Grebe	B	B	B
Pelecanus erythrorhynchos	American White Pelican	B	B	B
Cygnus columbianus	Tundra Swan	M	M	M
Phalacrocorax auritus	Double-crested Cormorant	B	B	B
Botaurus lentiginosus	American Bittern	B	B	B
*Ixobrychus exilis**	Least Bittern*	B	B	B
Ardea herodias	Great Blue Heron	B	B	B
Grande aigrette	Great Egret	M	M	M
Nycticorax nycticorax	Black-crowned Night-Heron	B	B	B
Branta canadensis	Canada Goose	B	B	B
Chen caerulescens	Snow Goose	M	M	M
Aythya marila	Greater Scaup	B	B	B
Aix sponsa	Wood Duck	B	B	B
Anas crecca	Green-winged Teal	B	B	B
Anas americana	American Widgeon	B	B	B
Anas platyrhynchos	Mallard	B	B	B
Anas rubripes	American Black Duck	B	B	B
Anas discors	Blue-winged Teal	B	B	B
Anas acuta	Northern Pintail	B	B	B
Anas strepera	Gadwall	B	B	B
Anas clypeata	Northern Shoveler	B	B	B
Aythya valisineria	Canvasback	B	B	B
Aythya americana	Redhead	B	B	B
Aythya collaris	Ring-necked Duck	B	B	B
Aythya affinis	Lesser Scaup	B	B	B
Bucephala albeola	Bufflehead	B	B	B
Melanitta fusca	White-winged Scoter	M	M	M
Oxyura jamaixensis	Ruddy Duck	B	B	B
Bucephala clangula	Common Goldeneye	B	B	B
Clangula hyemalis	Oldsquaw	M	M	M
Lophodytes cucullatus	Hooded Merganser	B	B	B
Mergus merganser	Common Merganser	B	B	B

Mergus serrator	Red-breasted Merganser	M	M	M
Haliaeetus leucocephalus	Bald Eagle	B	B	B
Cathartes aura	Turkey Vulture	B,N	B,N	B,N
Circus cyaneus	Northern Harrier	B	B	B
Accipiter striatus	Sharp-shinned Hawk	B	B	B
Accipiter cooperii	Coopers Hawk	B	B	B
Accipiter gentilis	Northern Goshawk	B	B	B
Buteo platypterus	Broad-winged Hawk	B	B	B
Buteo lagopus	Rough-legged Hawk	M	M	M
Buteo jamaicensis	Red-tailed Hawk	B	B	B
*Buteo regalis****	Ferruginous Hawk***	B	B	B
Aquila chrysaetos	Golden Eagle	B	B	B
Buteo swainsoni	Swainson's Hawk	B	B	B
*Falco peregrinus****	Peregrine Falcon***	M	M	M
Falco columbarius	Merlin	B	B	B
Falco sparverius	American Kestrel	B	B	B
Perdix perdix	Gray Partridge	A,I	A,I	A,I
Bonasa umbellus	Ruffed Grouse	A	A	A
Dendragapus canadensis	Spruce Grouse	A	B	-
*Tympanuchus cupido***	Greater Prairie-Chicken**	A	A	A
Tympanuchus phasianellus	Sharp-tailed Grouse	B	B	B
*Coturnicops noveboracensis**	Yellow Rail*	B	B	B
Rallus limicola	Virginia Rail	B	B	B
Prozana carolina	Sora	B	B	B
Fulica americana	American Coot	B	B	B
Grus canadensis	Sandhill Crane	M	M	M
*Charadrius melodus****	Piping Plover***	B	B	B
Pluvialis dominica	Lesser Golden-Plover	M	M	M
Pluvialis squatarola	Black-bellied Plover	M	M	M
Pluvier bronze	American Golden-Plover	M	M	M
Charadrius semipalmatus	Semipalmated Plover	M	M	M
Charadrius vociferus	Killdeer	B	B	B
Tringa solitaria	Solitary Sandpiper	B	B	B
Catoptrophorus semipalmatus	Willet	B	B	B
Tringa melanoleuca	Greater Yellowlegs	M	M	M
Tringa solitaria	Lesser Yellowlegs	M	M	M
Actitis macularia	Spotted Sandpiper	B	B	B
Tryngites subruficollis	Buff-breasted Sandpiper	M	M	M
Calidris himantopus	Stilt Sandpiper	M	M	M

Limnodromus griseus	Short-billed Dowitcher	M	M	M
Limnodromus scolopaceus	Long-billed Dowitcher	M	M	M
Bartramia longicauda	Upland Sandpiper	B	B	B
Limosa fedoa	Marbled Godwit	B	B	B
Limosa haemastica	Hudsonian Godwit	M	M	M
Gallinago gallinago	Wilson's Snipe	B	B	B
Phalaropus lobatus	Red-necked Phalarope	M	M	M
Scolopax minor	American Woodcock	B	B	B
Arenaria interpres	Ruddy Turnstone	M	M	M
Calidris melanotos	Pectoral Sandpiper	M	M	M
Calidris alpina	Dunlin	M	M	M
Calidris alba	Sanderling	M	M	M
Calidris fuscicollis	White-rumped Sandpiper	M	M	M
Calidris bairdii	Baird's Sandpiper	M	M	M
Calidris minutilla	Least Sandpiper	M	M	M
Calidris mauri	Western Sandpiper	M	M	M
Larus pipixcan	Franklin's Gull	B	B	B
Larus argentatus	Herring Gull	B	B	M
Larus philadelphia	Bonaparte's Gull	M	M	M
Larus delawarensis	Ring-billed Gull	B	B	B
Larus californicus	California Gull	B	B	B
Sterna hirundo	Common Tern	B	B	M
Sterna forsteri	Forster's Tern	B	B	B
Childonias niger	Black Tern	B	B	B
Sterna caspia	Caspian Tern	M	M	M
Columba livia	Rock Dove	A	A	A
Zenaida macroura	Mourning Dove	B	B	B
Otus asio	Eastern Screech Owl	A	A	A
Athene cunicularia	Burrowing Owl	B	U	U
Strix varia	Barred Owl	A	A	A
Asio otus	Long-eared Owl	B	B	B
Surnia ulula	Northern Hawk Owl	A	A	M
Aegolius funereus	Boreal Owl	A	A	A
*Asio flammeus**	Short-eared Owl*	B	B	-
Strix nebulosa	Great Gray Owl	A	B	-
Nyctea scandiaca	Snowy Owl	W	W	W
Aegolius acadicus	Nothern Saw-whet Owl	A	A	A
Chordeiles minor	Common Nighthawk	B	B	B
Caprimulgus vociferus	Whip-poor-will	B	B	B

Chaeura pelagica	Chimney Swift	B	B	B
Archilochus colubris	Ruby-throated Hummingbird	B	B	B
Ceryle alcyon	Belted Kingfisher	B	B	B
Sphyrapicus varius	Yellow-bellied Sapsucker	B	B	B
*Melanerpes erythrocephalus**	Red-headed Woodpecker*	B	B	B
Picoides pubescens	Downy Woodpecker	A	A	A
Picoides villosus	Hairy Woodpecker	A	A	A
Picoides arctus	Black-backed Woodpecker	A	B	-
Picoides tridactylus	American Three-toed Woodpecker	A	B	-
Colaptes auratus	Northern Flicker	B	B	B
Dryocopus pileatus	Pileated Woodpecker	A	A	A
Contopus borealis	Olive-sided Flycatcher	B	B	B
Empidonax flaviventris	Yellow-bellied Flycatcher	B	B	B
Empidonax alnorum	Alder Flycatcher	B	B	B
Empidonax traillii	Willow Flycatcher	B	B	B
Empidonax minimus	Least Flycatcher	B	B	B
Sayornis phoebe	Eastern Phoebe	B	B	B
Contopus virens	Eastern Wood-Pewee	B	B	B
Contopus sordidulus	Western Wood-Pewee	B	B	B
Myiarchus crinitus	Great Crested Flycatcher	B	B	B
Tyrannus verticalis	Western Kingbird	B	B	B
Tyrannus tyrannus	Eastern Kingbird	B	B	B
Lanius ludovicianus	Loggerhead Shrike	B	B	B
Lanius excubitor	Northern Shrike	W	W	W
Eremophila alpestris	Horned Lark	B	B	B
Progne subis	Purple Martin	B	B	B
Vireo solitarius	Blue-headed Vireo	B	B	M
Vireo gilvus	Warbling Vireo	B	B	B
Vireo philadelphicus	Philadelphia Vireo	B,M	B,M	B,M,
Vireo olivaceus	Red-eyed Vireo	B	B	B
Vireo flavifrons	Yellow-throated Vireo	B	B	B
Perisoreus canadensis	Gray Jay	A	B	B
Cyanocitta cristata	Blue Jay	A	A	A
Pica pica	Black-billed Magpie	A	A	A
Corvus brachyrhynchos	American Crow	B	B	B
Corvus corax	Common Raven	A	A	A
Tachycineta bicolor	Tree Swallow	B	B	B
Riparia riparia	Bank Swallow	B	B	B
Hirundo rustica	Barn Swallow	B	B	B

Stelgidopteryx serripennis	Northern Rough-winged Swallow	B	B	B
Parus atricapillus	Black-capped Chickadee	A	-	-
Parus hudsonicus	Boreal chickadee	A	A	A
Sitta canadensis	Red-breasted Nuthatch	A	A	A
Sitta carolinensis	White-breasted Nuthatch	A	A	A
Certhia americana	Brown Creeper	B	B	M
Troglodytes aedon	House Wren	B	B	B
Troglodytes troglodytes	Winter Wren	B	M	M
Cistothorus platensis	Sedge Wren	B	B	B
Cistothorus palustris	Marsh Wren	B	B	B
Regulus satrapa	Golden-crowned Kinglet	B	M	M
Regulus calendula	Ruby-crowned Kinglet	B	B	B
Sialia sialis	Eastern Bluebird	B	B	B
Sialia currucoides	Mountain Bluebird	B	B	B
Catharus fuscescens	Veery	B	B	B
Catharus ustulatus	Swainson's Thrush	B	M	M
Catharus minimus	Gray-cheeked Thrush	M	M	M
Catharus guttatus	Hermit Thrush	B	B	M
Turdus migratorius	American Robin	B	B	B
Dumetella carolinensis	Gray Catbird	B	B	B
Toxostoma rufum	Brown Thrasher	B	B	B
*Anthus spragueii**	Sprague's Pipit*	B	B	B
Anthus spinoletta	Water Pipit	M	M	M
Bombycilla garrulus	Bohemian Waxwing	W	W	W
bombycilla cedrorum	Cedar Waxwing	B	B	B
*Lanius ludovicianus***	Loggerhead Shrike***	B	B	B
Lanius excubitor	Northern Shrike	W	W	W
Sturnus vulgaris	European Starling	A	A	A
Vermivora peregrina	Tennessee Warbler	B	B	M
Vermivora celata	Orange-crowned Warbler	B	M	M
Vermivora ruficapilla	Nashville Warbler	M	B	M
Dendroica petechia	Yellow Warbler	B	B	B
Dendroica pensylvanica	Chestnut-sided Warbler	B	B	M
Dendroica magnolia	Magnolia Warbler	B	B	M
Parula americana	Northern Parula	B	-	-
Dendroica tigrina	Cape May Warbler	B	B	M
Dendroica coronata	Yellow-rumped Warbler	B	B	M
Dendroica virens	Black-throated Green Warbler	B	B	M
Mniotilta varia	Black-and-white Warbler	B	B	M

Dendroica fusca	Blackburnian Warbler	B	B	M
Dendroica castanea	Bay-breasted Warbler	B	B	M
Dendroica striata	Blackpoll Warbler	M	M	M
Dendroica pinus	Pine Warbler	B	B	-
Dendroica palmarum	Palm Warbler	B	B	M
Setophaga ruticilla	American Redstart	B	B	B
Seiurus aurocapillus	Ovenbird	B	B	M
Seiurus noveboracensis	Northern Waterthrush	B	B	B
Oporornis agilis	Connecticut Warbler	B	B	B
Oporornis philadelphia	Mourning Warbler	B	B	M
Geothlypis trichas	Common Yellowthroat	B	B	B
Wilsonia canadensis	Canada Warbler	B	B	M
Wilsonia pusilla	Wilson's Warbler	M	M	M
Pipilo erythrophthalmus	Rufous-sided Towhee	B	B	B
Spizella passerina	Chipping Sparrow	B	B	B
Spizella pallida	Clay-colored Sparrow	B	B	B
Ammodramus savannarum	Grasshopper Sparrow	B	B	B
Pooecetes gramineus	Vesper Sparrow	B	B	B
Chondestes grammacus	Lark Sparrow	B	B	B
Spizella arborea	American Tree Sparrow	M	M	M
Zonotrichia querula	Harris' Sparrow	M	M	M
Zonotrichia leucophrys	White-crowned Sparrow	M	M	M
Passerella iliaca	Fox Sparrow	M	M	M
Passerculus sandwichensis	Savannah Sparrow	B	B	B
*Ammodramus bairdii***	Baird's Sparrow**	B	B	B
Ammodramus leconteii	Le Conte's Sparrow	B	B	B
Ammodramus caudacutus	Sharp-tailed Sparrow	B	B	B
Melospiza melodia	Song Sparrow	B	B	B
Melospiza lincolnii	Lincoln's Sparrow	B	B	M
Melosppiza georgiana	Swamp Sparrow	B	B	B
Zonotrichia albicollis	White-throated Sparrow	B	B	M
Calcarius lapponicus	Lapland Longspur	M	M	M
Calcarius pictus	Smith's Longspur	M	M	M
Plectrophenax nivalis	Snow Bunting	W	W	W
Junco hyemalis	Dark-eyed Junco	B	B	B
Passerina cyanea	Indigo Bunting	B	B	B
Dolichonyx oryzivorus	Bobolink	B	B	B
Agelaius phoeniceus	Red-winged Blackbird	B	B	B
Sturnella neglecta	Western Meadowlark	B	B	B

Xanthocephalus xanthocepha lus	Yellow-headed Blackbird	B	B	B
Euphagus carolinus	Rusty Blackbird	B	B	B
Euphagus cyanocephalus	Brewer's Blackbird	B	B	B
Quiscalus quiscula	Common Grackle	B	B	B
Molothrus ater	Brown-headed Cowbird	B	B	B
Icterus galbula	Northern Oriole	B	B	B
Piranga olivacea	Scarlet Tanager	B	B	B
Carpodacus purpureus	Purple Finch	B	B	B
Loxia leucoptera	White-winged Crossbill	A	B	W
Loxia curvirostra	Red Crossbill	A	A	A
Spiza americana	Dickcissel	B	B	B
Carduelis pinus	Pine Siskin	B	B	B
Carduelis tristis	American Goldfinch	B	B	B
Cocoothraustes vespertinus	Evening Grosbeak	A	A	A
Pinicola enucleator	Pine Grosbeak	W	W	W
Passer domesticus	House Sparrow	A	A	A
Cardurlis hornemanni	Hoary Redpoll	W	W	W
Cardurlis flammea	Common Redpoll	W	W	W

Source: Godfrey 1986; Robbins *et al*. 1983; COSEWIC 2003; Manitoba Conservation 2003

[a] Note: B = breeding, M = migrant, P = permanent resident, N = northern extent of range, W = winter range, I = introduced, A= all year round, U= Unknown (no records of occurrence)

* deemed species at risk by COSEWIC

** deemed species at risk by MESA

*** deemed species at risk by both MESA and COSEWIC

Table 7A-3
Mammals Potentially Inhabiting the Red River Floodway Study Areas

MAMMAL SPECIES LIST				
Scientific name	**Common name**	**Regional Study Region**	**Flood Study Region**	**Floodway & West Dyke**
Odocoileus hemionus	Mule deer*	☞		
Odocoileus virginianus	White-tailed deer	☞	☞	☞
Cervus canadensis	Elk	☞		
Alces alces	Moose	☞	☞	?
Rangifer caribou	Woodland caribou	☞	?	?
Canis latrans	Coyote	☞	☞	☞
Canis Lupus	Gray wolf	☞	?	?
Vulpes vulpes	Red fox	☞	☞	☞
Urocyon cinereoargenteus	Grey fox**	☞	☞	☞
Ursus americanus	Black bear	☞	☞	☞
Felis concolor missoulensis	Cougar	☞	?	??
Lynx rufus	Bobcat	☞	☞	?
Lynx canadensis	Lynx	☞	?	?
Mephitis mephitis	Striped skunk	☞	☞	☞
Procyon lotor	Raccoon	☞	☞	☞
Martes pennanti	Fisher	☞	☞	?
Martes americana	Marten	☞	☞	?
Castor canadensis	Beaver	☞	☞	☞
Ondatra zibethicus	Muskrat	☞	☞	☞
Mustela rixosa	Least weasel	☞	☞	☞
Mustela erminea	Shorttail weasel	☞	☞	☞
Mustela frenata	Longtail weasel	☞	☞	☞
Mustela vison	Mink	☞	☞	☞
Lutra canadensis	River otter	☞	☞	☞
Erethizon dorsatum	Porcupine	☞	☞	☞
Sylvilagus floridanus	Eastern cottontail	☞	☞	☞
Lepus townsendi	Whitetail jackrabbit	☞	☞	☞
Lepus americanus	Snowshoe hare	☞	☞	☞
Marmota monax	Woodchuck	☞	☞	☞
Taxidea taxus	Badger	☞	☞	☞
Condylura cristata	Starnose mole	☞	☞	☞
Blarina brevicauda	Short-tail shrew	☞	☞	☞
Sorex palustris	Northern water shrew	☞	☞	☞
Microsorex hoyi	Pygmy shrew	☞	☞	☞
Sorex cinereus	Masked shrew	☞	☞	☞
Sorex arcticus	Arctic shrew	☞	☞	☞
Zapus hudsonius	Meadow jumping mouse	☞	☞	☞
Peromyscus maniculatus	Deer mouse	☞	☞	☞
Napaeozapus insignis	Woodland jumping mouse	☞	☞	☞
Onychomys leucogaster	Northern grasshopper mouse	☞	☞	☞
Microtus pennsylvanicus	Meadow vole	☞	☞	☞
Microtus ochrogaster	Praire vole	☞	☞	☞
Clethrionomys gapperi	Boreal redback vole	☞	☞	?
Phenacomys intermedius	Mountain phenacomys	☞	☞	☞
Spermophilus tridecemlineatus	Thirteen-lined ground squirrel	☞	☞	☞

Scientific name	Common name	Regional Study Region	Flood Study Region	Floodway & West Dyke
Citellus franklini	Franklin ground squirrel	☞	☞	☞
Citellus richardsoni	Richardson ground squirrel	☞	☞	☞
Thomomys talpoides	Northern pocket gopher	☞	☞	☞
Geomys bursarius	Plains pocket gopher	☞	☞	☞
Synaptomys borealis smithi	Northern bog lemming	☞	☞	☞
Tamias striatus	Eastern chipmunk	☞	☞	?
Eutamias minimus	Least chipmunk	☞	☞	?
Sciurus carolinensis	Eastern gray squirrel	☞	☞	?
Sciurus niger	Eastern fox squirrel	☞	?	?
Tamiasciurus hudsonicus	Red Squirrel	☞	☞	?
Glaucomys sabrinus	Northern flying squirrel	☞	?	?
Myotis lucifugus	Little brown myotis	☞	☞	☞
Myotis keeni	Keen myotis	☞	☞	☞
Lasionycteris noctivagans	Silver-haired bat	☞	☞	☞
Lasiurus borealis	Red bat	☞	☞	☞
Eptesicus fuscus	Big brown bat	☞	☞	☞
Lasiurus cinereus	Hoary bat	☞	☞	☞

Source: Banfield 1984; Burt and Grossenheider 1980; Manitoba Conservation 2003; COSEWIC 2003

*listed under MESA as species at risk. Eastern reaches of range

** listed under COSEWIC as species at risk. Accidental in Manitoba

Table 7A-4
Reptiles and Amphibians Potentially Inhabiting the Red River Floodway Regional and Flood Study Area

Scientific Name	Common Name	Regional	Flood Study Region
Opheodrys vernalis	Smooth Green Snake	☞	☞
Thamnophis radix haydeni	Western Plains Garter Snake	☞	☞
Thamnophis sirtalis parietalis	Red-sided Garter Snake	☞	☞
Storeria occipitomaculata occipitomaculata	Northern Redbelly Snake	☞	☞
Chrysemys picta belli	Western Painted Turtle	☞	☞
Chelyfra serpentina serpentina	Common Snapping turtle	☞	☞
*Rana pipiens**	Northern Leopard Frog*	☞	☞
Rana sylvatica	Wood Frog	☞	☞
Pseudacris triseriata maculata	Boreal Chorus Frog	☞	☞
Hyla chrysoscelis	Cope's Gray TreeFrog	☞	☞
Hyla versicolor	Gray TreeFrog	☞	☞
Hyla crucifer crucifer	Northern Spring Peeper	☞	☞
Bufo americanus hemiophrys	Canadian Toad	☞	☞
Bufo americanus	American Toad	☞	☞
Ambystoma laterale	Blue-spotted salamander	☞	☞
Ambystoma tigrinum diaboli	Gray Tiger Salamander	☞	☞
Necturus maculosus maculosus	Mudpuppy	☞	☞

* deemed species at risk by COSEWIC

Source: Preston 1982; COSEWIC 2003

Table 7A-5
Provincially Rare and Species at Risk Known to Occur Within the Winnipeg Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Astragalus neglectus	Milkvetch	G4	S1
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Amorpha fruticosa	False Indigo	G5	S1S2
Andropogon gerardii-sporobolus heterolepis-andropogon scoparius herbaceous vegetation	Big Bluestem-prairie Dropseed-little Bluestem Herbaceous Vegetation	GNR	S1
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	G5T5	S2
Asclepias verticillata	Whorled Milkweed	G5	S2
Aster sericeus	Western Silvery Aster	G5	S2
Boltonia asteroides var. recognita	White Boltonia	G5TNR	S2S3
Botrychium multifidum	Leathery Grape-fern	G5	S3
Botrychium pallidum	Pale Moonwort	G3	S1
Bouteloua curtipendula	Side-oats Grama	G5	S2
Bromus porteri	Porter's Chess	G5	S3?
Calamagrostis montanensis	Plains Reed Grass	G5	S3
Cardamine bulbosa	Spring Cress	G5	SH
Carex crawei	Crawe's Sedge	G5	S3S4
Carex cristatella	Crested Sedge	G5	S2
Carex emoryi	Emory's Sedge	G5	S2?
Carex hallii	Hall's Sedge	G4?Q	S3
Carex livida	Livid Sedge	G5	S3
Carex parryana	Parry's Sedge	G4	S3?
Carex pedunculata	Stalked Sedge	G5	S3?
Carex projecta	Necklace Sedge	G5	S2?
Carex tetanica	Rigid Sedge	G4G5	S2
Carex tribuloides	Prickly Sedge	G5	SNA
Carex vulpinoidea	Fox Sedge	G5	S3?
Circaea quadrisulcata var. canadensis	Large Enchanter's-nightshade	G5T5	S2
Clematis ligusticifolia	Western Virgin's-bower	G5	S1
Clematis virginiana	Virgin's-bower	G5	S2
Cornus alternifolia	Alternate-leaved Dogwood	G5	S3
Cuscuta pentagona var. pentagona	Dodder	G5T5	S1?
Cyperus erythrorhizos	Red-root Flatsedge	G5	S1
Cyperus schweinitzii	Schweinitz's Flatsedge	G5	S2
Cypripedium candidum	Small White Lady's-slipper	G4	S1
Desmodium canadense	Beggar's-lice	G5	S2
Elatine triandra var. americana	Mud-purslane	G4	S1
Elodea nuttallii	Waterweed	G5	S1
Festuca hallii	Plains Rough Fescue	G4	S3
Fraxinus pennsylvanica-(Ulmus americana)-Acer negundo forest	Green Ash-(American Elm)-manitoba Maple Forest	GNR	S3
Fraxinus pennsylvanica-Ulmus americana-(Celtis occidentalis, Tilia americana) forest	Green Ash-American Elm-(Hackberry, Basswood) Forest	GNR	S2
Gentiana puberulenta	Downy Gentian	G4G5	S2
Gerardia aspera	Rough Purple Agalinis	G5	S1S2
Hesperia dacotae	Dakota Skipper	G2G3	S2S3

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Heteranthera dubia	Water Star-grass	G5	S2
Hudsonia tomentosa	False Heather	G5	S3
Hypoxis hirsuta	Yellow Stargrass	G5	S3
Krigia biflora	Cynthia	G5	S2
Lactuca floridana	Woodland Lettuce	G5	S1
Lechea intermedia	Pinweed	G5	S1
Leersia oryzoides	Rice Cutgrass	G5	S3?
Pellaea glabella ssp. occidentalis	Cliff-brake	G5T4	S2
Penthorum sedoides	Ditch-stonecrop	G5	S1S2
Phryma leptostachya	Lopseed	G5	S3
Platanthera orbiculata	Round-leaved Bog Orchid	G5?	S3
Polygala verticillata	Whorled Milkwort	G5	S2
Polygala verticillata var. isocycla	Whorled Milkwort	G5T5	S2
Populus tremuloides/Corylus americana-(symphoricarpos occidentalis) forest	Trembling Aspen/American Hazel-(Snowberry) Forest	GNR	S4
Populus tremuloides-Quercus macrocarpa/Aralia nudicaulis forest	Trembling Aspen-bur Oak/sarsaparilla Forest	GNR	S3S4
Quercus macrocarpa/amelanchier alnifolia/aralia nudicaulis-carex assiniboinensis forest	Bur Oak/Saskatoon Serviceberry/ sarsaparilla-assiniboia Sedge Forest	GNR	S3?
Ranunculus cymbalaria var. saximontanus	Seaside Crowfoot	G5T5	S1S2
Salix exigua shrubland	Sandbar Willow Shrubland	GNR	S3S4
Sanguinaria canadensis	Blood-root	G5	S2
Sisyrinchium campestre	White-eyed Grass	G5	SU
Solidago riddellii	Riddell's Goldenrod	G5	S2
Sporobolus asper	Tall Dropseed	G5	S1
Sporobolus neglectus	Annual Dropseed	G5	S3?
Steironema quadriflorum	Whorled Loosestrife	G5?	S2
Stipa viridula	Green Needle Grass	G5	S3
Strix varia	Barred Owl	G5	S3S4
Verbena bracteata	Bracted Vervain	G4G5	S3
Vernonia fasciculata ssp. corymbosa	Western Ironweed	G5TNR	S1?
Veronicastrum virginicum	Culver's-root	G4	S1
Viola conspersa	Dog Violet	G5	S3?
Animals			
Accipiter cooperii	Cooper's Hawk	G5	S4B
Athene cunicularia	Burrowing Owl	G4	S1B
Quadrula quadrula	Mapleleaf Clam	G5	SNR
Ligumia recta	Black Sandshell Mussell	G5	SNR
Orconectes immunis	Papershell Crayfish	G5	SNR
Charadrius melodus	Piping Plover	G3	S2B
Coturnicops noveboracensis	Yellow Rail	G4	S4B
Falco peregrinus anatum	Peregrine Falcon	G4T3	S1B
Lanius ludovicianus migrans	Loggerhead Shrike	G4T3Q	S1
Geomys bursarius	Plains Pocket Gopher	G5	S3

* See Table 7A-17 for ranking information

Source: Manitoba Conservation Data Centre (CDC)

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-5 (Con't)

Table 7A-6
Species Protected Under COSEWIC* and/or MESA Potentially Occurring within the Red River Floodway Study Region**

Species	Common Name	Habitat
Ixobrychus exilis	Least Bittern[C]	marshes with cattails, sluggish streams
Buteo regalis	Ferriginous Hawk[B]	plains/prairies
Falco peregrinus	Peregrine Falcon[B]	open country with marshes, lakes and ponds
Tympanuchus cupido	Greater-Prairie Chicken[M]	tall grass prairie
Coturnicops noveboracensis	Yellow Rail[C]	wet meadows, fens and grassy marshes
Charadrius melodus	Piping Plover[B]	sandy shorelines
Asio flammeus	Short-eared Owl[C]	open country plains with marshes and sloughs
Melanerpes erythrocephalus	Red-headed Woodpecker[C]	open deciduous woods
Anthus spragueii	Sprague's Pipit[C]	northern plains
Lanius ludovicianus	Loggerhead Shrike[B]	open grass/shrubland
Ammodramus bairdii	Baird's Sparrow[M]	high plains
Athene cunicularia	Burrowing Owl[B]	open prairie/grassland
Rana pipiens	Northern Leopard Frog[C]	grasslands and wet woods
Urocyon cinereoargenteus	Gray Fox[C]	woodland (accidental in Mb)

Source: Manitoba Conservation 2004; COSEWIC 2004

*Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

**Manitoba Endangered Species Act (MESA)

C = listed under COSEWIC

B = listed under COSEWIC AND MESA

M = listed under MESA

Table 7A-7
Pronvincially Rare and Species at Risk Known to Occur Within the Winkler Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Asarum canadense	Wild Ginger	G5	S3?
Boltonia asteroides var. recognita	White Boltonia	G5TNR	S2S3
Calamagrostis montanensis	Plains Reed Grass	G5	S3
Carex bicknellii	Bicknell's Sedge	G5	SH
Carex cristatella	Crested Sedge	G5	S2
Carex supina var. spaniocarpa	Weak Sedge	G5TNR	S2?
Carex tetanica	Rigid Sedge	G4G5	S2
Clematis ligusticifolia	Western Virgin's-bower	G5	S1
Cornus alternifolia	Alternate-leaved Dogwood	G5	S3
Cryptotaenia canadensis	Honewort	G5	S2?
Elymus hystrix	Bottle-brush Grass	G5	S2
Festuca obtusa	Nodding Fescue	G5	S1
Musineon divaricatum	Leafy Musineon	G5	S2
Ostrya virginiana	Hop-hornbeam	G5	S2
Parietaria pensylvanica	American Pellitory	G5	S4
Phryma leptostachya	Lopseed	G5	S3
Polygala verticillata var. isocycla	Whorled Milkwort	G5T5	S2
Quercus macrocarpa/Amelanchier alnifolia/Aralia nudicaulis-carex assiniboinensis forest	Bur Oak/saskatoon, Serviceberry /sarsaparilla-assiniboia Sedge Forest	GNR	S3?
Stipa viridula	Green Needle Grass	G5	S3
Uvularia sessilifolia	Small Bellwort	G5	S2
Animals			
Athene cunicularia	Burrowing Owl	G4	S1B

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-17 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-8
Provincially Rare and Species at Risk Known to Occur Within the Steinbach Ecodistrict

Scientific Name	Provincial Common Name	G_ Rank*	S_ Rank*
Plants			
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Andropogon gerardii-(Calamagrostis canadensis)-Muhlenbergia richardsonis herbaceous vegetation	Big Bluestem-(Marsh Reed Grass)-mat Muhly Herbaceous Vegetation	GNR	S1
Andropogon gerardii-(Sorghastrum nutans) herbaceous vegetation	Big Bluestem-(Indian Grass) Herbaceous Vegetation	G2G3	S1
Andropogon gerardii-Sporobolus heterolepis-Andropogon scoparius herbaceous vegetation	Big Bluestem-prairie Dropseed-little Bluestem Herbaceous Vegetation	GNR	S1
Arethusa bulbosa	Swamp Pink	G4	S2
Asarum canadense	Wild Ginger	G5	S3?
Asclepias verticillata	Whorled Milkweed	G5	S2
Aster macrophyllus var. macrophyllus	White Wood Aster	G5TNR	S1
Aster modestus	Large Northern Aster	G5	S2
Aster sericeus	Western Silvery Aster	G5	S2
Astragalus neglectus	Milkvetch	G4	S1
Bromus pubescens	Canada Brome Grass	G5	SU
Calopogon pulchellus	Swamp-pink	G5	S2
Cardamine bulbosa	Spring Cress	G5	SH
Carex conoidea	Field Sedge	G5	S1
Carex livida	Livid Sedge	G5	S3
Carex tetanica	Rigid Sedge	G4G5	S2
Ceanothus herbaceus var. pubescens	New Jersey Tea	G5TNR	S3
Chamaesaracha grandiflora	Large White-flowered Ground-cherry	G3?	S3
Clematis virginiana	Virgin's-bower	G5	S2
Cyperus houghtonii	Houghton's Umbrella-sedge	G4?	S2
Cypripedium arietinum	Ram's Head Lady's-slipper	G3	S2?
Cypripedium candidum	Small White Lady's-slipper	G4	S1
Desmodium canadense	Beggar's-lice	G5	S2
Geranium maculatum	Wild Crane's-bill	G5	S1
Hesperia dacotae	Dakota Skipper	G2G3	S2S3
Hypoxis hirsuta	Yellow Stargrass	G5	S3
Ichthyomyzon castaneus	Chestnut Lamprey	G4	S3S4
Krigia biflora	Cynthia	G5	S2
Lactuca floridana	Woodland Lettuce	G5	S1
Ligumia recta		G5	SNR
Liparis loeselii	Yellow Twayblade	G5	S3?
Malaxis unifolia	Green Adder's-mouth	G5	S2?
Oarisma powesheik	Powesheik Skipper	G2	S2
Oenothera perennis	Sundrops	G5	S1S2
Ophioglossum pusillum	Northern Adder's-tongue	G5	S1
Orconectes immunis		G5	SNR
Orobanche ludoviciana	Louisiana Broom-rape	G5	S2
Platanthera praeclara	Western Prairie Fringed Orchid	G2	S1
Polygala verticillata	Whorled Milkwort	G5	S2
Quadrula quadrula		G5	SNR
Quercus macrocarpa tallgrass wooded herbaceous vegetation	Bur Oak Tallgrass Wooded Herbaceous Vegetation	G1Q	S1
Ranunculus septentrionalis	Swamp Buttercup	G5T5	S2

Table 7A-8 (Con't)

Scientific Name	Provincial Common Name	G_Rank *	S_Rank *
Salix brachycarpa	Short-capsuled Willow	G5	S3
Sisyrinchium campestre	White-eyed Grass	G5	SU
Solidago riddellii	Riddell's Goldenrod	G5	S2
Spartina pectinata-Calamagrostis inexpansa-Carex spp. herbaceous vegetation	Cord Grass-northern Reed Grass-sedge Herb Veg	G2G3	S1S2
Spiranthes magnicamporum	Great Plains Ladies'-tresses	G4	S1?
Steironema quadriflorum	Whorled Loosestrife	G5?	S2
Stipa viridula	Green Needle Grass	G5	S3
Thalictrum revolutum	Waxleaf Meadow-rue	G5	S1
Veronicastrum virginicum	Culver's-root	G4	S1
Animals			
Chlidonias niger	Black Tern	G4	S3S4B
Coturnicops noveboracensis	Yellow Rail	G4	S4B
Strix varia	Barred Owl	G5	S3S4
Snake hibernacula	Snake Hibernacula	GNR	SNR
Liochlorophis vernalis	Smooth Green Snake	G5	S3S4
Geomys bursarius	Plains Pocket Gopher	G5	S3

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-15 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

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Table 7A-9
Provincially Rare and Species at Risk Known to Occur Within the Portage Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Alisma gramineum	Narrow-leaved Water-plantain	G5	S1
Atriplex argentea	Saltbrush	G5	S2
Bromus pubescens	Canada Brome Grass	G5	SU
Carex parryana	Parry's Sedge	G4	S3?
Carex tribuloides	Prickly Sedge	G5	SNA
Celtis occidentalis	Hackberry	G5	S1
Circaea quadrisulcata var. canadensis	Large Enchanter's-nightshade	G5T5	S2
Cornus alternifolia	Alternate-leaved Dogwood	G5	S3
Cyperus schweinitzii	Schweinitz's Flatsedge	G5	S2
Double-crested cormorant	Double-crested Cormorant	GNR	SNR
Elymus hystrix	Bottle-brush Grass	G5	S2
Franseria acanthicarpa	Sandbur	G5	S2
Fraxinus pennsylvanica-ulmus americana-(celtis occidentalis, tilia americana) forest	Green Ash-american Elm-(Hackberry, Basswood) Forest	GNR	S2
Galium aparine	Cleavers	G5	S2
Phryma leptostachya	Lopseed	G5	S3
Polygala verticillata var. isocycla	Whorled Milkwort	G5T5	S2
Lotus purshianus	Prairie Trefoil	G4G5	S2S3
Scirpus rufus	Red Bulrush	G5	S2
Stipa viridula	Green Needle Grass	G5	S3
Animals			
Quadrula quadrula	Mapleleaf Mussell	G5	SNR
Strophitus undulatus	Creeper Mussell	G5	SNR
Ligumia recta	Black Sandshell Mussell	G5	SNR
Athene cunicularia	Burrowing Owl	G4	S1B
Charadrius melodus	Piping Plover	G3	S2B
Coturnicops noveboracensis	Yellow Rail	G4	S4B
Grebes	Grebes	GNR	SNR
Gulls	Gulls	GNR	SNR
Herons	Herons	GNR	SNR
Numenius borealis	Eskimo Curlew	GH	SNAN
Pelecanus erythrorhynchos	American White Pelican	GNR	SNR
Terns	Terns	GNR	SNR

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-17 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-10
Provincially Rare and Species at Risk Known to Occur Within the Piney Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	G5T5	S2
Asarum canadense	Wild Ginger	G5	S3?
Aster modestus	Large Northern Aster	G5	S2
Calopogon pulchellus	Swamp-pink	G5	S2
Carex castanea	Chestnut Sedge	G5	S3
Carex castanea	Chestnut Sedge	G5	S3
Carex douglasii	Douglas Sedge	G5	S3?
Carex gracillima	Slender Sedge	G5	S3
Carex prairea	Prairie Sedge	G5?	S4?
Carex vulpinoidea	Fox Sedge	G5	S3?
Caulophyllum thalictroides	Papoose-root	G4G5	S2
Ceanothus herbaceus var. pubescens	New Jersey Tea	G5TNR	S3
Chamaesaracha grandiflora	Large White-flowered Ground-cherry	G3?	S3
Chelone glabra	Turtlehead	G5	S2S3
Uvularia sessilifolia	Small Bellwort	G5	S2
Cyperus houghtonii	Houghton's Umbrella-sedge	G4?	S2
Cyperus squarrosus	Awned Cyperus	G5	S2
Cypripedium arietinum	Ram's Head Lady's-slipper	G3	S2?
Dicentra cucullaria	Dutchman's-breeches	G5	S1
Elymus hystrix var. hystrix	Bottle-brush Grass	G5T5	S2
Epigaea repens	Mayflower	G5	S3?
Goodyera tesselata	Tesselated Rattlesnake Plantain	G5	S2
Hudsonia tomentosa	False Heather	G5	S3
Lycopodium clavatum var. clavatum	Running-pine	G5TNR	S2
Lycopodium tristachyum	Ground-cedar	G5	S2
Maianthemum racemosum ssp. racemosum	False Spikenard	G5T5	S2?
Malaxis unifolia	Green Adder's-mouth	G5	S2?
Osmorhiza claytonii	Wooly or Hairy Sweet Cicely	G5	S2
Osmunda claytoniana	Interrupted Fern	G5	S3
Ostrya virginiana	Hop-hornbeam	G5	S2
Pinus resinosa	Red Pine	G5	S2S3
Pinus strobus	Eastern White Pine	G5	S2
Platanthera hookeri	Hooker's Orchis	G5	S2
Platanthera orbiculata	Round-leaved Bog Orchid	G5?	S3
Pyrola rotundifolia	Round-leaved Pyrola	G5	S2
Salix brachycarpa	Short-capsuled Willow	G5	S3
Sanguinaria canadensis	Blood-root	G5	S2
Animals			
Strix nebulosa	Great Gray Owl	G5	S4B
Strix varia	Barred Owl	G5	S3S4
Coturnicops noveboracensis	Yellow Rail	G4	S4B

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-17 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-11

Provincially Rare and Species at Risk Known to Occur Within the MacGregor Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Asarum canadense	Wild Ginger	G5	S3?
Bromus pubescens	Canada Brome Grass	G5	SU
Calamagrostis montanensis	Plains Reed Grass	G5	S3
Carex athrostachya	Long-bracted Sedge	G5	S1
Carex crawei	Crawe's Sedge	G5	S3S4
Carex cristatella	Crested Sedge	G5	S2
Carex hystericina	Porcupine Sedge	G5	S3?
Carex prairea	Prairie Sedge	G5?	S4?
Carex tetanica	Rigid Sedge	G4G5	S2
Carex tribuloides	Prickly Sedge	G5	SNA
Cornus alternifolia	Alternate-leaved Dogwood	G5	S3
Cryptotaenia canadensis	Honewort	G5	S2?
Cyperus houghtonii	Houghton's Umbrella-sedge	G4?	S2
Cyperus schweinitzii	Schweinitz's Flatsedge	G5	S2
Dalea villosa var. villosa	Silky Prairie-clover	G5TNR	S2
Elymus hystrix	Bottle-brush Grass	G5	S2
Eragrostis hypnoides	Creeping Teal Love Grass	G5	S4
Euphorbia geyeri	Prostrate Spurge	G5	S1
Hepatica nobilis var. obtusa	Liverleaf	G5	S1
Hudsonia tomentosa	False Heather	G5	S3
Hypoxis hirsuta	Yellow Stargrass	G5	S3
Ichthyomyzon castaneus	Chestnut Lamprey	G4	S3S4
Lygodesmia rostrata	Annual Skeletonweed	G5?	S1S2
Orobanche ludoviciana	Louisiana Broom-rape	G5	S2
Osmorhiza claytonii	Wooly or Hairy Sweet Cicely	G5	S2
Ostrya virginiana	Hop-hornbeam	G5	S2
Panicum linearifolium	White-haired Panic-grass	G5	S2
Phryma leptostachya	Lopseed	G5	S3
Polygala verticillata var. isocycla	Whorled Milkwort	G5T5	S2
Stipa viridula	Green Needle Grass	G5	S3
Townsendia exscapa	Silky Townsend-daisy	G5	S2
Uvularia sessilifolia	Small Bellwort	G5	S2
Animals			
Athene cunicularia	Burrowing Owl	G4	S1B
Strix varia	Barred Owl	G5	S3S4
Eumeces septentrionalis	Northern Prairie Skink	G5	S2

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-17 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-12
Provincially Rare and Species at Risk Known to Occur Within the Gimli Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Alisma gramineum	Narrow-leaved Water-plantain	G5	S1
Amorpha fruticosa	False Indigo	G5	S1S2
Aralia racemosa	Spikenard	G4G5	S2
Arethusa bulbosa	Swamp Pink	G4	S2
Asarum canadense	Wild Ginger	G5	S3?
Aster sericeus	Western Silvery Aster	G5	S2
Astragalus aboriginum	Indian Milkvetch	G5	S1?
Boltonia asteroides var. recognita	White Boltonia	G5TNR	S2S3
Botrychium multifidum	Leathery Grape-fern	G5	S3
Bouteloua curtipendula	Side-oats Grama	G5	S2
Bromus porteri	Porter's Chess	G5	S3?
Calamagrostis montanensis	Plains Reed Grass	G5	S3
Calopogon pulchellus	Swamp-pink	G5	S2
Carex hystericina	Porcupine Sedge	G5	S3?
Carex pedunculata	Stalked Sedge	G5	S3?
Carex sterilis	A Sedge	G4	S2
Caulophyllum thalictroides	Papoose-root	G4G5	S2
Ceanothus herbaceus	New Jersey Tea	G5	S3
Ceanothus herbaceus var. pubescens	New Jersey Tea	G5TNR	S3
Chamaesaracha grandiflora	Large White-flowered Ground-cherry	G3?	S3
Charadrius melodus	Piping Plover	G3	S2B
Cladium mariscoides	Twig Rush	G5	S2
Coregonus zenithicus	Shortjaw Cisco	G3	S3
Coturnicops noveboracensis	Yellow Rail	G4	S4B
Cyperus erythrorhizos	Red-root Flatsedge	G5	S1
Cyperus houghtonii	Houghton's Umbrella-sedge	G4?	S2
Gentiana rubricaulis	Closed Gentian	G4?	S2S3
Grebes	Grebes	GNR	SNR
Hudsonia tomentosa	False Heather	G5	S3
Hypoxis hirsuta	Yellow Stargrass	G5	S3
Lechea intermedia	Pinweed	G5	S1
Malaxis brachypoda	White Adder's-mouth	G4Q	S2?
Malaxis paludosa	Bog Adder's-mouth	G4	S1
Malaxis unifolia	Green Adder's-mouth	G5	S2?
Onoclea sensibilis	Sensitive Fern	G5	S3S4
Osmunda claytoniana	Interrupted Fern	G5	S3
Platanthera orbiculata	Round-leaved Bog Orchid	G5?	S3
Pyrola rotundifolia	Round-leaved Pyrola	G5	S2
Rhynchospora alba	White Beakrush	G5	S3?
Rhynchospora capillacea	Horned Beakrush	G4G5	S2
Sisyrinchium campestre	White-eyed Grass	G5	SU
Thalictrum revolutum	Waxleaf Meadow-rue	G5	S1
Viola conspersa	Dog Violet	G5	S3?

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Animals			
Strix varia	Barred Owl	G5	S3S4
Accipiter cooperii	Cooper's Hawk	G5	S4B
Terns	Terns	GNR	SNR
Snake hibernacula	Snake Hibernacula	GNR	SNR
Myotis lucifugus	Little Brown Myotis	G5	S2N,S5B

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-17 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-13
Provincially Rare and Species at Risk Known to Occur Within the Emerson Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	G5T5	S2
Cirsium discolor	Field Thistle	G5	S1
Boltonia asteroides var. recognita	White Boltonia	G5TNR	S2S3
Carex emoryi	Emory's Sedge	G5	S2?
Animals			
Quadrula quadrula	Mapleleaf Mussell	G5	SNR
Ligumia recta	Black Sandstone Mussell	G5	SNR
Geomys bursarius	Plains Pocket Gopher	G5	S3

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-15 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-14
Provincially Rare and Species at Risk Known to Occur Within the Stead Ecodistrict

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Agalinis tenuifolia	Narrow-leaved Gerardia	G5	S2S3
Amorpha fruticosa	False Indigo	G5	S1S2
Arethusa bulbosa	Swamp Pink	G4	S2
Asarum canadense	Wild Ginger	G5	S3?
Aster macrophyllus var. macrophyllus	White Wood Aster	G5TNR	S1
Aster modestus	Large Northern Aster	G5	S2
Bromus porteri	Porter's Chess	G5	S3?
Calopogon pulchellus	Swamp-pink	G5	S2
Carex castanea	Chestnut Sedge	G5	S3
Carex douglasii	Douglas Sedge	G5	S3?
Carex emoryi	Emory's Sedge	G5	S2?
Carex gracillima	Slender Sedge	G5	S3
Carex merritt-fernaldii	Fernald's Sedge	G5	S1
Carex normalis	Larger Straw Sedge	G5	SNA
Carex pedunculata	Stalked Sedge	G5	S3?
Carex tetanica	Rigid Sedge	G4G5	S2
Carex vulpinoidea	Fox Sedge	G5	S3?
Caulophyllum thalictroides	Papoose-root	G4G5	S2
Ceanothus herbaceus	New Jersey Tea	G5	S3
Ceanothus herbaceus var. pubescens	New Jersey Tea	G5TNR	S3
Chamaesaracha grandiflora	Large White-flowered Ground-cherry	G3?	S3
Chelone glabra	Turtlehead	G5	S2S3
Circaea quadrisulcata var. canadensis	Large Enchanter's-nightshade	G5T5	S2
Cladium mariscoides	Twig Rush	G5	S2
Cornus alternifolia	Alternate-leaved Dogwood	G5	S3
Cyperus houghtonii	Houghton's Umbrella-sedge	G4?	S2
Cyperus squarrosus	Awned Cyperus	G5	S2
Cypripedium arietinum	Ram's Head Lady's-slipper	G3	S2?
Drosera linearis	Slender-leaved Sundew	G4	S2
Dryopteris fragrans	Fragrant Shield Fern	G5	S3S4
Galium aparine	Cleavers	G5	S2
Gentiana rubricaulis	Closed Gentian	G4?	S2S3
Goodyera tesselata	Tesselated Rattlesnake Plantain	G5	S2
Helianthus nuttallii ssp. rydbergii	Tuberous-rooted Sunflower	G5T5	S2
Heteranthera dubia	Water Star-grass	G5	S2
Hudsonia tomentosa	False Heather	G5	S3
Juncus vaseyi	Big-head Rush	G5?	S4?
Lechea intermedia	Pinweed	G5	S1
Leersia oryzoides	Rice Cutgrass	G5	S3?
Liparis loeselii	Yellow Twayblade	G5	S3?
Lycopodium tristachyum	Ground-cedar	G5	S2
Malaxis brachypoda	White Adder's-mouth	G4Q	S2?
Malaxis unifolia	Green Adder's-mouth	G5	S2?
Onoclea sensibilis	Sensitive Fern	G5	S3S4
Osmorhiza claytonii	Wooly or Hairy Sweet Cicely	G5	S2
Osmunda claytoniana	Interrupted Fern	G5	S3
Ostrya virginiana	Hop-hornbeam	G5	S2
Pinus resinosa	Red Pine	G5	S2S3

Scientific Name	Provincial Common Name	G_Rank*	S_Rank*
Plants			
Platanthera hookeri	Hooker's Orchis	G5	S2
Platanthera lacera	Fringed Orchid	G5	S2
Platanthera orbiculata	Round-leaved Bog Orchid	G5?	S3
Pogonia ophioglossoides	Rose Pogonia	G5	S1
Potamogeton amplifolius	Large-leaved Pondweed	G5	S2?
Potamogeton robbinsii	Robbin's Pondweed	G5	S2
Pyrola rotundifolia	Round-leaved Pyrola	G5	S2
Ranunculus septentrionalis	Swamp Buttercup	G5T5	S2
Rhynchospora alba	White Beakrush	G5	S3?
Sagittaria rigida	Sessile-fruited Arrowhead	G5	S2
Sanguinaria canadensis	Blood-root	G5	S2
Selaginella selaginoides	Northern Spike-moss	G5	S2
Sisyrinchium campestre	White-eyed Grass	G5	SU
Solidago juncea	Sharp-toothed Goldenrod	G5	S2?
Solidago riddellii	Riddell's Goldenrod	G5	S2
Taxus canadensis	Canada Yew	G5	S3
Uvularia sessilifolia	Small Bellwort	G5	S2
Vaccinium caespitosum	Dwarf Bilberry	G5	S2
Viola conspersa	Dog Violet	G5	S3?
Animals			
Accipiter cooperii	Cooper's Hawk	G5	S4B
Charadrius melodus	Piping Plover	G3	S2B
Coturnicops noveboracensis	Yellow Rail	G4	S4B
Strix nebulosa	Great Gray Owl	G5	S4B
Strix varia	Barred Owl	G5	S3S4
Terns	Terns	GNR	SNR
Herons	Herons	GNR	SNR
Rana septentrionalis	Mink Frog	G5	S3
Snake hibernacula	Snake Hibernacula	GNR	SNR
Strophitus undulatus	Creeper Mussell	G5	SNR
Ligumia recta	Black Sandstone Mussell	G5	SNR
Puma concolor couguar	Cougar	G5TH	S2S3

Source: Manitoba Conservation Data Centre (CDC)

* See Table 7A-15 for ranking information

Note: An absence of data does not confirm the absence of a species at risk

Table 7A-15
Codes used for Evaluating and Ranking Species of Conservation Concern by Manitoba Conservation Data Centre

Rank	Definition
1	Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
2	Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
3	**Uncommon throughout its range or in the province (21 to 100 occurrences).**
4	Widespread, abundant, and apparently secure throughout its range or in the province, with many occurrences, but the element is of long-term concern (> 100 occurrences).
5	Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially irradicable under present conditions.
U	Possibly in peril, but status uncertain; more information needed.
H	Historically known; may be rediscovered.
X	Believed to be extinct; historical records only, continue search.
	Other Heritage Codes
G#G# S#S#	Numeric range rank: A range between two of the numeric ranks. Denotes range of uncertainty about the exact rarity of the species. G= Global; S = Provincial
	Subrank
T	Rank for subspecific taxon (subspecies, variety, or population); appended to the global rank for the full species, e.g. G4T3.
	Qualifiers
A	Accidental in the province; including species (usually birds or butterflies) recorded very infrequently, hundreds or thousands of kilometers outside their usual range.
B	Breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperilled) in the province, nonbreeding occurrences are not ranked in the province.
E	An exotic established in the province; may be native in nearby regions.
HYB	Element represents a hybrid of species.
N	Non-breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperilled) in the province
P	Indicates the element may potentially occur in the province.
Q	Taxonomic problems involved, more information needed; appended to the global rank.
R	Reported in the province, but lacking documentation which would provide a basis for either accepting or rejecting the report.
T	Rank for subspecific taxon (subspecies, variety, or population); appended to the global rank for the full species.
Z	Ranking not applicable.
#	A modifier to SX or SH; the species has been reintroduced but the population is not yet established.
?	Inexact or uncertain; for numeric ranks, denotes inexactness.

Source: Manitoba Conservation Data Centre 2004

APPENDIX 7B

Plant Field Studies

APPENDIX 7B
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1.0 INTRODUCTION

The main objectives of terrestrial field studies were to provide baseline information for input to the Floodway Expansion Project environmental assessment report in a manner sufficient to meet Provincial and Federal licensing requirements. This required obtaining sufficient information to outline data deficiencies to assist in the ongoing definition of the Project and to assess environmental impacts in a manner that would facilitate the subsequent preparation of an environmental assessment report and application for environmental licensing and approvals. This involved conducting field investigations to evaluate plant communities within the Floodway ROW and West Dyke. The results of these investigations are discussed in brief in the main body of the EIS and outlined in detail in this appendix.

2.0 METHODS

2.1 HELICOPTER OVER-FLIGHT

To assist in the fall fieldwork planning, a helicopter flight occurred in September 2003 over the Floodway Channel, 100 m upstream and downstream of the Seine River Syphon and 1 km upstream and 2 km downstream of the outlet channel on the Red River. Video obtained from the flight was used to develop aquatic and terrestrial maps that, in the Floodway Outlet, Floodway Channel and Seine River Syphon area, were further refined by ground-based surveys. Detailed GIS maps of the Floodway Channel aided in the selection of representative sites for additional ground-based characterization studies.

2.2 VEGETATION SURVEY

2.2.1 Sampling Areas

Floodway

Sampling of plant communities was conducted in five major sections of the Floodway. Sample locations were chosen for each section during an overview of the entire Floodway that took place on 6 May 2004, and included:

- Location 1: the southwest area near the Seine River Syphon.
- Location 2: the vicinity of the Trans-Canada Highway Bridge;
- Location 3: near Gunn Road between the CPR Keewatin Bridge and the Manitoba Hydro transmission line;
- Location 4: the vicinity of Dunning Crossing; and
- Location 5: an area just south of the Floodway Outlet structure at the northern end of the Floodway;

Vegetation analysis took place on both sides of the Floodway Channel at each of the five sample locations. This resulted in a total of 10 Sample Sites (5 locations x 2 sides). These transects were sampled at each site.

West Dyke

Sampling of plant communities was conducted at eighteen sites situated at regular intervals along the entire West Dyke ROW.

2.2.2 Sampling Methods

Floodway

Sampling occurred during the months of June/July and will finish in September. At each location, stratified random sampling was conducted within three definable zones (three moisture regimes):

- the Floodway Base up to the edge of the Low Flow Channel;
- the Lower Floodway slope (closest to the Floodway Base); and
- the Upper Floodway slope (where present).

Sampling was carried out using a line transect method. Transects were located using the following procedure:

1. The starting point for each Sample Site on the top of the Floodway Slope was located using a GPS. From this point, a 100m baseline transect ran parallel to the Low Flow Channel. Three line transects were then randomly located perpendicular to this baseline transect from the Upper Slope to the Low-Flow Channel.
2. For each of the three transects, within each of the three strata, five randomly-chosen one meter transect intervals (Table 7B-1) were marked and the following tasks were completed:
   a. A species list of plants both within transect intervals and in the vicinity of the line transect were compiled and confirmed by University of Manitoba herbarium staff.
   b. Plant cover for each species within the transect interval was calculated as the total length of the 1m transect interval intercepted by plants of each species. This included both basal cover (i.e., those plants rooted in each interval), and aerial cover (i.e., those plants whose aerial foliage overlies the transect.). The total may be greater than 100%.
   c. Specimens of all unknown species were collected for identification by University of Manitoba herbarium staff.
3. If a COSEWIC/MESA listed species was observed in vicinity of transect, the following actions were be taken:
   a. GPS location was recorded;
   b. Population size and range was estimated; and
   c. Plant habitat ws described.

Species cover and frequency values were obtained from the transect data. Plant cover was defined as the total length of the transect intercepted by plants of each species, including those rooted at each interval and those whose aerial foliage overlies the transect. Since the basal and aerial coverage distances of various individual plants may overlap, the sum of the intercept lengths may be greater than the total transect length (Barbour *et al*. 1987; Smith 1996). Species frequency is given by the number of transect intervals containing a particular species divided by the total number of intervals. The percentage of relative cover of each species is determined as: the proportion of the total transect length intercepted by each species divided by the total cover of all species, multiplied by 100. Relative frequency is determined in a similar fashion (Barbour *et al*. 1987; Smith 1996).

West Dyke

An overview survey of plant communities was conducted at selected areas of the West Dyke. This coincided with botanical sampling of the Floodway. A list of vascular plant species was compiled and any COSEWIC/MESA-listed and rare plant species noted as described above. A DAFOR (Dominant, Abundant, Frequent, Occasional, Rare) dominance rating was assigned to each species noted at survey sites.

3.0 RESULTS

3.1 FLOODWAY ROW

As of mid-July, approximately 70 species have been identified in the Floodway Upper Slope, Lower Slope, and Base (Table 7B-2). This is far less than the 150 prairie species found in the similar, but much smaller (12 Ha), habitat of the Living Prairie Museum in Winnipeg (Museum staff, pers. comm.).

The slopes of the Floodway were dominated by smooth brome and bluegrass (Table 7B-3), both of which were found in over 80% of the transect intervals on the Upper and Lower Slope. These two species accounted for 53% of the relative cover and 58% of the relative frequency on the Upper and Lower Floodway slopes (Table 7B-3, 4). Another common species found on the Upper and Lower slopes was alfalfa, which had a cover of over 10% (Table 7B-3) and a frequency of almost 40% (Table 7B-4). Other species were rarer, often being found in only one or two transect intervals (Table 7B-5). Overall, diversity was low in the Floodway Upper and Lower Slopes, with only a few species found on any given site (Table 7B-5). The exceptions to this were the areas near Birds Hill Park (Dunning Crossing), which had the highest number of species per site (Table 7B-5). Seed rain from the Provincial Park may be considerable in this area. Plant cover on the Floodway Slopes was also low, with an overall mean plant cover of less than 50% (Table 7B-3). This compares to cover values approaching 100% in the Living Prairie Museum which is a similar in habitat to the Floodway Slopes (Museum staff, per. comm.).

The Floodway Base was inundated between June 13 to June 28. The only species still green when the waters receded were the two willow species and the forb, fringed loosestrife (*Lysimachia ciliata*). Initiation of plant growth was rapid, however, and by the end of two weeks there were considerably more plants in evidence, though none covered extensive areas of the Floodway Base and all were stunted

in their growth (Table 7B-5). Another striking feature on the Floodway Base was the almost complete loss of thatch. On the slopes there was a thick layer of dead plant material, but on the base this layer was gone so that the bare ground was exposed and made up the most prevalent 'cover' in many areas (Table 7B-3).

The dominant plant species was sandbar willow, which was found growing in extensive thickets on the Base of the Floodway. It had a frequency of 24% (Table 7B-4) on the Base, with an estimated cover of just over 15% (Table 7B-3). This latter value is misleading, however, since Sandbar Willow tends to form dense thickets with 100% cover. These are then interspersed with areas completely lacking in Sandbar Willow.

3.2 WEST DYKE

The West Dyke is a fairly homogeneous grassland community. All of the sites examined were dominated by smooth brome. The other most abundant species were alfalfa, dandelion, Canada thistle, bluegrass, and clover. There were approximately 35 plant species found along the West Dyke, but no rare or endangered plant species (Table 7B-6).

4.0 REFERENCES

Barbour, M.G., Burk, J.H., Pitts, W.D. 1987. Terrestrial Plant Ecology, 2nd Ed. Benjamin Cummings Publishing Co. Inc., Don Mills, Ontario, 634 pp.

Smith, R.L. 1996. Ecology and Field Biology, 5th Ed. Harper and Collins Publishers Inc. 740 pp.

Museum staff, *pers. Comm*. A July 15, 2004 conversation between Dave Huebert and staff at the Living Prairie Museum, Wpg.

Table 7B-1
Floodway Vegetation Survey Transect Locations

S	P (m)	Easting	Northing	S	P (m)	Easting	Northing	S	P (m)	Easting	Northing
1	BASE	640757	5517439								
1-4	U0	640761	5517444	1-35	U0	640788	5517460	1-49	U0	640800	5517473
1-4	U68/L0	640795	5517383	1-35	U68/L0	640824	5517402	1-49	U68/L0	640831	5517414
1-4	L42/B0	640817	5517344	1-35	L42/B0	640846	5517370	1-49	L42/B0	640860	5517378
1-4	B71	640860	5517290	1-35	B71	640884	5517309	1-49	B71	640905	5517322
2	BASE	640950	5517108								
2-18	U0	640969	5517121	2-51	U0	640990	5517141	2-62	U0	641004	5517152
2-18	U72/L0	640929	5517184	2-51	U72/L0	640954	5517199	2-62	U72/L0	640969	5517212
2-18	L42/B0	640907	5517212	2-51	L39/B0	640927	5517238	2-62	L38/B0	640945	5517245
2-18	B69	640845	5517257	2-51	B63	640903	5517239	2-62	B72	640901	5517292
3	BASE	646117	5521122								
3-47	U0	646165	5521143	3-61	U0	646180	5521152	3-73	U0	646188	5521158
3-47	U55/B0	646192	5521098	3-61	U56/B0	646208	5521102	3-73	U58/B0	646215	552113
3-47	B73	646235	5521039	3-61	B72	646254	5521054	3-73	B72	646255	5521055
4	BASE	646347	5520580								
4-47	U0	646389	5520876	4-78	U0	646414	5520895	4-96	U0	646435	5520907
4-47	U65/L0	646351	5520930	4-78	U65/L0	646381	5520948	4-96	U66/L0	646392	5520963
4-47	L57/B0	646317	5520987	4-78	L58/B0	646339	5521003	4-96	L65/B0	646358	5521016
4-47	B75	646645	5521043	4-78	B72	646301	5521037	4-96	B69	646325	5521071
5	BASE	645958	5531836								
5-22	U0	645957	5531856	5-56	U0	645943	5531887	5-85	U0	645929	5531917
5-22	U65/B0	646015	5531874	5-56	U65/B0	646004	5531911	5-85	U65/B0	645989	5531944
5-22	B71	646082	5531905	5-56	B74	646072	5531944	5-85	B63	646065	5531965
6	BASE	646278	5532038								
6-16	U0	646279	5532057	6-20	U0	646269	5532061	6-40	U0	646264	5532081
6-16	U72/L0	646209	5532038	6-20	U70/L0	646197	5532045	6-40	U70/L0	646195	5532053
6-16	L67/B0	646142	5532013	6-20	L70/B0	646138	5532020	6-40	L70/B0	646133	5532036
6-16	B72	646076	5532002	6-20	B62	646081	5532006	6-40	B71	646060	5532021
7	BASE	646130	5541577								
7-16	U0	646142	5541592	7-36	U0	646155	5541608	7-81	U0	646179	5541645
7-16	U72/L0	646084	5541635	7-36	U72/L0	646100	5541653	7-81	U73/L0	646123	5541689
7-16	L48/B0	646049	5541667	7-36	L48/B0	646057	5541684	7-81	L45/B0	646086	5541718
7-16	B43	646013	5541690	7-36	B43	646021	5541708	7-81	B49	646046	5541742
8	BASE	645779	5541699								
8-14	U0	645786	5541711	8-26	U0	645749	5541726	8-34	U0	645807	5541729
8-14	U72/L0	645845	5541664	8-26	U70/L0	645859	5541685	8-34	U72/L0	645861	5541689
8-14	L48/B0	645885	5541637	8-26	L49/B0	645896	5541653	8-34	L45/B0	645895	5541660
8-14	B36	645915	5541619	8-26	B53	645930	5541625	8-34	B52	645933	5541629
9	BASE	648458	5546891								
9-7	U0	648457	5546899	9-56	U0	648452	5546940	9-70	U0	648448	5546960
9-7	U75/L0	648533	5546913	9-56	U75/L0	648524	5546945	9-70	U80/L0	648522	5546961
9-7	L50/B0	648578	5546918	9-56	L50/B0	648575	5546948	9-70	L50/B0	648578	5546977
9-7	B50	648626	5546916	9-56	B52	648627	5546956	9-70	B52	648629	5546973
10	BASE	648827	5546914								
10-95	U0	648812	5547000	10-97	U0	648821	5547011	10-98	U0	648815	5547003
10-95	U79/L0	648730	5546986	10-97	U78/L0	648729	5546991	10-98	U72/L0	648740	5546994
10-95	L44/B0	648696	5546982	10-97	L47/B0	648693	5546990	10-98	L44/B0	648690	5546995
10-95	B57	648639	5546974	10-97	B51	648641	5546991	10-98	B52	648637	5546995

Notes: S = Site number with distance from baseline starting point, in metres P = Position along transect, in metres

Table 7B-2
Identified and Verified Species in the Floodway Channel (June 28 – July 12, 2004)

Scientific Name	Common Name	Abbreviation	Scientific Name	Common Name	Abbreviation
Achillea millefolium	Yarrow	AM	*Potentilla anserina*	Silverweed	PoA
Amelanchier alnifolia	Saskatoon	AA	*Potentilla norvegica*	Rough cinquefoil	PN
Amorpha fruticosa	False Indigo	AF	*Rhus radicans*	Poison Ivy	RR
Agropyron repens	Couch Grass	AR	*Rosa spp.*	Wild Rose	R?
Anemone canadensis	Canada Anemone	AC	*Rudbeckia hirta*	Brown-eyed Susan	RH
Arabii glabra		AG	*Rumex crispus*	Dock	RC
Antennaria sp.	Pussy toes	A?	*Sagittaria sp.*	Arrowhead	S?
Artemisia ludoviciana	Prairie Sage	AL	*Salix exigua*	Sandbar Willow	SE
Asclepias speciosa	Showy Milkweed	AS	*Taraxacum officinale*	Dandelion	TO
Astragalus goniatus	Ascending Purple Milk Vetch	AG	*Thalictrum venulosum*	Veine Meadow Rue	TV
Aster laevis	Smooth Aster	AiL	*Tragopogon dubius*	Goatsbeard	TD
Bromus inermis	Smooth Brome	BI	*Trifolium hybridum*	Alsike Clover	Tsp
Carex aquatili	Water Sedge	C?	*Trifolium pratense*	Red Clover	Tsp
Cirsium arvense	Canada Thistle	CA	*Trifolium repens*	White Clover	Tsp
Eleocharis sp.	Spike Rush	E?	*Typha latifolia*	Cattail	TL
Equisetum arvense	Common Horsetail	EA	*Vicia americana*	Wild Vetch	VA
Equisetum fluviatile	Swamp Horsetail	EF	*Vicia cracca*	Tufted Vetch	VC
Erigeron aspen	Rough Fleabane	ERA	*Zizia aptera*	Heart-leaved Alexander	ZA
Fraxinus pennsylvanica	Green Ash	FP	**Species Noted in the 2003 Fall Survey**		
Lathrys achroleucus	Creamed-color Vetchling	LO	*Atriplex patula*	Orache	AP
Leucanthemum vulgare	Oxeye Daisy	LV	*Bidens cernua*	Beggarticks	BC
Linum lewisii	Wild Blue Flax	LL	*Lactuca serriola*	Prickly Lettuce	LS
Lotus corniculatus	Bird's Foot Trefoil	LC	*Phragmites australis*	Common Reed Grass	PhA
Lysimachia ciliata	Fringed Loosestrife	LyC	*Polygonum coccineum*	Marsh Smartweed	PC
Medicago lupulina	Black Medick	ML	*Scirpus cyperinus*	Bullrush	ScC
Medicago sativa	Alfalfa	MS	*Senecio vulgaris*	Common Groundsel	SV
Melilotus officinalis	Yellow Sweet Clover	MO	*Sisymbruim loesellii*	Tall Hedge Mustard	SiL
Phalaris arundinacea	Reed Canary Grass	PA	*Smilacina stellata*	False Solomon's Seal	SS
Phleum pratense	Timothy	PhP	*Sonchus asper*	Annual Sow Thistle	SA
Plantago major	Common Plantain	PM	*Spartina gracilis*	Alkali Cord Grass	SG
Poa pratensis	Bluegrass	PP	*Symphyotichum* spp.	American Aster	Sy?
Populus balsamifera	Balsam Poplar	PB	*Tanacetum vulgare*	Common Tansy	TaV
Populus deltoides	Cottonwood	PD			
Populus tremuloides	Trembling Aspen	PT			

Note: This listing does not include unidentified specimens.

Table 7B-3
Percent Cover Values for the Floodway Survey

Species Common Name	U	L	B	U/L	U/L/B	Relative Cover U/L	Relative Cover B
Thatch	40.8 ± 27.5	49.6 ± 31.2	14.4 ± 23.9	44.2 ± 29.5	34.6 ± 31.2	----	----
Bare Ground	0	10.1 ± 24.5	63.8 ± 31.6	4.5 ± 17.0	25.7 ± 37.0	----	----
Smooth Brome	20.4 ± 14.7	14.9 ± 13.2	4.6 ± 8.5	18.0 ± 10.06	13.2 ± 14.0	33.2%	12.4%
Bluegrass	11.6 ± 7.8	9.5 ± 8.9	<1	10.6 ± 8.4	6.9 ± 9.0	19.6%	<1
Alfalfa	16.8 ± 25.0	7.2 ± 17.0	0	12.5 ± 22.3	----	23.1%	0
Dandelion	4.8 ± 10.5	<1	0	2.7 ± 8.0	----	5.0%	0
Canada Thistle	2.7 ± 8.1	1.5 ± 5.0	0	2.2 ± 6.9	----	4.1%	0
Yellow Sweet Clover	2.1 ± 8.3	0.9 ± 6.0	0	1.6 ± 7.4	----	3.0%	0
Sandbar Willow	0	<1	15.7 ± 33.0	<1	----	0	43.7%
Reed Canary Grass	0	<1	4.6 ± 11.0	<1	----	0	12.7%
Fringed Loosestrife	0	<1	3.0 ±14.0	<1	----	0	8.1%
Transect	64.1 ± 32.8	40.0 ± 27.1	37.3 ± 35.6	----	46.6 ± 34.8		

Notes:
U = Upper Slope of Floodway
L = Lower Slope of Floodway
B = Base of Floodway
U/L = Upper and Lower Slope of Floodway
U/L/B = Upper Slope, Lower Slope, and Base of Floodway

Transect does not include Thatch or Bare Ground
---- = Value not calculated
% cover values = ± standard deviation

Table 7B-4
Species Frequency for the Most
Common Species in the Floodway

Species		B	U/L	U/L/B	Relative Frequency	
Scientific Name	**Common Name**				**B**	**U/L**
Bromus inermis	Smooth Brome	34%	95%	74%	27%	30.8%
Poa pratensis	Bluegrass	<1%	89%	42%	<1%	28%
Medicago sativa	Alfalfa	0	38%		0	12%
Taraxacum officinale	Dandelion	0	14%		0	4.4%
Cirsium arvense	Canada Thistle	0	17%		0	5.4%
Melilotus officinale	Yellow Sweet Clover	0	7.4%		0	2.3%
Salix exigua	Sandbar Willow	24%	<1%		19%	<1%
Phalaris arundinacea	Reed Canary Grass	23%	<1%		18%	<1%
Lysimachia ciliata	Fringed Loosestrife	6.7%	0		5.3%	0

Notes: ---- = Value not calculated
U/L = Upper and Lower Slope of Floodway
U/L/B = Upper Slope, Lower Slope and Base of Floodway
B = Base of Floodway

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																			
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
29-Jun-04	1	1-4	U0	20	0	10	20	0	40	27	0	0	0																												
29-Jun-04	1	1-4	U24	20	0	45	30	0	0	18	0	0	0																												
29-Jun-04	1	1-4	U31	59	0	19	20	0	2	0	0	0	0																												
29-Jun-04	1	1-4	U35	50	0	40	10	0	0	0	0	0	0																												
29-Jun-04	1	1-4	U54	67	0	29	4	0	0	0	0	0	0																												
29-Jun-04	1	1-4	L5	80	0	22	2		0	0	0	0	0																												
29-Jun-04	1	1-4	L7	75	0	10	10		0	5	0	0	0																												
29-Jun-04	1	1-4	L17	70	0	13	20		0	0	0	0	0																												
29-Jun-04	1	1-4	L32	75	0	8	10		0	0	0	0	0																												
29-Jun-04	1	1-4	L36	95	0	5	2		0	0	0	0	0																												
4-Jul-04	1	1-4	B1	70	30	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
4-Jul-04	1	1-4	B9	70	30	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
4-Jul-04	1	1-4	B39	0	80	0	0																						0	0	0	20	0	0	0	0	0	0	0	0
4-Jul-04	1	1-4	B42	0	70	0	0																						0	0	0	30	0	0	0	5	0	0	0	0
4-Jul-04	1	1-4	B68	0	70	0	0																						0	0	0	40	0	5	30	0	0	0	0	0
29-Jun-04	1	1-35	U5	60	0	12	25	0	10	0	9	0	0																												
29-Jun-04	1	1-35	U6	20	0	16	25	0	80	0	0	0	0																												
29-Jun-04	1	1-35	U14	30	0	8	20	0	40	5	0	0	0																												
29-Jun-04	1	1-35	U23	25	0	9	10	0	60	5	0	0	0																												
29-Jun-04	1	1-35	U46	60	0	37	5	0	0	0	0	0	0																												
29-Jun-04	1	1-35	L14	75	0	11	5		0	2	0	0	0																												
29-Jun-04	1	1-35	L15	75	0	7	5		23	8	0	0	0																												
29-Jun-04	1	1-35	L19	80	0	9	10		0	5	0	0	0																												
29-Jun-04	1	1-35	L30	85	0	5	10		0	0	0	0	0																												
29-Jun-04	1	1-35	L38	0	100	0	5		0	0	0	0	0																												
4-Jul-04	1	1-35	B11	40	95	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
4-Jul-04	1	1-35	B22	50	95	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
4-Jul-04	1	1-35	B37	10	80	0	0																						0	0	0	15	20	0	0	0	0	0	0	0
4-Jul-04	1	1-35	B41	20	90	0	0																						0	0	0	40	0	0	0	0	0	0	0	0
4-Jul-04	1	1-35	B52	50	25	0	0																						0	0	0	50	0	0	0	0	0	0	0	0
29-Jun-04	1	1-49	U8	40	0	10	30	0	28	0	0	0	0																												
29-Jun-04	1	1-49	U19	45	0	12	40	0	3	0	0	0	0																												
29-Jun-04	1	1-49	U43	60	0	41	15	0	0	0	0	0	0																												
29-Jun-04	1	1-49	U48	80	0	13	10	0	0	0	0	0	0																												
29-Jun-04	1	1-49	U62	80	0	15	5	0	0	0	0	0	0																												
29-Jun-04	1	1-49	L8	85	0	12	5		0	0	0	0	0																												
29-Jun-04	1	1-49	L19	85	0	5	10		0	0	0	0	0																												
29-Jun-04	1	1-49	L26	70	0	0	13		0	8	10	0	0																												
29-Jun-04	1	1-49	L33	75	0	6	15		0	5	0	0	0																												
29-Jun-04	1	1-49	L41	100	0	0	0		0	0	0	0	0																												
4-Jul-04	1	1-49	B19	10	90	0	0																						0	0	0	0	5	0	0	0	0	0	0	0
4-Jul-04	1	1-49	B46	30	70	0	0																						0	0	0	30	0	5	0	0	0	0	0	0
4-Jul-04	1	1-49	B47	10	90	0	0																						0	0	0	5	0	0	15	0	0	0	0	0
4-Jul-04	1	1-49	B60	10	90	0	0																						0	0	0	0	0	0	63	0	0	0	0	0
4-Jul-04	1	1-49	B71	50	50	0	0																						0	0	0	0	0	0	60	0	0	0	0	0
29-Jun-04	1	2-18	U10	80	0	7	10	0	0	0	8	0	0																0												
29-Jun-04	1	2-18	U18	85	0	11	5	0	0	0	0	0	0																0												
29-Jun-04	1	2-18	U24	85	0	8	5	5	0	0	0	0	0																0												
29-Jun-04	1	2-18	U40	80	0	7	15	0	0	0	0	0	0																0												
29-Jun-04	1	2-18	U70	72	0	5	10	5	0	0	0	0	0																10												
29-Jun-04	1	2-18	L2	70	0	10	8		0	0	0	0	0																15												
29-Jun-04	1	2-18	L11	50	0	25	15		0	0	0	0	0																15												
29-Jun-04	1	2-18	L17	10	0	5	10		0	0	0	0	0																10												
29-Jun-04	1	2-18	L25	85	0	5	5		0	0	0	0	0																23												
29-Jun-04	1	2-18	L37	100	0	0	0		0	0	0	0	0																0												
12-Jul-04	1	2-18	B0	30	0	0	30																						0	0	0	0	0	0	0	0	0	0	0	40
12-Jul-04	1	2-18	B23	0	0	10	0																						0	0	0	0	0	0	0	30	0	90	0	0
12-Jul-04	1	2-18	B28	0	5	15	0																						0	0	0	0	0	0	0	0	0	80	0	0

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																		
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
12-Jul-04	1	2-18	B45	0	25	15	0																						0	0	0	0	0	0	0	0	0	60	0	0
12-Jul-04	1	2-18	B69	70	0	10	0																						0	0	0	0	0	0	0	0	0	20	0	0
29-Jun-04	1	2-51	U11	90	0	10	5	0	0	0	0	0	0																												
29-Jun-04	1	2-51	U44	42	0	15	10	0	0	0	35	0	0																												
29-Jun-04	1	2-51	U48	78	0	10	5	16	0	0	10	0	0																												
29-Jun-04	1	2-51	U56	80	0	6	10	5	0	0	0	0	0																												
29-Jun-04	1	2-51	U68	60	0	18	5	3	0	15	0	0	0																												
29-Jun-04	1	2-51	L1	75	0	12	5		0	11	0	0	0																												
29-Jun-04	1	2-51	L7	75	0	10	15		0	1	0	0	0																												
29-Jun-04	1	2-51	L28	45	0	20	40		0	0	0	0	0																												
29-Jun-04	1	2-51	L32	85	0	5	15		0	0	0	0	0																												
29-Jun-04	1	2-51	L38	30	100	0	0		0	0	0	0	0																												
12-Jul-04	1	2-51	B2	0	30	40	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	1	2-51	B12	0	80	0	0																						0	0	0	0	0	0	0	0	0	0	0	20
12-Jul-04	1	2-51	B13	0	80	0	0																						0	0	0	0	0	0	0	0	0	0	0	20
12-Jul-04	1	2-51	B24	0	5	0	0																						0	0	0	0	0	0	0	100	0	20	0	0
12-Jul-04	1	2-51	B48	0	70	0	0																						0	0	0	0	0	0	0	0	0	0	0	30
29-Jun-04	1	2-62	U19	55	0	25	5	0	0	18	0	0	0														0													
29-Jun-04	1	2-62	U35	40	0	17	15	0	0	14	13	0	0														0													
29-Jun-04	1	2-62	U42	65	0	16	10	0	0	0	10	0	0														0													
29-Jun-04	1	2-62	U47	65	0	12	10	0	0	0	15	0	0														0													
29-Jun-04	1	2-62	U68	0	0	20	5	0	0	15	0	0	0														4													
29-Jun-04	1	2-62	L3	90	0	4	10		0	0	0	0	0											0			0													
29-Jun-04	1	2-62	L7	90	0	5	5		0	0	0	0	3											0			0													
29-Jun-04	1	2-62	L9	85	0	3	10		0	6	0	0	0											5			0													
29-Jun-04	1	2-62	L15	85	0	5	10		0	0	0	0	0											0			4													
29-Jun-04	1	2-62	L37	85	0	15	0		0	0	0	0	0											0			0													
12-Jul-04	1	2-62	B8	30	5	0	0																						0	0	0	0	0	0	0	0	20	0	0	50
12-Jul-04	1	2-62	B31	0	0	0	0																						0	0	0	0	0	0	0	0	0	100	0	0
12-Jul-04	1	2-62	B36	20	30	0	0																						0	0	0	0	0	0	0	0	0	30	40	0
12-Jul-04	1	2-62	B47	10	0	0	0																						0	0	0	0	0	0	0	0	0	0	90	0
12-Jul-04	1	2-62	B71	70	0	0	0																						0	0	0	0	0	0	0	80	0	0	0	0
29-Jun-04	2	3-47	UL7	85	0	15	5		3	15	0	0	0																												
29-Jun-04	2	3-47	UL27	45	0	15	5		40	0	0	0	0																												
29-Jun-04	2	3-47	UL34	10	0	20	15		57	0	0	0	3																												
29-Jun-04	2	3-47	UL45	70	0	25	10		0	4	0	0	0																												
29-Jun-04	2	3-47	UL50	80	0	10	10		0	0	0	0	0																												
12-Jul-04	2	3-47	B3	0	55	30	0																						0	0	0	0	0	0	0	0	0	15	0	0
12-Jul-04	2	3-47	B4	0	65	20	0																						0	0	0	0	0	0	0	0	0	15	0	0
12-Jul-04	2	3-47	B7	0	40	30	10																						0	0	0	0	0	0	0	0	0	20	0	0
12-Jul-04	2	3-47	B11	30	60	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	3-47	B25	10	60	30	0																						0	0	0	0	0	0	0	0	0	0	0	0
29-Jun-04	2	3-61	UL2	60	0	25	5		8	5	0	0	0																												
29-Jun-04	2	3-61	UL5	80	0	13	1		8	0	0	0	0																												
29-Jun-04	2	3-61	UL6	0	0	10	0		8	8	0	0	0																												
29-Jun-04	2	3-61	UL18	15	0	40	0		38	0	0	11	0																												
29-Jun-04	2	3-61	UL24	0	0	30	5		66	18	0	0	0																												
12-Jul-04	2	3-61	B20	40	50	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	3-61	B22	40	50	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	3-61	B25	10	75	15	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	3-61	B26	10	70	15	0																						0	0	0	0	7	0	0	0	0	0	0	0
12-Jul-04	2	3-61	B59	15	80	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
29-Jun-04	2	3-73	UL3	65	0	20	5		15	0	0	0	0																						0					
29-Jun-04	2	3-73	UL5	0	0	50	5		57	0	0	0	0																						0					
29-Jun-04	2	3-73	UL32	15	0	40	10		40	0	0	0	0																						0					
29-Jun-04	2	3-73	UL48	85	0	6	5		0	0	0	0	0																						6					
29-Jun-04	2	3-73	UL52	97	0	5	0		0	0	0	0	0																						0					
12-Jul-04	2	3-73	B27	20	60	15	0																					7	0	0	0	0	0	0	0	0	0	0	0

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
12-Jul-04	2	3-73	B35	10	50	10	0																					23	0	0	0	0	10	10	0	0	0	0	0	0
12-Jul-04	2	3-73	B54	20	60	20	0																					0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	3-73	B61	0	80	10	0																					0	0	0	0	0	0	0	14	0	0	0	0	0
12-Jul-04	2	3-73	B63	0	85	5	0																					5	0	0	0	0	0	0	8	0	0	0	0	0
30-Jun-04	2	4-47	U7	0	0	0	5	0	87	0	0	21	0	5																										
30-Jun-04	2	4-47	U14	30	0	25	5	0	19	0	0	24	0	0																										
30-Jun-04	2	4-47	U32	0	0	0	20	0	82	0	0	24	0	5																										
30-Jun-04	2	4-47	U39	10	0	0	5	0	73	0	0	15	0	12																										
30-Jun-04	2	4-47	U56	35	0	5	10	0	21	0	0	28	0	5																										
30-Jun-04	2	4-47	L1	45	0	25	10		11	0	5	6	0		0																									
30-Jun-04	2	4-47	L6	90	0	12	0		0	0	0	0	0		0																									
30-Jun-04	2	4-47	L28	75	0	10	10		0	0	0	0	2		6																									
30-Jun-04	2	4-47	L50	70	0	15	10		0	0	0	8	0		0																									
30-Jun-04	2	4-47	L51	85	0	15	5		0	0	0	0	0		0																									
12-Jul-04	2	4-47	B8	0	5	10	0																						0	0	0	0	0	0	100	0	0	0	0	0
12-Jul-04	2	4-47	B43	0	70	10	0																						0	0	0	0	0	0	80	0	0	0	0	0
12-Jul-04	2	4-47	B48	0	40	0	0																						0	0	0	0	0	0	30	0	0	0	0	30
12-Jul-04	2	4-47	B64	0	70	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
12-Jul-04	2	4-47	B65	0	5	0	0																						0	0	0	0	0	0	100	0	0	0	0	10
30-Jun-04	2	4-78	U9	35	0	15	5	0	27	0	0	20	0	0																										
30-Jun-04	2	4-78	U17	45	0	5	2	0	8	0	0	44	0	2																										
30-Jun-04	2	4-78	U46	10	0	5	5	0	64	0	0	22	0	0																										
30-Jun-04	2	4-78	U49	40	0	10	30	0	0	0	0	25	0	0																										
30-Jun-04	2	4-78	U50	45	0	5	30	0	0	0	0	24	0	0																										
30-Jun-04	2	4-78	L14	90	0	10	5		0	0	0	0	0																										
30-Jun-04	2	4-78	L15	90	0	10	5		0	0	0	0	0																										
30-Jun-04	2	4-78	L17	70	0	30	5		0	0	0	0	0																										
30-Jun-04	2	4-78	L27	65	0	15	10		11	0	0	0	0																										
30-Jun-04	2	4-78	L40	0	0	5	30		0	0	0	0	0																										
12-Jul-04	2	4-78	B17	10	30	10	0																						0	0	0	0	0	0	52	0	0	0	0	0
12-Jul-04	2	4-78	B39	0	15	40	0																						0	0	0	0	0	0	60	0	0	0	0	0
12-Jul-04	2	4-78	B45	0	45	30	0																						0	0	0	0	15	0	10	0	0	0	0	0
12-Jul-04	2	4-78	B65	0	60	0	0																						0	0	0	0	10	0	30	0	0	0	0	0
12-Jul-04	2	4-78	B70	0	60	0	0																						0	0	0	0	30	0	20	0	0	0	0	0
30-Jun-04	2	4-98	U14	45	0	15	2	0	18	0	0	13	0	10																										
30-Jun-04	2	4-98	U22	0	0	0	10	0	67	0	0	43	0	0																										
30-Jun-04	2	4-98	U25	0	0	0	5	0	100	0	0	30	0	5																										
30-Jun-04	2	4-98	U48	15	0	20	30	0	0	0	0	36	0	0																										
30-Jun-04	2	4-98	U66	25	0	25	15	0	30	0	0	12	0	0																										
30-Jun-04	2	4-98	L14	90	0	5	5		5	0	0	0	0		0																									
30-Jun-04	2	4-98	L22	90	0	5	10		0	0	0	0	0		0																									
30-Jun-04	2	4-98	L26	80	0	10	10		5	0	0	0	0		0																									
30-Jun-04	2	4-98	L47	75	0	5	15		0	0	0	0	0		10																									
30-Jun-04	2	4-98	L56	50	0	5	40		0	0	0	0	0		0																									
12-Jul-04	2	4-98	B1	30	40	30	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	4-98	B18	10	60	30	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	4-98	B19	60	40	15	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	4-98	B39	60	40	15	0																						0	0	0	0	0	0	0	0	0	0	0	0
12-Jul-04	2	4-98	B61	0	20	0	0																						0	0	0	0	80	0	0	0	0	0	0	0
30-Jun-04	3	5-22	UL3	0	0	90	0		53	0	0	20	0														0													
30-Jun-04	3	5-22	UL14	15	0	40	5		34	0	0	10	0														0													
30-Jun-04	3	5-22	UL26	15	0	30	20		18	7	0	0	0														16													
30-Jun-04	3	5-22	UL47	65	0	30	10		0	0	0	0	0														10													
30-Jun-04	3	5-22	UL58	70	0	5	30		0	0	0	0	0														0													
6-Jul-04	3	5-22	B29	0	90	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-22	B36	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-22	B38	0	95	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-22	B48	30	60	5	0																						0	0	0	0	0	0	0	0	0	0	0	5

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																				
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
6-Jul-04	3	5-22	B59	30	55	0	0																						0	0	0	0	0	0	0	21	0	0	0	0
30-Jun-04	3	5-56	UL10	10	0	15	5		59	4	0	9	0											0			0														
30-Jun-04	3	5-56	UL11	0	0	80	0		30	10	0	0	0											0			0														
30-Jun-04	3	5-56	UL15	0	0	15	5		30	0	0	0	0											11			0														
30-Jun-04	3	5-56	UL20	0	0	30	5		56	0	0	0	0											0			0														
30-Jun-04	3	5-56	UL54	60	0	10	30		0	0	0	0	0											0			5														
6-Jul-04	3	5-56	B24	0	85	15	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-56	B31	40	55	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-56	B44	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-56	B54	0	95	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-56	B62	0	45	0	0																						15	0	0	0	0	0	40	0	0	0	0	0
30-Jun-04	3	5-85	UL0	0	0	30	5		60	18	0	10	0														0														
30-Jun-04	3	5-85	UL10	35	0	30	5		35	0	0	0	0														0														
30-Jun-04	3	5-85	UL11	5	0	50	5		30	0	0	0	0														0														
30-Jun-04	3	5-85	UL15	15	0	30	10		37	0	0	10	0														0														
30-Jun-04	3	5-85	UL54	40	0	40	10		0	0	0	0	0														9														
6-Jul-04	3	5-85	B14	100	0	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-85	B16	90	0	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-85	B25	95	0	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-85	B45	95	0	0	0																						5	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	3	5-85	B59	90	0	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
30-Jun-04	3	6-16	U26	0	0	15	5	0	0	53	0	30	0		0	0								0																
30-Jun-04	3	6-16	U44	55	0	10	10	0	5	0	0	0	6		14	0								5																
30-Jun-04	3	6-16	U45	45	0	20	10	0	0	0	0	0	23		5	0								0																
30-Jun-04	3	6-16	U50	75	0	15	15	0	0	0	0	0	0		0	0								0																
30-Jun-04	3	6-16	U55	10	0	30	30	0	0	0	0	0	0		14	20								0																
30-Jun-04	3	6-16	L7	65	0	15	10		2	10	0	0	0														0														
30-Jun-04	3	6-16	L27	45	0	50	0		8	0	0	0	0														0														
30-Jun-04	3	6-16	L34	25	0	50	0		20	0	0	0	6														0														
30-Jun-04	3	6-16	L43	0	0	15	0		0	0	0	0	7														90														
30-Jun-04	3	6-16	L53	0	0	90	0		0	20	0	0	0														20														
6-Jul-04	3	6-16	B10		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-16	B11		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-16	B25		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-16	B33		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-16	B38		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
30-Jun-04	3	6-20	U7	0	0	60	15	0	0	24	0	46	0		0	0											0														
30-Jun-04	3	6-20	U27	0	0	10	5	0	0	5	70	15	0		0	6											0														
30-Jun-04	3	6-20	U43	40	0	15	20	0	0	0	0	0	11		15	0											0														
30-Jun-04	3	6-20	U54	0	0	70	30	0	0	0	0	0	0		20	0											30														
30-Jun-04	3	6-20	U67	40	0	15	20	0	0	0	0	0	0		0	0											0														
30-Jun-04	3	6-20	L20	40	0	30	5		0	0	27	0	0																												
30-Jun-04	3	6-20	L21	45	0	25	5		0	22	5	0	0																												
30-Jun-04	3	6-20	L34	50	0	40	0		0	0	0	0	14																												
30-Jun-04	3	6-20	L37	70	0	30	0		0	6	0	0	0																												
30-Jun-04	3	6-20	L40	10	0	30	5		0	0	59	0	0																												
6-Jul-04	3	6-20	B13		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-20	B35		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-20	B54		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-20	B60		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-20	B62		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
30-Jun-04	3	6-40	U5	0	0	30	10	0	46	0	0	25	0			0											0														
30-Jun-04	3	6-40	U24	10	0	20	15	0	0	57	0	0	0			0											0														
30-Jun-04	3	6-40	U38	0	0	15	10	0	4	5	0	13	0			5											0														
30-Jun-04	3	6-40	U63	65	0	5	10	0	0	0	0	0	0			0											11														
30-Jun-04	3	6-40	U64	75	0	5	25	0	0	0	0	0	0			0											0														
30-Jun-04	3	6-40	L18	15	0	50	0		0	40	0	0	0		0												0				0										
30-Jun-04	3	6-40	L26	80	0	15	0		10	0	0	0	0		0												0				0										

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																		
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
30-Jun-04	3	6-40	L45	5	0	25	5		64	6	0	0	0		0												0				0										
30-Jun-04	3	6-40	L54	30	0	25	25		0	0	0	0	0		0												21								0						
30-Jun-04	3	6-40	L59	60	0	15	20		0	0	0	0	0		13												0				8										
6-Jul-04	3	6-40	B0		65	15	0																						0	0	0	0	0	0	20	0	0	0	0	0
6-Jul-04	3	6-40	B5		30	10	0																						0	0	0	0	0	0	60	0	0	0	0	0
6-Jul-04	3	6-40	B14		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-40	B28		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	3	6-40	B40		90	0	0																						0	0	0	0	0	0	100	0	0	0	0	0
6-Jul-04	4	7-16	U2	45	0	20	5	0	34	0	0	0	0	0	0	0	0																							
6-Jul-04	4	7-16	U8	30	0	25	10	0	54	0	0	11	0	0	0	0	0																							
6-Jul-04	4	7-16	U24	35	0	0	30	0	0	0	0	0	0	40	0	0	0																							
6-Jul-04	4	7-16	U45	60	0	10	15	0	0	0	0	0	0	2	7	3	8																							
6-Jul-04	4	7-16	U54	30	0	15	20	0	0	0	0	0	0	0	37	2	0																							
6-Jul-04	4	7-16	L4	55	0	10	5		21	8	0	4	0																											
6-Jul-04	4	7-16	L9	80	0	10	5		10	0	0	0	0																											
6-Jul-04	4	7-16	L15	60	0	5	5		34	0	0	0	0																											
6-Jul-04	4	7-16	L38	40	35	25	15		0	0	0	0	0																											
6-Jul-04	4	7-16	L41	40	35	8	15		0	0	0	0	0																											
6-Jul-04	4	7-16	B7	0	95	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-16	B12	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-16	B14	0	95	0	0																						0	0	0	0	0	0	0	0	0	0	0	10
6-Jul-04	4	7-16	B22	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-16	B27	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-36	U33	5	0	15	10	0	0	0	0	6	0		81	5											0													
6-Jul-04	4	7-36	U43	70	0	15	10	0	0	0	0	0	0		0	0											17													
6-Jul-04	4	7-36	U52	35	0	20	10	0	0	0	0	0	0		25	18											0													
6-Jul-04	4	7-36	U70	55	0	15	15	0	0	0	0	0	0		0	5											15													
6-Jul-04	4	7-36	U71	65	0	10	20	0	0	0	0	5	0		0	0											6													
6-Jul-04	4	7-36	L7	40	30	30	5		0	0	0	0	0		0		0											0									0			
6-Jul-04	4	7-36	L24	65	0	8	10		0	0	0	0	0		3		16											0									0			
6-Jul-04	4	7-36	L27	35	0	5	15		0	0	0	0	0		0		0											19									0			
6-Jul-04	4	7-36	L31	55	0	10	15		0	0	0	0	0		23		0											4									0			
6-Jul-04	4	7-36	L48	0	75	5	0		0	0	0	0	0		0		0											0									25			
6-Jul-04	4	7-36	B10	20	90	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-36	B19	30	0	0	0																						0	0	0	0	0	0	70	0	0	0	0	0
6-Jul-04	4	7-36	B24	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-36	B34	0	40	0	0																						0	0	0	0	0	0	60	0	0	0	0	5
6-Jul-04	4	7-36	B35	0	20	0	0																						0	74	0	0	0	0	0	0	0	0	0	10
6-Jul-04	4	7-81	U20	5	0	15	20	0	70	0	0	0	0	10	0	0	0										0													
6-Jul-04	4	7-81	U23	25	0	20	10	0	26	11	0	0	0	15	0	0	0										0													
6-Jul-04	4	7-81	U37	35	0	30	15	0	0	0	0	0	0	0	5	0	10										7													
6-Jul-04	4	7-81	U40	45	0	20	15	0	0	0	0	0	0	0	9	11	0										4													
6-Jul-04	4	7-81	U52	65	0	10	25	0	0	0	0	0	0	0	0	0	0										5													
6-Jul-04	4	7-81	L11	50	30	10	0		15	0	0	0	0																											
6-Jul-04	4	7-81	L13	95	0	8	5		0	0	0	0	0																											
6-Jul-04	4	7-81	L25	60	0	10	10		0	0	0	0	0																											
6-Jul-04	4	7-81	L31	55	0	15	15		0	0	0	0	0																											
6-Jul-04	4	7-81	L38	45	25	10	25		0	0	0	0	0																											
6-Jul-04	4	7-81	B3	40	60	5	0								0														0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-81	B23	0	100	0	0								0														0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-81	B30	0	90	0	0								10														0	0	0	0	0	0	0	0	0	0	0	10
6-Jul-04	4	7-81	B35	0	100	0	0								0														0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	7-81	B36	0	95	0	0								0														0	0	0	0	5	0	0	0	0	0	0	0
6-Jul-04	4	8-14	U18	15	0	60	5	0	5	18	0	0	0	0		0										0													
6-Jul-04	4	8-14	U48	75	0	15	5	0	0	0	0	0	0	0		0										6													
6-Jul-04	4	8-14	U57	55	0	15	20	0	0	0	11	0	0	2		0										0													
6-Jul-04	4	8-14	U68	60	0	30	10	0	0	0	0	0	0	0		0										0													
6-Jul-04	4	8-14	U69	55	0	35	5	0	0	0	0	0	0	5		5										0													

Table 7B-5
Floodway Vegetation Survey Raw Data (June 28 - July 12, 2004)

Date Surveyed	Location[1]	Site	Position (m)	TH	BG	Vegetation Species[2]																																				
						BI	PP	AG	MS	CA	MO	TO	So?	AR	Tsp	ML	PhP	LC	SC	TD	PB	AS	PM	U25	U29	U33	VA	VC	RC	E?	PN	TL	U31	U32	EA	SE	SL	PoA	LyC	C?	PA
6-Jul-04	4	8-14	L10	45	0	15	5		42	0	0	0	0																													
6-Jul-04	4	8-14	L22	25	0	15	15		45	4	0	0	0																													
6-Jul-04	4	8-14	L35	0	45	25	25		0	0	0	0	0																													
6-Jul-04	4	8-14	L42	0	60	40	0		0	0	0	0	0																													
6-Jul-04	4	8-14	L48	30	65	5	0		0	0	0	0	0																													
6-Jul-04	4	8-14	B0	10	80	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-14	B5	15	75	10	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-14	B13	0	90	5	0																						0	0	0	0	5	0	0	0	0	0	0	0
6-Jul-04	4	8-14	B28	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-14	B36	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-26	U4	15	0	30	5	0	56	0	0	0	0			0			0																						
6-Jul-04	4	8-26	U31	65	0	30	5	0	0	0	0	0	0			0			0																						
6-Jul-04	4	8-26	U45	45	0	35	15	0	0	0	0	0	0			0			18																						
6-Jul-04	4	8-26	U58	65	0	10	15	0	0	0	16	0	0			0			0																						
6-Jul-04	4	8-26	U69	25	0	40	15	0	0	0	0	0	0			20			0																						
6-Jul-04	4	8-26	L2	45	0	25	15		10	0	0	0	0			5			0																						
6-Jul-04	4	8-26	L10	65	0	15	5		0	10	0	0	0			0			5																						
6-Jul-04	4	8-26	L23	50	0	25	15		0	0	0	0	0			5			8																						
6-Jul-04	4	8-26	L36	65	0	15	20		0	0	0	0	0			0			0																						
6-Jul-04	4	8-26	L43	30	0	5	0		0	0	0	0	0			0			0																						
6-Jul-04	4	8-26	B3	30	45	25	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-26	B16	15	75	5	0																						0	0	0	0	0	0	0	0	0	0	0	5
6-Jul-04	4	8-26	B28	0	95	0	0																						0	0	0	0	5	0	0	0	0	0	0	0
6-Jul-04	4	8-26	B42	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-26	B46	0	95	0	0																						0	0	0	0	5	0	0	0	0	0	0	0
6-Jul-04	4	8-34	U29	45	0	35	15	0	0	0	5	0	0	0		0											0					0								
6-Jul-04	4	8-34	U35	45	0	30	20	0	0	0	0	0	0	5		0											0					0								
6-Jul-04	4	8-34	U41	60	0	25	10	0	0	0	0	0	0	0		0											5					11								
6-Jul-04	4	8-34	U54	65	0	25	10	0	0	0	0	0	0	0		0											0					0								
6-Jul-04	4	8-34	U70	60	0	30	5	0	0	0	0	0	0	0		5											0					0								
6-Jul-04	4	8-34	L7	75	0	5	10		10	0	0	0	0																												
6-Jul-04	4	8-34	L12	55	0	10	10		16	0	0	0	0																												
6-Jul-04	4	8-34	L32	5	0	15	10		0	0	0	0	0																												
6-Jul-04	4	8-34	L35	60	0	35	5		0	0	0	0	0																												
6-Jul-04	4	8-34	L40	0	60	30	10		0	0	0	0	0																												
6-Jul-04	4	8-34	B21	30	55	0	0																						0	0	0	0	0	0	0	0	0	0	0	15
6-Jul-04	4	8-34	B25	0	95	5	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-34	B37	0	95	0	0																						0	0	0	0	5	0	0	0	0	0	0	0
6-Jul-04	4	8-34	B43	40	60	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
6-Jul-04	4	8-34	B51	0	100	0	0																						0	0	0	0	0	0	0	0	0	0	0	0
8-Jul-04	5	9-7	U0	75	0	15	10	0	0	0	0	0	0		0					0																					
8-Jul-04	5	9-7	U15	70	0	5	5	0	16	0	0	0	0		0					7																					
8-Jul-04	5	9-7	U40	85	0	15	5	0	0	0	0	2	0		0					0																					
8-Jul-04	5	9-7	U41	85	0	10	5	0	0	0	0	0	0		0					0																					
8-Jul-04	5	9-7	U66	65	0	10	5	0	0	0	15	0	0		5					0																					
8-Jul-04	5	9-7	L15	0	0	5	5		19	0	0	0	0	2					15							0	0													
8-Jul-04	5	9-7	L34	0	0	30	15		0	0	0	0	0	0					0							10	47													
8-Jul-04	5	9-7	L43	75	0	20	5		0	0	0	0	0	0					0							0	0													
8-Jul-04	5	9-7	L44	50	0	15	35		0	0	0	0	0	0					0							0	0													
8-Jul-04	5	9-7	L45	55	0	15	30		0	0	0	0	0	0					0							0	0													
8-Jul-04	5	9-7	B10	30	40	0	0																				0		15	0	0	0	0	0	0	0	0	0	0	15
8-Jul-04	5	9-7	B12	30	30	0	0																				0		30	0	0	0	0	0	0	0	0	0	0	10
8-Jul-04	5	9-7	B15	0	70	0	0																				0		0	0	0	0	0	0	0	0	0	0	0	30
8-Jul-04	5	9-7	B20	0	80	0	0																				9		0	0	15	0	0	0	0	0	0	0	0	5
8-Jul-04	5	9-7	B33	0	100	0	0																				18		0	0	0	0	0	0	0	0	0	0	0	0
8-Jul-04	5	9-56	U1	70	0	15	15	0	0	0	0	0	0	0																										
8-Jul-04	5	9-56	U2	70	0	15	15	0	4	0	0	0	0	0																										
8-Jul-04	5	9-56	U25	35	0	15	10	0	30	0	0	0	0	0																										

Table 7B-6
West Dyke Vegetation Survey Raw Data (June 28 – July 12, 2004)

UTM Coordinates		Sites																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
UTM Easting		631942	630798	NV	630842	630634	628629	626018	626082	626145	624853	619853	615047	609887	604788	602992	601355	598505	594820
UTM Northing		5509274	5507312	NV	5504945	5502968	5503009	5502314	5499319	5496224	5494632	5494536	5494422	5494294	5494265	5499118	5501557	5502312	5502252
Species List		**Abundance**																	
Common Name	**Scientific Names**																		
Alfalfa	*Medicago sativa*	A	A	A	A	F	F	A	A	#	A	O	R	F					
Smooth Brome	*Bromus inermis*	D	D	D	D	D	D	D D		#	D	D	D	D D	D	D D			D
Dandelion	*Taraxacum officinale*	F	A	F	A	F	O	F	O	#		R							O
Canada Thistle	*Cirsium arvense*	O	O	O	O	O	O	O	O	#	F	R				R			
Bluegrass	*Poa pratensis*	A	O	F	F	A	A	A	F	#	F	F	F	F F	F F			O	F
Clover	*Trifolium sp??*	O	R		O	O		O	O	#		R							
Purple Milk-Vetch	*Astragalus goniatus*	R	R			F	O	F	O		R	O		O		O			
Dock	*Rumex crispus*	O		R		R				#									
Saskatoon	*Amelanchier alnifolia*	R																	
Wild Rose	*Rosa sp.??*	R								#			O		R	F	O	O	F
Blue-eyed Grass	*Sisyrinchium montanum*		R			O			R			O							O
Sow Thistle	*Sonchus sp.??*	R	O		R														
U9 - need flowers			F																
U10 - need flowers			O			R	R	R											
Sunflower	*Helianthus sp.??*		R				R								R		R		
Goats-beard	*Tragopogon dubius*		R				R												
Horsetail	*Equisetum arvense*				R														
Silverweed	*Potentilla anserina*			R	R														
Vetch	*Vicia americana*					R	R		F								R		
Bugleweed	*Lycopus americanus*					R													
Goldenrod	*Solidago sp.??*					R	R									O	R		R
Milkweed	*Asclepias sp.??*								R								R		
Willow	*Salix lutea*						O												
Canada Anemone	*Anemone canadensis*						R			#	R						A	F	
Sweet Clover??	*Melilotus sp.??*			O					A	#	O	O							R
Birds-Foot Trefoil	*Lotus corniculatus*								O		O			O					
Stinkweed	*Thlapsi arvense*									#				R			R		
Reed Canary Grass	*Phalaris arundinaceum*									#									
Northern Bedstraw	*Gallium borealis*									#							F		
Crested Wheatgrass	*Agropyron cristatum*										R								
Quack Grass	*Agropyron repens*			O								A	O						
Water Plantain	*Alisma sp.??*													R					
Snowberry	*Symphoricarpos occidentalis*																O		
Wild Strawberry	*Fragaria glauca*																		F
Meadow Rue	*Thalictrum venosum*																		R
Prairie Sage	*Artemisia ludoviciana*																		R

Notes: D = Dominant (>50%), A = Abundant (25-50%), F = Frequent (1-25%), O = Occassional (<1%), R = Rare (<<<1%); Portions of the West Dyke in the RM of Macdonald are regularly sprayed with Tordon22k and Vanquish

APPENDIX 7C

Terrestrial Field Studies

APPENDIX 7C
TABLE OF CONTENTS

1.0 INTRODUCTION

The main objective of terrestrial field studies were to provide baseline information for input to the Floodway Project environmental assessment report in a manner sufficient to meet Provincial and Federal licensing requirements. This required firstly obtaining sufficient information to outline data deficiencies to assist in the ongoing definition of the Project and to then secure an appropriate level of detailed information to assess potential environmental effects of the Project in a manner that would facilitate the subsequent preparation of an environmental assessment report and application for environmental licensing and approvals. This involved conducting field investigations to evaluate wildlife communities and wildlife habitat within the Floodway ROW and West Dyke. The results of these investigations are discussed in brief in the main body of the EIS and outlined in detail in this appendix.

2.0 METHODS

2.1 HELICOPTER OVER-FLIGHT

To assist in the fall fieldwork planning, a helicopter was used in September 2003 to fly over the Floodway Channel, 100 m upstream and downstream of the Seine River Siphon and 1 km upstream and 2 km downstream of the Outlet Channel on the Red River. Video obtained from the flight was used to develop aquatic and terrestrial maps that were further refined by ground-based surveys (Section 7. Table 7.2-1).

2.2 WILDLIFE HABITAT ASSESSMENT

FLOODWAY

Wildlife habitat within the Flood Study Region was initially assessed using orthophotos, forest resource inventory (FRI) and satellite imagery maps. Existing habitats were verified during ground-based surveys of the Floodway right-of way (ROW); particular attention was given to sites where drains, siphons, road/rail bridges, or any other project-related channel disruption are proposed to occurred. Other areas with suspected wildlife activity (beaver dams) or contained sensitive wildlife habitats were also investigated.

The assessment of wildlife habitat within selected portions of the Floodway ROW extended from the Floodway Spoil Banks to the Low Flow Channel. The habitat assessment was based on the vegetation recorded within 3 habitat zones (the Floodway Upper and Lower slopes, Channel Base and the Low Flow Channel), on wildlife seen or heard within the region, and on wildlife sign noted during field visits i.e., tracks, trails, nests, scat, evidence of forage, dams, burrows, etc.

WEST DYKE

Habitat along the West Dyke was assessed using methods similar to those used for the Floodway ROW. Aerial over-flights, maps and ground site visits assisted in the mapping of wildlife habitat along the West Dyke. General habitat assessments were conducted for the West Dyke slopes, ditches and upland areas.

2.3 WILDLIFE SURVEYS

Surveys of wildlife within the Flood Study Region were focused on breeding birds and amphibians. The following outlined methods will provide information on diversity and density of species breeding within the West Dyke and Floodway ROW. Reconnaissance observations during each site visit noted other wildlife (and wildlife sign) utilizing the Flood Study Region. Since mammal use of this region is low, surveys (e.g., through line transects, small mammal trapping) were deemed unnecessary for this Project.

BREEDING BIRD SURVEYS

Due to a late spring and heavy rains, surveys of breeding birds along the Floodway did not occur until late June 2004. It was anticipated that at this time, the remaining late migrants (e.g., Yellow Warblers and flycatchers) would have established breeding territories within the Floodway and the existing high water levels would have resided to levels more typical of spring. Since water levels had not resided by the time surveys were conducted, only exposed grassy slopes were surveyed for breeding birds. Conditions along parts of the West Dyke were suitable for surveying in early June and in other parts, not until late June. Seasonality and weather conditions were an important factor in determining the feasibility of surveys in 2004.

Three road-based transects extending 6 10, and 11 km, were surveyed along segments of the West Dyke on June 6. An additional transect extending 4 km along the eastern portion of the West Dyke was surveyed on June 30, 2004. For each road-based transect, stops occurred every 800 m, and birds within and beyond a 100m radius of the road survey stop were noted during a 5 minute sample period. This method yielded a total of 31 survey stops for the West Dyke.

Within the Floodway, surveys for breeding birds at 8 bridge and rail crossings occurred on June 18. At that time, the Channel Base was nearly completely flooded and only the Floodway slopes were exposed and suitable for surveying. Water levels were still high during a follow-up 8-stop survey of the southern portion of the Floodway on June 30. Observations of nests, waterfowl and birds over-flying the sample site, were also recorded during surveys of both the West Dyke and Floodway.

AMPHIBIAN SURVEYS

Amphibian surveys along the Floodway and West Dyke occurred during April and May 2004. Although frogs will call throughout the daytime, peak hours of breeding calls occur after sunset and throughout the night. As such, surveys began approximately one-half hour before sunset and at times ended a few hours after midnight.

Frogs in the Floodway and West Dyke were surveyed at stops occurring every 800m along transects that extended 6 to 9 km. Survey stops were located 2-10m from the Channel or ditch (where possible), to avoid disturbing amphibians. Number of species heard calling were recorded and given a chorus rating as below:

- 0 – no calls heard;
- 1 – individuals can be counted, no overlapping calls;
- 2 – calls distinguishable, calls overlapping; and
- 3 – full chorus, calls continuous and overlapping.

For the West Dyke, 3 road-based transects totalling 20 stops were surveyed May 17, 2004. One transect and 4 additional bridge/crossing sites totalling 14 stops were surveyed in the Floodway on April 27 and May 18.

RECONNAISSANCE

During site visits, any species of wildlife noted utilizing the Floodway and West Dyke were recorded. Observations include sign (e.g., scat, burrows, dens, tracks, trails, dams and food caches), visual sightings and breeding/alarm calls. These observations were considered reconnaissance if they were not the focus of a structured survey.

Mammals, reptiles, insects and invertebrates within the Project sites were noted exclusively as reconnaissance observations. Amphibians were also noted as reconnaissance observations during breeding bird surveys as were birds noted during evening amphibian surveys. All wildlife observed during fall habitat assessments were considered reconnaissance since structured survey methods were not used at that time.

2.4 RESULTS AND DISCUSSION

Wildlife and wildlife habitat field investigations within the Flood Study Region revealed a low diversity of passerines and amphibians utilizing the Floodway and West Dyke. Although this region has the potential to support 250 species of birds (during breeding, migrating and wintering periods; Appendix 7A, Table 7A-2), only 164 may breed within the area. Of the potential 164 birds within the Flood Study Region, 44 species were observed during surveys. For amphibians, 5 of the potential 11 species potentially residing within the region (Appendix A, Table 7A-4) may be heard during breeding surveys (some don't vocalize). Spring surveys indicated 3 amphibian species (boreal chorus frog, wood frog, and leopard frog) breed within the West Dyke and Floodway regions (Appendix 7C, Table 7C-3).

Survey conditions were not optimal along the Floodway in spring 2004 (due to high water levels in the Channel). This is reflected in the low diversity of breeding birds noted during spring surveys (22 species in the Floodway). Comparatively, 46 species were observed utilizing the West Dyke region during spring surveys. It is anticipated that spring breeding bird surveys of the Floodway would yield a higher diversity of birds during years when the Floodway Channel contained average water levels. No rare or

endangered species (listed under MESA and/or COSEWIC) were noted in the Flood Study Region. Given the conditions of the Floodway Channel during the 2004 breeding season, a thorough investigation of the occurrence of rare and endangered species in the Floodway was not possible, but should be considered when conditions are favourable during future breeding seasons.

Of the breeding birds surveyed in the Flood Study Region, some of the most common birds of the West Dyke were: Red-winged Blackbirds, Savannah Sparrows, Brown-headed Cowbirds, Brewer's Blackbirds and Bobolinks. Savannah Sparrows, Cliff Swallows, Bobolinks and Western Meadowlarks were common to the Floodway ROW (Appendix 7C, Table 7C-4). All of these birds (except Cliff Swallows) are typical of grassland habitats. Spotted Sandpipers were also frequent within the Channel, with the greatest concentration observed foraging over the Channel near the Floodway Outlet. Of the noted bird species, Upland Sandpiper and Sora (noted exclusively at the West Dyke), were some of the uncommon species within the West Dyke; American Crow and American Goldfinch were least common along the Floodway (Appendix 7C, Table 7C-4).

Other birds noted within the Flood Study Region include those observed during reconnaissance investigations. Fall field investigations revealed the presence of migrating waterfowl such as ducks, geese, Lesser Yellowlegs and Double-crested Cormorants loafing in various regions throughout the Floodway Low-Flow Channel (Appendix 7C, Table 7C-5). At that time, raptors such as Bald Eagles and Northern Harriers were noted foraging along the Floodway.

Results from the spring amphibian surveys conducted along parts of the West Dyke and Floodway indicated boreal chorus, wood frogs and leopard Frogs were breeding within parts of the Channel and West Dyke (Appendix 7C, Figure 7C.3-1, 7C.3-2 and 7C.3-3). Reconnaissance-based observations of American/Canadian Toads also occurred within the Flood Study Region during breeding bird surveys in June. The absence of this amphibian during surveys is explained by its later breeding period (June; Appendix 7C, Table 7C-3). At the time of surveys (late April and mid May), parts of the Low-Flow Channel were flooded between 0-3m; the West Dyke ditches held between 0-5m of water. These conditions appeared normal for the season.

Although amphibian species diversity was the same for the West Dyke and Floodway, species densities were not. Amphibian abundance is greater within the ditches of the West Dyke for both boreal chorus and wood frogs. Habitat structure (e.g., vegetation) and infrequent periods of flooding may contribute to the high densities of frogs noted during surveys. Boreal chorus frogs occurred in high densities (code 3; Appendix 7C, Table 7C-3) at every survey stop (20 stops in total), while wood frogs occurred at high densities (code 3) for 15 of the 20 stops and low densities at the remaining five stops surveyed along the West Dyke. Floodway results also indicated high densities for boreal chorus frogs (Appendix 7C, Table 7C-3) throughout all transect stops. However, these calls differed in loudness from the West Dyke. Based on these results, it appears frog densities were higher along the West Dyke when compared to the Floodway.

Individual leopard frogs were noted at 6 of the 9 survey stops within the Floodway Channel while only one leopard frog was heard at one stop along the West Dyke. Overall, Leopard frog occurrence within the Flood Study Region during the spring was very low.

Amphibians were also noted during fall field visits, within shallow pools of water south of the Seine River Siphon. Vegetated (short grasses, some sedge and cattail), clay-bottomed, shallow areas of the Channel supported leopard frogs and wood frogs. Leopard frogs may have been potentially looking to hibernate in the Low-Flow Channel substrate.

Other wildlife, namely mammals, were recorded within the Flood Study Region as reconnaissance observations (Appendix 7C, Table 7C-5). Of the 45 potential species of mammals inhabiting or utilizing the West Dyke and Floodway regions, eight were noted during site visits, includeding white-tailed deer, white-tailed jackrabbit, raccoon, beaver, vole, coyote, ground squirrels and red fox along the Floodway and white-tailed deer, white-tailed jackrabbit and beaver along the West Dyke (Appendix 7C, Table 7C-5). Other reconnaissance observations included snails and fingernail clams within and adjacent to, the Low Flow Channel. There were no unusual or notable concentrations of invertebrates or their habitat.

Table 7C-1
Specially Designated Areas within each Ecodistrict of the Floodway Expansion Regional Study Area

Ecozone	Ecodistrict	Specially Designated Areas	Area (ha)
Boreal Plains	Gimli (554 381 ha)	Broad Valley WMA	501.3
		Lee Lake WMA	7126.8
		Little Birch WMA	11.5
		Mantagao Lake WMA	104.0
		Mars Hill WMA	3368.8
		Birds Hill Provincial Park	3014.2
		Fisher Bay Park Reserve	2478.5
		Camp Morton Provincial Park	167.0
		Hnausa Beach Provincial Park	9.7
		Patricia Beach Provincial Park	54.2
		Winnipeg Beach Provincial Park	36.4
		Lake St. George Caves Ecological Reserve	50.7
		Netley Marsh Important Bird Area	1072.0
		Netley Creek Provincial Park	1.5
		Libau Bog Ecological Reserve	188.1
		Total	18184.9
	Steinbach (357 018 ha)	Rat River WMA	1053.7
		St. Malo Provincial Park	168.6
		Stuartburn WMA	328.7
		Watson P. Davidson WMA	2829.2
		St. Malo WMA	148.4
		Total	4528.5
Boreal Shield	Piney (245 513 ha)	Pocock Lake Ecological Reserve	165.4
		Watson P. Davidson WMA	140.3
		Moose Lake Provincial Park	932.6
		Spur Woods WMA	347.8
		Wampum Ecological Reserve	65.0
		Total	1651.0
	Stead (484 457 ha)	Catfish Creek WMA	6420.7
		Lee River WMA	1188.7
		Thalberg Bush WMA	725.1
		Elk Island Provincial Park	2.3
		Grand Beach Provincial Park	2462.4
		Pinawa Dam Provincial Park	26.0
		Whiteshell Provincial Park	2392.7
		Brokenhead River Ecological Reserve	62.5
		Lewis Bog Ecological Reserve	579.1
		Spur Woods WMA	383.3
		Watson P. Davidson WMA	2952.3
		Total	17195.1
Prairie	Portage (138 807 ha)	Lake Francis WMA	6670.9
		St. Ambroise Beach Provincial Park	45.7
		Clandeboye Bay Special Conservation Area	349.7
		Delta Marsh Heritage Marsh/Important Bird Area	16000.0
		Total	23066.3
	MacGregor (289 774 ha)	Portage Sandhills WMA	1591.5
		Whitemud Watershed WMA	619.9
		Stephenfield Provincial Park	94.3
		Total	2305.7

Ecozone	Ecodistrict	Specially Designated Areas	Area (ha)
Prairie	Winnipeg (918 370 ha)	Grants Lake WMA	399.7
		Oak Hammock Marsh WMA/Important Bird Area	3587.8
		Beaudry Provincial Park	938.1
		Duff Roblin Provincial Park	18.9
		Trappist Monastery Provincial Park	2.0
		Birds Hill Provincial Park	497.8
		Hyland Provincial Heritage Park	4.5
		Lockport Provincial Heritage Park	2.0
		River Road Provincial Heritage Park	2.0
		St. Norbert Provincial Heritage Park	2.0
		Total	5454.8
Grand Total			72386.3

Table 7C-2
Summary of the Proportions of Specially Designated Areas within each Ecodistrict

Ecodistrict	Specially Designated Area											
	Wildife Management Area		Provincial Park or Reserve		Ecological Reserve		Heritage Marsh and /or Important Bird Area		Special Conservation Area		Total Area	Total % of Ecodistrict
	Total Area (ha)	% of Ecodistrict	Total Area (ha)	% of Ecodistrict	Total Area (ha)	% of Ecodistrict	Total Area (ha)	% of Ecodistrict	Total Area (ha)	% of Ecodistrict		
Portage	6670.9	4.8	45.7	0.0	-	-	16000.0	11.5	349.7	0.3	23066.3	16.6
Stead	11670.1	2.4	4883.4	1.0	641.6	0.1	-	-	-	-	17195.1	3.5
Gimli	11112.4	2.0	5760.0	1.0	238.8	0.0	1072.0	0.2	-	-	18183.2	3.3
Steinbach	4360.0	1.2	168.6	0.0	-	-	-	-	-	-	4528.6	1.3
MacGregor	2211.4	0.8	94.3	0.0	-	-	-	-	-	-	2305.7	0.8
Piney	488.1	0.2	932.6	0.4	230.4	0.1	-	-	-	-	1651.1	0.7
Winnipeg	3987.5	0.4	1467.3	0.2	-	-	-	-	-	-	5454.8	0.6
Winkler	-	-	-	-	-	-	-	-	-	-	-	-
Emerson	-	-	-	-	-	-	-	-	-	-	-	-
Total	40500.4	11.8	13351.9	2.7	1110.8	0.3	17072.0	11.7	349.7	0.3	72384.8	26.8

Table 7C-3
Amphibians Surveyed at 48 Stops Within the Flood Study Region in Spring 2004

Species	Number of stops					
	Code 0	Code 1	Mean # of frogs heard / stop (Code 1)	Code 2	Mean # of frogs heard / stop (Code 2)	Code 3
Floodway (April): Amphibians observed at 15 stops						
Boreal Chorus Frog	5	1	2	2	4.5	7
Wood Frog	3	3	2	2	4.5	7
Leopard Frog	15	0	0	0	0	0
Floodway (May): Amphibians observed at 13 stops						
Boreal Chorus Frog	0	1	6	0	0	12
Wood Frog	2	6	2.6	0	0	5
Leopard Frog	7	6	0	0	0	0
West Dyke (May): Amphibians observed at 20 stops						
Boreal Chorus Frog	0	0	0	0	0	20
Wood Frog	0	5	3.8	0	0	15
Leopard Frog	17	3	1	0	0	0

Code:
0= no individuals calling
1= Individuals can be counted, calls not overlapping
2= Some individuals can be counted, others overlapping
3= Full chorus, calls continuous and overlaping, individuals not distinguishable

Table 7C-4

Bird Species observed during Flood Study Region
Breeding Bird Surveys June 2004

Species	Floodway*	West Dyke**	Total
Red-winged Blackbird	15	195	210
Savannah Sparrow	57	117	174
Common Mallard	73	80	153
Bobolink	14	39	53
Western Meadowlark	13	36	49
Brown-headed Cowbird	1	47	48
Cliff Swallow	31	9	40
Clay-coloured Sparrow	15	22	37
Killdeer	10	21	31
Meadow Lark	11	16	27
American Crow	6	17	23
American Goldfinch	4	16	20
Horned Lark		13	13
Canada Goose		12	12
Mourning Dove		12	12
Franklin's Gull	8	3	11
Barn Swallow		10	10
House Sparrow	4	6	10
Spotted Sandpiper	9		9
Song Sparrow	4	4	8
Eastern Kingbird		6	6
Tree Swallow		6	6
Sedge Wren		5	5
Brewer's Blackbird		4	4
Common Grackle	2	2	4
Ring-billed Gull	1	3	4
Sora		4	4
Blue-winged Teal	1	2	3
Gull	3		3
Magpie		3	3
Northern Harrier	1	2	3
Starling		3	3
Vesper Sparrow		3	3
Warbling Vireo		3	3
Western Kingbird		3	3
Yellow Warbler		3	3
Red-eyed Vireo		3	3
American Robin		2	2
Common Snipe	1	1	2
Least Flycatcher		2	2
Alder Flycatcher		1	1
Baltimore Oriole		1	1
Blue Jay		1	1
Common Yellow-throat		1	1
Great Crested Flycatcher		1	1
Upland Sandpiper		1	1
White-throated Sparrow		1	1
Woodpecker		1	1
Total	269	643	912

* Based on 16 survey stops ** Based on 38 survey stops

Table 7C-5
Reconnaissance Observations of Wildlife Along The Floodway During Fall 2003 & Spring 2004

Name	Visual (V) / Sign (S)	#	Fall (F) or Spring (S)	Location	Activity
Mammals					
American Beaver	V	1	F	Low-Flow Channel	Swimming
American Beaver	S	3	F	Low-Flow Channel	Dam, food cache, tracks
Coyote	S	1	F	Floodway Channel	Tracks
Coyote	V	1	S	Floodway Slope	Deer bones nearby
ground squirrel	V	3	F	Floodway Slope	Near burrows
Raccoon	S	2	F	Low-Flow Channel Bank	Tracks
Red Fox	S	1	F	Floodway Channel Bank	Tracks
Red Fox	V	1	S	Floodway Channel Base	Hunting
small mammal	S	many	F	Floodway Slope	Burrows
Vole	V	1	F	Floodway Slope	Red-backed Vole?
White-tailed Deer	S	5	F	Low-Flow Channel	Tracks
White-tailed Deer	V	3	F	Floodway Slope	Large doe with two young
White-tailed Deer	V	4	S	Floodway Slope	Foraging
White-tailed Jack Rabbit	V	2	F	Floodway Slope	Foraging
Birds					
American Crow	V	3	F	Near Floodway Channel	Flying
American Goldfinch	V	1	F	Near Floodway Channel	Flying
American Tree Sparrow	V	7	F	Floodway Channel	Migrant, in willow
Bald Eagle	V	1	F	Near Floodway Channel	Adult, perched in dead tree
Black-billed Magpie	V	6	F	Near Floodway Channel	Flying
Canada Goose	V	76	F	Floodway Channel	Loafing in water
Canada Goose	V	394	F	Near Floodway Channel	2 Flying Flocks
Canada Goose	V	7	F	Floodway Slope	Hunter-kill
Canada Goose	S	>5	F	Floodway Slope	Scat
Common Goldeneye	V	21	F	Floodway Channel	Loafing in water
Common Grackle	V	30	F	Channel	Migrant, in cattails
Double-crested Cormorant	V	7	F	Floodway Channel	Foraging
Duck	V	23	F	Floodway Channel	Loafing in water
Great Blue Heron	V	4	F	Floodway Channel	Foraging
Great Blue Heron	S	1	F	Low-Flow Channel	Tracks
Harris's Sparrow	V	5	F	Floodway Channel	Migrant flock in willow

Name	Visual (V) / Sign (S)	#	Fall (F) or Spring (S)	Location	Activity
Birds					
Rock Dove	V	32	F	Bridge	Roosting
Savannah Sparrow	V	>5	F	Floodway Slope	In grasses
Savannah Sparrow	V	1	F	Floodway Channel Base	In willow
shorebird	S	many	F	Low-Flow Channel	Tracks
Teal sp.	V	9	F	Floodway Channel	Loafing in water
Western Meadowlark	V	13	F	Floodway Slope	Scattered along Floodway
White-throated Sparrow	V	5	F	Floodway Channel	Migrant flock in willow
Amphibians					
Leopard Frog	V	10	F	Low-Flow Channel	Various sizes (near inlet)
Wood Frog	V	3	F	Low-Flow Channel	In small pools (near inlet)
Invertebrates					
Fingernail Clam	V	many	F	Low-Flow Channel	Empty shells
Fingernail Clam	V	many	F	Seine River Siphon	Empty shells in Silty bank
Snails	V	many	F	Low-Flow Channel	Living


April 27, 2004 Field Observations
St. Mary's Road Bridge
KEY MAP INDEX
1
2
3
4
5
6
7
8
9
10
11
Legend
Floodway ROW
Buildings
Structures
Landcover
Administrative Boundary
Road and Rail
Amphibian Observations
Code 1
Code 2
Code 3
Boreal Chorus Frog
Wood Frog
Leopard Frog
n/a
n/a
Code 1 Individuals can be counted, calls not overlapping.
Code 2 Some individuals can be counted, some overlapping.
Code 3 Full chorus, calls continuous and overlapping; individuals not distinguishable.
Source:
InterGroup
TetrES CONSULTANTS INC.
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Proposed Floodway Expansion Project
Amphibian Observations
Scale 1:26,000
0 400 800 1,600 m
N
W
E
S
635000
636000
637000
638000
639000
640000
641000
642000
5518000
5517000
5516000
5515000
5514000
5513000
5512000

Figure 7C.3-1


May 18, 2004 Floodway Observations
St. Mary's Road Bridge
635000
636000
637000
638000
639000
640000
641000
642000
5518000
5517000
5516000
5515000
5514000
5513000
5512000
N
S
W
E
KEY MAP INDEX
1
2
3
4
5
6
7
8
9
10
11
Legend
Floodway ROW
Buildings
Structures
Landcover
Administrative Boundary
Road and Rail
Amphibian Observations
Code 1
Code 2
Code 3
Boreal Chorus Frog
Wood Frog
Leopard Frog
n/a
n/a
Code 1 Individuals can be counted, calls not overlapping.
Code 2 Some individuals can be counted, some overlapping.
Code 3 Full chorus, calls continuous and overlapping; individuals not distinguishable.
Source:
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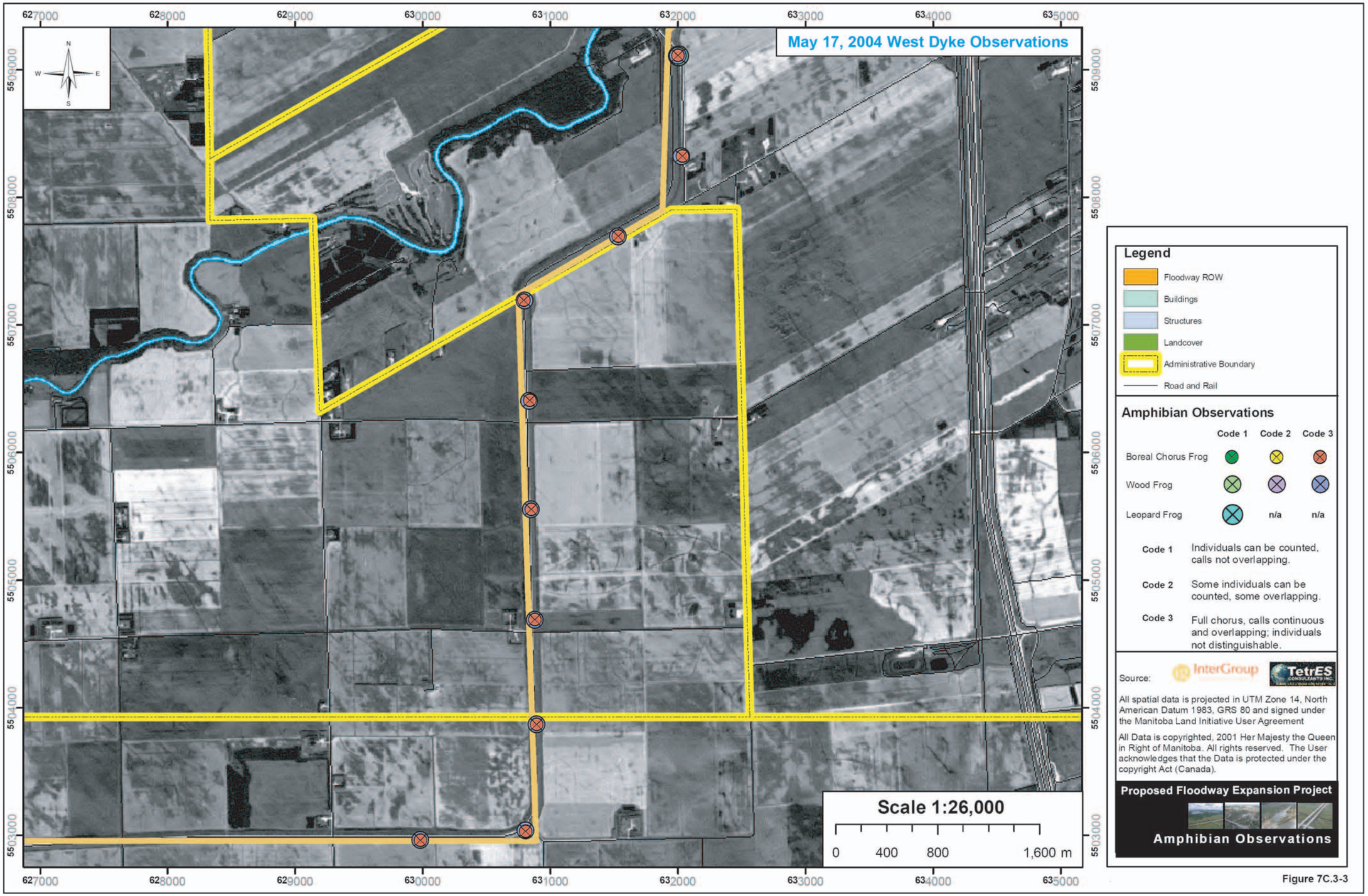
Proposed Floodway Expansion Project
Amphibian Observations
Scale 1:26,000
0
400
800
1,600 m

Figure 7C.3-2


May 17, 2004 West Dyke Observations
627000
628000
629000
630000
631000
632000
633000
634000
635000
5509000
5508000
5507000
5506000
5505000
5504000
5503000
N
W
E
S
Scale 1:26,000
0
400
800
1,600 m
Legend
Floodway ROW
Buildings
Structures
Landcover
Administrative Boundary
Road and Rail
Amphibian Observations
Code 1
Code 2
Code 3
Boreal Chorus Frog
Wood Frog
Leopard Frog
n/a
Code 1 Individuals can be counted, calls not overlapping.
Code 2 Some individuals can be counted, some overlapping.
Code 3 Full chorus, calls continuous and overlapping; individuals not distinguishable.
Source:
InterGroup
TetrES CONSULTANTS INC.
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Proposed Floodway Expansion Project
Amphibian Observations

Figure 7C.3-3