APPENDIX 11.

RISK ASSESSMENT OF DEVELOPMENT OF KEEWATINOOW CONVERTER STATION TO THE UNNAMED TRIBUTARY OF THE NELSON RIVER

Appendix 11

Risk Assessment of Development of Keewatinoow Converter Station to the Unnamed Tributary of the Nelson River

Site Description

The proposed Keewatinoow converter site (NCS4) is located south of Goose Creek. The site includes the saturated headwater area of an unnamed tributary, which has poor connectivity to the Nelson River. No fish were captured during spring or summer sampling efforts in this tributary. The habitat type within the proposed converter station footprint consisted of pools with organic substrate with little channel development. This tributary is rated as Marginal fish habitat and does not support fish directly (see Appendix 4 for further details). It provides indirect fish habitat in the form of water, nutrients, and food (lower trophic levels) to the Nelson River. Considering the small size of this unnamed tributary and the large size of the Nelson River, the relative contribution of water, food, and nutrients to the Nelson River are negligible.

Based on NHN dataset, the approximate linear distance of the waterbody from the converter station site to the Nelson River is 1,500 m. Infilling of the converter station's footprint includes 622 m of this linear distance.

The area surrounding the converter station footprint is flat, saturated land that drains towards the Conawapa access road ditch similarly to the converter site's area, and is directed through the same culvert. The surrounding area also has similar substrate and vegetation as the footprint area. The infilling of the footprint's wetted area would be displaced proportionally to adjacent low-lying areas.

Risk Assessment

The potential effects of the construction of the Keewatinoow Converter Station on the unnamed creek in relation to fish habitat were assessed following the Practitioners Guide to the Risk Management Framework for DFO Habitat Management Staff (DFO 2010). The unnamed creek at the converter station does not support fish and serves as indirect fish habitat only. Therefore the fish and fish habitat sensitivity was rated as Low (Table A11-1). Infilling approximately 622 m of the upper reaches of the creek was rated as High for scale of negative effect (Table A11-2). Approximately 40% of the channel length of the small unnamed creek would be affected leading to high ratings irrespective of the value or sensitivity of the fish habitat.

The construction of the Keewatinoow Converter Station will negatively affect a large proportion of the total creek channel. However due to the nature of the habitat and lack of

fish presence (i.e. boreal wetland and no fish), the risk of habitat effect requiring an authorization under the Fisheries Act is considered very Low.

References

FISHERIES AND OCEANS CANADA (DFO) 2010. Practitioners Guide to the Risk Management Framework for DFO Habitat Management Staff Version 1.0. August 2010.

Tables

Table A11-1. Sensitivity of fish and fish habitat in the unnamed tributary at the proposed Keewatinoow Converter Station site.

Attribute	Description	Rating
Species Sensitivity	Sensitivity of fish species/community to changes in environmental conditions (e.g., suspended sediments, water temperature, oxygen).	Low
Species Dependence on Habitat	Use of habitat by fish species. Some species may have very specific habitat requirements.	Low
Rarity	The relative strength of a fish population or prevalence of a specific habitat type.	Low
Habitat Resiliency	The relative strength of a fish population or prevalence of a specific habitat type.	Low
Overall		Low

Table A11-2. Scale of negative effect rating for effects of development of the Keewatinoow Converter Station on the unnamed tributary of the Nelson River.

Attribute	Description	Scale
Extent	The direct footprint of the development as well as indirectly affected areas, such as downstream areas.	High
Duration	The amount of time that a residual effect will persist.	High
Intensity	The expected amount of change from baseline condition.	High
Overall		High

Figures

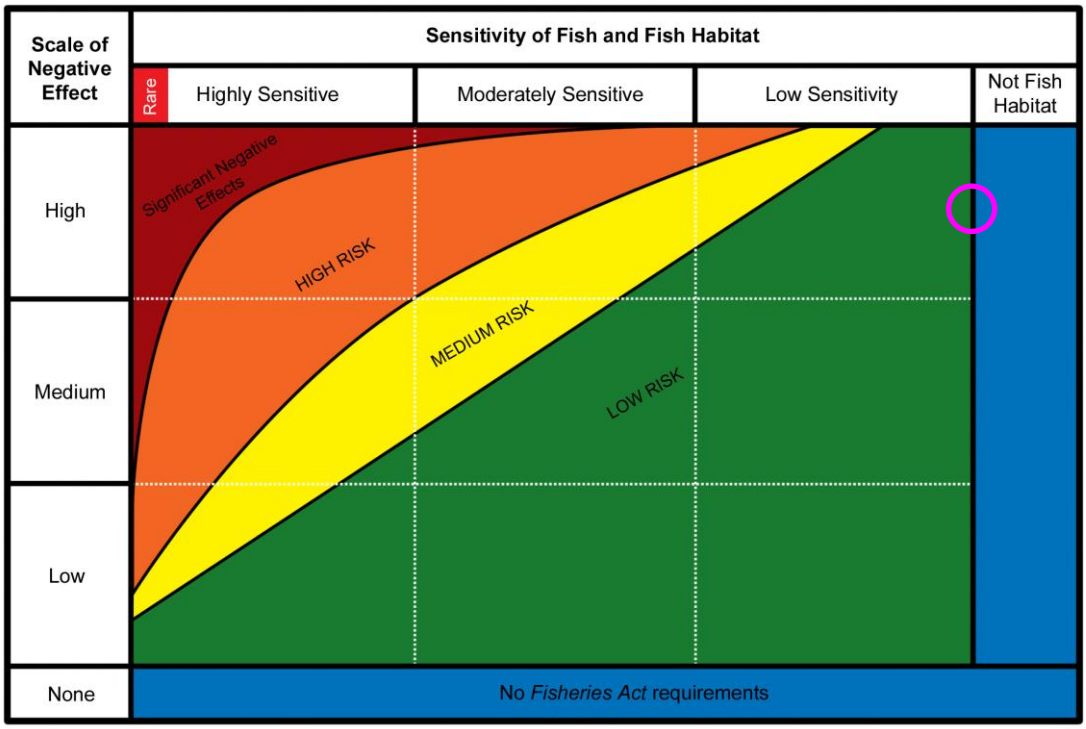

Figure A11-1. Risk assessment of development of the Keewatinoow Converter Station on fish habitat. Figure from DFO (2010).

APPENDIX 12.

AQUATIC ENVIRONMENT VEC ENVIRONMENTALLY SENSITIVE SITES

Appendix 12

Environmentally Sensitive Site (ESS) Tables for Project Components

Table A12-1. Bipole III Project Transmission Line Sensitive Site Standard Potential Effects, and Standard Mitigation Measures.

Effects	Mitigation measure
• Construction Effects (Habitat loss from structure foundations and installations, Contamination from structure foundations and installations, Increased erosion and sedimentation of streams, Rutting of floodplains, Damage to stream banks)	Where possible, installation of overhead lines over watercourses and poorly drained habitats such as bogs and fens will be conducted under frozen conditions or aerially. Where possible, transmission line approaches and crossings will be perpendicular to the watercourse and will avoid unstable features such as meander bends, braided streams and active floodplains. All structures (temporary and permanent), will be placed above the ordinary high water mark (HWM).
• Vegetation Removal Effects (Loss of riparian vegetation, Increased erosion and sedimentation of streams)	Removal of riparian vegetation will be limited to select plants within the RoW required to accommodate overhead lines (i.e. ground cover and shrubs to remain). A machine free zone (MFZ) of 7 m will be established from the HWM of all waterbodies where harvesting or clearing machinery will not enter other than to cross the stream. A riparian buffer (RB) of 7, 15 or 30 m (depending on fish habitat quality) will be established at all waterbodies where ground disturbance is minimized, all shrub and herbaceous vegetation is retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements are retained. Vegetation will be retained for as long as possible prior to construction. Clearing limits and sensitive areas will be clearly marked prior to vegetation removal. Clearing will be conducted under favourable weather conditions. Operations will be postponed under adverse weather (i.e. storm events), to minimize potential sediment introduction into the aquatic environment. Slash/debris piles will be adequately stabilized and stored well above the HWM.
• Vegetation Management Effects (Loss of riparian vegetation, Increased erosion and sedimentation of streams)	In riparian areas, vegetation will be maintained in a way that leaves root systems intact. Riparian vegetation maintenance within 30 m of the HWM will affect a maximum of 1/3 of woody vegetation (e.g. trees and shrubs) within the RoW.

Effects	Mitigation measure
	Riparian vegetation maintenance will be conducted by the method that minimizes stream bank disturbance. If rutting or erosion is likely, appropriate bank protection measures will be implemented prior to machinery use. All waste materials (slash) will be stabilized well above the HWM to mitigate entry into the watercourse. Application of herbicides will adhere to appropriate best management practices. All chemical applications will be conducted by a certified applicator.
• Increased erosion and sedimentation of streams	Disturbed areas will be re-vegetated following completion of works. Appropriate erosion and sediment control measures will be implemented to mitigate sediment introduction into watercourses.
• Stream Crossing Effects (Fish habitat disturbance and impeded fish movement due to temporary stream crossings, Increased bank erosion due to disturbance, Increased TSS from stream bank disturbance)	Temporary stream crossings will be constructed only where existing crossings do not exist or are not practical for use. Temporary stream crossings consist of bridges, dry streambed fords or a one-time ford in flowing waters. Whenever possible, existing trails, roads and cut lines will be used as access routes. Crossings will be constructed on a straight section of the watercourse, perpendicular to the channel. Clean materials will be used in the construction of temporary crossings. All materials will be removed upon project completion or prior to freshet (whichever occurs first). One-time fording of flowing streams and temporary bridge construction will only occur where the channel width is less than 5 m (from HWM to HWM). Fording in flowing waters will occur within appropriate fisheries timing windows, as outlined in DFO's *Manitoba In-water Construction Timing Windows for the Protection of Fish and Fish Habitat* (DFO 2007e) (Appendix 6).These timing windows are determined on a case by case basis according to the species of fish in the water body, whether those fish spawn in the spring, summer or fall, and whether the water body is located in Northern or Southern Manitoba. Timing windows where no instream work may occur for spring spawning fish extend from approximately April - June, windows for summer spawning fish extend from May - July, and windows for fall spawning fish extend from September - May, with exact dates dependant on location. Fording will occur under low flow and favourable weather conditions and will avoid known fish spawning areas. Where necessary, measures to protect the streambed and banks will be in place prior to fording (i.e. pads, swamp mats). Protection measures will not impede fish passage, or constrict flows. If fording will likely result in erosion and degradation of the streambed and banks, a temporary bridge will be constructed. At ice bridges water withdrawal will not exceed 10% of instantaneous flow and water flow beneath the ice bridge will be maintained.

Table A12-2. Bipole III Project Preferred Route Sensitive Sites, Potential Effects, and Mitigation Measures. Mitigation measures are those in addition to standard mitigation outlined in Table A12-1.

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
1	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
2	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
3	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 – July 15 to protect fish during spawning and rearing.	
4	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
5	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
6	Unnamed Tributary of Tiny Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
7		N	Wetland			
8	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
9	Unnamed Tributary of Goose Creek	Y	Small headwater tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
10	Goose Creek	Y	Perennial stream with documented indicator and forage fish species	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
11	Unnamed Tributary of Weir River	N	Small headwater tributary			
12	Unnamed Tributary of Weir River	N	Small headwater tributary			
13	9-Mile Creek	Y	Headwater portion of 9-Mile Creek with wetland like habitat (low flow and abundant vegetation)	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
14	9-Mile Creek	Y	Headwater portion of 9-Mile Creek with wetland like habitat (low flow and abundant vegetation)	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
15	9-Mile Creek	Y	Headwater portion of 9-Mile Creek with wetland habitat (low flow and abundant vegetation)	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
16	9-Mile Creek	Y	Headwater portion of 9-Mile Creek with wetland habitat (low flow and abundant vegetation)	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
17	9-Mile Creek	Y	Headwater portion of 9-Mile Creek with wetland habitat (low flow and abundant vegetation)	• Instream work effects	No instream work between April 15 – July 15 to protect fish during spawning and rearing.	
18	Unnamed Tributary of McMillan Creek	N	Ephemeral headwater bog			
19	Unnamed Tributary of McMillan Creek	N	Ephemeral headwater bog			
20	Unnamed Tributary of McMillan Creek	Y	Perennial creek with saturated floodplain and fish presence	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
21	Unnamed Tributary of McMillan Creek	Y	Perennial creek with saturated floodplain and fish presence	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
22	McMillan Creek	Y	Perennial creek with stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
23	Unnamed Tributary of McMillan Creek	N	Small headwater tributary/bog area			
24	Unnamed Tributary of McMillan Creek	N	Small headwater tributary/bog area			
25	Unnamed Tributary	N	Ephemeral headwater creek/bog area			
26	Unnamed Tributary of Limestone River	N	Ephemeral headwater creek/bog area			
27	Limestone River	Y	Major river - important fish habitat with stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
28	Limestone River	Y	Major river - important fish habitat with stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
29	Unnamed Tributary of Limestone River	Y	Small unnamed tributary with potential for fish presence and saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
30	Unnamed Tributary of Limestone River	Y	Small unnamed tributary with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
31	Unnamed Tributary of Unnamed Lake	Y	Ephemeral stream with saturated floodplain sensitive to damage	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
32	Unnamed Tributary of Unnamed Lake	Y	Ephemeral stream with abundant instream vegetation	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
33	Limestone River	Y	Main river with some bare soil and slumping	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
34	Unnamed Tributary of Limestone River	Y	Ephemeral stream with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
35	North Moswakot River	Y	Perennial river with stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
36	Unnamed tributary of South Moswakot River	Y	Small tributary with soft floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
37	Unnamed tributary of South Moswakot River	Y	Small intermittent tributary with unknown bank stability	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
38	South Moswakot River	Y	Perennial river with unknown bank stability	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
39	Unnamed tributary of South Moswakot River	Y	Primary intermittent tributary with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
40	Unnamed tributary of South Moswakot River	Y	Small tributary with soft shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
41	Unnamed tributary of Stephens Lake	Y	Primary intermittent tributary with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
42	Unnamed tributary of Assean River	Y	Intermittent tributary with unknown bank stability	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
43	Unnamed tributary of Assean River	Y	Intermittent tributary with unknown bank stability, and soft shrub floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
44	Unnamed tributary of Apetowachakamasik Lake	Y	Intermittent stream with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
45	Unnamed Tributary of Apetowachakamasik Lake	Y	Ephemeral tributary with abundant instream vegetation	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
46	Unnamed Tributary of Apetowachakamasik Lake	Y	Dry ephemeral tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
47	Unnamed Tributary of Assean River	Y	Ephemeral tributary that likely supports fish when water levels are high	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
48	Crying River	Y	Perennial river, important fish habitat, stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
49	Unnamed Tributary of Hunting River	Y	Ephemeral stream with abundant instream vegetation	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
50	Hunting River	Y	Perennial river, important fish habitat, stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
51	Unnamed Tributary of Hunting River	N	Ephemeral tributary, may provide fish habitat when water levels are high			

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
52	Awaweyaykamak Creek	Y	Intermittent stream with bank instability	• Erosion and sedimentation • Damage to stream Banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
53	Unnamed Tributary of Hunting River	Y	Primary ephemeral tributary with sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
54	Unnamed Tributary of Hunting River	Y	Secondary ephemeral tributary with sensitive floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
55	Missewaitay River	Y	Perennial river with exposed banks susceptible to erosion	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
56	Unnamed tributary of Hunting Lake	Y	Small tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
57	Unnamed tributary of Hunting Lake	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
58	Unnamed tributary of Hunting Lake	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
59	Unnamed tributary of Assean Lake	Y	Ephemeral stream with low bank stability, but marginal fish habitat	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
60	Unnamed tributary of Assean Lake	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
61	Unnamed tributary of Clay River	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
62	Unnamed tributary of Clay River	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
63	Clay River	Y	Major river with unkown bank stability	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
64	Unnamed tributary of Burntwood River	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
65	Unnamed tributary of Burntwood River	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
66	Unnamed tributary of Burntwood River	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
67	Unnamed tributary of Burntwood River	Y	Small intermittent tributary/peat wetland with soft floodplain and potential fish habitat	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
68	Unnamed tributary of Orr Creek	Y	Small intermittent tributary with soft floodplain and potential fish habitat	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
69	Orr Creek	Y	Perennial river with unknown bank stability	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
70	Unnamed tributary of Orr Creek	Y	Small intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
71	Unnamed tributary of Burntwood River	Y	Intermittent tributary with unknown bank stability	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
72	Odei River	Y	Major perennial river with stable vegetated banks	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
73	Unnamed Tributary of Odei River	Y	Ephemeral stream with abundant instream vegetation	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
74	Unnamed Tributary of Burntwood River	Y	Ephemeral stream with potentially sensitive floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
75	Unnamed Tributary of Burntwood River	Y	Small ephemeral stream	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
76	Unnamed Tributary of Burntwood River	N	Small ephemeral stream			
77	Burntwood River	Y	Major perennial river with unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
78	Tributary of Burntwood River	Y	Intermittent stream with a potentially sensitive floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
79	Ponded area within wetland	N	Small, shallow, isolated wetland			
80	Tributary of Brannigan Creek	Y	Small intermittent creek with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
81	Tributary of Brannigan Creek	Y	Small intermittent creek with stable shoreline area	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
82	Brannigan Creek	Y	Intermittent creek with unstable banks, and potentially sensitive floodplain	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
83	Unnamed stream	Y	Intermittent steam with little flow	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
84	Unnamed stream	Y	Intermittent stream with little flow	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
85	Small, unnamed lake	Y	Small lake with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
86	Tributary of Isbister Creek	Y	Wetland like area with potentially sensitive saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
87	Tributary of Isbister Creek	Y	Confluence of two streams, potentially stable floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
88	Tributary of Isbister Creek	Y	Intermittent stream with exposed soil making floodplain potentially unstable/sensitive	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
89	Isbister Creek	Y	Intermittent creek with potentially sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
90	Tributary of Isbister Creek	Y	Headland wetland with potentially unstable/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
91	Tributary of Partridge Crop Lake	N	Dry ephemeral tributary; No fish habitat	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
92	Tributary of Partridge Crop Lake	Y	Ephemeral tributary with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
93	Unnamed Tributary of Partridge Crop Lake	Y	Soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
94	Tributary of Partridge Crop Lake	Y	Ephemeral tributary with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
95	Tributary of Partridge Crop Lake	Y	Ephemeral tributary with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
96	Tributary of Partridge Crop Lake	N	Ephemeral tributary with shrub riparian area			

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
97	Tributary of Partridge Crop Lake	Y	Intermittent tributary with a potentially sensitive grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
98	Partridge Crop Lake	Y	Mouth of tributary connected to lake, with some instream veg, very slow flow, and stable streambanks	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
99	Partridge Crop Lake	Y	Lake with stable rock shoreline	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
100	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
101	Unnamed Tributary into Partridge Crop Lake	N	Ephemeral tributary with stable banks			
102	Unnamed Tributary into Partridge Crop Lake	Y	Wetland like area with abundant vegetation	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
103	Unnamed Pond	N				
104	Unnamed Tributary into Partridge Crop Lake	Y	Ephemeral headwater tributary/wetland; Stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
105	Unnamed Tributary into Partridge Crop Lake	Y	Perennial tributary with potentially sensitive floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
106	Unnamed Tributary into Partridge Crop Lake	Y	Perennial tributary with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
107	Unnamed Tributary into Partridge Crop Lake	Y	Perennial stream with saturated floodplain	• Rutting of floodplain	Winter Construction	
108	Unnamed Tributary into Partridge Crop Lake	Y	Ephemeral small stream/wetland area with saturated floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
109	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater stream with stable banks, and little flow or water	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
110	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater stream/wetland area with potentially sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
111	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater stream/wetland area with potentially sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
112	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater stream/wetland area with potentially sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
113	Unnamed Tributary into Partridge Crop Lake	Y	Small headwater stream/wetland area with potentially sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
114	Unnamed Tributary into Partridge Crop Lake	Y	Perennial tributary with potentially unstable and sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
115	Unnamed Tributary into Partridge Crop Lake	Y	Perennial headwater stream with potentially unstable and sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
116	Unnamed Tributary into Teardrop Lake	Y	Perennial headwater stream with saturated/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
117	Unnamed Tributary connecting Gordon Brown Lake and Wintering Lake	Y	Perennial tributary with saturated/perennial floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
118	Unnamed Tributary of Wintering Lake	Y	Small tributary with lots of beaver activity, deadwood, a small floodplain, and stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
119	Unnamed Tributary into Gordon Brown Lake	Y	Intermittent stream with soft floodplain	• Rutting of floodplain	Winter Construction	
120	Unnamed Tributary into Wintering Lake	Y	Small ephemeral headwater stream with saturated/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
121	Unnamed Tributary into Wintering Lake	Y	Small ephemeral headwater stream with saturated/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
122	Unnamed Tributary into Wintering Lake	Y	Small ephemeral headwater stream with saturated/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
123	Unnamed Tributary into Wintering Lake	Y	Small ephemeral headwater stream with saturated/sensitive floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
124	Patrick Creek	Y	Perennial creek with road crossing upstream	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
					rearing.	
125	Halfway River	Y	Perennial river with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
126	Halfway River	Y	Perennial river with stable banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
127	Unnamed tributary of Patrick Lake	N	Small intermittent headwater tributary			
128	Unnamed pond	N	Small dry grassy area/pond			
129	Unnamed tributary of Tooth Lake	Y	Small tributary with soft grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
130	Unnamed tributary of Rocky Lake	Y	Small tributary with soft grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
131	Unnamed tributary of Monty Lake	Y	Small tributary with soft grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
132	Unnamed tributary of Leech Lake	Y	Small tributary with soft grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
133	Unnamed tributary of Sipiwesk Lake	Y	Small tributary with soft floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
134	Lumgair Creek	Y	Small tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
135	Thicket Creek	Y	Small tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
136	Unnamed tributary of Thicket Creek	Y	Small tributary with soft grass floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
137	Unnamed tributary of Clarke Creek	Y	Small tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
138	Unnamed tributary of Clarke Creek	Y	Small tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
139	Unnamed tributary of Clarke Creek	Y	Small tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
140	Unnamed tributary of Clarke	Y	Small tributary with soft	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
	Creek		floodplain			
141	Clarke Creek	Y	Perennial creek with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
142	Unnamed tributary of Muningwari Creek	Y	Intermittent tributary with soft floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
143	Unnamed Tributary into Mitishto River	Y	Intermittent stream with an unstable bank	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
144	Unnamed Tributary into Mitishto River	Y	Intermittent tributary with saturated floodplain	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
145	Mitishto River	Y	Perennial river with slumping left bank	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
				• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
146	Mitishto River	Y	Perennial river with unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
147	Unnamed Tributary into Mitishto River	Y	Ephemeral tributary with potentially sensitive floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
148	Unnamed Tributary into Mitishto River	Y	Intermittent tributary/channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
149	Unnamed Tributary into Mitishto River	Y	Intermittent tributary/channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
150	Unnamed Tributary into Mitishto River	Y	Intermittent tributary/channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
151	Unnamed Tributary into Mitishto River	Y	Intermittent tributary/channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
152	Unnamed Tributary into Mitishto River	Y	Ephemeral tributary/channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
153	Unnamed Tributary into Mitishto River	Y	Ephemeral tributary within headwater bog, and is a channelized diversion channel	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
154	Mitishto River	Y	Perennial river with soft floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
155	Unnamed Tributary into Dyce Lake	Y	Ephemeral tributary with large wetland area and soft floodplain	• Rutting of floodplain	Winter Construction	
156	Unnamed Tributary of Frog Creek	Y	Ephemeral tributary with soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
157	Unnamed Tributary into Frog Creek	Y	Headwater bog area intermixed with small pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
158	Frog Creek	Y	Perennial creek with soft grass floodplain connecting Cormorant and North Moose Lake	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
159	Unnamed Headwater or Side Tributaries into Frog Creek	N	Small ephemeral tributary			
160	Unnamed Headwater or Side Tributaries into Little Frog Creek	N	Small ephemeral tributary			
161	Unnamed Headwater or Side Tributaries into Little Frog Creek	N	Small ephemeral tributary			
162	Unnamed Headwater or Side Tributaries into Little Frog Creek	N	Small ephemeral tributary			
163	Unnamed Headwater or Side Tributaries into Little Frog Creek	N	Small ephemeral tributary			
164	Unnamed Headwater or Side Tributaries into Little Frog Creek	N	Small ephemeral tributary			
165	Unnamed Tributary into Little Frog Creek	N	Small ephemeral tributary			

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
166	Unnamed Tributary into Little Frog Creek	N	Small ephemeral tributary			
167	Unnamed Tributary of Unnamed Lake	N	Small ephemeral tributary			
168	Unnamed tributary of Little Frog Creek	Y	Perennial tributary/headwater bog area with soft riparian area	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
169	Little Frog Creek	Y	Perennial Creek with soft riparian area	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
170	Unnamed tributary of Little Frog Creek	N	Old dry channel or side tributary			
171	Unnamed tributary of Little Frog Creek	N	Old dry channel or side tributary			
172	Unnamed tributary of Little Frog Creek	Y	Perennial tributary with saturated floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
173	Unnamed tributary of Little Frog Creek	N	Old dry channel or side tributary			
174	Unnamed tributary of Little Frog Creek	N	Old dry channel or side tributary			
175	Unnamed tributary of Little Frog Creek	N	Old dry channel or side tributary			
176	Unnamed pond	N	Small pond in larger wetland area			
177	Saskatchewan River	Y	Major river	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing.	
178	Unnamed tributary of Saskatchewan River	Y	Appears to be inactive channel with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
179	Unnamed tributary of Saskatchewan River	Y	Appears to be inactive channel with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
180	Rall's Creek	Y	Perennial creek with stable vegetated banks	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
181	Unnamed pond	N	Small pond within grass wetland area			
182	Iskwayanikakespeetik Creek	Y	Intermittent creek with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
183	Iskwayanikakespeetik Creek	Y	Intermittent creek with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
184	Iskwayanikakespeetik Creek	Y	Intermittent creek with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
185	Unnamed tributary of Cedar Lake	Y	Slow moving stagnant tributary with soft grass/shrub floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing.	
186	Unnamed drain	Y	Intermittent drain connected to Lake Winnipegosis with stable vegetated banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
187	Overflowing River	Y	Major river with stable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
188	Unnamed tributary of Lake Winnipegosis	Y	Intermittent tributary well connected to Lake Winnipegosis with soft grass floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
189	Red Deer River	Y	Major river with stable vegetated banks	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing.	
190	Unnamed tributary of Lake Winnipegosis	Y	Small ephemeral tributary	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
191	Unnamed tributary of Lake Winnipegosis	N	Small ephemeral tributary			
192	Unnamed tributary of Lake Winnipegosis	Y	Small ephemeral tributary with soft floodplain in a wetland area	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
193	Unnamed tributary of Sucker Creek	N	Small ephemeral tributary			
194	Unnamed tributary of Sucker	N	Small ephemeral tributary			

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
	Creek					
195	Unnamed tributary of Unnamed Lake	Y	Small ephemeral tributary with potentially soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
196	Unnamed tributary of Unnamed Lake	Y	Small ephemeral tributary with potentially soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
197	Unnamed tributary of Unnamed Lake	Y	Small ephemeral tributary with potentially soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing.	
198	Unnamed tributary of Unnamed Lake	Y	Small ephemeral tributary	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
199	Steeprock River	Y	Major river with unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between September 15 - June 30 to protect fish during spawning and rearing.	
200	Unnamed tributary of Mafeking Creek	Y	Small ephemeral tributary	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
201	Mafeking Creek	Y	Perennial creek with forested riparian area and soft shrub floodplain	• Rutting of floodplain	Winter Construction	
				• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
202	Unnamed tributary of Moose Creek	Y	Ephemeral tributary with soft grass floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain.	Winter Construction	
203	Unnamed tributary of Moose Creek	Y	Intermittent tributary with soft grass floodplain	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain.	Winter Construction	
204	Unnamed tributary of Moose Creek	Y	Ephemeral tributary with soft floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain.	Winter Construction	
205	Moose Creek	Y	Intermittent creek with soft shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain.	Winter Construction	
206	Moose Creek	Y	Intermittent creek with soft shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain.	Winter Construction	
207	Moose Creek	Y	Intermittent creek with soft shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
					fish during spawning and rearing.	
208	Unnamed tributary of Bell River	Y	Ephemeral tributary with soft floodplain	• Rutting of floodplain.	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
209	Bell River	Y	Perennial river with stable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
210	Unnamed tributary of Bell River	N	Intermittent headwater tributary			
211	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
212	Bell Creek	Y	Intermittent creek channelized at RoW	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
213	Wawayanagan River	Y	Intermittent river with saturated/soft floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
214	Unnamed Creek	N	Ephemeral agricultural drain			
215	Fishtown Creek	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
216	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
217	Swede Creek	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
218	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
219	Unnamed tributary of Woody River	Y	Headwaters of ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
220	Woody River	Y	Perennial river with exposed unstable banks and canopy cover	• Removal of riparian canopy • Erosion and sedimentation • Damage to stream banks	Minimize clearing of riparian trees	Clearly mark unstable banks and avoid vehicle crossing
221	Tributary of Woody River	Y	Intermittent tributary with canopy cover and somewhat unstable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Removal of riparian canopy • Erosion and sedimentation • Damage to stream banks	Minimize clearing of riparian trees	Clearly mark unstable banks and avoid vehicle crossing
222	Tributary of Woody River	Y	Intermittent tributary with canopy cover and somewhat unstable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Removal of riparian forest canopy	Minimize clearing of riparian trees	
223	Poplar Creek	Y	Ephemeral tributary with stable vegetated banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
224	Poplar Creek	N	Ephemeral headwater agricultural drain			

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
225	Poplar Creek	N	Ephemeral headwater agricultural drain			
226	Poplar Creek	N	Ephemeral headwater agricultural drain			
227	Oxbow lake/wetland of Swan River	Y	Oxbow with stable vegetated banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
228	Oxbow lake/wetland of Swan River	N	Oxbow with stable vegetated banks			
229	Swan River	Y	Major river with bare and slumping banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
230	Kitzul Drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
231	Unnamed agricultural drain	Y		• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
232	Unnamed agricultural drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
233	North Duck River	Y	River with unstable cutbanks and exposed soil	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
234	Unnamed tributary of North Duck River	Y	Intermittent tributary in wetland area with soft shrub floodplain	• Rutting of floodplain	Winter Construction	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
235	Sclater River	Y	River in wetland area with grass/shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
236	Unnamed tributary of Sclater River	Y	Intermittent tributary in wetland area with soft shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
237	Unnamed tributary of North Pine River	Y	Creek in wetland area with soft floodplain and some bank instability	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain • Erosion and sedimentation • Damage to stream banks	Winter Construction	Clearly mark unstable banks and avoid vehicle crossing
238	North Pine River	Y	Perennial river with unstable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
239	North Pine River	Y	Perennial river with unstable banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
					fish during spawning and rearing.	
240	North Pine River	Y	Perennial river with unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
241	South Pine River	Y	Perennial river with unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
242	Unnamed pond	N	Small unnamed lake			
243	Unnamed tributary of Garland River	Y	Ephemeral tributary with soft grass/shrubland floodplain	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
244	Garland River	Y	Perennial river with some bank instability	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
245	Backwater of Garland River	Y	Perennial backflow tributary with some bank instability	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
					rearing.	
246	Backwater of Garland River	Y	Perennial backflow tributary with canopy cover and some bank instability	• Removal of riparian canopy • Erosion and sedimentation • Damage to stream banks	Minimize clearing of riparian trees	Clearly mark unstable banks and avoid vehicle crossing
247	Unnamed tributary of Wellburns Creek	Y	Intermittent stream with soft grass/shrub floodplain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
				• Rutting of floodplain	Winter Construction	
248	Unnamed tributary of Wellburns Creek	Y	Small ephemeral stream	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
					No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
249	Wellburns Creek	Y	Perennial creek with some bank instability	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
250	Unnamed small lake	N	Small lake within larger wetland area			
251	Mossy River	Y	Perennial river	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
252	Robinson Creek	Y	Ephemeral creek	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
253	Unnamed Tributary of Cork Cliff Creek	Y	Small intermittent stream	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
254	Cork Cliff Creek	Y	Small intermittent creek with some exposed banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
255	Unnamed Tributary of Lake Winnipegosis	Y	Ephemeral stream	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
256	Unnamed Tributary of Lake Winnipegosis	Y	Ephemeral stream	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
257	German Creek	Y	Intermittent creek	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
258	Unnamed pond	N	Small pond surrounded by larger wetland			
259	Unnamed agricultural drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
260	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
261	Unnamed stream between Jarvies Lake and an unnamed lake	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
262	Garrioch Creek	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
					rearing.	
263	Rocklan Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
264	Small, unnamed lake	Y	Small lake surrounded by wetland area	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
265	Small, unnamed lake	Y	Small lake surrounded by wetland area	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
266	Small, unnamed lake	N	Small lake surrounded by wetland area			
267	Unnamed road ditch	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
268	Whitemud River	Y	River with unstable banks and riparian forest	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
269	Squirrel Creek	Y	Intermittent creek	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
270	New Beaudin Drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
271	Unnamed ditch	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
272	Unnamed road ditch	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
273	Westbourne Drain	Y	Intermittent drain with stable well vegetated banks	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
274	Unnamed, small lake	N	Ephemeral stream/wetland			
275	Unnamed tributary of Rat Creek	N	Ephemeral stream			
276	Bagot Creek	Y	Perennial creek with soft grass floodplain and steeply sloped riparian area	• Rutting of floodplain	Winter Construction	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
277	Rat Creek	Y	Perennial creek with forest canopy cover	• Removal of riparian forest canopy	Minimize clearing of riparian trees	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
278	Unnamed wetland	N	Unnamed ephemeral wetland			
279	Fetterly Creek	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
280	Unnamed tributary of Assiniboine River	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
281	Assiniboine River	Y	Major river	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between September 15 - June 30 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
282	Unnamed small wetland area	N	Ephemeral wetland			
283	Unnamed small lake	N	Small unconnected perennial lake/pond			
284	Unnamed agricultural drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
285	11-A Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
286	11-A Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
287	11-A Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
288	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
289	Parker Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
290	Parker Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
291	Garber Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
292	Garber Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
293	Unnamed agricultural drain	Y	Intermittent agricultural drain with exposed banks;	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
294	Unnamed road ditch	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
295	Manness Drain	Y	Intermittent agricultural drain with exposed banks; No fish habitat	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
296	Domain Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
297	Unnamed agricultural drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
298	La Pointe Coulee	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
299	Red River	Y	Major river with unstable, exposed, steep banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between September 15 - June 30 to protect fish during spawning and rearing.	
300	Unnamed tributary of Marsh River	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
301	Marsh River	Y	Perennial river with exposed, somewhat unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
302	Rat River	Y	Perennial river with exposed, unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
303	Unnamed agricultural drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
304	Tourond Creek	Y	Perennial creek with somewhat unstable banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
305	Old South Lateral Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
306	South Lateral Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
307	Chorlitz Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
308	Manning Canal	Y	Intermittent agricultural drain with riffle habitat	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	

ID	Name	Fish Habitat	Description	Effect	Mitigation 1	Mitigation 2
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
309	Youville Drain	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
310	Seine River Diversion	Y	Perennial agricultural drain/river diversion	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
311	Seine River	Y	Channelized perennial river with unstable/exposed banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing	
				• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
312	Unnamed ditch/drain connected to Seine River	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
313	Unnamed ditch/drain connected to Seine River	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
314	Fish Creek	Y	Intermittent agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	
315	Unnamed lake	N	Ephemeral low spot in agricultural field			
316	Unnamed ditch/drain	N	Ephemeral agricultural drain			
317	Swede Drain	Y	Ephemeral agricultural drain	• Instream work effects	No instream work between April 1 - June 30 to protect fish during spawning and rearing.	

Table A12-3. Bipole III Project Collector and Construction Power Line Sensitive Sites, Potential Effects, and Mitigation Measures. Mitigation measures are those in addition to standard mitigation outlined in Table A12-1.

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
1	Unnamed tributary of Nelson River	Y	Intermittent headwater tributary with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
2	Goose Creek	Y	Perennial creek with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.
3	Unnamed tributary of Goose Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
4	Unnamed tributary of Goose Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
5	Unnamed tributary of Goose Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
6	Unnamed Tributary of Goose Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
7	Unnamed Tributary of Goose Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
8	Unnamed Tributary of Tiny Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
9	Tiny Creek	Y	Perennial creek in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
10	Unnamed Tributary of Nelson River	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
11	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
12	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
13	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
14	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
15	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
16	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
17	Unnamed Tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
18	Swift Creek	Y	Perennial creek in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
19	Unnamed Tributary of Swift Creek	Y	Intermittent tributary with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
20	Unnamed tributary of Beaver Creek	Y	Ephemeral tributary with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
21	Beaver Creek	Y	Intermittent creek in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
22	Unnamed Tributary of Sundance Creek	Y	Intermittent creek in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
23	Sundance Creek	Y	Intermittent creek with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
24	Unnamed Tributary of Unnamed Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
25	Unnamed Tributary of Unnamed Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
26	Unnamed Creek	Y	Perennial creek in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
27	Unnamed wetland	N	Ephemeral wetland with no connecting water courses		
28	Unnamed wetland	N	Ephemeral wetland with no connecting water courses		
29	Limestone River	Y	Major river with exposed banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.
30	Unnamed wetland	N	Ephemeral wetland with no connecting water courses		
31	Unnamed Tributary of Nelson River	Y	Ephemeral tributary with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
32	Unnamed Tributary of Nelson River	Y	Ephemeral stream with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
33	Nelson River	Y	Major river with exposed banks	• Erosion and sedimentation • Damage to stream banks	Clearly mark unstable banks and avoid vehicle crossing
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.
34	Unnamed wetland	N	Ephemeral wetland with no connecting water courses		
35	Unnamed tributary of Nelson River	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
36	Unnamed tributary of Nelson River	Y	Intermittent tributary with unknown bank stability	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
37	Brooks Creek	Y	Intermittent creek with unknown bank stability	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
38	Unnamed tributary of Nelson River	Y	Ephemeral tributary	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
39	Unnamed tributary of Nelson River	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
40	Unnamed tributary of Nelson River	Y	Intermittent tributary in wetland area with soft floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
41	Wilson Creek	Y	Intermittent creek with soft shrub floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.
42	Wilson Creek	Y	Intermittent creek with soft shrub floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.
43	Wilson Creek	Y	Intermittent creek with soft shrub floodplain	• Rutting of floodplain	Winter Construction
				• Instream work effects	No instream work September 1 - July 15 to protect fish during spawning and rearing.

Table A12-4. Bipole III Project Northern Ground Electrode Line Sensitive Sites, Potential Effects, and Mitigation Measures. Mitigation measures are those in addition to standard mitigation outlined in Table A12-1.

ID	Name	Fish Habitat	Description	Effect	Mitigation 1
1	Tiny Creek	Y	Perennial creek	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
2	Unnamed tributary of Nelson River	Y	Intermittent tributary in wetland area with soft floodplain	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
				• Rutting of floodplain	Winter Construction
3	Unnamed tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
				• Rutting of floodplain	Winter Construction
4	Unnamed tributary of Swift Creek	Y	Intermittent tributary in wetland area with soft floodplain	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.
				• Rutting of floodplain	Winter Construction
5	Swift Creek	Y	Perennial creek	• Instream work effects	No instream work April 15 - July 15 to protect fish during spawning and rearing.

Table A12-5. Bipole III Project Transmission Line Sensitive Sites within the 50 m riparian buffer, Potential Effects and Mitigation Measures.

ID	Name	Effect	Mitigation
1	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
2	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
3	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
4	Headwaters of unnamed tributary of McMillan Creek	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
5	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
6	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
7	Unnamed Pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
9	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
10	Unnamed Lake	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 30m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

ID	Name	Effect	Mitigation
11	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 30m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
13	Unnamed tributary of Burntwood River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
14	Unnamed tributary of Partridge Crop Lake	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
15	Unnamed Tributary of Partridge Crop Lake,	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
16	Unnamed Pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
17	Unnamed wetland/floodplain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
18	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
20	Unnamed tributary of Partridge Crop Lake	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
21	Ephemeral Unnamed wetland, with no fish habitat	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
22	Ephemeral Unnamed wetland with no fish habitat	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

ID	Name	Effect	Mitigation
23	Intermittent Unnamed tributary of Halfway River, with no fish habitat	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
24	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
25	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
26	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
29	Unnamed pond/wetland	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
31	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
32	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
35	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
36	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
37	Unnamed wetland	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

ID	Name	Effect	Mitigation
38	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
40	Unnamed wetland	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
41	Unnamed wetland	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
45	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
50	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
52	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
56	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
57	Oxbow lake of Rat River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
58	Unnamed wetland	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
61	Unnamed tributary of Thicket Creek	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

ID	Name	Effect	Mitigation
62	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
63	Munigwari Creek	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 30m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
64	Unnamed tributary of Goose Creek	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
65	Unnamed tributary of Clay River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 30m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
66	Unnamed tributary of North Moswakot River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
68	Unnamed tributary of South Moswakot River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
69	Unnamed tributary of Burntwood River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
70	Unnamed tributary of Burntwood River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
71	Unnamed tributary of Partridge Crop Lake	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
72	Unnamed tributary of Partridge Crop Lake	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

ID	Name	Effect	Mitigation
73	Unnamed agricultural drain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
75	Unnamed agricultural drain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
77	Unnamed stream	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
79	Unnamed agricultural drain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
80	Unnamed tributary of Assiniboine River	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 15m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
81	Unnamed agricultural drain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
82	Unnamed agricultural drain	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
83	Cooks Creek	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 30m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.
C_C* 84	Unnamed pond	• Increased erosion and sedimentation, Rutting of floodplains, Loss of riparian vegetation	Riparian Buffer of 7m established surrounding the riparian zone, where all shrub and herbaceous vegetation will be retained and all trees that do not violate Manitoba Hydro vegetation clearance requirements will be retained.

* C_C denotes collector and construction power line watercourse crossings

Table A12-6. Bipole III Project Preferred Northern and Southern Ground Electrode Sensitive Sites, Potential Effects, and Mitigation Measures.

ID	Name	Description	Effect	Mitigation
NES6 (Preferred northern ground electrode site)	Unnamed Tributary of Nelson River	Intermittent watercourse with marginal fish habitat	• Instream works and diversion effects (impacts to stream bank and streambed, blockage or alteration of flow, fish stranding)	No instream work April 15- July 15 to protect fish during spawning and rearing. Instream work will be conducted during favourable weather conditions. Construction will be postponed under adverse weather (i.e., storm events), to minimize potential sediment introduction into the aquatic environment. All instream construction activities will be conducted in isolation of flowing water using a temporary diversion. Temporary diversions will be constructed and operated using the best management practices outlined in Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (DFO and MNR 1996). During pump around diversions, pump intakes will be screened according to DFO guidelines (DFO 1991). Water will be discharged downstream from the worksite, onto a splash pad to prevent channel and bank erosion. If diversion channels are used, the channel will be designed to accommodate high flows due to storm events, be lined with erosion-resistant lining, and be passable by fish under all flow conditions. The diversion channel will be backfilled and stabilized upon completion of construction. Flow to downstream areas will be maintained at all times while diversions are in place. Turbid water generated from the isolated work site will be pumped away from the watercourse to a vegetated area, filter fabric dam or other acceptable area that will provide filtration and/or settling time prior to entering watercourses.

				Turbidity monitoring will be conducted during instream construction activities. Turbidity measurements will detect changes in turbidity resulting from construction activities and monitor effectiveness of mitigation measures. Diversions will be removed following completion of works. The site will be restored and all disturbed surfaces stabilized (i.e. re-vegetated).
			• Increased erosion and sedimentation of streams	Disturbed areas will be re-vegetated following completion of works. Appropriate erosion and sediment control measures will be implemented to mitigate sediment introduction into watercourses.
			• Contamination of a watercourse from leaching of embedded coke	Coke may be rinsed or leached (aged) .To prevent an accidental spill of coke into the aquatic environment, coke materials will be stored greater than 100 m from the ordinary high water mark. Coke will be adequately contained and will be protected from wind and rain to prevent entry of fine particulates into streams through runoff or dust deposition.
			• Stream Crossing effects (Fish habitat disturbance and impeded fish movement due to temporary stream crossings, Increased bank erosion due to disturbance, Increased TSS from stream bank disturbance)	Where crossing a stream is necessary, fording or construction of temporary stream crossings will follow DFO's operational statements for Temporary Stream Crossings (DFO 2007d) and, if appropriate conditions exist, Ice Bridges and Snow Fills (DFO 2007f), as outlined in the Standard Mitigation Table for Preferred Route Stream Crossings.
SES1cS1 (Preferred southern ground electrode site)	Unnamed agricultural ditches/drains	Intermittent watercourses with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of surrounding streams, where vegetation removal and mechanical disturbance will be minimized.

	• Contamination of a watercourse from leaching of embedded coke	Coke may be rinsed or leached (aged). To prevent an accidental spill of coke into the aquatic environment, coke materials will be stored greater than 100 m from the ordinary high water mark. Coke will be adequately contained and will be protected from wind and rain to prevent entry of fine particulates into streams through runoff or dust deposition.

Table A12-7. Bipole III Project Preferred Converter Station Sensitive Sites, Potential Effects, and Mitigation Measures.

ID	Name	Description	Effect	Mitigation
NCS4 (Preferred northern converter station site)	Unnamed Tributary of Nelson River	Ephemeral watercourse with marginal fish habitat	• Infilling of fish habitat	To avoid fish stranding, a fish salvage will be conducted prior to construction (i.e., fish access will be blocked to the construction site and a fish rescue will be conducted by qualified biologists).
			• Increased erosion and sedimentation of streams from construction of station	Erosion and sedimentation control measures will be in place before construction commences and will be maintained throughout the construction phase. During spring runoff erosion and sediment control measures will be in place to ensure sediment laden water does not leave the site or enter nearby streams. Silt fencing will be used and installed correctly where there is the potential for erosion of exposed soils into adjacent waterbodies or wetlands. Damaged silt fencing will be immediately repaired. Surface erosion control measures such as tackifiers, hydroseeding, organic mulches, wood fibre, peat moss, wood chips/bark, brush matting, or the application of water may also be used at the discretion of the construction contractor. Erosion prone areas, such as steep slopes, erodible soils, wet areas, and areas adjacent to watercourses, will be monitored to ensure erosion is minimized. Erosion control measures will be used as required in the ditches to reduce surface erosion and the washing or blowing away of seed. Surface drainage in areas with existing surface water, groundwater seepage, and directing stormwater runoff will be maintained by diversion ditches. Surface runoff will be directed into well vegetated areas or settling basins. Existing drainage systems will be used when possible. If rutting problems on wet ground are jeopardizing topsoil structure and integrity, equipment travel and operation will be suspended or modified. Contractors will ensure that sufficient erosion control materials are present on site (such as silt fencing, stakes, and geotextile fabric) to ensure timely response to erosion and sedimentation issues that arise during construction activities. The application of soil erosion control measures will be implemented when there is evidence of soil erosion (e.g., erosion of topsoil berms or piles, etc.) and immediately after grading is completed to stabilize the soil.

		When it is dry or windy, water will be applied to prevent topsoil loss from traffic areas.
Goose Creek	•Waste water effluent effects	Sewage effluent will be treated to meet the Manitoba Water Quality Standard for municipal wastewater effluents of 25 mg/L TSS prior to discharge.
		Sewage effluent will be treated to meet the Manitoba Water Quality Standard for Municipal Wastewater Effluents of 25 mg/L biochemical oxygen demand (BOD) prior to discharge.
		Sewage effluent will be treated, as required, to meet the Manitoba Water Quality Standards, Objectives, and Guidelines (MWQSOG) for the protection of aquatic life (6.5-9.0), prior to discharge.
		Sewage effluent will be treated to meet the Manitoba Water Quality Standard for Municipal Wastewater Effluents of 200 fecal coliform organisms/100 mL prior to discharge.
		Sewage effluent will be treated to meet the Manitoba Water Quality Standard for municipal waste water effluents of 1 mg/L TP prior to discharge.
	• Increased erosion and sedimentation of streams from construction of station	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.

Table A12-8. Bipole III Project Preferred Construction Camp Sensitive Sites, Potential Effects, and Mitigation Measures

Name	Description	Effect	Mitigation
Creek Fourteen	Ephemeral watercourse with marginal fish habitat	• Waste water effluent effects	Sewage effluent will be treated to meet the Manitoba Water Quality Standard for municipal wastewater effluents of 25 mg/L TSS prior to discharge.
			Sewage effluent will be treated to meet the Manitoba Water Quality Standard for Municipal Wastewater Effluents of 25 mg/L biochemical oxygen demand (BOD) prior to discharge.
			Sewage effluent will be treated, as required, to meet the Manitoba Water Quality Standards, Objectives, and Guidelines (MWQSOG) for the protection of aquatic life for pH (6.5-9.0), prior to discharge.
			Sewage effluent will be treated to meet the Manitoba Water Quality Standard for Municipal Wastewater Effluents of 200 fecal coliform organisms/100 mL prior to discharge.
			Sewage effluent will be treated to meet the Manitoba Water Quality Standard for municipal waste water effluents of 1 mg/L TP prior to discharge.
		• Instream work effects	No instream work April 15-July 15 to protect fish during spawning and rearing.
		• Increased erosion and sedimentation of streams from construction of station	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
Creek Fifteen	Perennial watercourse with important fish habitat	• Increased erosion and sedimentation of streams from construction of station	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
Unnamed Tributary of Nelson River	Ephemeral watercourse with marginal fish habitat	• Increased erosion and sedimentation of streams from construction of station	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.

Table A12-9. Borrow Pit Area Sensitive Sites, Potential Effects, and Mitigation Measures.

ID	Name	Fish Habitat	Description	Effect	Mitigation
N-4	Swift Creek	Y	Perennial creek with important fish habitat	• Changes to groundwater quantity and quality, dewatered water tables	No excavating below water table
				• Pollution of groundwater through fuel spills	No refueling or dumping of oil or other machinery lubricants in borrow areas
				• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-5	Swift Creek	Y	Perennial creek with important fish habitat	• Changes to groundwater quantity and quality, dewatered water tables	No excavating below water table
				• Pollution of groundwater through fuel spills	No refueling or dumping of oil or other machinery lubricants in borrow areas
				• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-6	Swift Creek	Y	Perennial creek with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-6	Unnamed tributary of Nelson River	Y	Small intermittent tributary with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-6	Unnamed tributary of Swift Creek	Y	Small intermittent tributary with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.

ID	Name	Fish Habitat	Description	Effect	Mitigation
N-8	Unnamed tributary of Nelson River	Y	Small intermittent tributary with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-9	Goose Creek	Y	Perennial creek with important fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.
N-10-2	Unnamed tributary of Nelson River	Y	Small intermittent tributary with marginal fish habitat	• Increased erosion and sedimentation of streams	Standard development setback of 15m established from the HWM of the stream, where vegetation removal and mechanical disturbance will be minimized.

Table A12-10. Bipole III Project Access Trail Sensitive Sites, Potential Effects, and Mitigation Measures. Mitigation measures are those in addition to standard mitigation outlined in Table A12-1 (Stream Crossing Effects).

ID	Name	Fish Habitat	Description	Effect	Mitigation
02-11	McMillan Creek	Y	Small stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
02-10	McMillan Creek	Y	Small stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
02-9	McMillan Creek	Y	Small stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
02-7	Oxbow lake of the Limestone River	Y	Medium stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
02-6	Limestone River	Y	Medium stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
02-8	Unnamed Tributary of McMillan Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
02-5	Unnamed tributary of the Limestone River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
02-2	Unnamed Pond	Y	Small pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
02-3	Unnamed tributary into Twelve Mile Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
02-1	Unnamed tributary of Twelve Mile Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
02-4	Twelve Mile Creek	Y	Small stream	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
10-2	Unnamed tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
10-1	Unnamed tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
10-3	Unnamed tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-2	Unnamed Tributary into Moak Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
10-4	Unnamed tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-1	Moak Creek	Y	Small stream	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-7	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-7	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-5	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-11	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-10	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-5	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-4	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-6	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
14-2	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-3	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-8	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-3	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-6	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-12	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
13-9	Unnamed Tributary of the Burntwood River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-4	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-9	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-8	Unnamed Tributary of Apussigamasi Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-12	Unnamed Pond	Y	Small pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-15	Unnamed Pond	Y	Small pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-14	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
15-13	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-1	Unnamed Pond	Y	Small pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-21	Partridge Crop Lake	Y	Large River	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
15-20	Partridge Crop Lake	Y	Large River	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
15b-2	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-7	Unnamed Tributary of Partridge Crop Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-4	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-5	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-16	Unnamed Tributary of Partridge Crop Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-19	Unnamed Tributary of Partridge Crop Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-17	Unnamed Tributary of Partridge Crop Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-18	Unnamed Tributary of Partridge Crop Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-6	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
15-11	Unnamed Tributary of the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15b-3	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
14-1	Unnamed Lake	Y	Small lake	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-6	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-2	Grass River	Y	Large River	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
15-1	Unnamed Tributary of Owl Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-11	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-9	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-1	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-10	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-2	Unnamed Tributary of Unnamed Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-5	Unnamed Tributary into Unnamed Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-3	Unnamed Tributary into Unnamed Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
15-4	Unnamed Tributary into Thompson Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-3	Unnamed Tributary of Unnamed Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15d-5	Unnamed tributary of Paint Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-8	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-6	Unnamed Tributary into Thompson Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-7	Unnamed Tributary into Thompson Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-8	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-7	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15c-4	Unnamed Tributary into Unnamed Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-9	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-10	Unnamed Tributary into the Grass River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15-5	Thompson Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15d-2	Unnamed Tributary into Wintering Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
15d-1	Unnamed Tributary into Wintering Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15d-4	Unnamed Tributary into Wintering Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
15d-3	Unnamed Tributary into Wintering Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
16-2	Halfway River	Y	Medium River	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
16-3	Unnamed tributary of Halfway River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
16-4	Patrick Creek	Y	Small Stream	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
21-2	Gormley Lake	Y	Small lake	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
16-1	Unnamed tributary of Brostrom Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
24-1	Hayward Creek	Y	Small Stream	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
20-1	Liquid Waste Pond	Y	Pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
20-2	Liquid Waste Pond	Y	Pond	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
18-1	Unnamed tributary of Clarke Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
20-4	Unnamed tributary of Clarke Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
20-5	Unnamed tributary of Clarke Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
21-3	Unnamed tributary of Clarke Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
20-3	Unnamed tributary of Clarke Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
19-1	Clarke Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
18b-1	Clarke Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
21-1	Unnamed tributary into Mitishto River	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
24-2	Unnamed tributary of Patriarche Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
25-2	Unnamed tributary of Little Cormorant Lake	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
25-3	Pickerel Creek	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
25-1	Air Force Bay	Y	Large Lake - Cormorant Lake	• Instream work effects	No instream work between September 1 - July 15 to protect fish during spawning and rearing
28-1	Intermittently wetted drain	Y	Small tributary	• Instream work effects	No instream work between April 15 - July 15 to protect fish during spawning and rearing
35-1	Unnamed Pond	Y	Pond	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
38-1	Unnamed tributary of Lake Winnipegosis	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
37-1	Unnamed tributary of Lake Winnipegosis	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
35-2	Unnamed drain	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
48-1	Unnamed tributary of Swan River	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
47-1	Unnamed agricultural drain	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
48-2	Unnamed tributary of Swan River	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
48-4	Unnamed agricultural drain	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
48-3	Unnamed tributary of Swan River	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
50-1	North Duck River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-10	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-2	Unnamed agricultural drain	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-6	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-5	Jarosz Drain	Y	Small Stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-1	Cox Drain	Y	Small Stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing

ID	Name	Fish Habitat	Description	Effect	Mitigation
49-7	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-8	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-9	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-3	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
49-4	Sinclair River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
51-2	Unnamed tributary of South Pine River	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
51-4	Unnamed tributary of North Pine River	Y	Small tributary	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
51-1	South Pine River	Y	Medium stream	• Instream work effects	No instream work between April 1 – June 30 to protect fish during spawning and rearing
51-3	North Pine River	Y	Medium stream	• Instream work effects	No instream work between September 1 – July 15 to protect fish during spawning and rearing

APPENDIX 13.

FISH SAMPLING SUMMARY FOR KEEWATINOOW CONVERTER STATION AND GROUND ELECTRODE SITES

Appendix 13. Summary of fish sampling conducted at the Keewatinoow ground electrode, converter station, and construction camp sites.

Site	Sample Date	Stream Name	Sample Site[1]		Method[2]	Duration[3]	Fish Captured
			Easting	Northing			
NCS4-1	30/8/2010	Unnamed tributary of the Nelson River	815960	6291265	GN	20 m	no fish captured
			815960	6291265	EF	73 s	no fish captured
	1/6/2011		815960	6291265	EF	828 s	no fish captured
CC1	2/6/2011	Creek Fourteen	816184	6293171	EF	1859 s	no fish captured
NES6S1	3/6/2011	Unnamed tributary of the Nelson River	810864	6281316	EF	827 s	no fish captured

1 - NAD83, Zone 14N.
2 - EF = backpack electrofishing; GN = small mesh gill net.
3 – m = minute; s = seconds.