

Site 181

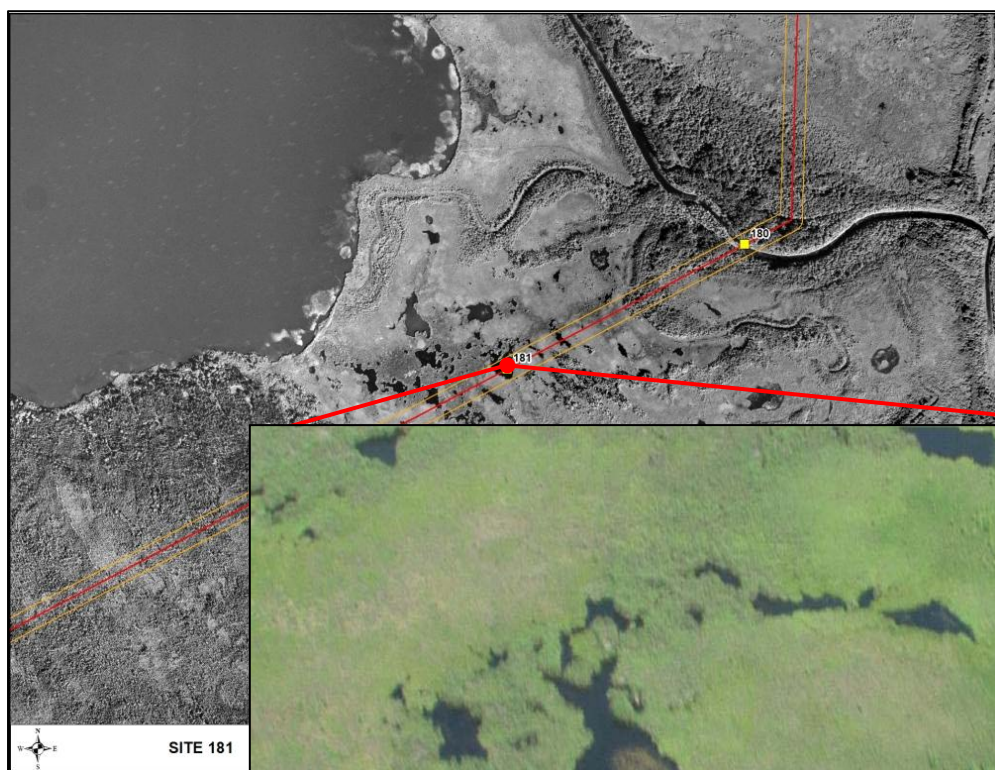
Unnamed pond

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 362532
Northing: 5961911
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: Moderate
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	0.47
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	100
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No fish habitat

Fish Presence: N/A

Comments:

This unnamed, intermittent pond is unlikely to support fish. It is within a larger wetland area between two lakes.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 182

Iskwayanikakespeetik Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 357307
Northing: 5942911
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 71.1 km²
Distance to Receiving Water: Kelsey Lake 2.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	2
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	347
Left Bank	11

Riparian Distance (m)

Right Bank	525
Left Bank	15

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Iskwayanikakespeetik Creek likely provides complex habitat for forage fish species, with low overwintering potential. The channel is surrounded by a soft grass/shrub floodplain. Sites 182, 183, and 184 all cross Iskwayanikakespeetik Creek.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 183

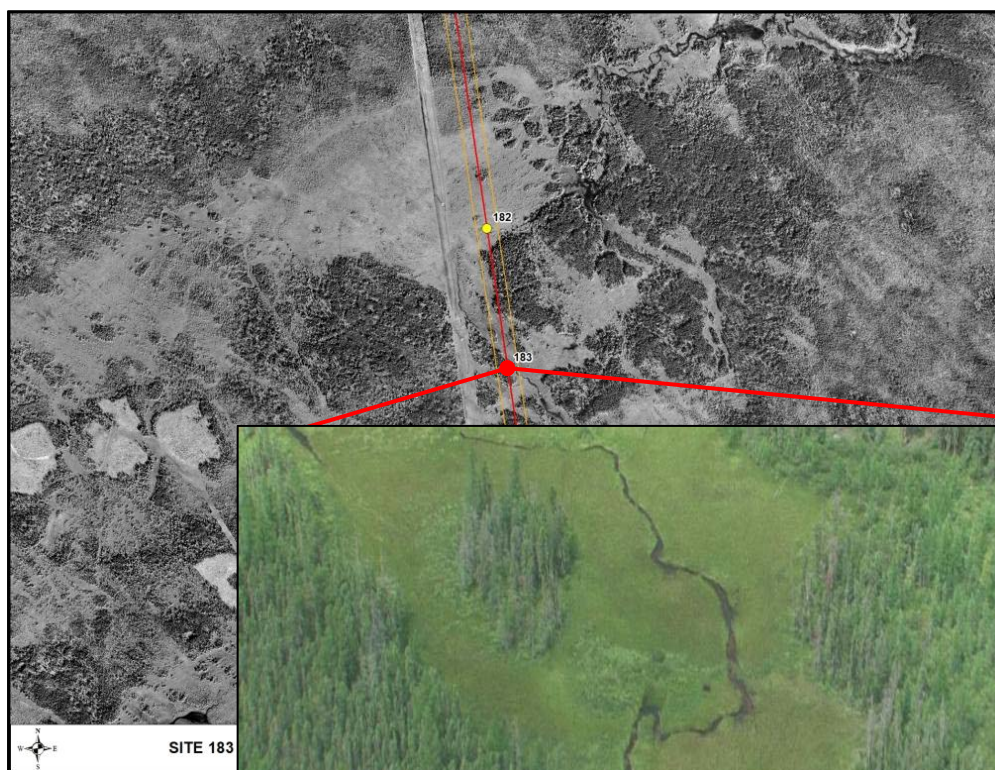
Iskwayanikakespeetik Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 357350
Northing: 5942608
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 70.6 km²
Distance to Receiving Water: Kelsey Lake 3.1 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	13
Left Bank	33

Riparian Distance (m)

Right Bank	18
Left Bank	36

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Iskwayanikakespeetik Creek likely provides complex habitat for forage fish species, with low overwintering potential. The channel is surrounded by a soft grass/shrub floodplain. The RoW crosses the floodplain for 157m downstream of the site, and crosses the channel two times within this distance. Sites 182, 183, and 184 all cross Iskwayanikakespeetik Creek.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 184

Iskwayanikakespeetik Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 357434
Northing: 5942024
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 68.4 km²
Distance to Receiving Water: Kelsey Lake 3.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	1
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	179
Left Bank	94

Riparian Distance (m)

Right Bank	185
Left Bank	159

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Iskwayanikakespeetik Creek likely provides complex habitat for forage fish species, with low overwintering potential. The channel is surrounded by a soft grass/shrub floodplain. Sites 182, 183, and 184 all cross Iskwayanikakespeetik Creek.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 185

Unnamed Tributary of Cedar Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 359836
Northing: 5925289
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 4.8 km²
Distance to Receiving Water: Cedar Lake 14 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	31
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	46
Left Bank	24

Riparian Distance (m)

Right Bank	81
Left Bank	35

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	Tr
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Cedar Lake likely provides complex habitat for forage fish species, with low overwintering potential. The channel is surrounded by a soft grass/shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 186

Unnamed Drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 358992
Northing: 5895706
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 57.2 km²
Distance to Receiving Water: Lake Winnipegosis
8.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	13
Channel Width (m)	13

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	6
Left Bank	39

Riparian Distance (m)

Right Bank	25
Left Bank	9

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	50
Instream Vegetation	50
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

This unnamed drain is well-connected to Lake Winnipegosis, and likely provides simple habitat for large-bodied fish species, with moderate overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 187

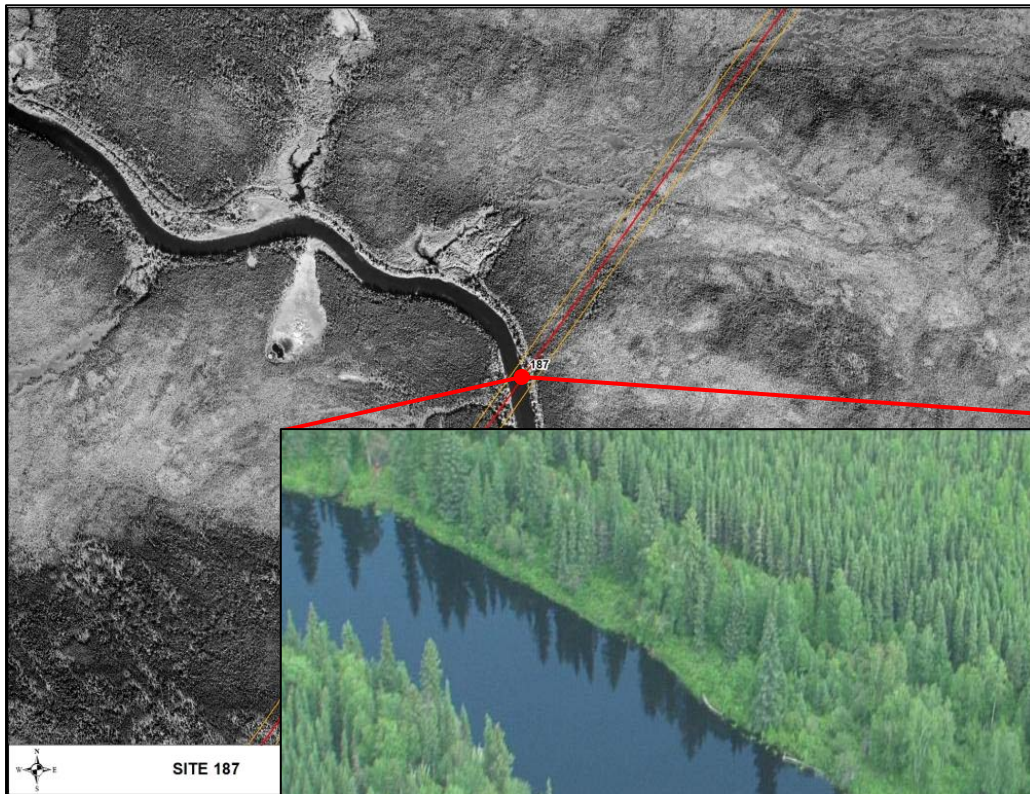
Overflowing River

Location

Datum:	NAD 83
UTM:	Zone: 14N
	Easting: 356847
	Northing: 5892686
Data Source:	DOI. Video. Site visit

General Morphology

Stream/Lake:	Stream
Pattern:	IM
Confinement:	UN
Stage:	Moderate
Flow Regime:	Perennial
Morphology:	LC
U/S Drainage:	3044 km ²
Distance to Receiving Water:	Lake Winnipegosis 6.8 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~30	~30	~30	-	-
Wetted Width (m)	~32	~32	~32	-	-

Water Depths (m)

25%	0.9	0.9	0.8	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	70	30	80	-	-
Left Bank Stability (%)	100	100	100	-	-
Right Bank Slope (°)	~45	~45	~30	-	-
Left Bank Slope (°)	~5	~5	~5	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	3.8	3.3	4.8	-	-
Left Bank	~5	~10	~4	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	-	-	-	-	-
Shrubs	-	-	-	-	-
Conifers	Y	Y	Y	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	15	15	15	-	-
--	----	----	----	---	---

Substrate

Substrate Type (%)

Fines	20	20	20	-	-
Small Gravel	-	-	-	-	-
Large Gravel	40	40	40	-	-
Cobble	40	40	40	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	20	20
Large Woody Debris	10	10
Overhanging Vegetation	90	80
Instream Vegetation	-	10
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Overflowing River 4.5 km downstream of site 187 at transect 1.



Downstream view of the Overflowing River 4.5 km downstream of site 187 at transect 3.



Right bank approach of the Overflowing River 4.5 km downstream of site 187 at transect 2, showing slumping.



Left bank of the Overflowing River 4.5 km downstream of site 187 at transect 3.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Important

Fish Presence: Emerald shiner, Fathead minnow, Goldeye, Johnny darter, Logperch, Longnose dace, Northern pike, Quillback, River darter, Sauger, Shorthead redhorse, Spottail shiner, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Overflowing River is a major river that likely provides complex habitat for indicator fish species, for all life requisites. The site was not accessible; therefore the river was assessed 4.5 km downstream of the RoW. There is no bank instability evident at the RoW from the orthophotos and video.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

The banks within the RoW appear stable and habitat is uniform run and therefore low sensitivity rating.

Site 188

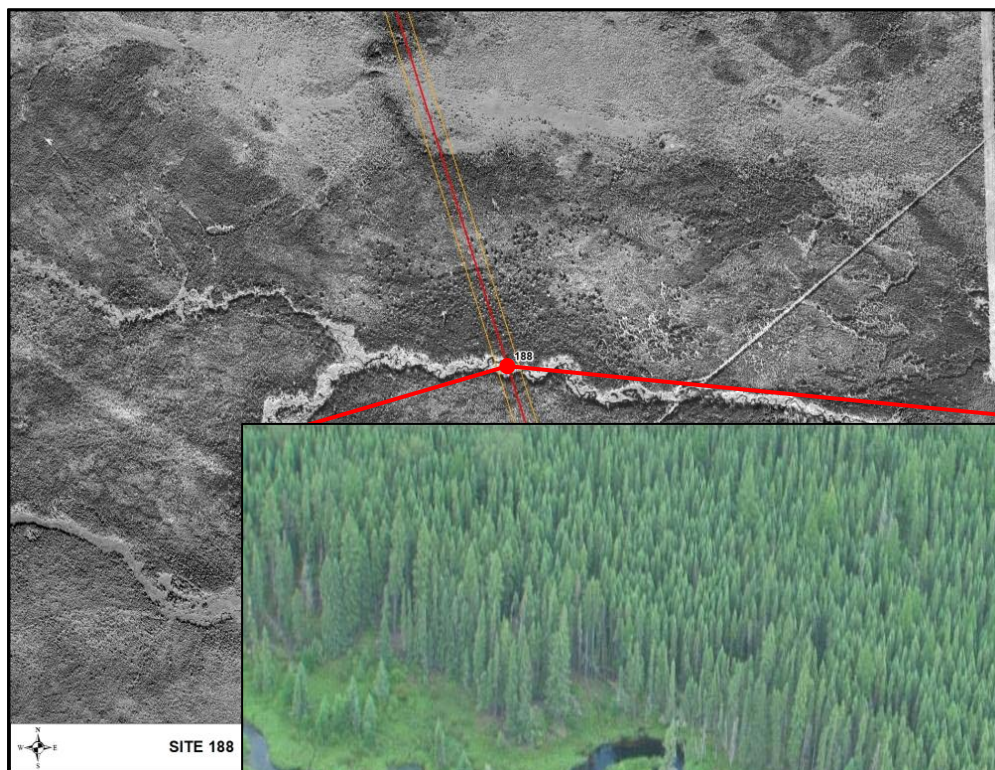
Unnamed Tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 357091
Northing: 5880464
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 27.8 km²
Distance to Receiving Water: Lake Winnipegosis
4.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	5
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	6
Left Bank	39

Riparian Distance (m)

Right Bank	12
Left Bank	39

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	50
Instream Vegetation	50
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

This unnamed tributary is well-connected to Lake Winnipegosis, and likely provides complex habitat for indicator fish species, with moderate overwintering potential. It is surrounded by a soft grass floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain and important fish habitat result in a moderate sensitivity rating.

Site 189

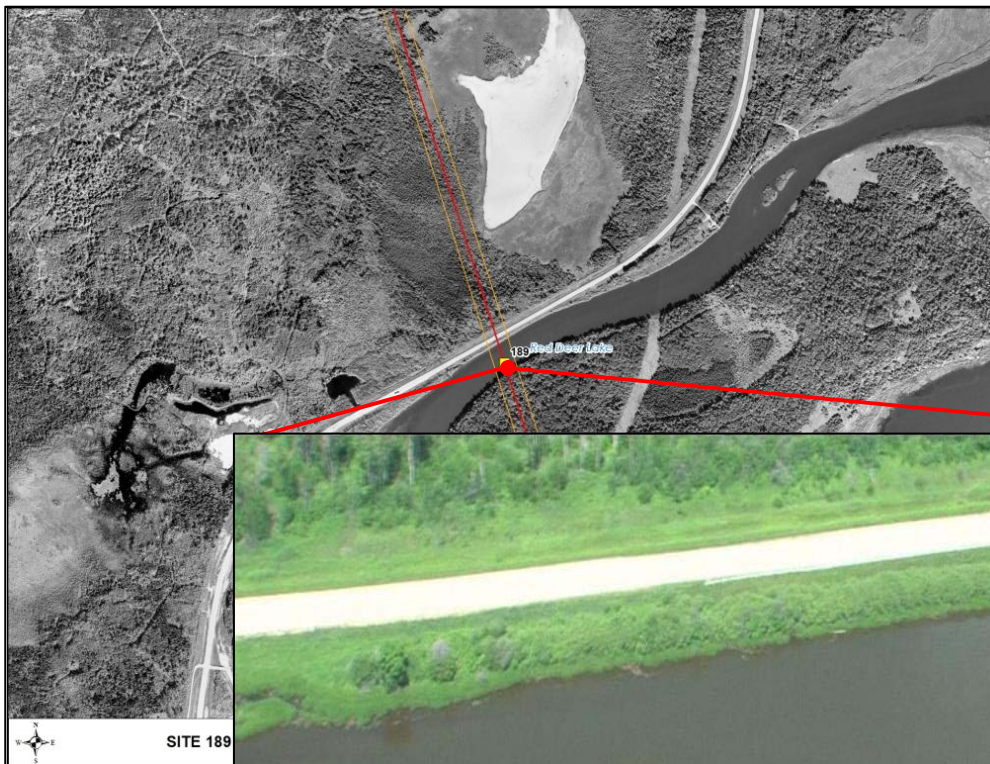
Red Deer River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363014
Northing: 5861633
Data Source: DOI. Video.Site Visit

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: High
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 14,505 km²
Distance to Receiving Water: Lake Winnipegosis
2.1 km



Site Conditions

+ Physical Data

Survey Date: 7 October 2009, 15 October 2010 **Stage:** Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	86	-	-	-	-
Wetted Width (m)	89	-	-	-	-

Water Depths (m)

25%	-	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	100	-	-	-	-
Left Bank Stability (%)	100	-	-	-	-
Right Bank Slope (°)	-	-	-	-	-
Left Bank Slope (°)	-	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	7	-	-	-	-
Left Bank	24	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	Y	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	10	-	-	-	-
--	----	---	---	---	---

Substrate Type (%)

Fines	-	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-
Bedrock	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
--	----	----

Cover Composition (% of Total)

Large Woody Debris	10	10
Overhanging Vegetation	-	-
Instream Vegetation	10	10
Pool	-	-
Boulder	-	-
Undercut Bank	-	-





Downstream view of the Red Deer River at site 189.



Left bank (SE) view of the Red Deer River at site 189.



Upstream view of the Red Deer River from the PTH 10 bridge.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

The Red Deer River is a major river which provides complex fish habitat for indicator fish species supporting all requisites of life. The crossing location is within the backwater effect of Lake Winnipegosis with a broader channel and lower velocity flow than upstream areas.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 190

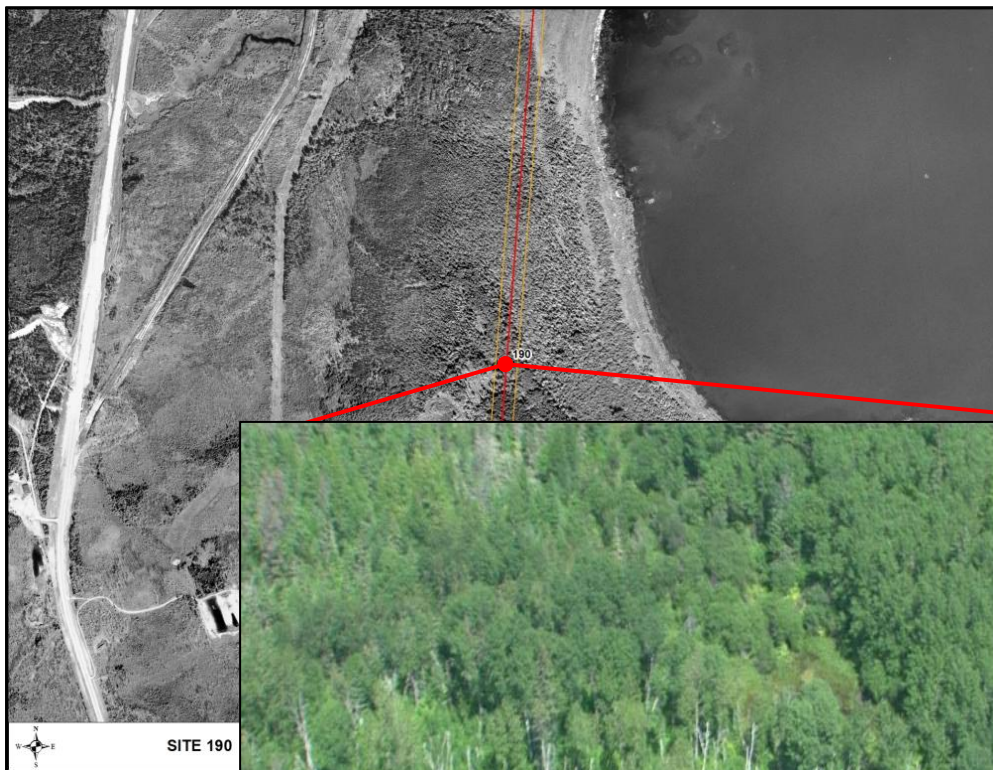
Unnamed Tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363128
Northing: 5858786
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.2 km²
Distance to Receiving Water: Lake Winnipegosis
0.5 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Lake Winnipegosis likely provides habitat for forage fish species, with no overwintering potential. It appears as a very faint, dry channel in the orthophoto and video. Fish may use this tributary extensively when water levels are high, due to its close proximity to Lake Winnipegosis.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Small channel size and marginal fish habitat result in a low sensitivity rating.

Site 191

Unnamed Tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363011
Northing: 5857254
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Lake Winnipegosis
1.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed tributary of Lake Winnipegosis likely provides only indirect fish habitat in the form of water and nutrients flowing downstream. It appears as a very faint, dry channel in the orthophoto and video.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 192

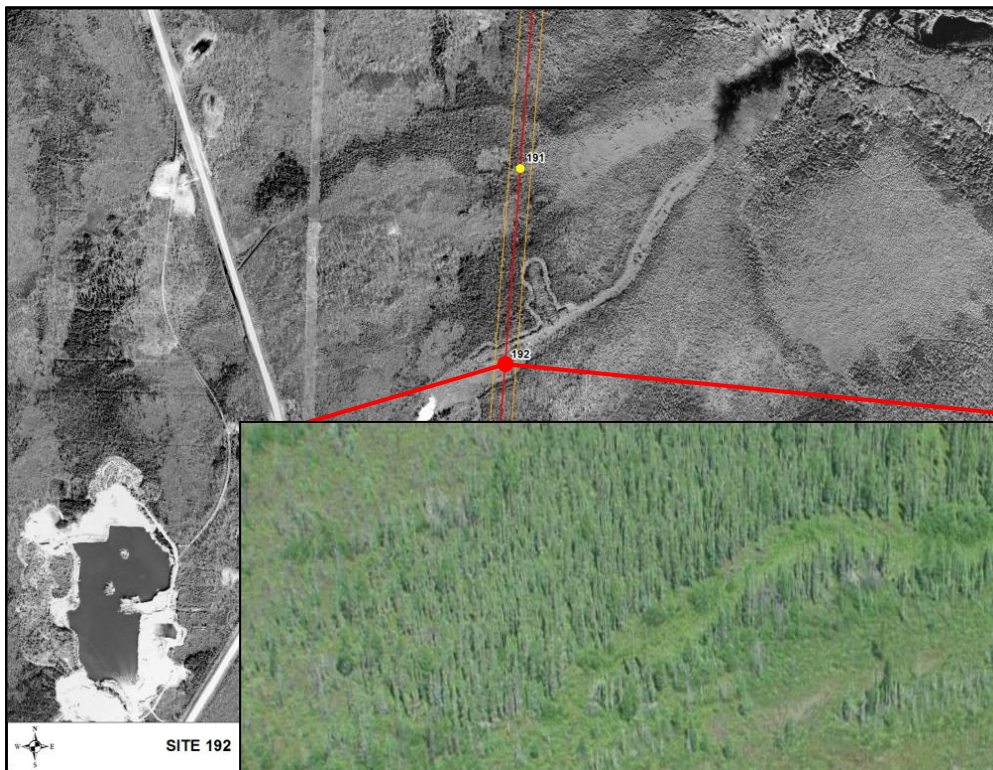
Unnamed Tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 362965
Northing: 5856655
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.01 km²
Distance to Receiving Water: Lake Winnipegosis
2.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	3

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	63
Left Bank	63

Riparian Distance (m)

Right Bank	67
Left Bank	66

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Lake Winnipegosis lies in the headwaters of the creek and habitat consists of a small channel within a shallow wetland area. Forage fish may make use of this site, but large bodied species are not expected to be found in the area.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Surrounding soft floodplain results in a low sensitivity rating.

Site 193

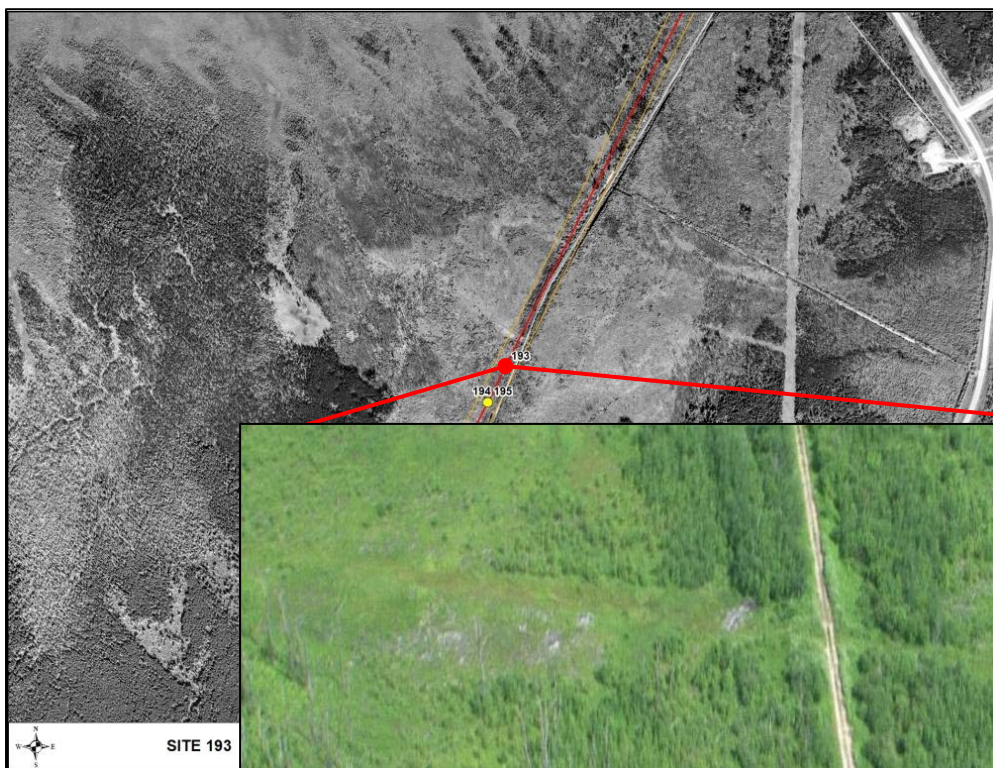
Unnamed Tributary of Sucker Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360986
Northing: 5851384
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Sucker Creek 4.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed tributary of Sucker Creek likely provides only indirect fish habitat in the form of water and nutrients flowing downstream. In the orthophoto and video the channel is only faintly visible.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 194

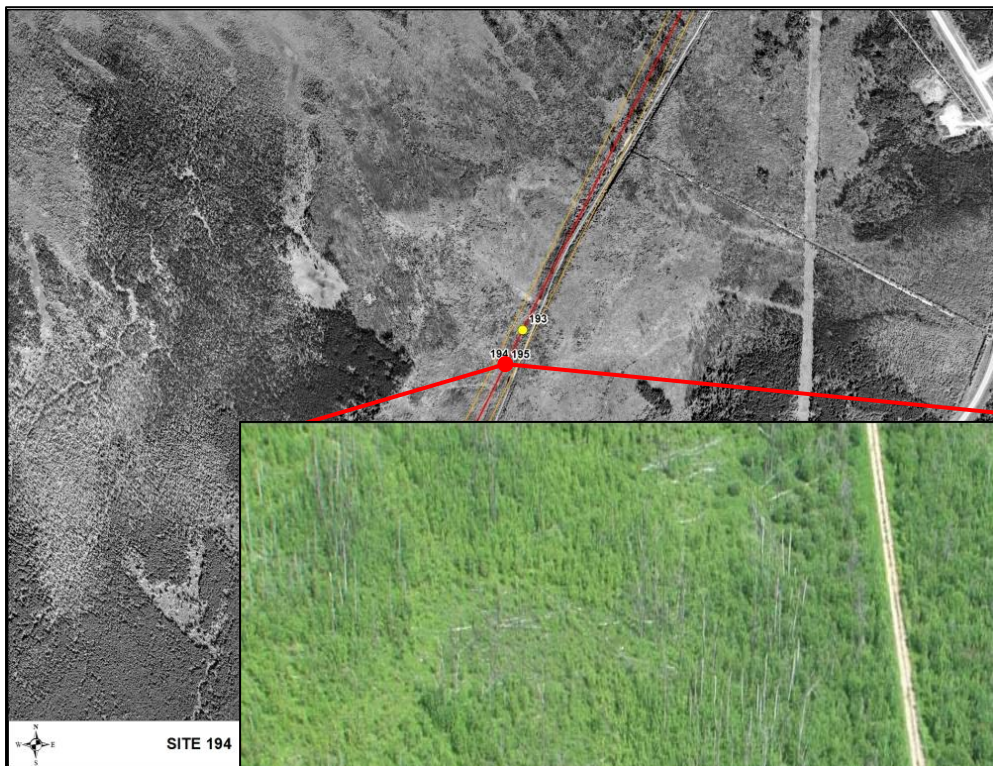
Unnamed Tributary of Sucker Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360932
Northing: 5851276
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Sucker Creek 4.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed tributary of Sucker Creek likely provides only indirect fish habitat in the form of water and nutrients flowing downstream. In the orthophoto and video the channel is only faintly visible.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 195

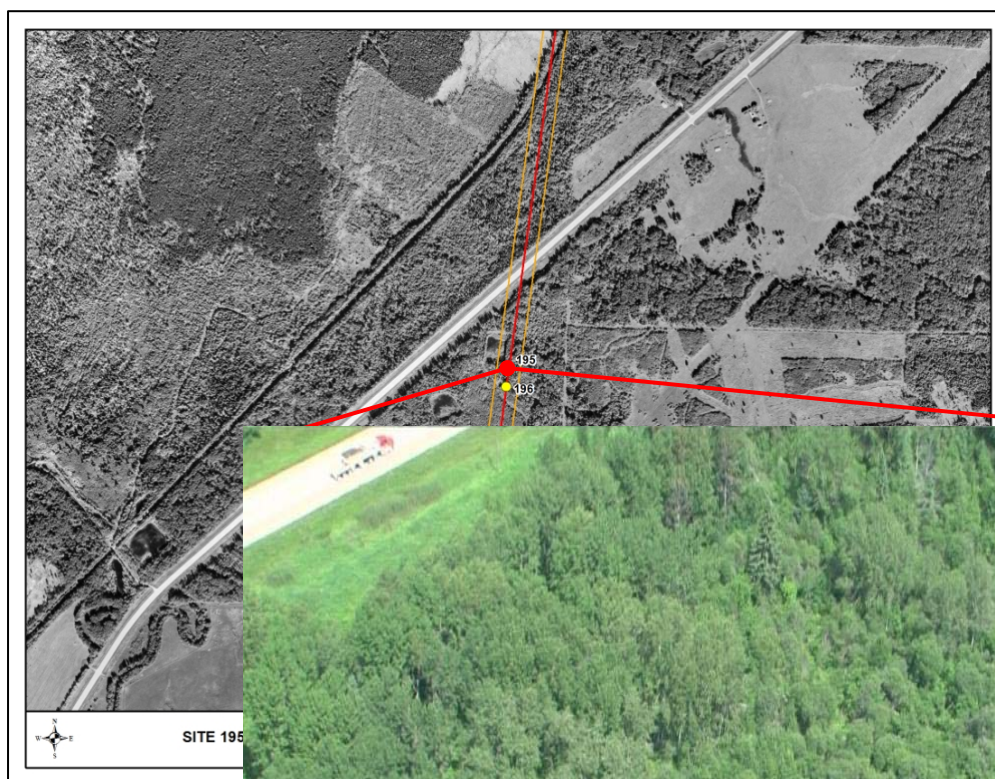
Unnamed Tributary of Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360394
Northing: 584929
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ME
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 3.4 km²
Distance to Receiving Water: Unnamed Lake 3.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of an unnamed lake provides complex habitat for forage fish species. The riparian area may be soft. There is a ponded area within the channel 41m upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Potentially soft riparian results in a moderate sensitivity rating, despite marginal fish habitat.

Site 196

Unnamed Tributary of Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360387
Northing: 5849249
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ME
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 3.4 km²
Distance to Receiving Water: Unnamed Lake 3.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	9

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	95
Left Bank	94

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of an unnamed lake provides complex habitat for forage fish species. The riparian area may be soft.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Potentially soft riparian results in a moderate sensitivity rating, despite marginal fish habitat.

Site 197

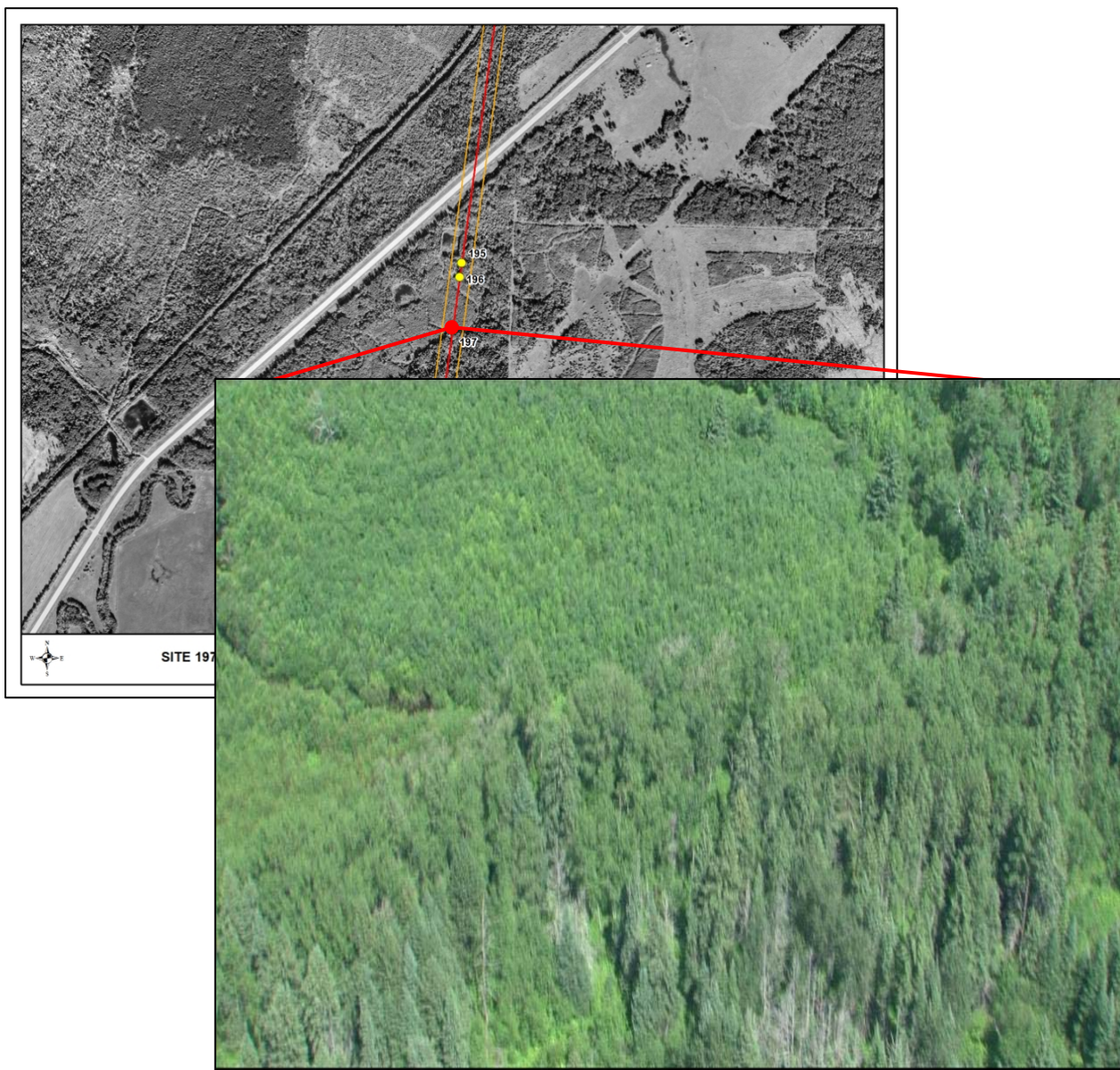
Unnamed Tributary of Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360365
Northing: 5849086
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ME
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: LC
U/S Drainage: 3.3 km²
Distance to Receiving Water: Unnamed Lake 4.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	8

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	11
Left Bank	147

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

50

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of an unnamed lake provides complex habitat for forage fish species. The riparian area may be soft.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Potentially soft riparian results in a moderate sensitivity rating, despite marginal fish habitat.

Site 198

Unnamed Tributary of Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360287
Northing: 5848515
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: LC
U/S Drainage: 3.0 km²
Distance to Receiving Water: Unnamed Lake 4.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	21

Banks (%)

Right Bank Stability	70
Left Bank Stability	70

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

80

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of an unnamed lake provides only indirect fish habitat in the form of water and nutrients flowing downstream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Very marginal fish habitat results in a low sensitivity rating.

Site 199

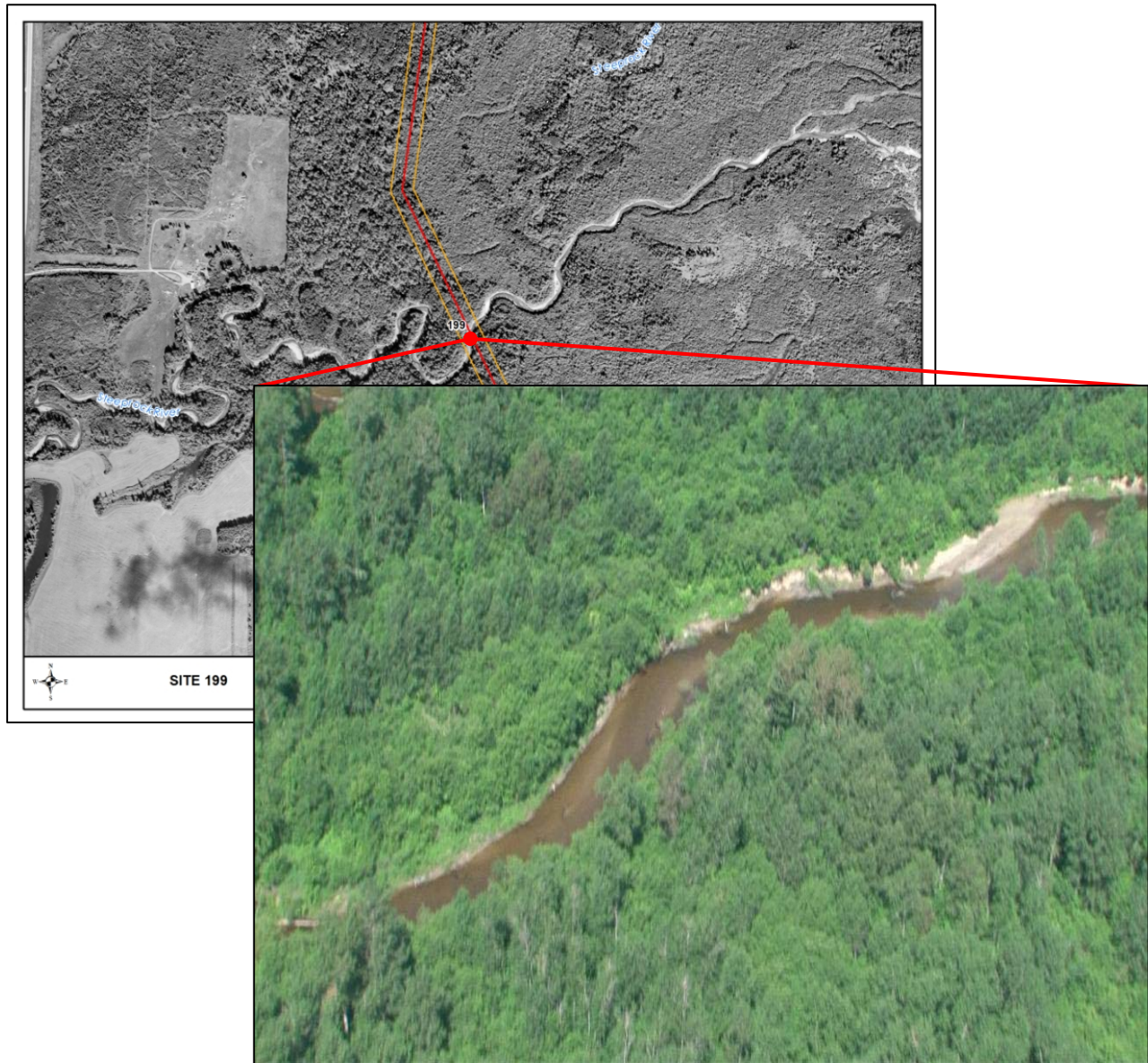
Steeprock River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360224
Northing: 5846051
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 203.4 km²
Distance to Receiving Water: Lake Winnipegosis
14.6 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	23.5	22.5	~20	46.2	30.7
Wetted Width (m)	12	21	~10	12.1	10

Water Depths (m)

25%	0.5	0.02	0.7	0.1	0.3
50%	0.4	0.02	-	0.2	0.3
75%	0.2	0.3	-	0.6	0.4
Max	0.5	0.5	-	0.6	0.4

Banks

Right Bank Stability (%)	40	40	30	70	40
Left Bank Stability (%)	70	70	50	20	70
Right Bank Slope (°)	~80	~90	~90	~20	~90
Left Bank Slope (°)	~20	~20	~20	~90	~20

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	10	4	~10	21.4	10
Left Bank	18	3.5	~18	1	9.4

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	Y	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	Tr	0	Tr	0	0
--	----	---	----	---	---

Substrate

Substrate Type (%)

Fines	33	33	33	33	33
Small Gravel	-	-	-	-	-
Large Gravel	33	33	33	33	33
Cobble	33	33	33	33	33
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	90	90	75	20	100
Riffle	10	10	25	80	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	15	15
Large Woody Debris	90	90
Overhanging Vegetation	10	10
Instream Vegetation	-	-
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Steeprock River 4.7 km upstream of site 199 at transect 5.



Downstream view of the Steeprock River 4.7 km upstream of site 199 at transect 4.



Right bank of the Steeprock River 4.7 km upstream of site 199 at transect 5.



Left bank approach of the Steeprock River 4.7 km upstream of site 199 at transect 3.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Blacknose shiner, Blackside darter, Longnose dace (FIHCS 2009)

Comments:

The Steeprock River provides complex habitat for indicator fish species. The banks are steep and unstable, and both riffle and run habitat is present. The site was not accessible; therefore the river was assessed 4.7 km upstream of the RoW. However from the orthophotos the river conditions at the RoW appear similar.

+ Habitat Sensitivity

Sensitivity Rating: High

Comments:

Unstable banks, habitat diversity, and important fish habitat result in a high sensitivity rating.

Site 200

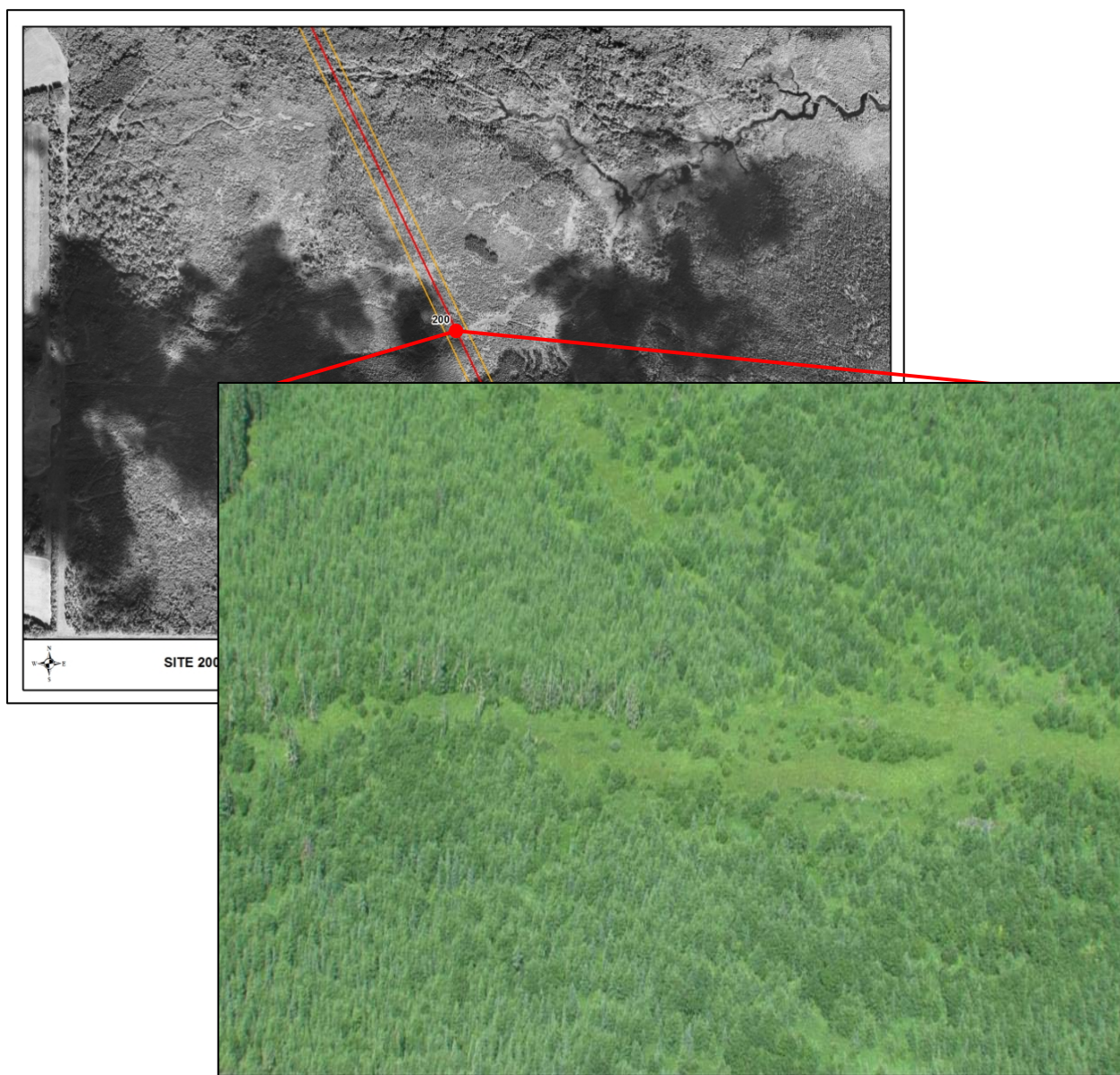
Unnamed Tributary of Mafeking Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 360847
Northing: 5844747
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.7 km²
Distance to Receiving Water: Mafeking Creek
3.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	8 (total)
Left Bank	-

Riparian Distance (m)

Right Bank	13 (total)
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The crossing of this unnamed tributary of Mafeking Creek lies in the extreme headwaters and provides only indirect fish habitat in the form of water and nutrients flowing downstream. It appears very small, and there is no channel visible at the RoW. It is surrounded by a soft grass/shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Soft floodplain results in a moderate sensitivity rating.

Site 201

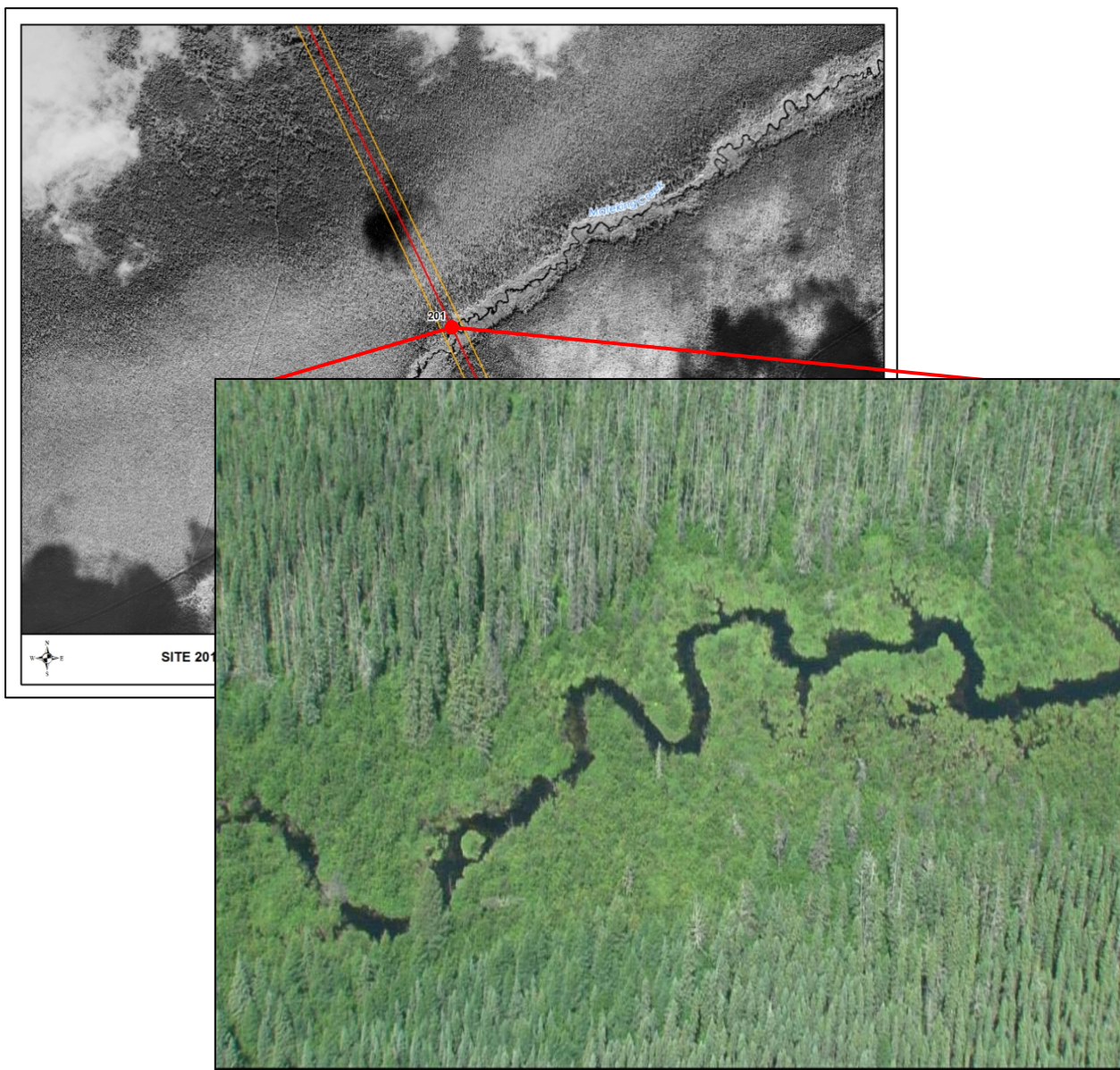
Mafeking Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 361992
Northing: 5842350
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 4.8 km²
Distance to Receiving Water: Steeprock River 8.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	8
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	36
Left Bank	8

Riparian Distance (m)

Right Bank	48
Left Bank	33

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

Mafeking Creek provides complex habitat for indicator fish species as well as forage fish. It is surrounded by a broad soft shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain and important fish habitat result in a moderate sensitivity rating.

Site 202

Unnamed Tributary of Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363275
Northing: 5839663
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 1.3 km²
Distance to Receiving Water: Moose Creek 1.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	3

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	9
Left Bank	3

Riparian Distance (m)

Right Bank	36
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Moose Creek is rated as supporting complex habitat for forage fish species. However at the RoW a stream channel and water were not visible in the ortho or video imagery, suggesting very marginal habitat.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

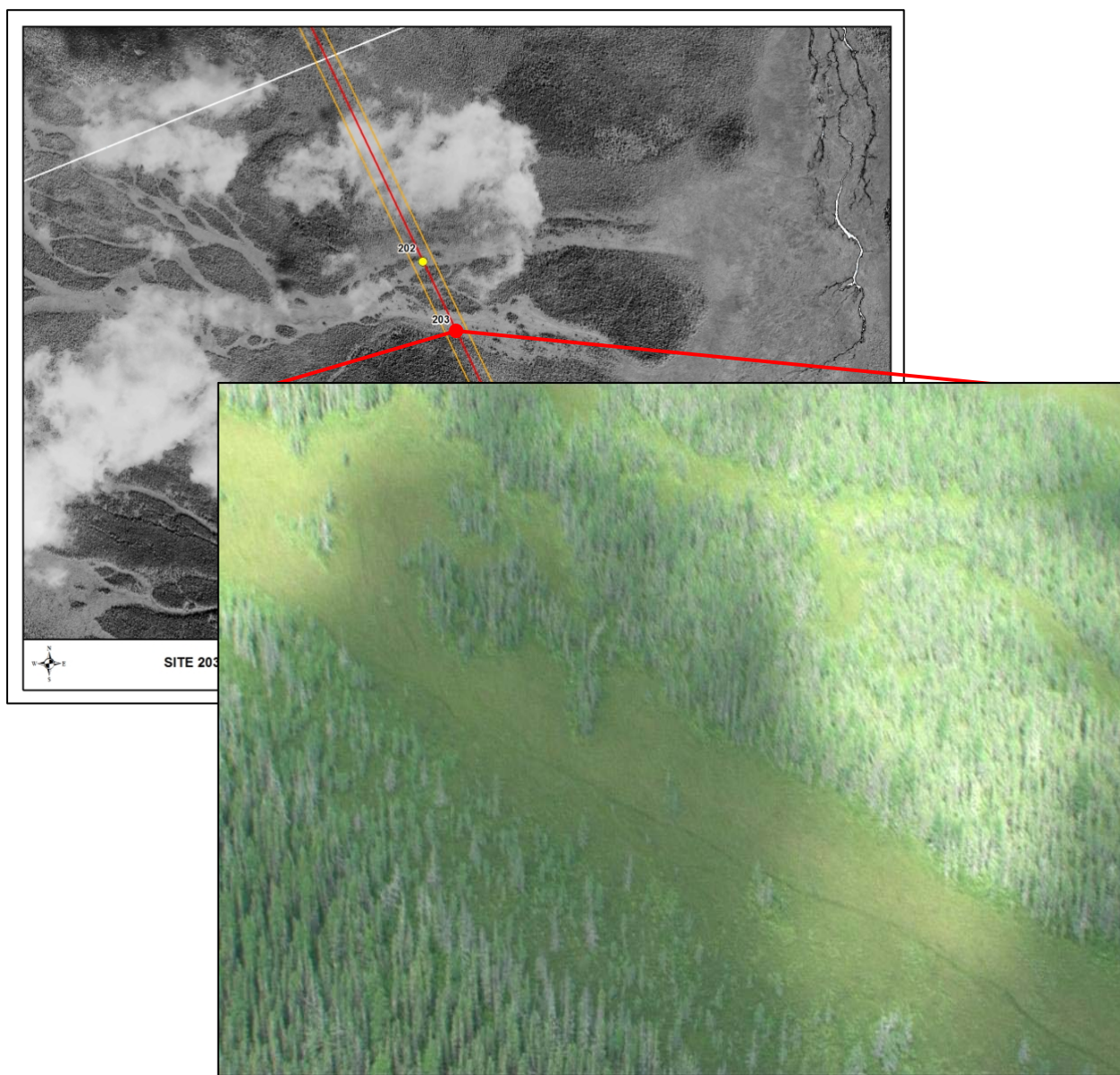
Site 203 Unnamed Tributary of Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363381
Northing: 5839440
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 0.5 km²
Distance to Receiving Water: Moose Creek 2.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	3

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	25
Left Bank	21

Riparian Distance (m)

Right Bank	30
Left Bank	41

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

E

Fish Habitat Classification:

Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Moose Creek provides only indirect fish habitat in the form of water and nutrients flowing downstream. It is surrounded by a soft grass floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Very marginal fish habitat results in a low sensitivity rating.

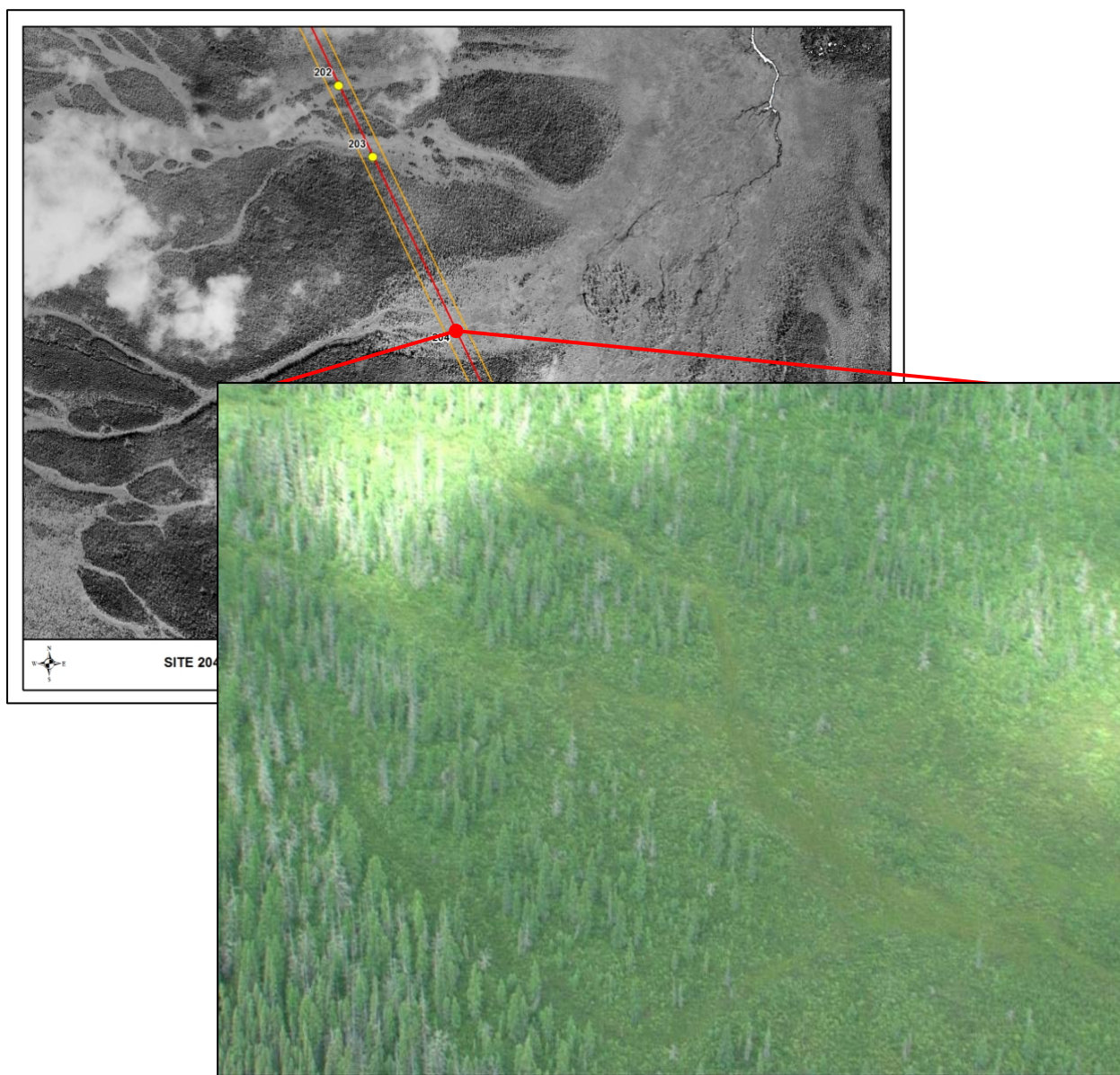
Site 204 Unnamed Tributary of Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363643
Northing: 5838891
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 1.0 km²
Distance to Receiving Water: Moose Creek 1.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	12

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	43
Left Bank	19

Riparian Distance (m)

Right Bank	96
Left Bank	88

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Moose Creek is rated by DFO as providing complex habitat for forage fish species. At the RoW only low wetland area with no visible water or distinct channel were apparent.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 205

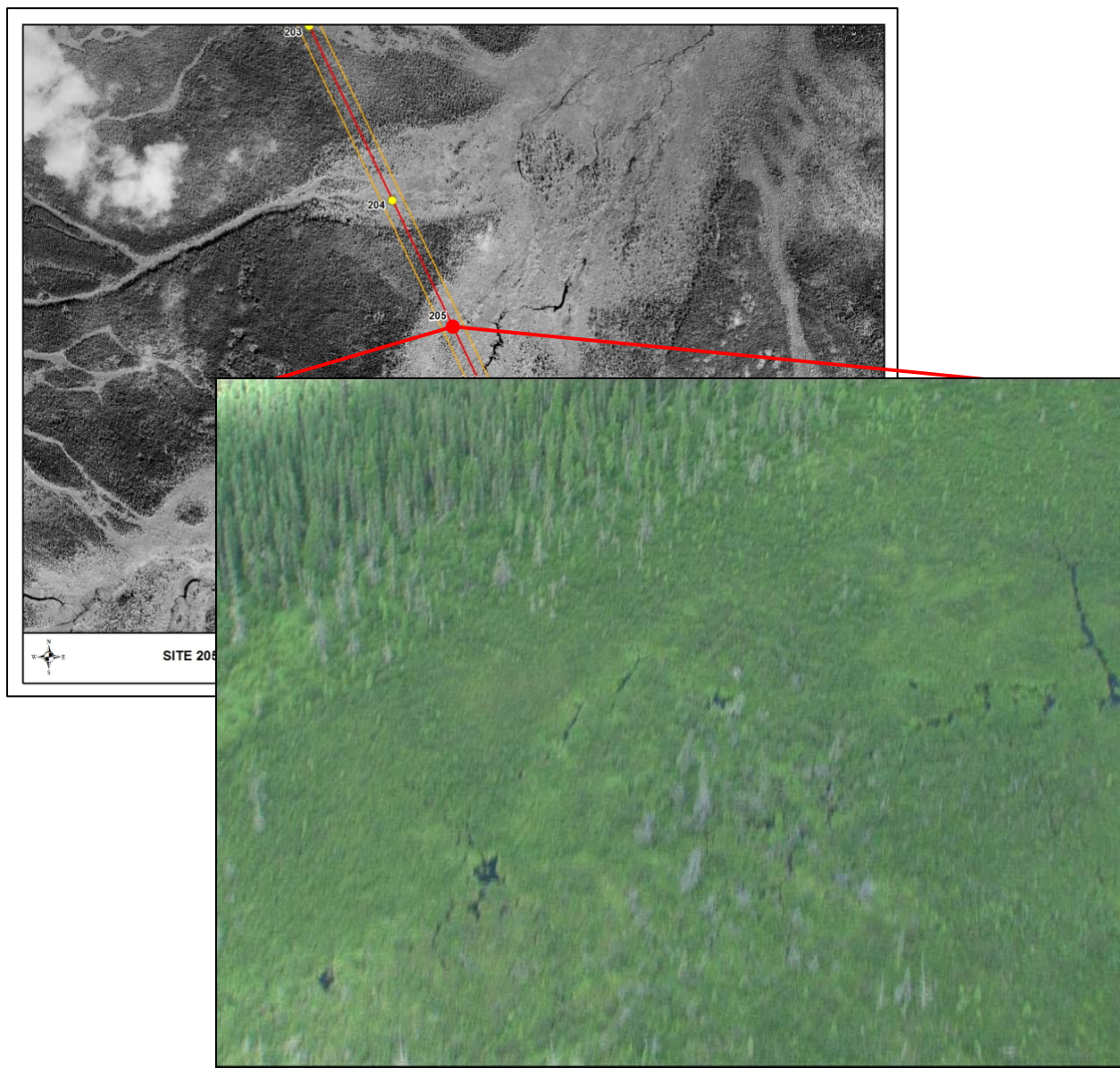
Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363836
Northing: 5838488
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IR
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 8.5 km²
Distance to Receiving Water: Mafeking Creek 5.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	2
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	57
Left Bank	494

Riparian Distance (m)

Right Bank	79
Left Bank	507

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

50

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Moose Creek provides complex habitat for forage fish species, with low overwintering potential. It is surrounded by a large, soft, shrub floodplain. Sites 207, 206, and 205 are all braids of the same channel (within the same floodplain area).

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 206

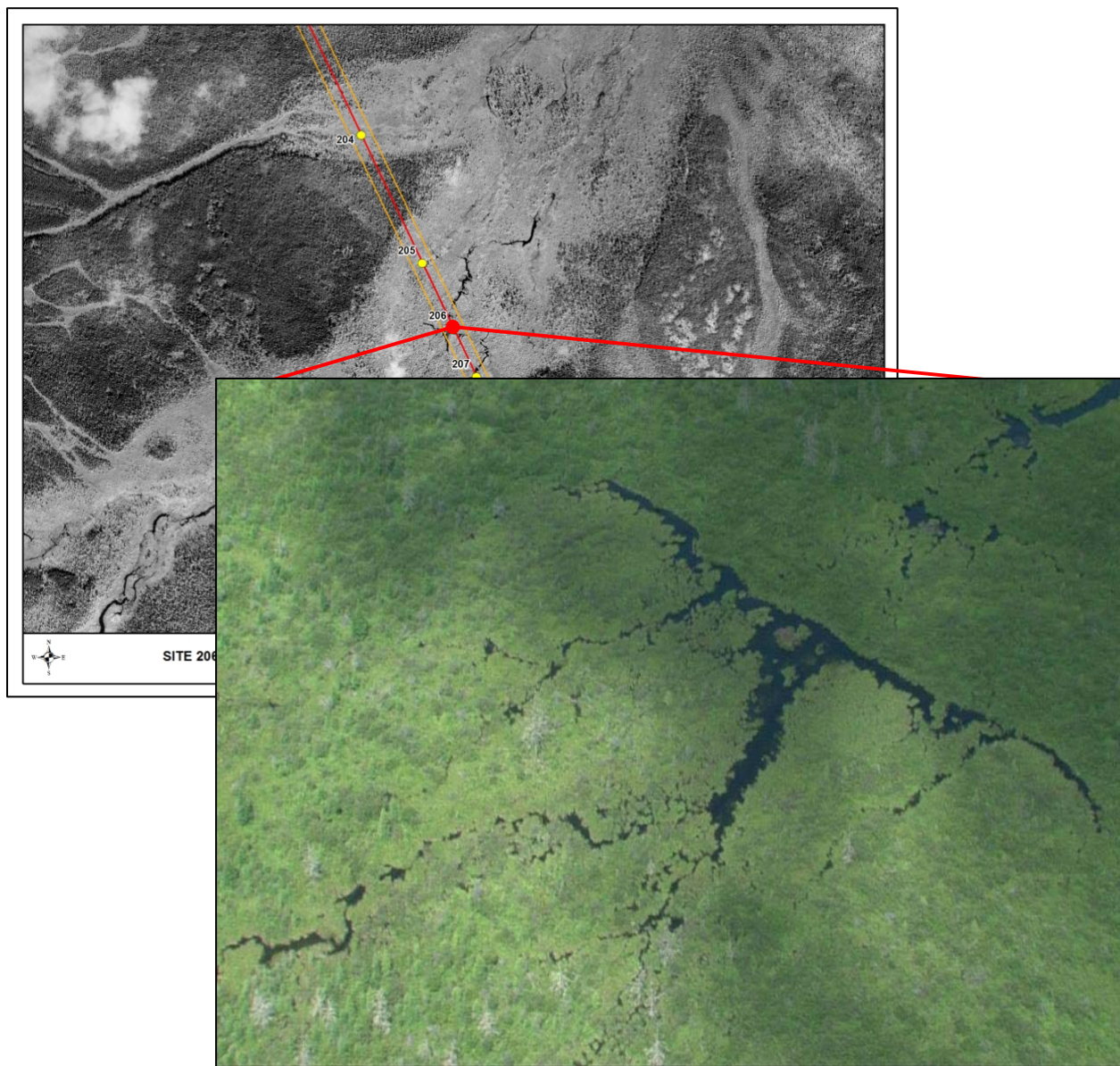
Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 363934
Northing: 5838283
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IR
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 8.4 km²
Distance to Receiving Water: Mafeking Creek 5.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	19
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	244
Left Bank	259

Riparian Distance (m)

Right Bank	263
Left Bank	277

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

20

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	80
Run	20
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The RoW crosses Moose Creek at a ponded area. This creek provides complex habitat for forage fish species, with low overwintering potential. It is surrounded by a large, soft, shrub floodplain. Sites 207, 206, and 205 are all braids of the same channel (within the same floodplain area).

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 207

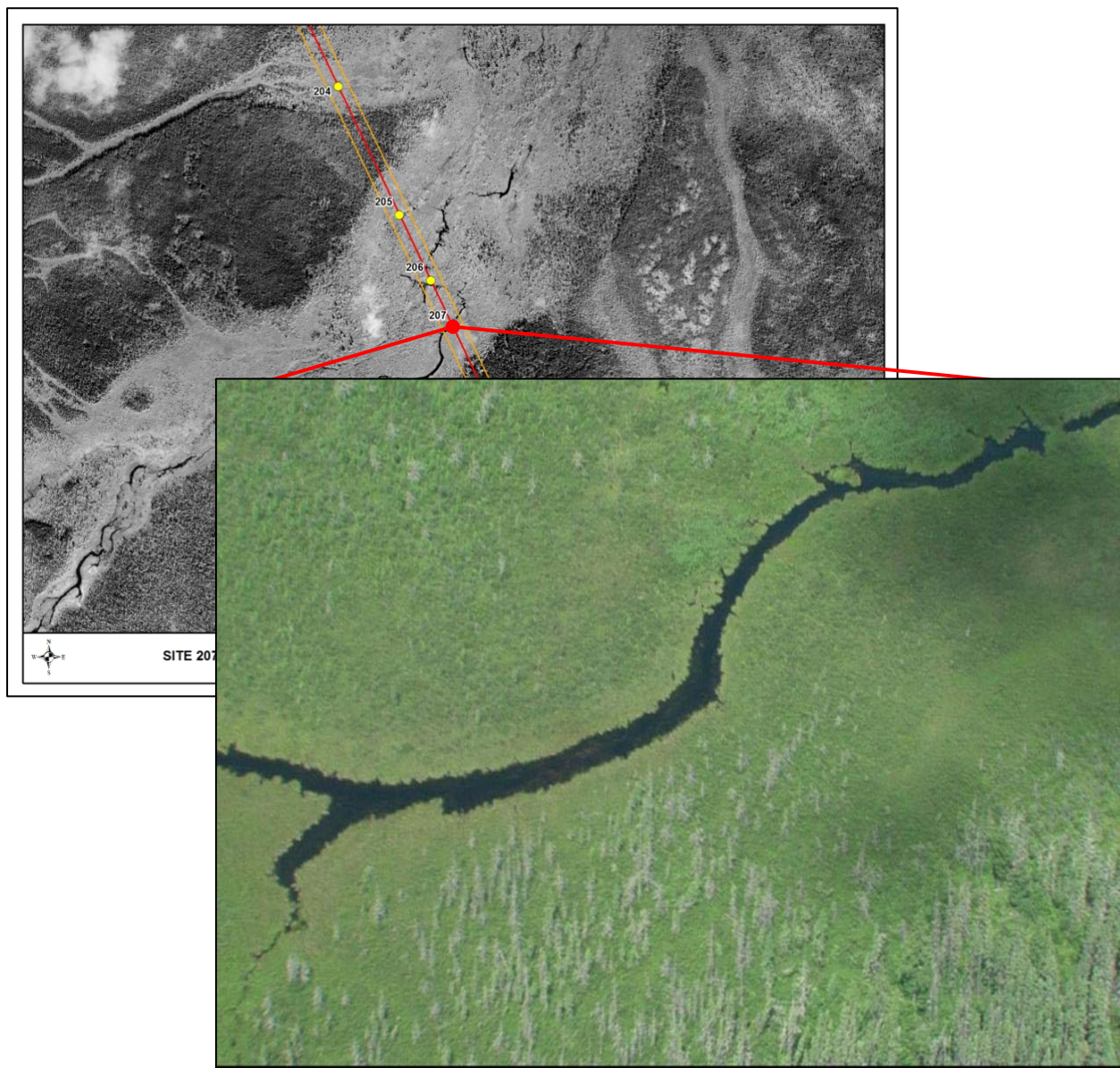
Moose Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 364006
Northing: 5838131
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IR
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 8.6 km²
Distance to Receiving Water: Mafeking Creek 5.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	8
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	380
Left Bank	100

Riparian Distance (m)

Right Bank	408
Left Bank	130

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	Tr
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Moose Creek provides complex habitat for forage fish species, with low overwintering potential. It is surrounded by a large, soft, shrub floodplain. Sites 207, 206, and 205 are all braids of the same channel (within the same floodplain area).

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Unnamed Tributary of Bell River

Stream/Lake:	Stream
Pattern:	IM
Confinement:	UN
Stage:	Low
Flow Regime:	Ephemeral
Morphology:	-
U/S Drainage:	12.2 km ²
Distance to Receiving Water:	Bell River 3.9 km

Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	85
Left Bank	319

Riparian Distance (m)

Right Bank	135
Left Bank	337

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of the Bell River is rated by DFO as providing complex habitat for forage fish species. At the RoW a stream channel was not visible and the floodplain habitat may support forage fish where water occurs.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 209

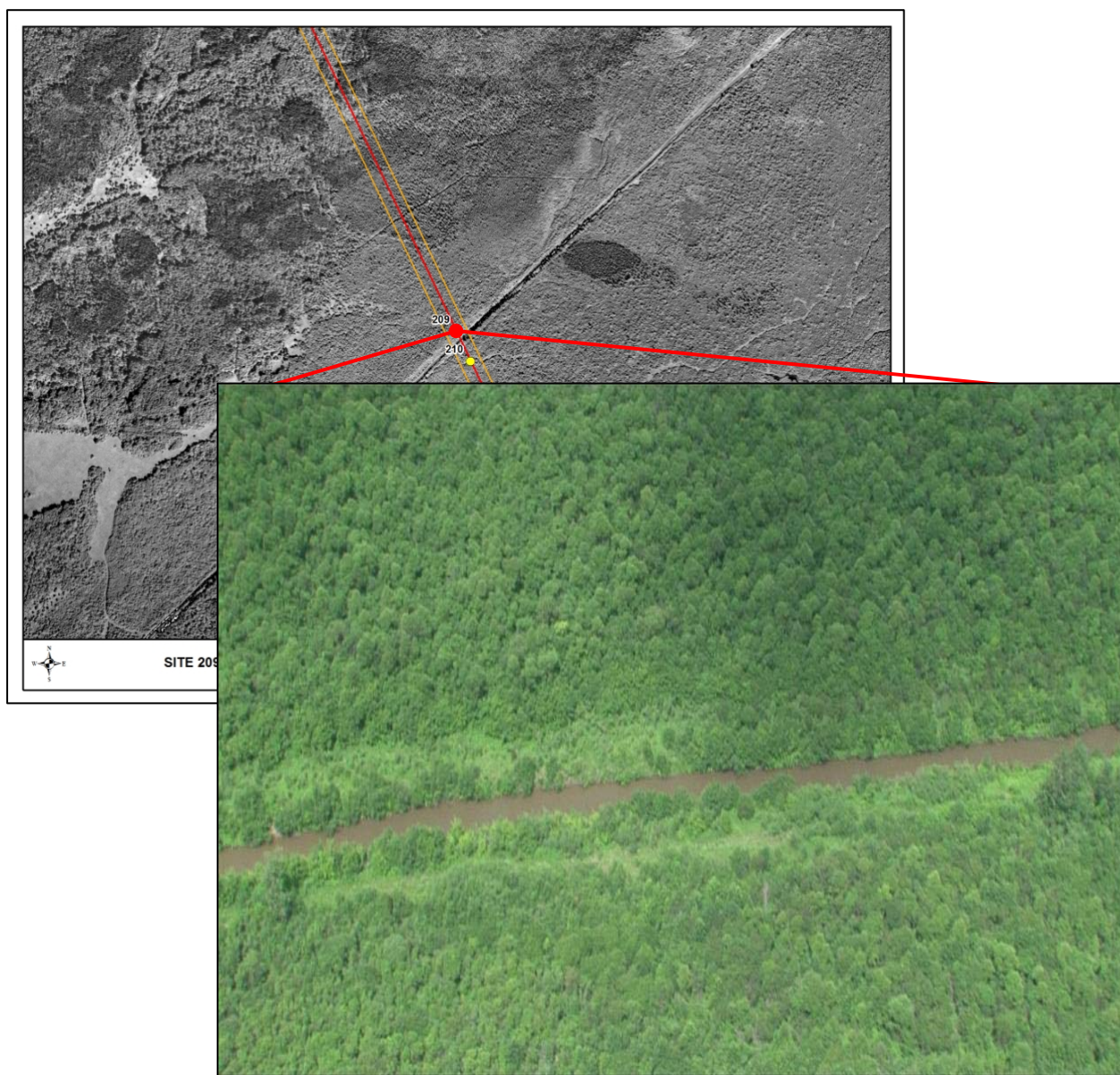
Bell River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 366275
Northing: 5833381
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 135.6 km²
Distance to Receiving Water: Lake Winnipegosis
17.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	7
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	7
Left Bank	2

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	15
--	----

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Blackside darter, Creek chub, Fathead minnow, Longnose dace, Mottled sculpin, Northern pike, Splake, Spottail shiner, White sucker (FIHCS 2009)

Comments:

The Bell River is channelized as an agricultural drain at the RoW. It provides simple habitat for indicator fish species, with moderate overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 210

Unnamed tributary of Bell River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 366318
Northing: 5833291
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Bell River 4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%) 80

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

No

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed tributary of the Bell River is only faintly visible through the surrounding tree canopy at the RoW. The RoW crosses at the extreme headwaters of this small stream and is not expected to support any fish.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat.

Site 211

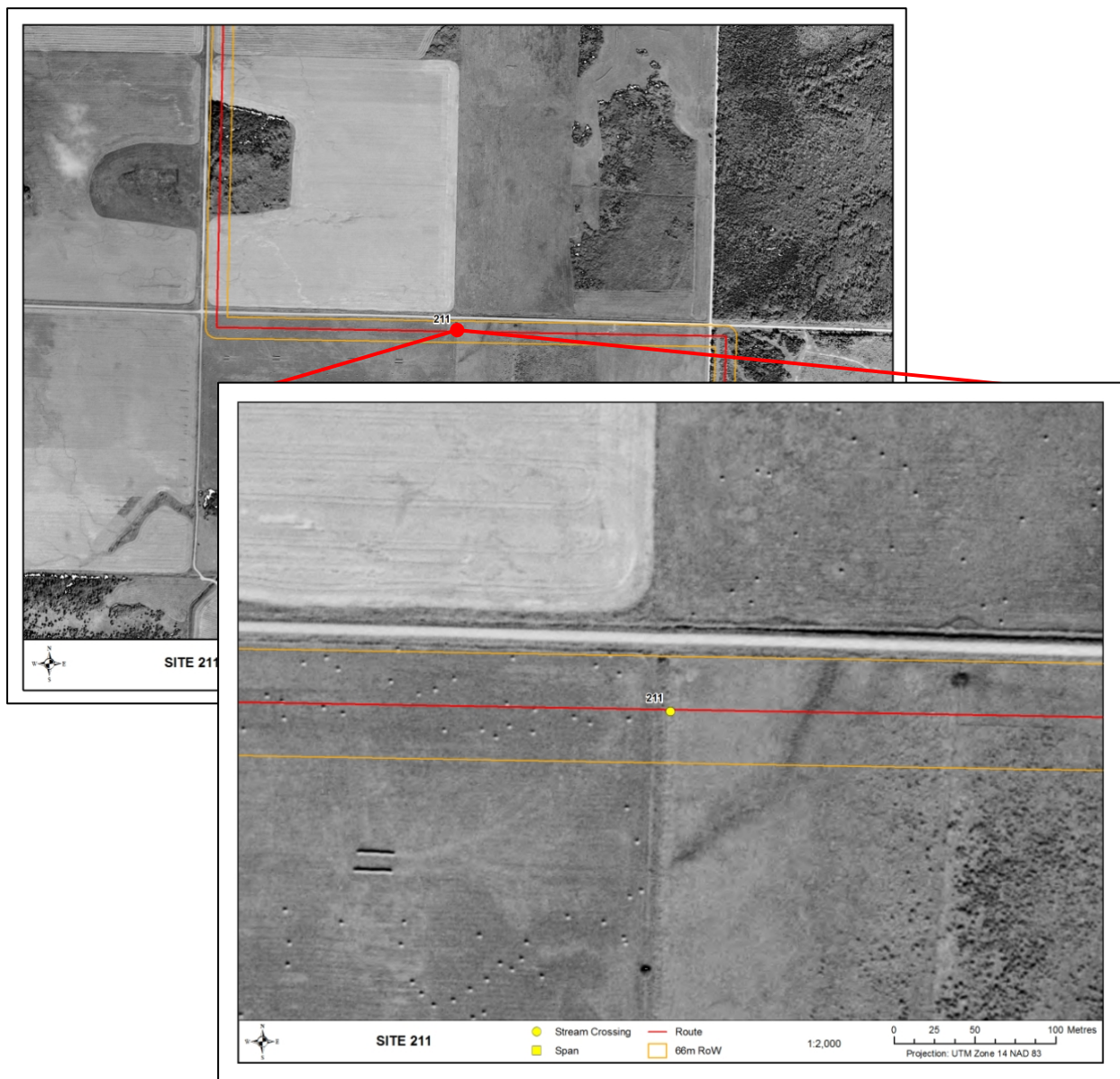
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367407
Northing: 5825703
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 0.01 km²
Distance to Receiving Water: Bell Creek 0.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	9

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as an agricultural drain at the RoW. It provides only indirect fish habitat, in the form of water and nutrients flowing downstream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Channelized banks and very marginal fish habitat result in a low sensitivity rating.

Site 212

Bell Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 368206
Northing: 5824547
Data Source: DOI.

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: CO
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 2.3 km²
Distance to Receiving Water: Swan Lake 10.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	2
Channel Width (m)	12

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: Blacknose shiner, Brook stickleback, Fathead minnow, Finescale dace, Northern pike, White sucker (FIHCS 2009)

Comments:

Bell Creek provides simple fish habitat for indicator fish species, with low overwintering potential. It is channelized at the RoW, and there is a road crossing upstream of the site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Channelized banks result in a low sensitivity rating, despite important fish habitat.

Site 213

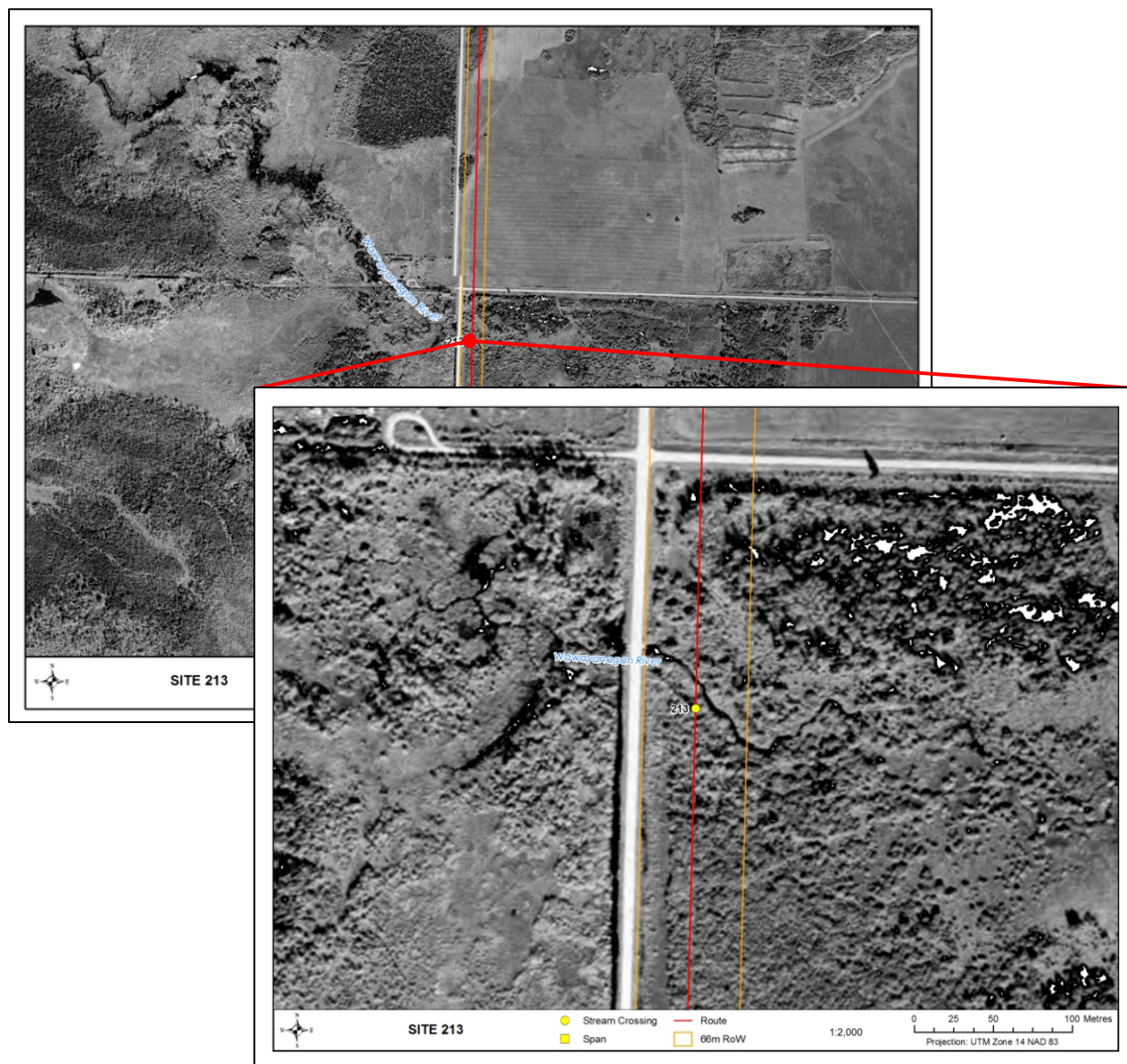
Wawayanagan River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 368102
Northing: 5820698
Data Source: DOI. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 4.7 km²
Distance to Receiving Water: Indian Birch River 7.3 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	2	-	-	-	-
Wetted Width (m)	3.5	-	-	-	-

Water Depths (m)

25%	0.75	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	100	-	-	-	-
Left Bank Stability (%)	100	-	-	-	-
Right Bank Slope (°)	~5	-	-	-	-
Left Bank Slope (°)	~5	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	13	-	-	-	-
Left Bank	10.8	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	15	-	-	-	-
--	----	---	---	---	---

Substrate

Substrate Type (%)

Fines	90	-	-	-	-
Small Gravel	10	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	100	-	-	-	-
Run	-	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	35	50
Large Woody Debris	50	50
Overhanging Vegetation	20	30
Instream Vegetation	30	20
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Wawayanagan River 30m upstream of site 213.



Downstream view of the Wawayanagan River 30m upstream of site 213.



Right bank of the Wawayanagan River 30m upstream of site 213.



Debris in Wawayanagan River 30m upstream of site 213.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

A

Fish Habitat Classification:

Important

Fish Presence: N/A

Comments:

The Wawayanagan River provides complex habitat for indicator fish species, with moderate overwintering potential. The riparian area is wet and soft, and there is shrub wetland beyond the riparian distance measured. The site was not accessible; therefore the river was assessed 30m upstream of the RoW. However from the orthophotos the habitat conditions at the RoW appear similar.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft riparian area and important fish habitat result in a moderate sensitivity rating.

Site 214

Unnamed tributary of Indian Birch River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367905
Northing: 5816290
Data Source: DOL.

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 16.8 km²
Distance to Receiving Water: Indian Birch River 2.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%) 0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%) -

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present No

DFO Manitoba Agricultural Watershed Classification: -

Fish Habitat Classification: No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed tributary of Indian Birch River appears as a dry streambed at the RoW. It likely provides only indirect fish habitat in the form of water and nutrients flowing downstream. There is a road crossing downstream of the site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 215

Fishtown Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367842
Northing: 5814787
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 33.6 km²
Distance to Receiving Water: Indian Birch River 1.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%) 0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%) -

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Fishtown Creek is dry at the crossing with no visible channel in the agricultural field. The creek may have been diverted into the road side ditch. It provides only indirect fish habitat in the form of water and nutrients flowing downstream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Very marginal fish habitat results in a low sensitivity rating.

Site 216

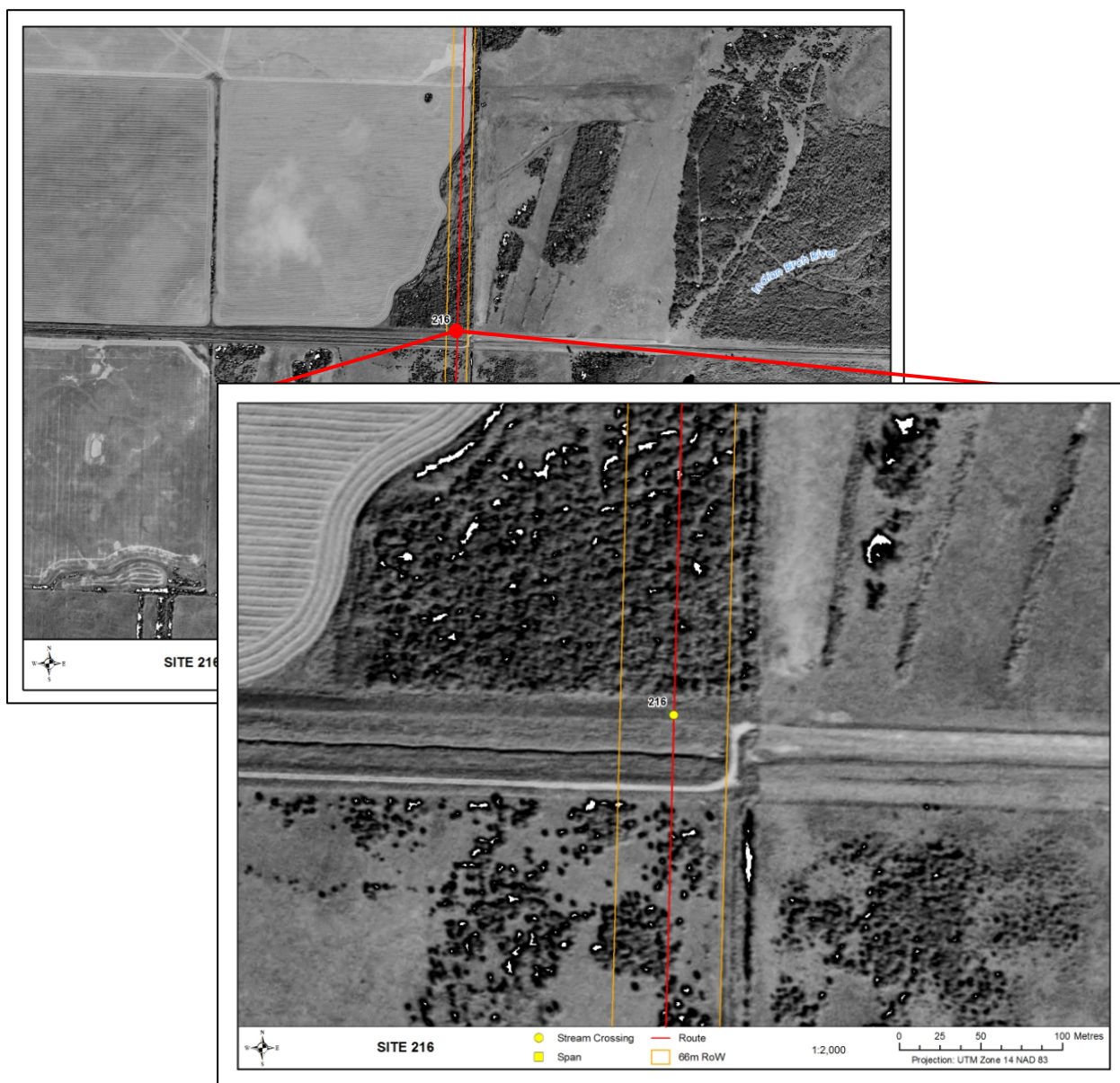
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367817
Northing: 5812793
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 83.0 km²
Distance to Receiving Water: Swede Creek 1.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	4
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	5
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a road ditch at the RoW. It provides simple habitat for indicator fish species, with low overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Channelized banks result in a low sensitivity rating, despite important fish habitat.

Site 217

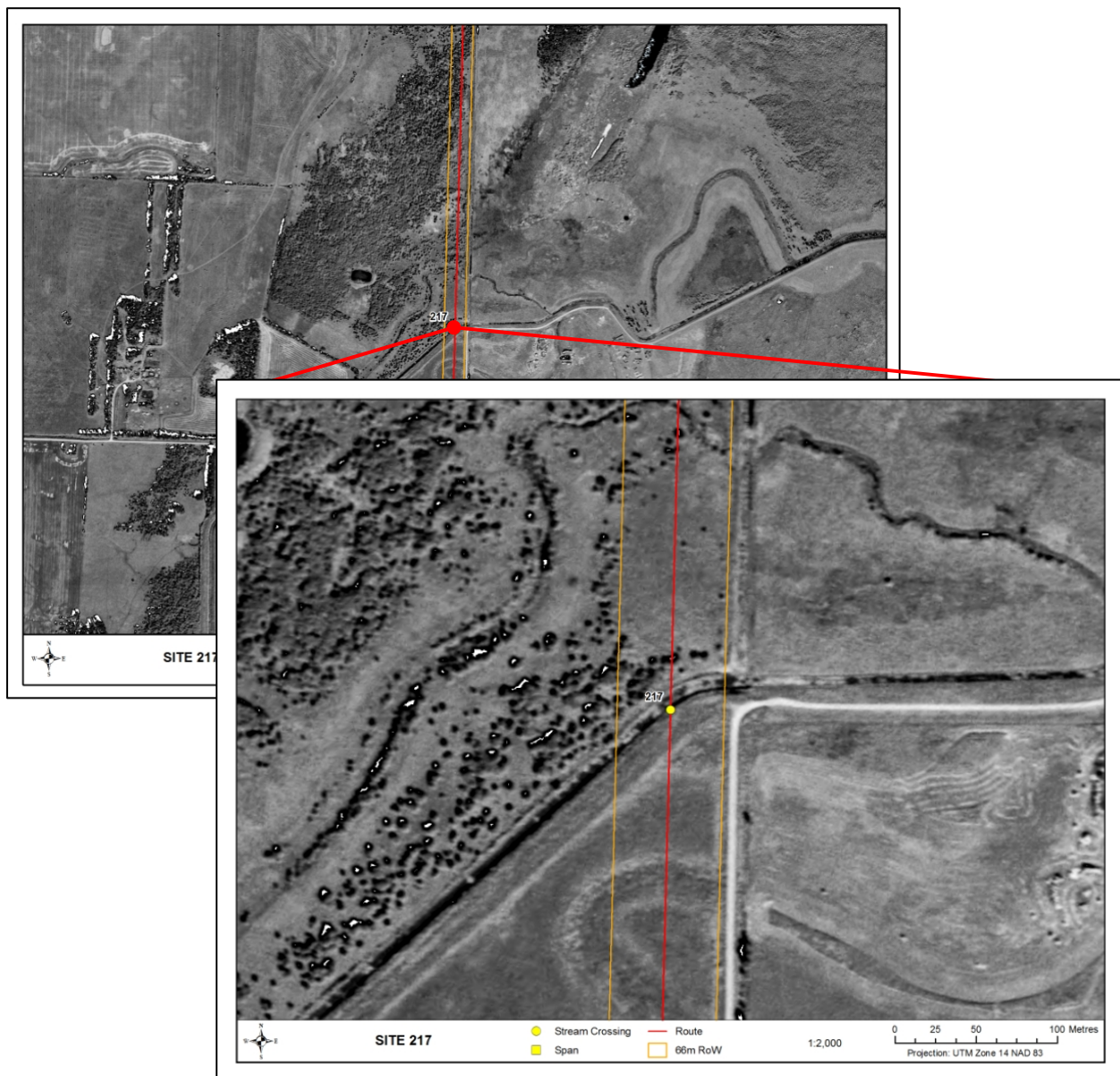
Swede Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367784
Northing: 5811514
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 119.4 km²
Distance to Receiving Water: Indian Birch River 6.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	7
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	2
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

Swede Creek is channelized as an agricultural drain at the RoW. It provides simple habitat for indicator fish species, with low to moderate overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Channelized banks result in a low sensitivity rating, despite important fish habitat.

Site 218

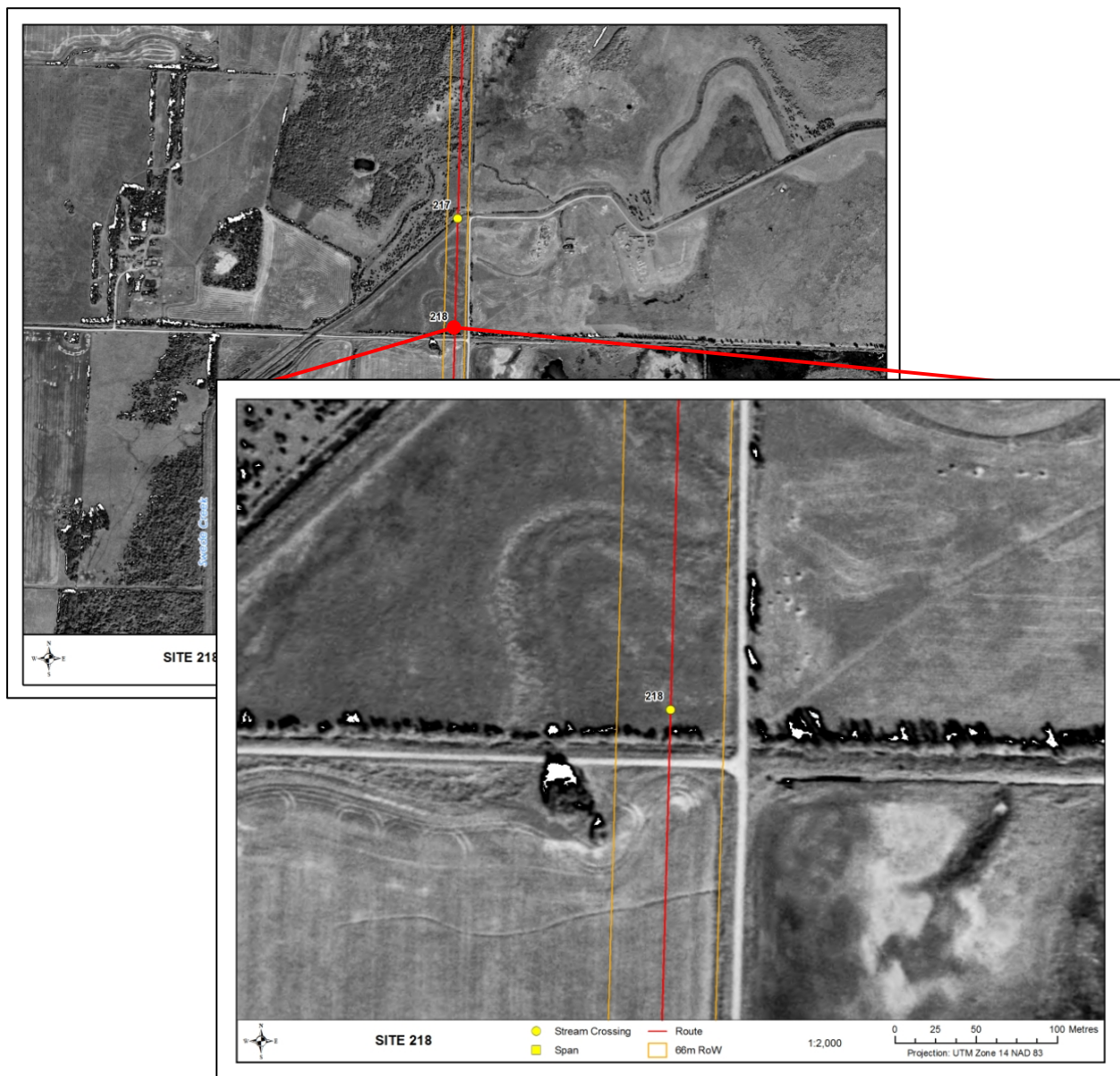
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 367775
Northing: 5811165
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 121.4 km²
Distance to Receiving Water: Woody River 2.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	2
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a road ditch at the RoW. It likely provides simple habitat for forage fish species, with no overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 219

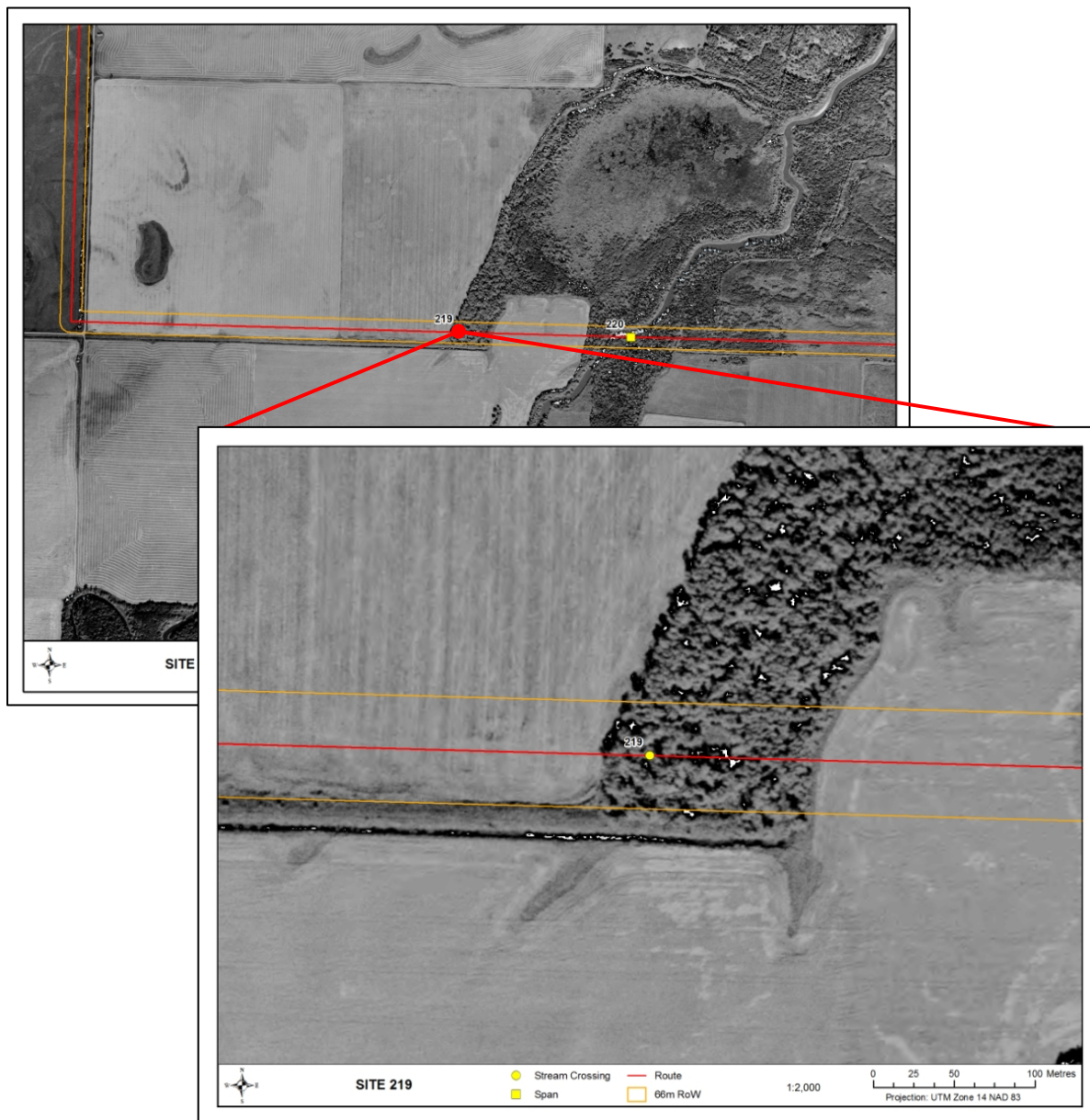
Unnamed tributary of Woody River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 368893
Northing: 5807920
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0 km²
Distance to Receiving Water: Woody River 1.53 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The RoW crosses the headwaters of this unnamed tributary of the Woody River. It provides habitat for forage fish, with no overwintering potential. It is within agricultural field and deciduous forest.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Extremely marginal fish habitat results in a low sensitivity rating.

Site 220

Woody River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 369424
Northing: 5807905
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 2,500 km²
Distance to Receiving Water: Swan Lake 17.5 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~30	~30	~30	~25	~30
Wetted Width (m)	~28	~28	~28	~24	~28

Water Depths (m)

25%	-	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	40	40	40	40	40
Left Bank Stability (%)	40	40	40	40	40
Right Bank Slope (°)	~90	~90	~90	~90	~90
Left Bank Slope (°)	~90	~90	~90	~50	~75

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~2.6	~5.2	~4.5	~7.2	~11
Left Bank	2.6	5.2	4.5	7.2	11

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	-	Y	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	Y	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	20	15	20	15	15
--	----	----	----	----	----

Substrate

Substrate Type (%)

Fines	100	100	100	100	100
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	100	100
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	5	10
Large Woody Debris	100	100
Overhanging Vegetation	-	-
Instream Vegetation	-	-
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Woody River at site 220 from transect 3.



Downstream view of the Woody River at site 220 from crossing.



Right bank of the Woody River at site 220 from transect 2.



Left bank approach of the Woody River at site 220 from transect 5.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Bigmouth buffalo, Blacknose dace, Blackside darter, Brook stickleback, Brook trout, Brown trout, Burbot, Common shiner, Creek chub, Goldeye, Johnny darter, Longnose dace, Rainbow trout, Sand shiner, Shorthead redhorse, Slimy sculpin, Walleye, White sucker, Yellow perch

Comments:

The Woody River provides complex habitat for indicator fish species, with high overwintering potential. Scoured, bare banks indicate instability, and there is a substantial amount of canopy cover. There is riparian forest beyond the riparian distance measured at each transect. The site assessment was conducted 157m upstream of the crossing, however conditions appear similar at both locations.

+ Habitat Sensitivity

Sensitivity Rating: High

Comments:

Site 221

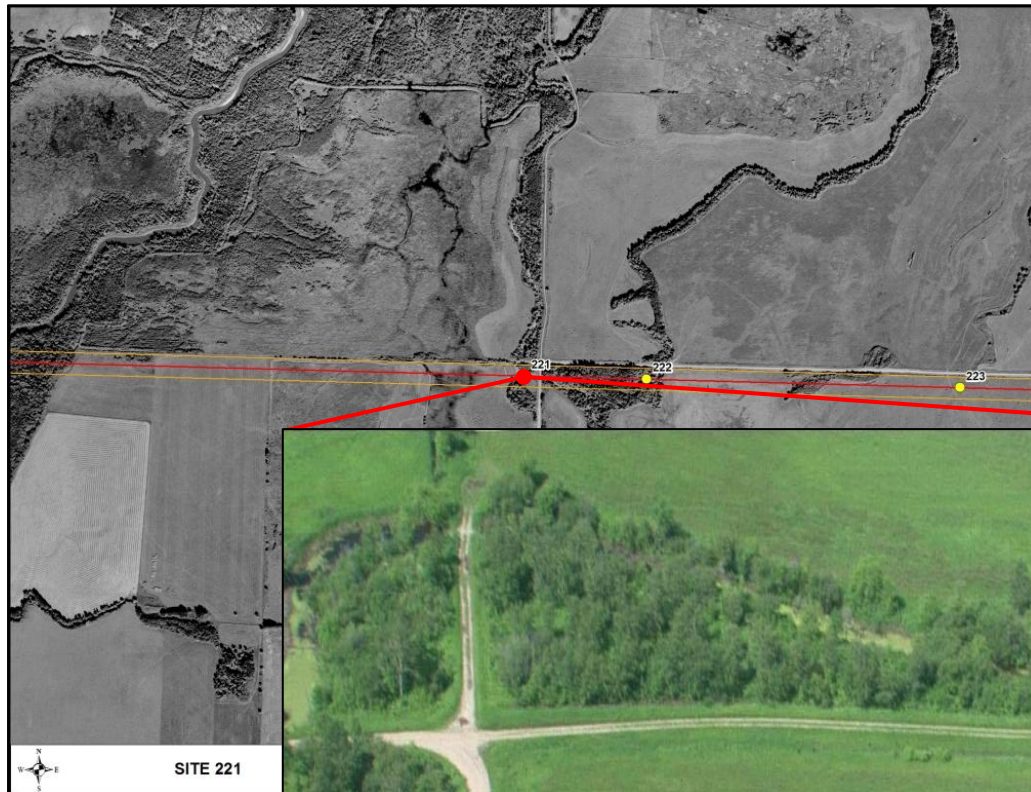
Unnamed Tributary of the Woody River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 370908
Northing: 5807864
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 9.7 km²
Distance to Receiving Water: Woody River 7.7 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	11.7	-	-	-	-
Wetted Width (m)	9.7	-	-	-	-

Water Depths (m)

25%	0.5	-	-	-	-
50%	0.9	-	-	-	-
75%	0.7	-	-	-	-
Max	0.9	-	-	-	-

Banks

Right Bank Stability (%)	75	-	-	-	-
Left Bank Stability (%)	85	-	-	-	-
Right Bank Slope (°)	~35	-	-	-	-
Left Bank Slope (°)	~35	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	5	-	-	-	-
Left Bank	7.9	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	25	-	-	-	-
--	----	---	---	---	---

Substrate

Substrate Type (%)

Fines	100	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	30	30
Large Woody Debris	50	60
Overhanging Vegetation	-	-
Instream Vegetation	50	40
Pool	-	-
Boulder	Tr	Tr
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of unnamed tributary of the Woody River at site 221 from crossing.



Downstream view of unnamed tributary of the Woody River at site 221 from crossing.



Right bank of unnamed tributary of the Woody River at site 221 from crossing.



Left bank approach of unnamed tributary of the Woody River at site 221 from crossing.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of the Woody River provides complex habitat for forage fish species, with low overwintering potential. Bare soil on banks indicates instability, and there is a large amount of canopy cover. There is a road crossing downstream of the RoW. There is little flow at the site, with floating instream vegetation present.. The RoW parallels the tributary for approximately 56m downstream of the site.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Somewhat unstable banks and a substantial amount of canopy cover results in a moderate sensitivity rating, despite marginal fish habitat.

Site 222

Unnamed Tributary of the Woody River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 371353
Northing: 5807851
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 9.7 km²
Distance to Receiving Water: Woody River 7.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	62
Left Bank	55

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

80

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

80

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	100
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of the Woody River provides complex habitat for forage fish species, with low overwintering potential. There is a road crossing downstream of the site. Riparian distance includes riparian forest.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

High amount of canopy cover results in a moderate sensitivity rating, despite marginal fish habitat.

Site 223

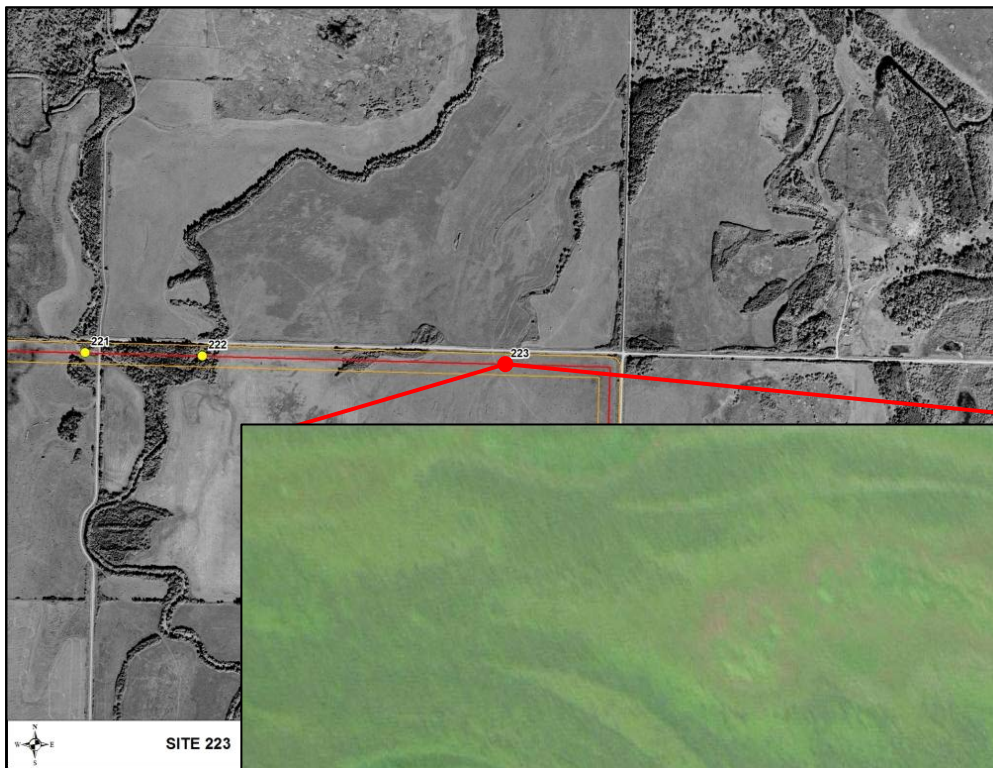
Poplar Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372274
Northing: 5807826
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 1.6 km²
Distance to Receiving Water: Woody River 14 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

Marginal

Fish Presence: N/A

Comments:

The RoW crosses Poplar Creek four times within its headwaters, at which all sites appear as a dry streambed. It likely provides habitat for forage fish species at higher water levels, with no overwintering potential. There is a road crossing downstream of the site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 224

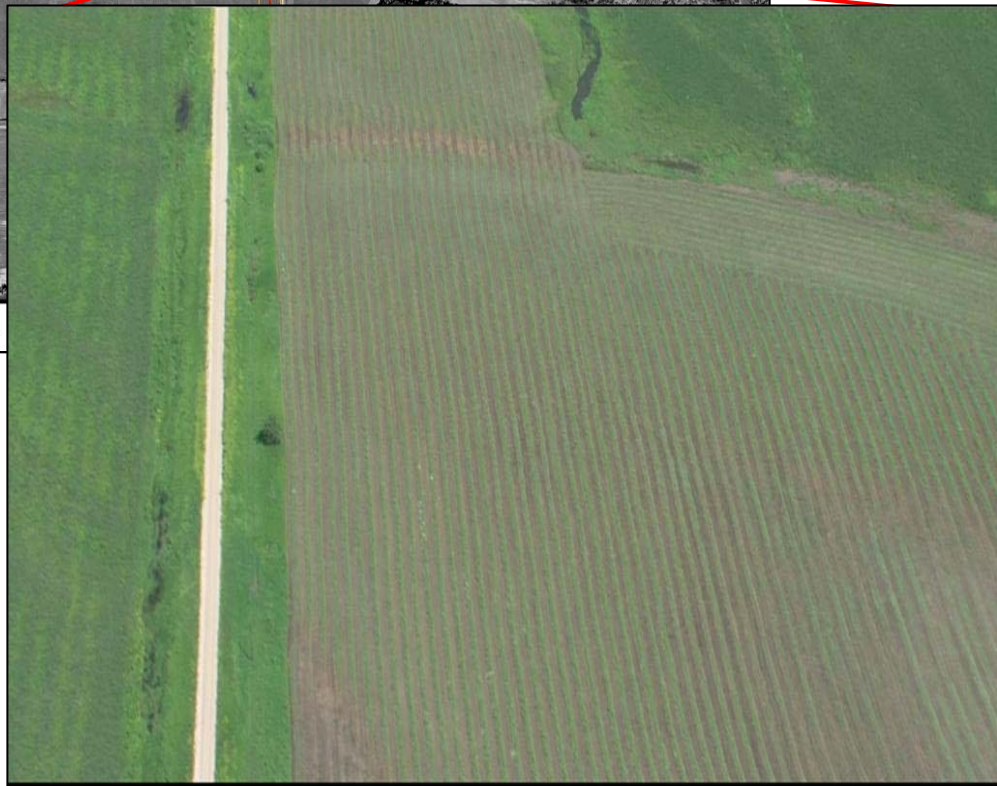
Poplar Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372517
Northing: 5806740
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Woody River 17.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	27

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

No

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No Fish Habitat

Fish Presence: N/A

Comments:

The RoW crosses Poplar Creek four times within its headwaters, at which all sites are dry and farmed (cultivated) through. No fish are expected at this site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat.

Site 225

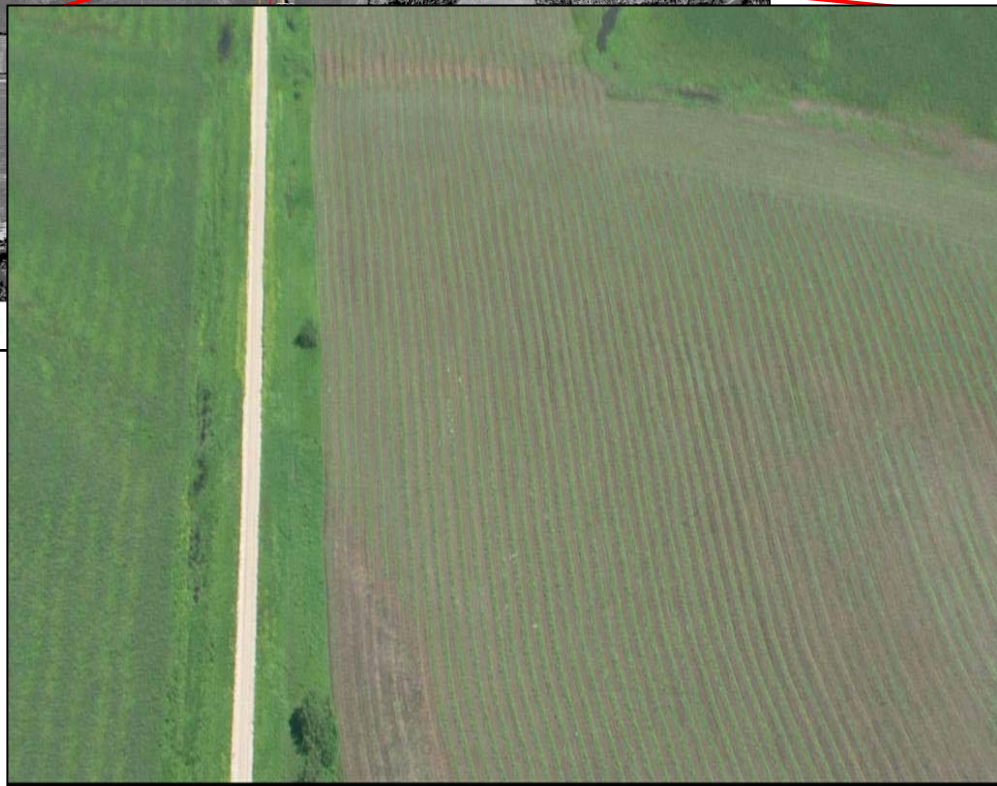
Poplar Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372514
Northing: 5806603
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.2 km²
Distance to Receiving Water: Woody River 16.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	14

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No Fish Habitat

Fish Presence: N/A

Comments:

The RoW crosses Poplar Creek four times within its headwaters where the creek has been cultivated within a farm field. No fish are expected at this site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat.

Site 226

Poplar Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372507
Northing: 5806370
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.3 km²
Distance to Receiving Water: Woody River 16.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	17

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No Fish Habitat

Fish Presence: N/A

Comments:

The RoW crosses Poplar Creek four times within its headwaters where the creek has been cultivated through within a farm field. No fish are expected at this site.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat.

Site 227

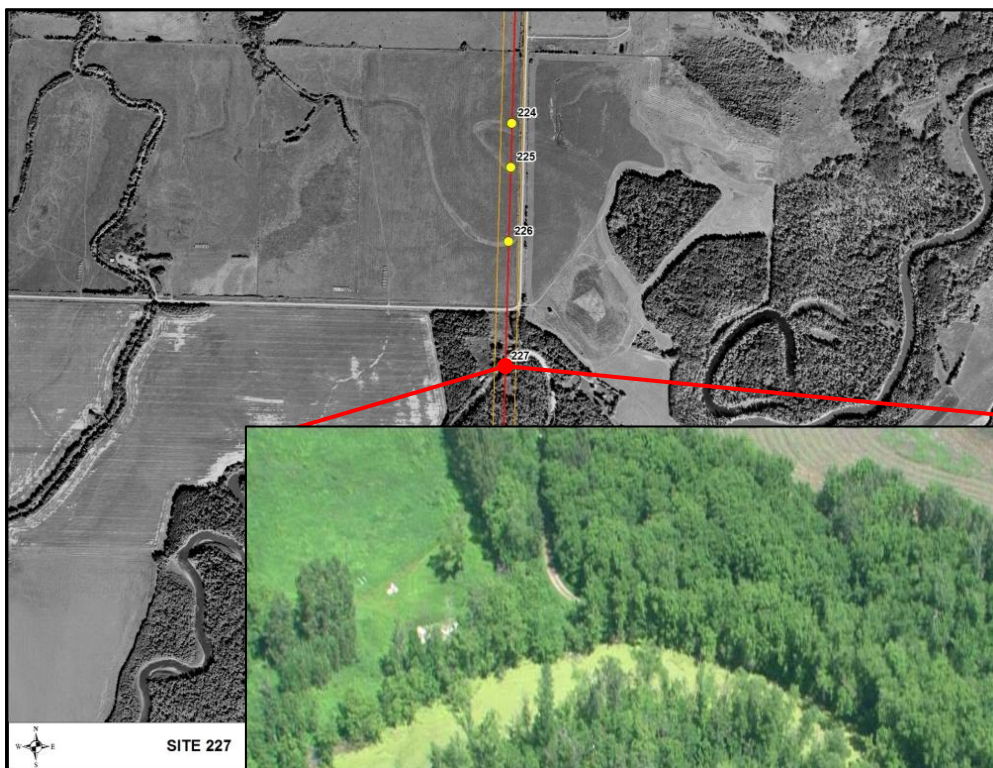
Oxbow lake/wetland of Swan River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372497
Northing: 5805981
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: Moderate
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	4.55
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

25

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

100

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	10
Instream Vegetation	90
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	100
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This oxbow lake/wetland of Swan River likely provides fish habitat for indicator species during higher water levels, and forage fish species at all times. It is not connected to the Swan River in the orthophoto or video but it is likely connected at higher water levels. It also appears to be stagnant with floating aquatic vegetation covering much of its surface.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

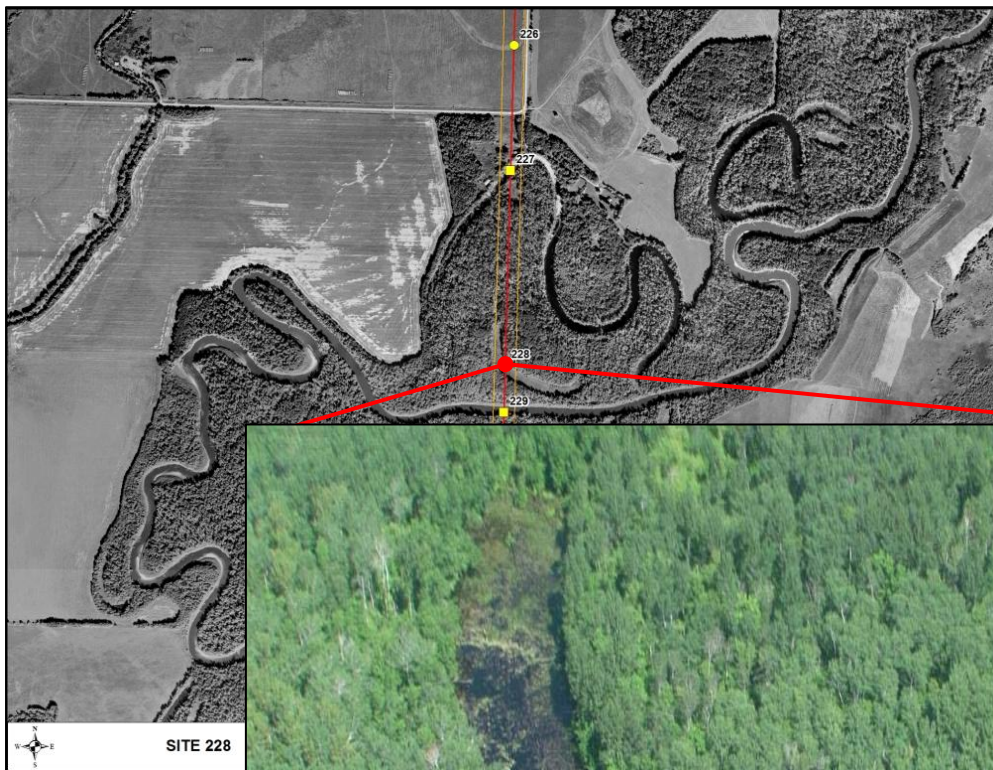
Site 228 Oxbow lake/wetland of Swan River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372480
Northing: 5805372
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: High
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	2.8
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	10
--	----

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	Tr
Overhanging Vegetation	5
Instream Vegetation	95
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	100
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No Fish Habitat

Fish Presence: N/A

Comments:

This oxbow lake/wetland of Swan River likely provides no fish habitat. It appears to have no connection to Swan River, and to be stagnant with floating aquatic vegetation covering much of its surface.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and no fish habitat result in a low sensitivity rating.

Site 229

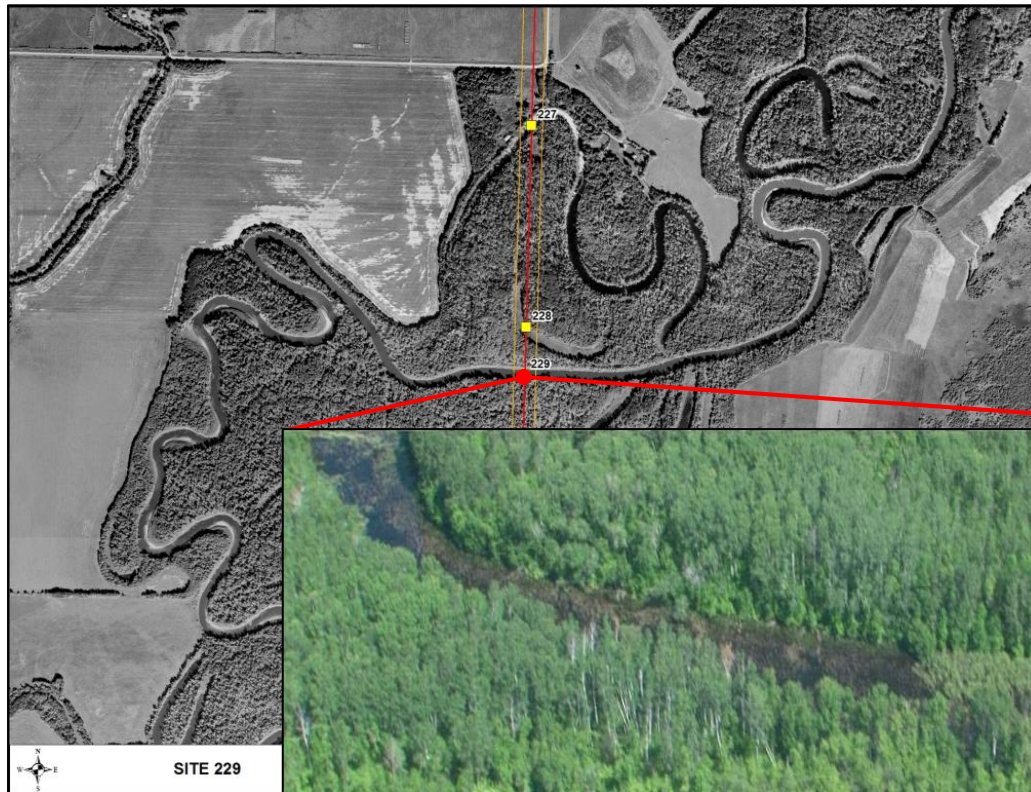
Swan River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372476
Northing: 5805226
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 6,131.8 km²
Distance to Receiving Water: Swan Lake
23.2 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~50	~40	~50	~40	~45
Wetted Width (m)	~50	~40	~50	~40	~60

Water Depths (m)

25%	-	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	40	40	40	55	45
Left Bank Stability (%)	40	40	40	55	45
Right Bank Slope (°)	~80	~80	~80	~60	~85
Left Bank Slope (°)	~70	~80	~80	~60	~85

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~5.5	~7.3	~4.6	~10.2	~5.9
Left Bank	5.5	7.3	4.6	10.2	5.9

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	Y	Y	Y	Y	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	5	5	5	5	50
--	---	---	---	---	----

Substrate

Substrate Type (%)

Fines	70	70	70	80	80
Small Gravel	10	10	10	-	5
Large Gravel	10	10	10	-	5
Cobble	10	10	10	10	5
Boulder	-	-	-	10	5

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	100	100
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	5	5
Large Woody Debris	50	50
Overhanging Vegetation	50	50
Instream Vegetation	-	-
Pool	-	-
Boulder	Tr	Tr
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of Swan River 17.5 km upstream of site 229 at transect 4.



Downstream view of Swan River 17.5 km upstream of site 229 at transect 1.



Right bank of Swan River 17.5 km upstream of site 229 at transect 1.



Left bank approach of Swan River 17.5 km upstream of site 229 at transect 1.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Bigmouth shiner, Blacknose dace, Black-sided darter, Burbot, Carp, Common shiner, Creek chub, Fathead minnow, Johnny darter, Longnose dace, Northern pike, River darter, Sand shiner, Shorthead redhorse, Trout perch, Walleye, White sucker, Yellow perch

Comments:

The Swan River was not accessible at the site and therefore it was assessed 17.5km upstream. This river provides complex habitat for indicator fish species, with high overwintering potential. Bare soil and slumping indicate instability where the river was assessed, and the orthophoto and video also show this instability at the site.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 230

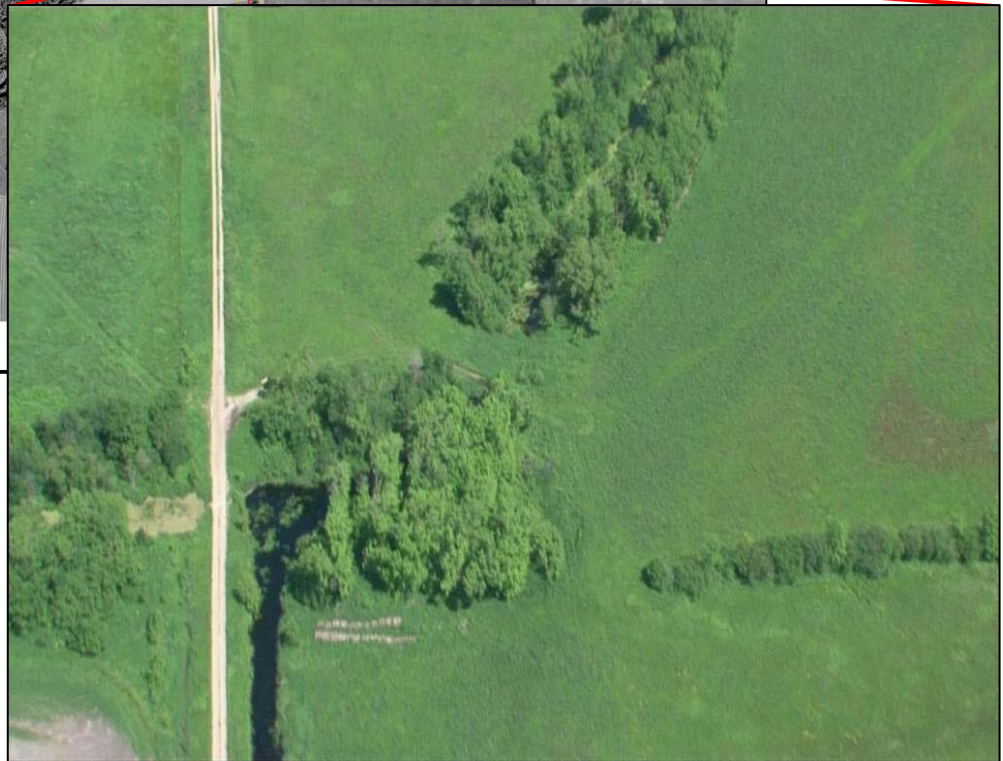
Kitzul Drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372435
Northing: 5803753
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 0.7 km²
Distance to Receiving Water: Swan River 1 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	-	~10	-	-	-
Wetted Width (m)	-	~10	-	-	-

Water Depths (m)

25%	-	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	-	85	-	-	-
Left Bank Stability (%)	-	85	-	-	-
Right Bank Slope (°)	-	~35	-	-	-
Left Bank Slope (°)	-	~45	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	-	~7	-	-	-
Left Bank	-	~7	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	-	-	-	-	-
Shrubs	-	Y	-	-	-
Conifers	-	-	-	-	-
Deciduous	-	Y	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	-	40	-	-	-
--	---	----	---	---	---

Substrate

Substrate Type (%)

Fines	-	100	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	-	100	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	40	40
Large Woody Debris	25	25
Overhanging Vegetation	25	25
Instream Vegetation	50	50
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Kitzul Drain at site 230 from transect 2.



Downstream view of the Kitzul Drain at site 230 from transect 2.



Left bank of the Kitzul Drain at site 230 from transect 2.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The Kitzul Drain is a channelized agricultural drain providing only indirect fish habitat, in the form of water and nutrients flowing downstream. The connection to Swan River appears to be ephemeral, and there was very little flow at the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Relatively stable banks, channelized habitat, and very marginal fish habitat result in a low sensitivity rating.

Site 231

Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372286
Northing: 5798024
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 1.7 km²
Distance to Receiving Water: Swan River 7.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	D
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a drain at the RoW. It provides simple habitat for forage fish species, with no overwintering potential. The banks appear stable although the drain is very small and hard to see.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Likely stable vegetated banks, small size, and marginal fish habitat result in a low sensitivity rating.

Site 232

Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 372358
Northing: 5793158
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 9.2 km²
Distance to Receiving Water: Swan River 12.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	9
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	6
Left Bank	9

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	D
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a drain at the RoW. It provides simple habitat for forage fish species, with no overwintering potential. There is a road crossing upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 233

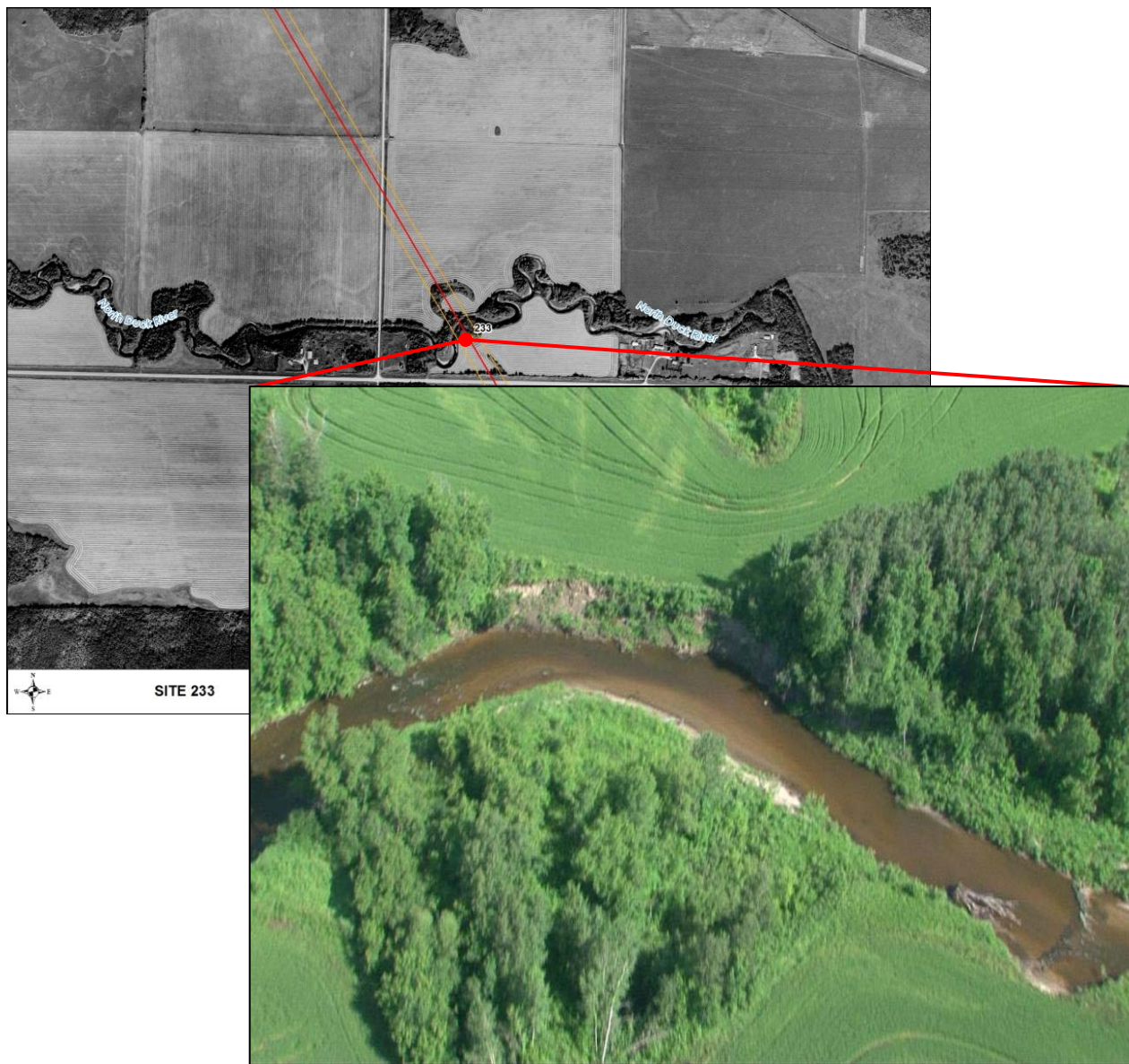
North Duck River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 398046
Northing: 5761996
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 293.2 km²
Distance to Receiving Water: Lake Winnipegosis
43.7 km



Site Conditions

+ Physical Data

Survey Date: 17 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	16.5	15.8	14	13.6	32.7
Wetted Width (m)	15.5	12.4	11.8	12.6	18.2

Water Depths (m)

25%	0.1	0.5	0.2	0.2	0.5
50%	0.2	0.5	0.3	0.3	0.6
75%	0.1	0.5	0.2	0.3	0.7
Max	0.2	0.5	0.3	0.3	0.7

Banks

Right Bank Stability (%)	50	50	30	30	40
Left Bank Stability (%)	40	10	70	30	10
Right Bank Slope (°)	~90	~50	~90	~90	~90
Left Bank Slope (°)	~90	~90	~35	~90	~90

Riparian

Floodplain Distance (m)

Right Bank	-	13.7	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	4	13.7	4	~5.4	12
Left Bank	4.5	5	8.8	5.4	3

Riparian Vegetation Type (Y/N)

None	-	-	-	-	Y
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	Y	-	-	-	Y
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	Y	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	Tr	Tr	10	15	Tr
--	----	----	----	----	----

Substrate

Substrate Type (%)

Fines	15	80	40	15	80
Small Gravel	10	10	10	10	-
Large Gravel	30	10	15	30	10
Cobble	40	-	15	40	10
Boulder	5	-	20	5	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	50
Run	60	100	80	40	50
Riffle	40	-	20	60	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	20	20
Large Woody Debris	70	70
Overhanging Vegetation	10	10
Instream Vegetation	-	-
Pool	-	-
Boulder	20	20
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the North Duck River at site 233 from crossing.



Downstream view of North Duck River at site 233 from crossing.



Right bank of the North Duck River at site 233 from transect 5, showing pool created by beaver dam



Left bank approach of the North Duck River at site 233 from transect 2.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

A

Fish Habitat Classification:

Important

Fish Presence: Blacknose dace, Brook stickleback, Brook trout, Creek chub, Emerald shiner, Fathead minnow, Finescale dace, Johnny darter, Logperch, Longnose dace, Mottled sculpin, Northern pike, Rainbow trout, Shorthead redhorse, Spottail shiner, Trout perch, White sucker, Yellow perch

Comments:

The North Duck River provides complex habitat for forage fish species. Cutbanks and bare soil on banks indicate instability. The river has high habitat diversity, with riffle, run, and pool habitats. A floodplain was evident at transect 2, however it was not soft and is therefore not a sensitive area. The channel of transect 5 also includes a floodplain area.

+ Habitat Sensitivity

Sensitivity Rating: High

Comments:

Unstable cutbanks, high habitat diversity, and important fish habitat result in a high sensitivity rating.

Site 234

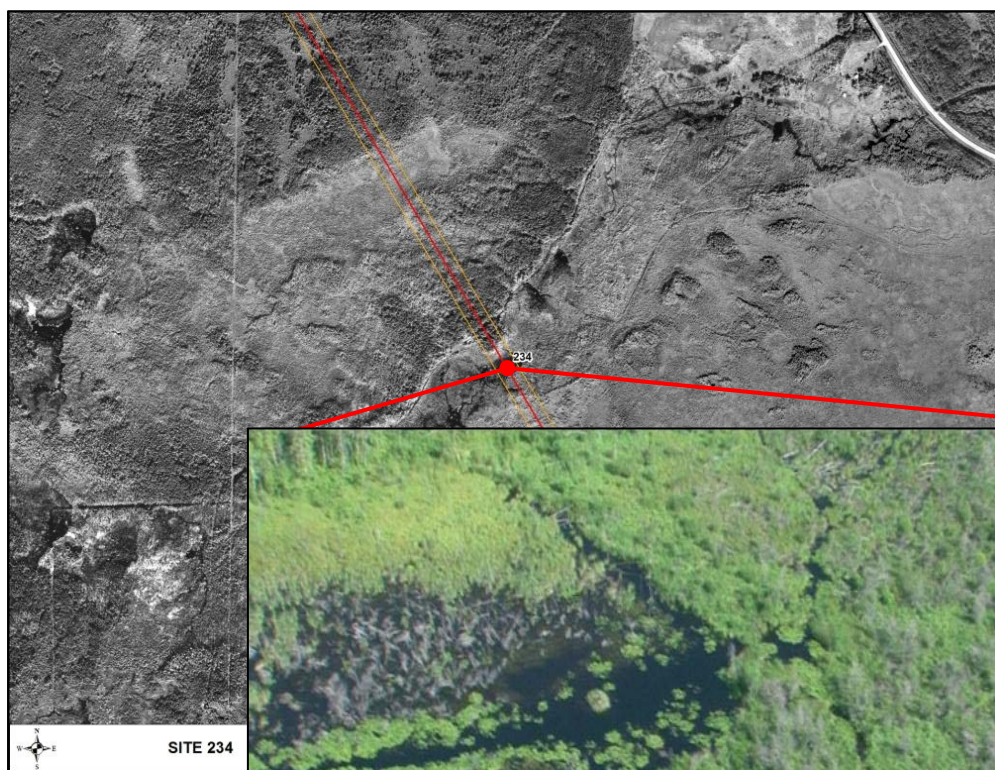
Unnamed tributary of North Duck River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 400163
Northing: 5758408
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 46.2 km²
Distance to Receiving Water: North Duck River 2.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	93
Channel Width (m)	3

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	36
Left Bank	210

Riparian Distance (m)

Right Bank	115
Left Bank	660

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

50

Cover Composition (% of Total)

Large Woody Debris	50
Overhanging Vegetation	-
Instream Vegetation	50
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	100
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present Yes

DFO Manitoba Agricultural Watershed Classification: B

Fish Habitat Classification: Important

Fish Presence: N/A

Comments:

This unnamed tributary of North Duck River provides simple habitat for indicator fish species, with low overwintering potential. The channel is faintly defined within a wetland area, with ponded areas within the channel. The RoW is at one of these ponded areas. It is surrounded by a soft shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain and important fish habitat result in a moderate sensitivity rating.

Site 235

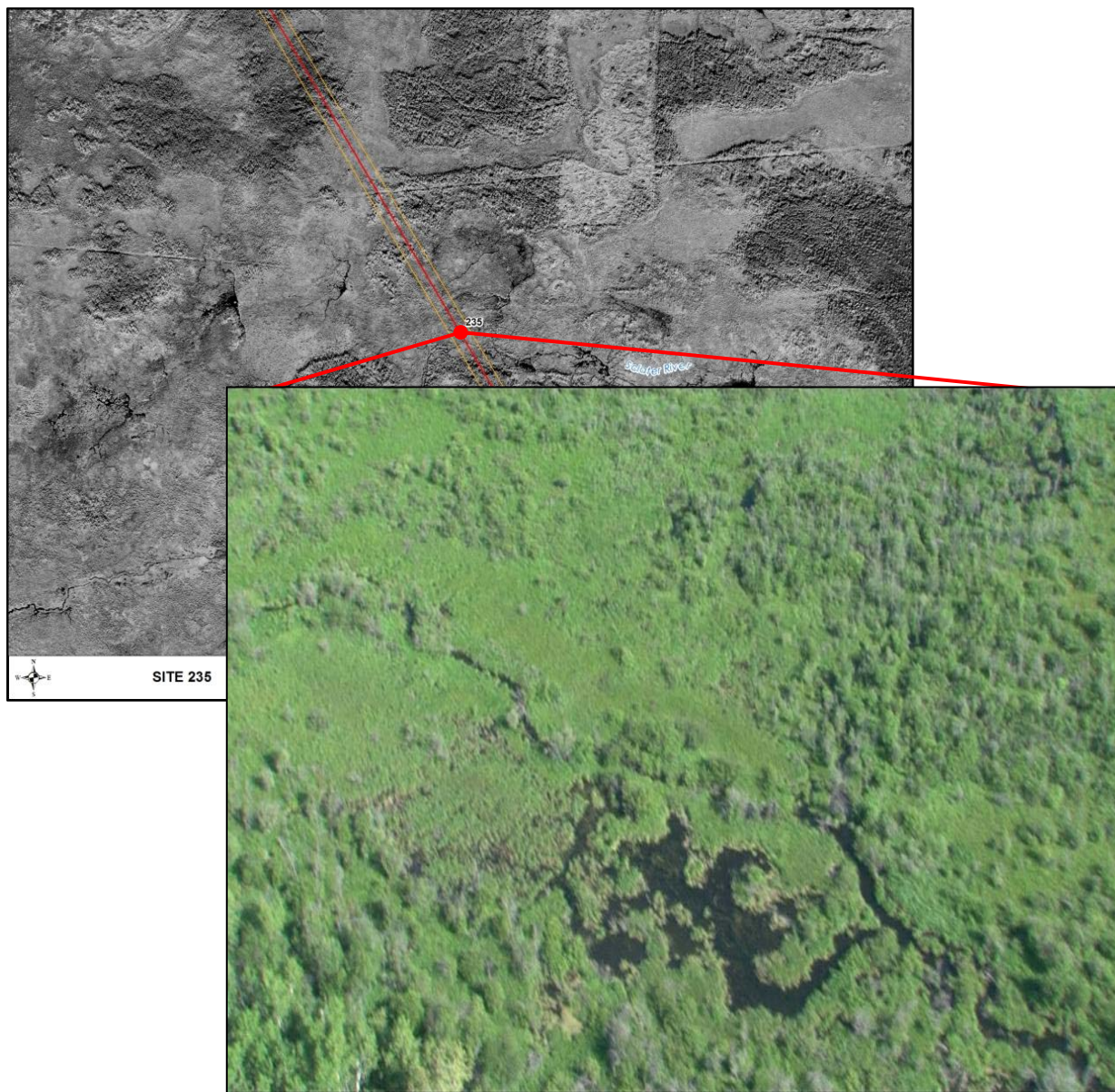
Sclater River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 401048
Northing: 5756908
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 176.6 km²
Distance to Receiving Water: Lake Winnipegosis
44.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	5
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	391
Left Bank	43

Riparian Distance (m)

Right Bank	540
Left Bank	821

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

30

Cover Composition (% of Total)

Large Woody Debris	20
Overhanging Vegetation	80
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present Yes

DFO Manitoba Agricultural Watershed Classification: A

Fish Habitat Classification: Important

Fish Presence: Blacknose dace, Brook stickleback, Brook trout, Creek chub, Fathead minnow, Finescale dace, Iowa darter, Johnny darter, Longnose dace, Pearl dace, Rainbow trout, White sucker, Yellow sucker

Comments:

This Sclater River provides complex habitat for indicator fish species, with moderate overwintering potential. At the RoW the channel is faintly defined within a wetland area, with ponded areas within the channel; this is in contrast to upstream and downstream areas of this river where a more defined channel occurs. At the site the river is surrounded by a soft shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain and important fish habitat result in a moderate sensitivity rating.

Site 236

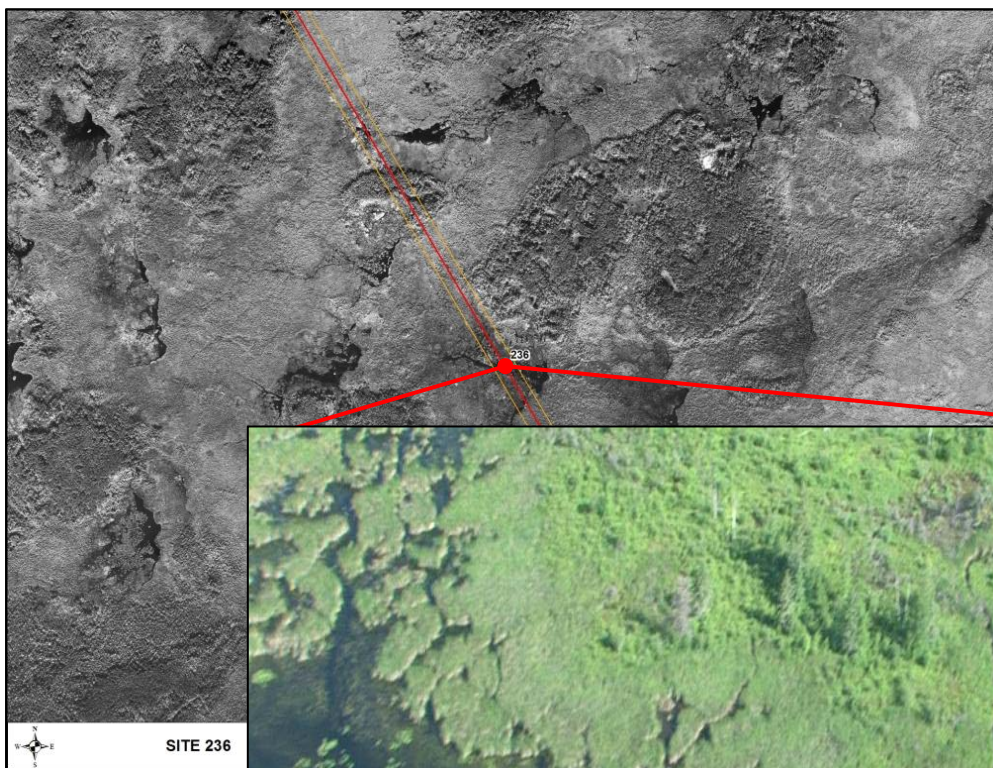
Unnamed tributary of Sclater River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 403650
Northing: 5752497
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: -
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 127.2 km²
Distance to Receiving Water: Sclater River 3.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	29
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	36
Left Bank	296

Riparian Distance (m)

Right Bank	118
Left Bank	787

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

20

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	100
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

This unnamed tributary of the Sclater River provides complex habitat for indicator fish species, with moderate overwintering potential. The channel is faintly defined within a wetland area, with ponded areas within the channel. The RoW crosses at one of these ponded areas. It is surrounded by a soft grass floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating.

Site 237

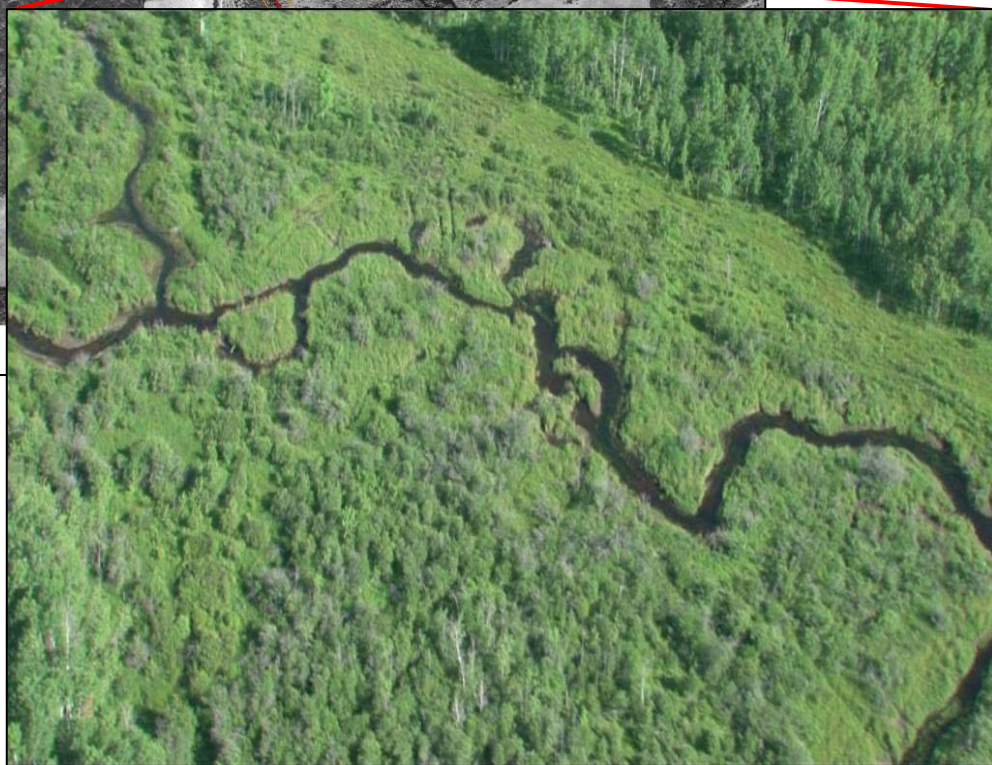
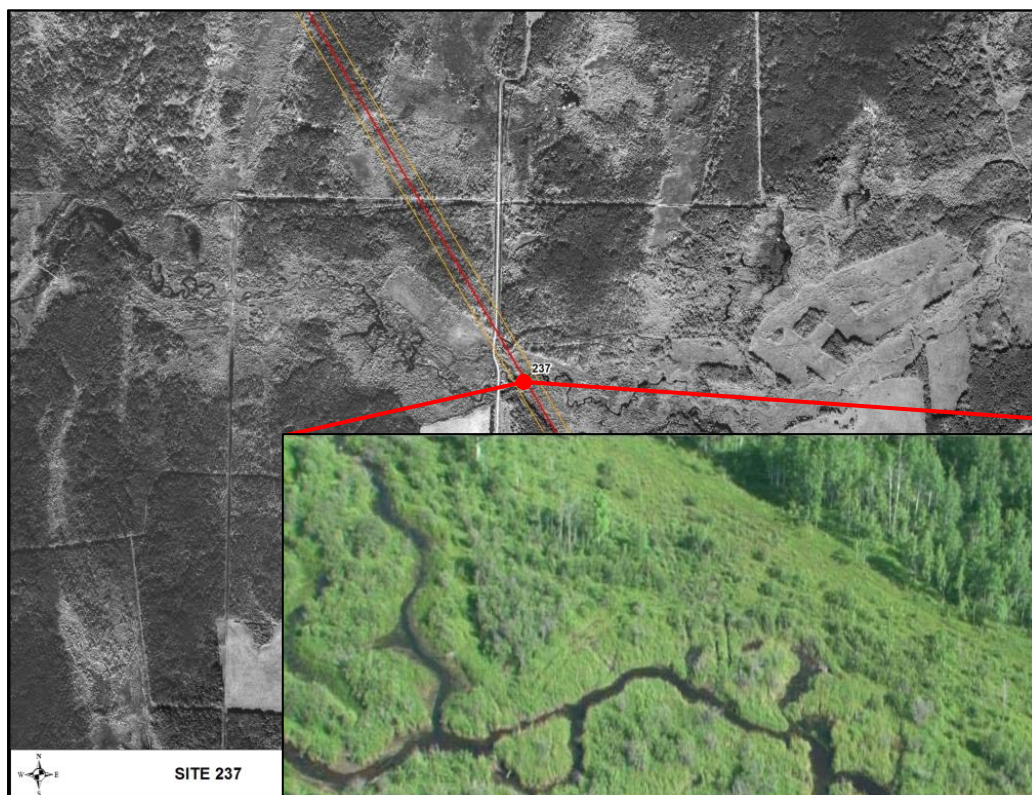
Unnamed tributary of North Pine River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 405904
Northing: 5748678
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 13.0 km²
Distance to Receiving Water: North Pine River 2.9 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	130 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	6.6	5.2	4	-	4.5
Wetted Width (m)	6.5	3.2	4	~30	4.5

Water Depths (m)

25%	0.5	0.1	0.4	-	0.65
50%	0.6	0.25	0.7	-	0.7
75%	0.4	0.2	0.25	-	0.7
Max	0.6	0.35	0.7	-	0.7

Banks

Right Bank Stability (%)	60	65	85	-	80
Left Bank Stability (%)	65	60	85	-	90
Right Bank Slope (°)	~45	~20	~80	-	~80
Left Bank Slope (°)	~90	~30	~80	-	~15

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	8.4	4.1	15.2	-	4.3
Left Bank	6.4	5.2	8.2	-	6.4

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	Y	Y	Y	Y	Y
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

0	0	Tr	10	Tr
---	---	----	----	----

Substrate

Substrate Type (%)

Fines	100	100	100	100	90
Small Gravel	-	-	-	-	10
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	100	-
Run	100	100	100	-	100
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	10	20
Large Woody Debris	-	Tr
Overhanging Vegetation	20	10
Instream Vegetation	80	90
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of unnamed tributary of the North Pine River at site 237 from crossing.



Downstream view of unnamed tributary of the North Pine River at site 237 from crossing.



Right bank of unnamed tributary of North Pine River at site 237 from crossing.



Upstream view of unnamed tributary of the North Pine River at site 237 from transect 2, showing soft riparian on left bank.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of the North Pine River provides complex habitat for forage fish species, with low overwintering potential. Bare soil on banks indicates some instability. The riparian area close to the channel is very wet and soft on the left bank of transect 2, and on both banks downstream of transect 4. Transect 4 was assessed 130m upstream at the road crossing, at which point the stream was flooded from a beaver dam at the road culvert.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and soft riparian result in a moderate sensitivity rating, despite marginal fish habitat.

Site 238, 239, 240

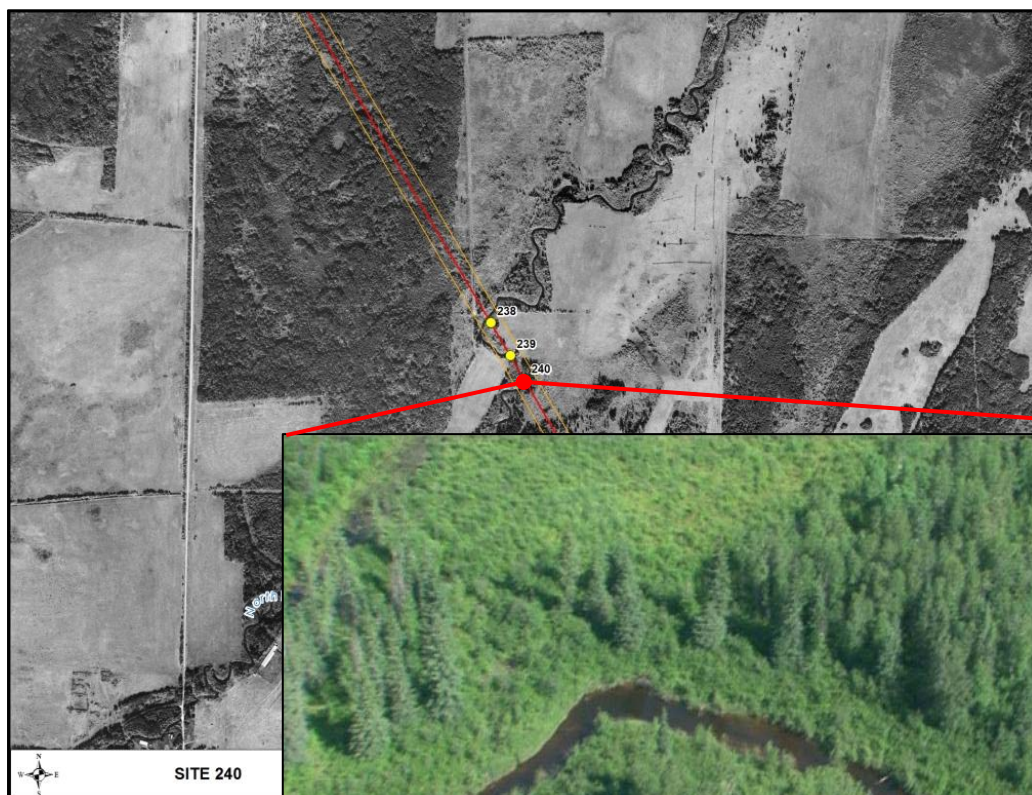
North Pine River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 406703
Northing: 5747323
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 290 km²
Distance to Receiving Water: Pine River 5.2 – 5.5 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~13	-	-	-	-
Wetted Width (m)	~10	-	-	-	-

Water Depths (m)

25%	0.8	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	60	-	-	-	-
Left Bank Stability (%)	60	-	-	-	-
Right Bank Slope (°)	~45	-	-	-	-
Left Bank Slope (°)	~50	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	6	-	-	-	-
Left Bank	~6	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	10	-	-	-	-
--	----	---	---	---	---

Substrate

Substrate Type (%)

Fines	60	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	20	-	-	-	-
Cobble	20	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	80	-	-	-	-
Run	20	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	20	20
Large Woody Debris	25	15
Overhanging Vegetation	-	10
Instream Vegetation	25	25
Pool	50	50
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-



Upstream view of the North Pine River 2.5km upstream of sites 238, 239, and 240.



Downstream view of the North Pine River 2.5km upstream of sites 238, 239, and 240.



Right bank approach of the North Pine River 2.5km upstream of sites 238, 239, and 240.



Downstream view showing riffle and eroding banks of the North Pine River 2.5km upstream of sites 238, 239, and 240.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Brassy minnow, Brook stickleback, Brook trout, Creek chub, Fathead minnow, Finescale dace, Iowa darter, Johnny darter, Longnose dace, Mottled sculpin, Pearl dace, Rainbow trout, White sucker (FIHCS 2009)

Comments:

The North Pine River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. The river was not accessible at the RoW, so it was assessed 2.5km upstream of the site. Where assessed the river contained run and pool habitat, with riffle habitat upstream and downstream. There was some bank instability, with cutbanks visible downstream likely from bison activity. From the orthophoto and video the actual site appears to have some bank instability, and to contain run habitat.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 241

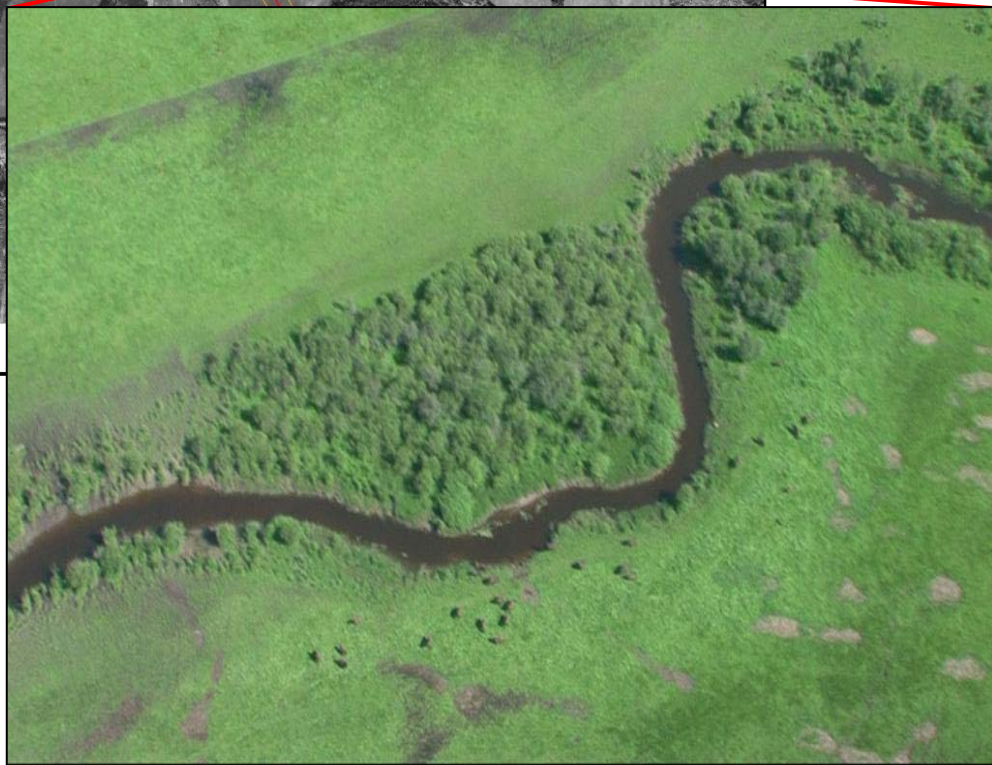
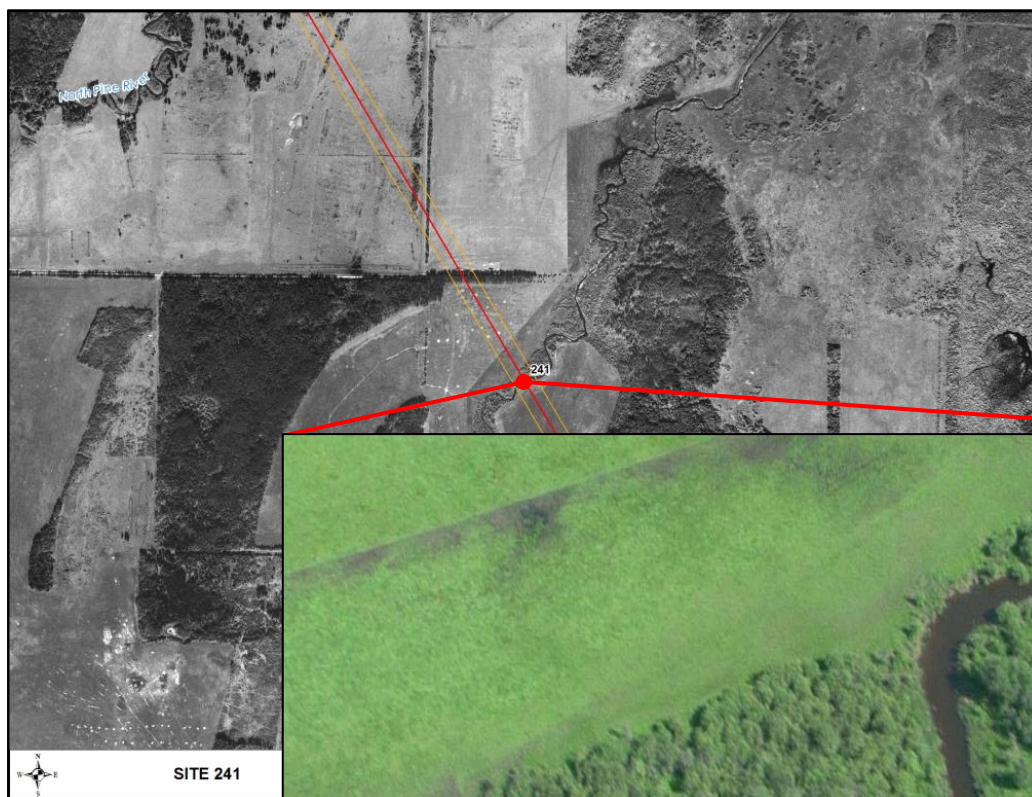
South Pine River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 407690
Northing: 5745650
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 245.5 km²
Distance to Receiving Water: Pine River 6.7 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	7	-	-	-	-
Wetted Width (m)	-	-	-	-	-

Water Depths (m)

25%	-	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	80	-	-	-	-
Left Bank Stability (%)	90	-	-	-	-
Right Bank Slope (°)	-	-	-	-	-
Left Bank Slope (°)	-	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	21	-	-	-	-
Left Bank	20	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	5	-	-	-	-
--	---	---	---	---	---

Substrate

Substrate Type (%)

Fines	-	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	10	10
Large Woody Debris	-	-
Overhanging Vegetation	50	50
Instream Vegetation	50	50
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the South Pine River 1.2km upstream of site 241.



Downstream view of the South Pine River 1.2km upstream of site 241.



Left bank to right bank view of the South Pine River 1.2km upstream of site 241.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

The South Pine River is a perennial river that provides complex habitat for indicator fish species, with moderate overwintering potential. The site was not accessible at the RoW, so pictures were taken at a ponded area 1.5km upstream of the RoW. Habitat information was obtained from the orthograph and video.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 242

Unnamed pond



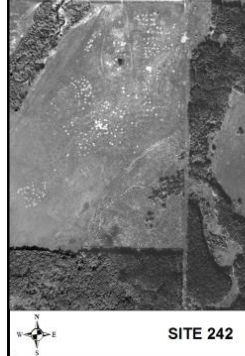
Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 408377
Northing: 5744486
Data Source: DOI. Video



General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: Moderate
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



SITE 242



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	0.33
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No fish habitat

Fish Presence: N/A

Comments:

This unnamed, intermittent pond is unlikely to support fish. It is surrounded by a wetland area 12.94 ha in area, and is connected to another wetland area to the N by a small stream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 243

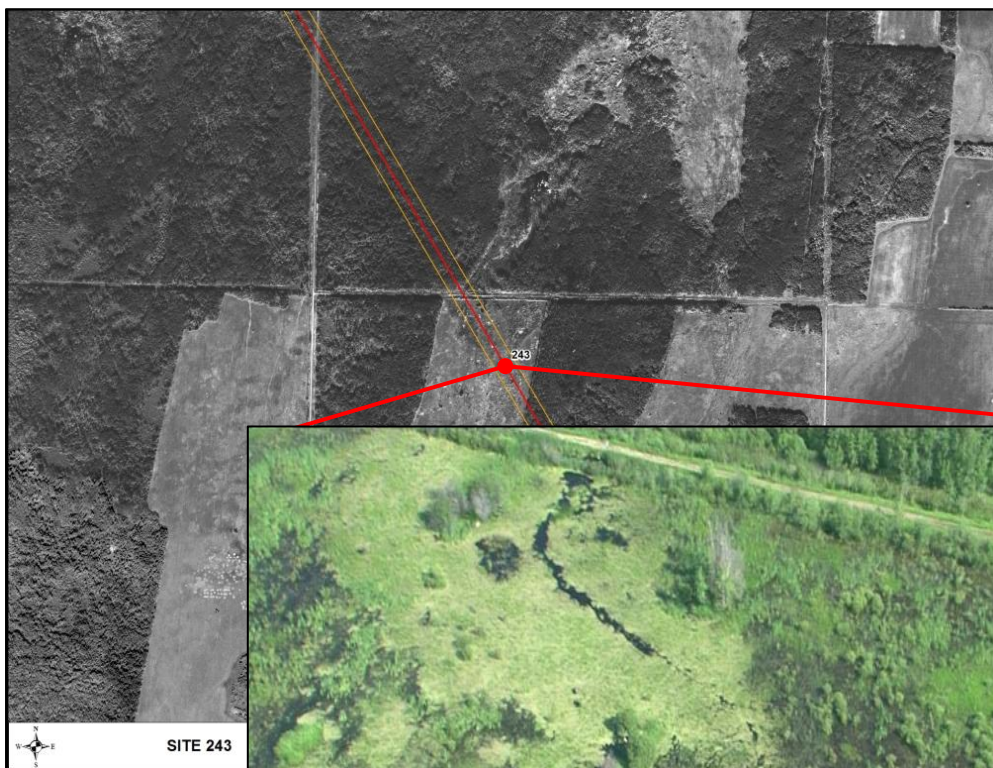
Unnamed tributary of the Garland River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 409569
Northing: 5742466
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Ephemeral
Morphology: LC
U/S Drainage: 11.1 km²
Distance to Receiving Water: Garland River 10 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	~94
Left Bank	~45

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

30

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of the Garland River provides complex habitat for forage fish species, with low overwintering potential. It is surrounded by a soft grass/shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating, despite marginal fish habitat.

Site 244

Garland River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 410302
Northing: 5741223
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 425.4 km²
Distance to Receiving Water: Pine River
15.6 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~10	9.9	~11	-	-
Wetted Width (m)	~10	9.1	~10	-	-

Water Depths (m)

25%	-	0.75	-	-	-
50%	-	0.7	-	-	-
75%	-	0.7	-	-	-
Max	-	0.75	-	-	-

Banks

Right Bank Stability (%)	40	50	40	-	-
Left Bank Stability (%)	80	50	60	-	-
Right Bank Slope (°)	~80	~90	~90	-	-
Left Bank Slope (°)	~90	~80	~70	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	4.2	20.6	5	-	-
Left Bank	~3	8.7	~4	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	-	-
Shrubs	Y	Y	Y	-	-
Conifers	-	-	-	-	-
Deciduous	Y	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	5	Tr	Tr	-	-
--	---	----	----	---	---

Substrate

Substrate Type (%)

Fines	100	50	100	-	-
Small Gravel	-	10	-	-	-
Large Gravel	-	20	-	-	-
Cobble	-	20	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	10	40
Large Woody Debris	50	90
Overhanging Vegetation	-	5
Instream Vegetation	50	5
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Garland River at site 244 from crossing.



Downstream view of the Garland River at site 244 from crossing.



Right bank of the Garland River at site 244 from transect 2.



Left bank approach of the Garland River at site 244 from crossing.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Brook stickleback, Creek chub, Fathead minnow, Finescale dace, Iowa darter, Northern pike, Northern redbelly dace, Pearl dace, Quillback, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Garland River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. Bare soil on banks indicates some instability. There is riparian forest beyond the riparian distance measured.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 245

Backwater channel of Garland River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 410321
Northing: 5741191
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 425.3 km²
Distance to Receiving Water: Pine River
15.6 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~10	~11	9.9	-	-
Wetted Width (m)	~10	~9	9.1	-	-

Water Depths (m)

25%	0.8	0.4	0.75	-	-
50%	-	-	0.7	-	-
75%	-	-	0.7	-	-
Max	-	-	0.75	-	-

Banks

Right Bank Stability (%)	50	50	50	-	-
Left Bank Stability (%)	55	60	50	-	-
Right Bank Slope (°)	~60	~90	~90	-	-
Left Bank Slope (°)	~80	~35	~80	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~3	~5	20.6	-	-
Left Bank	3	5	8.7	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	-	-
Shrubs	-	-	Y	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	35	15	Tr	-	-
--	----	----	----	---	---

Substrate

Substrate Type (%)

Fines	100	100	50	-	-
Small Gravel	-	-	10	-	-
Large Gravel	-	-	20	-	-
Cobble	-	-	20	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	35	50
Large Woody Debris	90	95
Overhanging Vegetation	Tr	-
Instream Vegetation	10	5
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the backwater of Garland River at site 245 from crossing.



Downstream view of the backwater of Garland River at site 245 from crossing.



Right bank of the backwater of Garland River at site 245 from crossing.



Left bank approach of the backwater of Garland River at site 245 from crossing.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Brook stickleback, Creek chub, Fathead minnow, Finescale dace, Iowa darter, Northern pike, Northern redbelly dace, Pearl dace, Quillback, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Garland River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. This backwater channel is well-connected to the main river and likely shares these attributes. However there is less flow within the backwater. There is riparian forest beyond the riparian distance measured.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks, canopy cover, and important fish habitat result in a moderate sensitivity rating.

Site 246

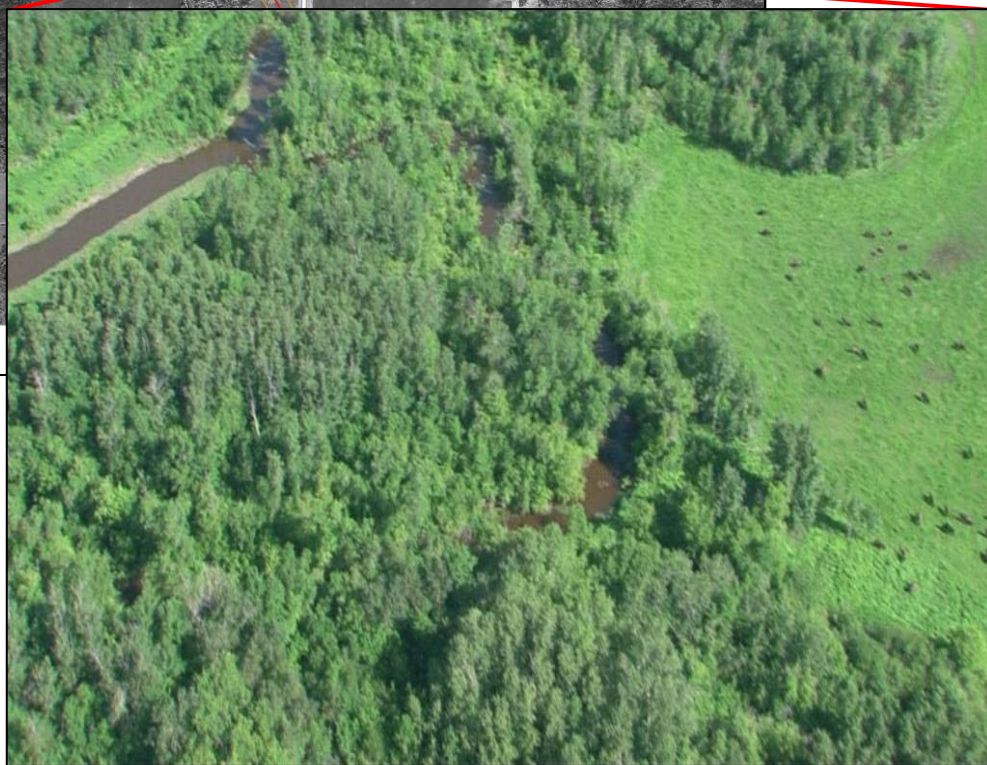
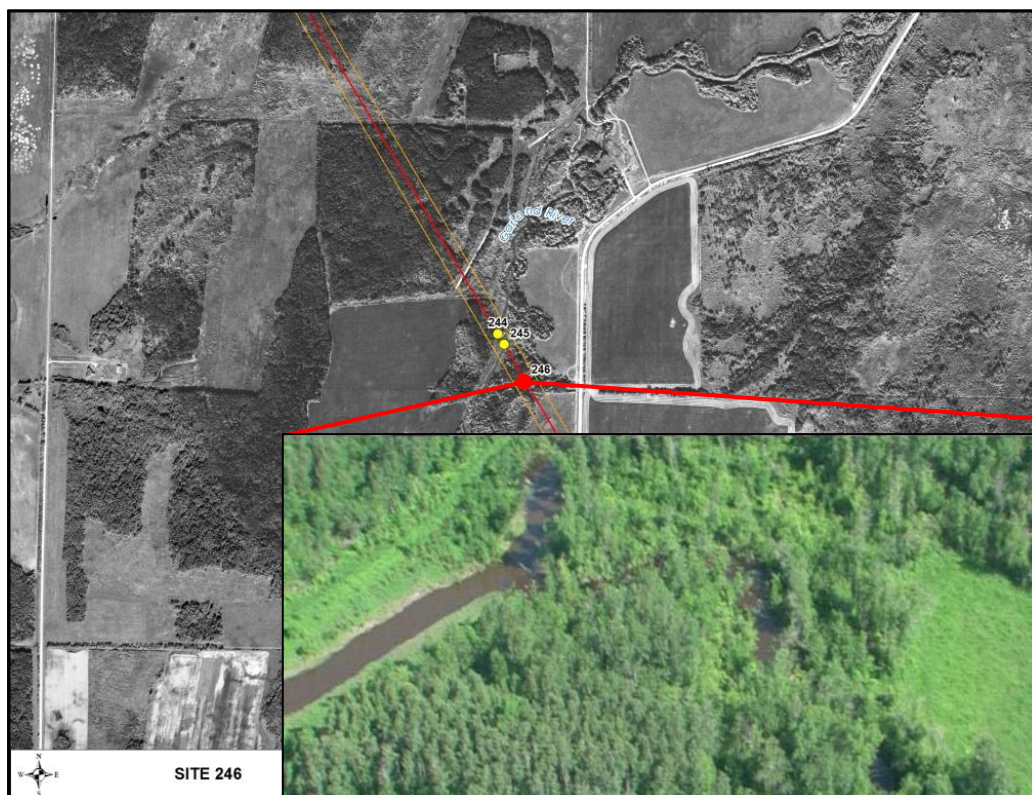
Backwater channel of Garland River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 410386
Northing: 5741080
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 425.0 km²
Distance to Receiving Water: Pine River
15.8 km



Site Conditions

+ Physical Data

Survey Date: 18 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	9.6	11	~14	11	~11
Wetted Width (m)	7.6	8.6	~10	11	~9

Water Depths (m)

25%	0.45	0.3	0.5	1	0.4
50%	0.75	0.4	0.75	1	-
75%	0.4	0.5	-	0.9	-
Max	0.75	0.5	-	1	-

Banks

Right Bank Stability (%)	60	60	75	60	50
Left Bank Stability (%)	60	50	70	50	60
Right Bank Slope (°)	~35	~50	~30	~90	~90
Left Bank Slope (°)	~40	~45	~70	~90	~35

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	2.6	3	6	3.6	5
Left Bank	5.7	3.3	~4	4	~5

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	Y	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	35	40	20	20	15
--	----	----	----	----	----

Substrate

Substrate Type (%)

Fines	100	100	100	100	100
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	100	100
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	40	35
Large Woody Debris	90	90
Overhanging Vegetation	-	-
Instream Vegetation	10	10
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the backwater of Garland River at site 246 from crossing.



Downstream view of the backwater of Garland River at site 246 from crossing.



Right bank of the backwater of Garland River at site 246 from crossing.



Left bank approach of the backwater of Garland River at site 246 from transect 3.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace, Brook stickleback, Creek chub, Fathead minnow, Finescale dace, Iowa darter, Northern pike, Northern redbelly dace, Pearl dace, Quillback, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Garland River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. This backwater channel is well-connected to the main river and likely shares these attributes. However there is less flow within the backwater. There is riparian forest beyond the riparian distance measured.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks, canopy cover, and important fish habitat result in a moderate sensitivity rating.

Site 247

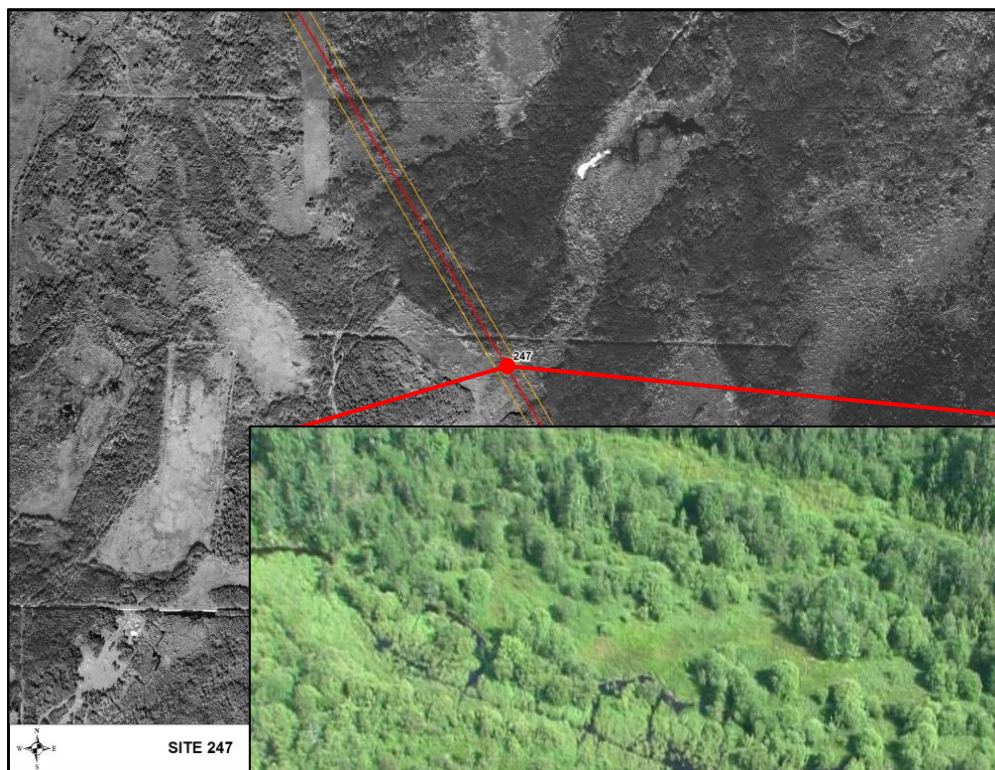
Unnamed tributary of Wellburns Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 412837
Northing: 5736926
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 3.7 km²
Distance to Receiving Water: Wellburns Creek
16.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	11

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	18
Left Bank	163

Riparian Distance (m)

Right Bank	23
Left Bank	136

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Wellburns Creek provides complex habitat for forage fish species, with low overwintering potential. It is surrounded by a soft grass/shrub floodplain.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Surrounding soft floodplain results in a moderate sensitivity rating.

Site 248

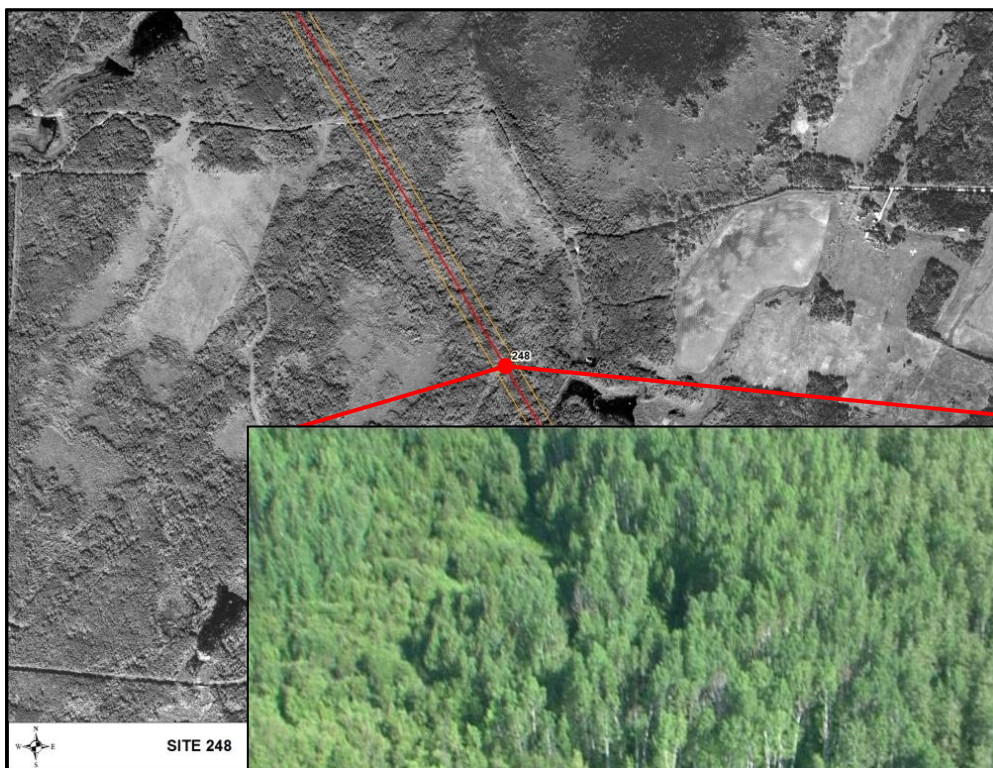
Unnamed tributary of Wellburns Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 413649
Northing: 5735551
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: -
Confinement: -
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 13.7 km²
Distance to Receiving Water: Wellburns Creek
17.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	C
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Wellburns Creek provides complex habitat for forage fish species, with no overwintering potential. At the RoW it appears only as a faint, dry streambed through the surrounding forest canopy.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 249

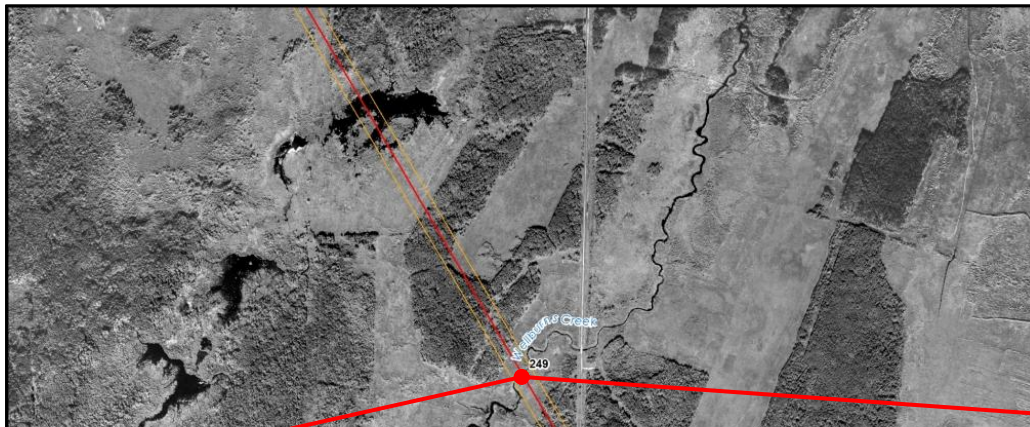
Wellburns Creek

Location

Datum:	NAD 83
UTM:	Zone: 14N
	Easting: 415123
	Northing: 5733053
Data Source:	DOI. Video. Site visit

General Morphology

Stream/Lake:	Stream
Pattern:	IM
Confinement:	UN
Stage:	Moderate
Flow Regime:	Perennial
Morphology:	LC
U/S Drainage:	25.0 km ²
Distance to Receiving Water:	Lake Winnipegosis 28.7 km



SITE 249



Site Conditions

+ Physical Data

Survey Date: 19 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	6.8	6	4.3	-	-
Wetted Width (m)	5.4	6	4.3	-	-

Water Depths (m)

25%	0.6	0.6	0.75	-	-
50%	0.7	0.55	0.7	-	-
75%	0.8	0.25	0.45	-	-
Max	0.8	0.6	0.75	-	-

Banks

Right Bank Stability (%)	65	80	85	-	-
Left Bank Stability (%)	75	75	90	-	-
Right Bank Slope (°)	~90	~80	~45	-	-
Left Bank Slope (°)	~45	~80	~70	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	2.3	2	4	-	-
Left Bank	4.2	6.8	5	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	-	-
Shrubs	Y	Y	Y	-	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	15	20	20	-	-
--	----	----	----	---	---

Substrate

Substrate Type (%)

Fines	80	100	100	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	10	-	-	-	-
Boulder	10	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	50	50
Large Woody Debris	10	10
Overhanging Vegetation	20	10
Instream Vegetation	70	80
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of Wellburns Creek at site 249 from crossing.



Downstream view of Wellburns Creek at site 249 from crossing.



Right bank of Wellburns Creek at site 249 from transect 3.



Left bank approach of Wellburns Creek at site 249 from transect 2.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

A

Fish Habitat Classification:

Important

Fish Presence: N/A

Comments:

Wellburns Creek is a perennial river that provides complex habitat for indicator fish species, with moderate overwintering potential. Large amounts of dried algae on the banks indicate stagnant conditions at times. There is a road crossing downstream of the RoW, with water flowing over the road.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 250

Unnamed pond



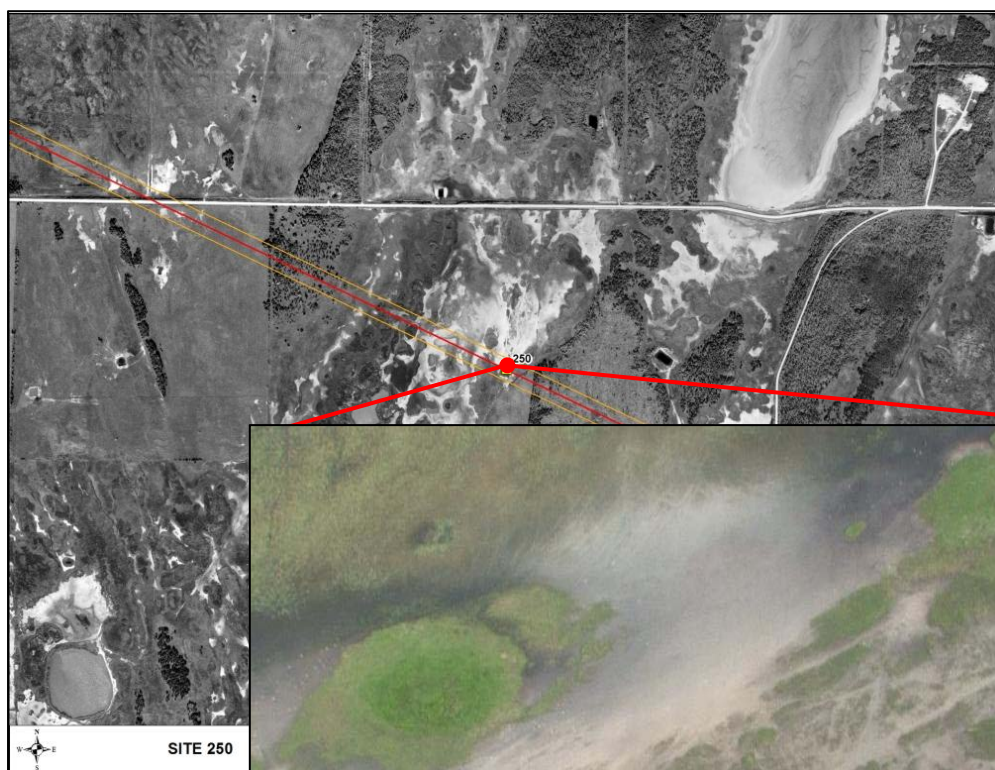
Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 431879
Northing: 5719108
Data Source: DOI. Video



General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	0.097
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	Y
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

No

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No fish habitat

Fish Presence: N/A

Comments:

This unnamed, intermittent pond is unlikely to support fish. It is surrounded by bare soil, which may indicate a salt flat area.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 251

Mossy River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 434153
Northing: 5718021
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: High
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 9,686 km²
Distance to Receiving Water: Lake Winnipegosis
7.4 km



Site Conditions

+ Physical Data

Survey Date: 19 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~50	~50	~50	-	-
Wetted Width (m)	~50	~50	~50	-	-

Water Depths (m)

25%	0.5	0.6	0.45	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	90	100	90	-	-
Left Bank Stability (%)	90	100	90	-	-
Right Bank Slope (°)	~45	~25	~45	-	-
Left Bank Slope (°)	~45	~45	~45	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~12	~20	~8	-	-
Left Bank	12	14.7	8	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	-	-
Shrubs	Y	Y	Y	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	5	5	5	-	-
--	---	---	---	---	---

Substrate

Substrate Type (%)

Fines	100	90	90	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	10	10	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	5	5
Large Woody Debris	33	33
Overhanging Vegetation	33	33
Instream Vegetation	33	33
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Mossy River at site 251 from crossing.



Downstream view of the Mossy River at site 251 from crossing.



Right bank of the Mossy River at site 251 from transect 2.



Left bank approach of the Mossy River at site 251 from crossing.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blackchin shiner, Blacknose shiner, Burbot, Carp, Emerald shiner, Fathead minnow, Goldeye, Iowa darter, Johnny darter, Logperch, Northern pike, Sauger, Shorthead redhorse, Spottail shiner, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Mossy River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. The banks are stable but steep. The river is surrounded by a small treed riparian, and has a small amount of canopy cover.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 252

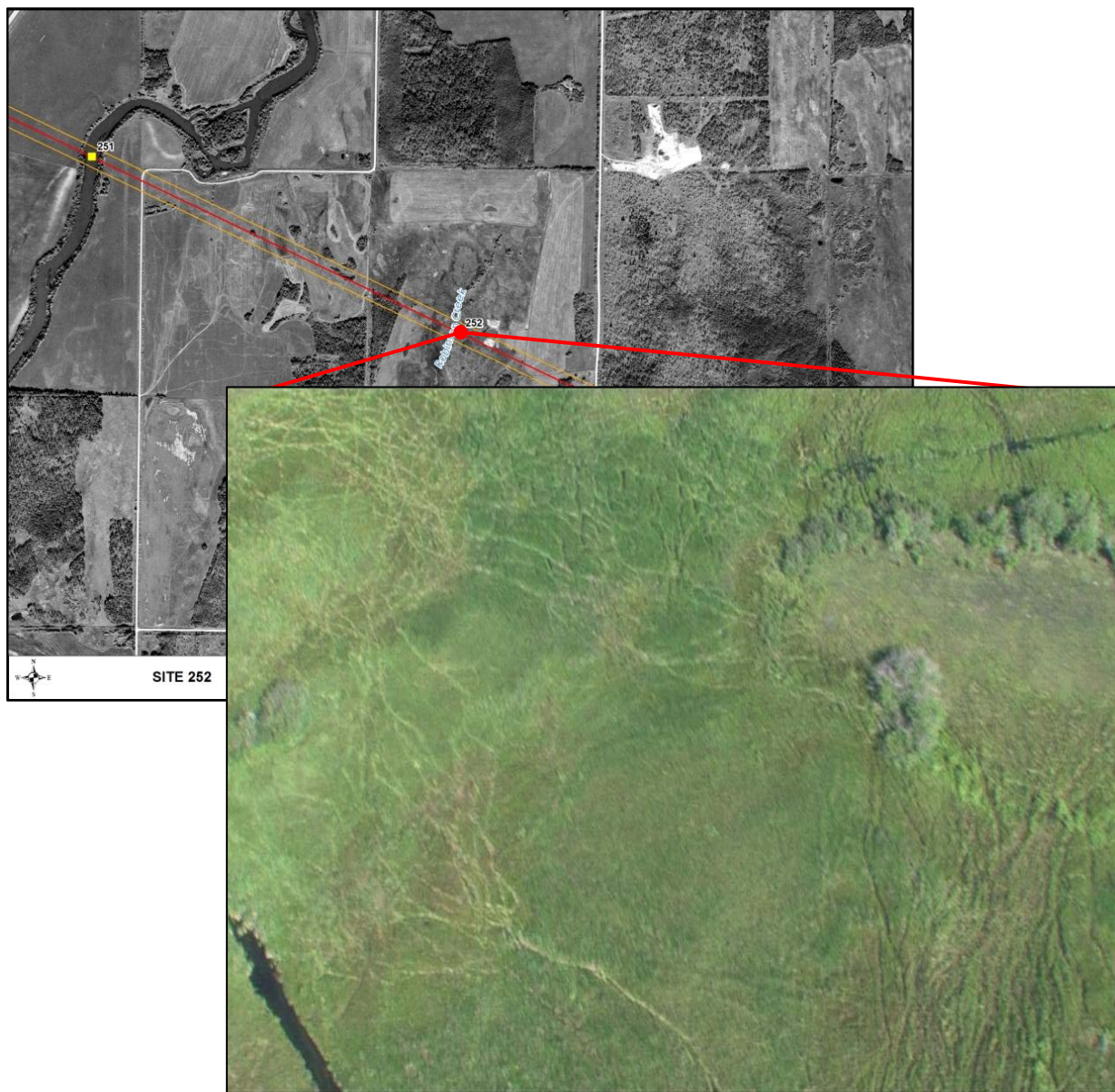
Robinson Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 435442
Northing: 5717405
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: IR
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 32.4 km²
Distance to Receiving Water: Lake Winnipegosis
6.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	D
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Robinson Creek provides simple habitat for forage fish species. At the RoW it appears only as a faint, dry streambed. The surrounding land appears heavily used by cattle.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 253

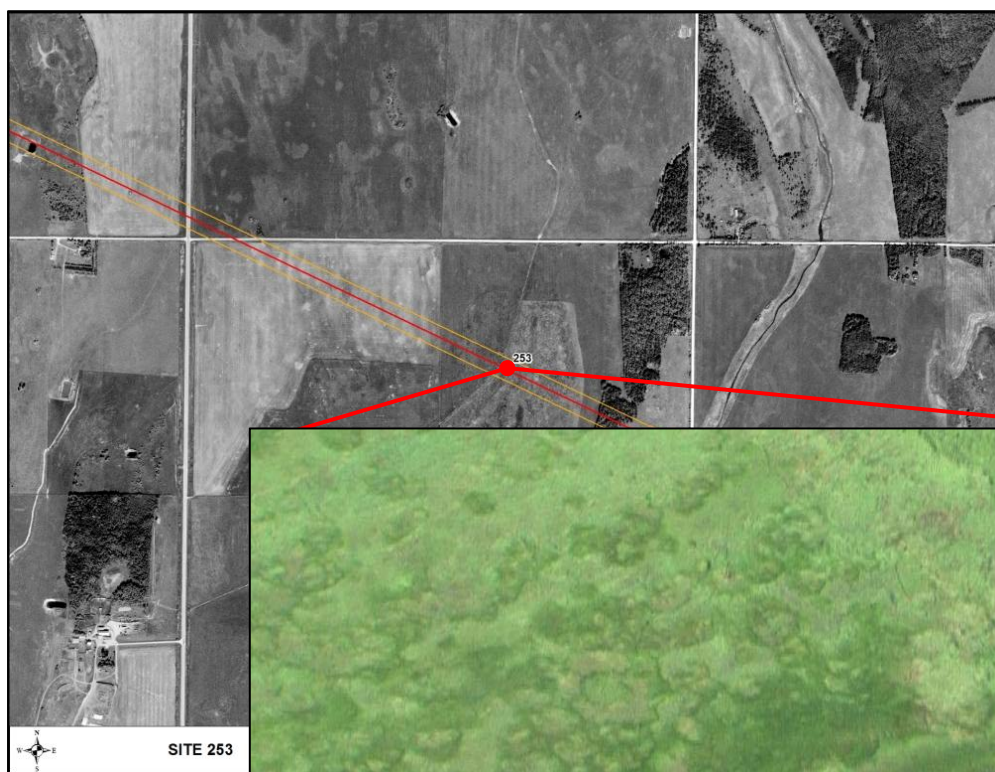
Unnamed tributary of Cork Cliff Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 438543
Northing: 5715923
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 3.8 km²
Distance to Receiving Water: Cork Cliff Creek 2.6 km



SITE 253



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	2
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	D
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary of Cork Cliff Creek provides simple habitat for forage fish species. It is channelized as an agricultural drain at the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 254

Cork Cliff Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 439154
Northing: 5715618
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 24.1 km²
Distance to Receiving Water: Lake Winnipegosis
5.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	4
Channel Width (m)	-

Banks (%)

Right Bank Stability	80
Left Bank Stability	90

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	5
Left Bank	5

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

Cork Cliff Creek provides complex habitat for indicator fish species. There is bare soil and exposed banks at the RoW, and a road crossing upstream.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Somewhat unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 255

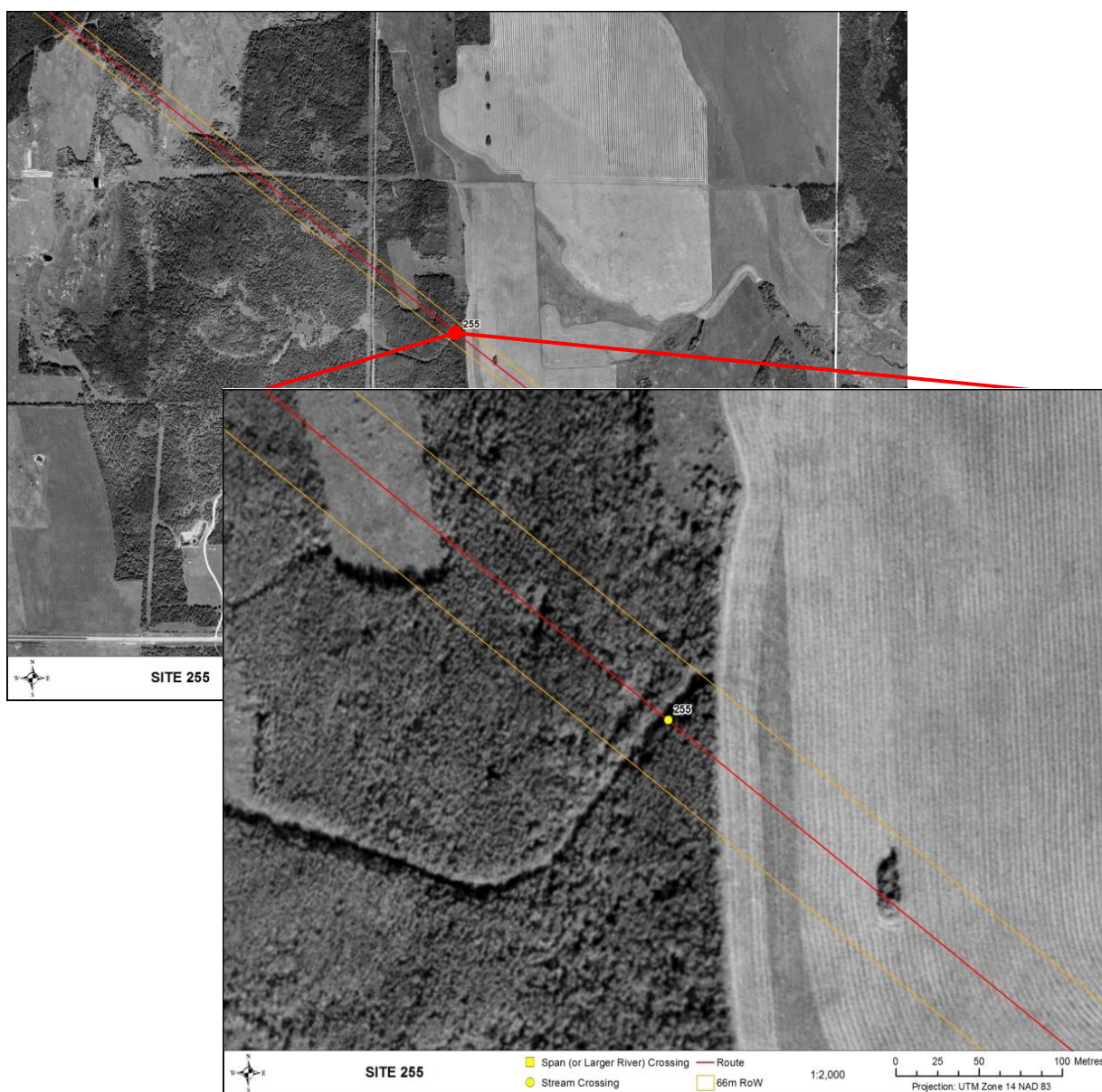
Unnamed tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 441017
Northing: 5714153
Data Source: DOL

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.1 km²
Distance to Receiving Water: Lake Winnipegosis
1.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	-
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%) 80

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%) -

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The RoW crosses this small stream at its upper most reach where the channel is difficult to discern. In contrast to the DFO rating of type A, the habitat at the RoW is considered Marginal.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Site 256

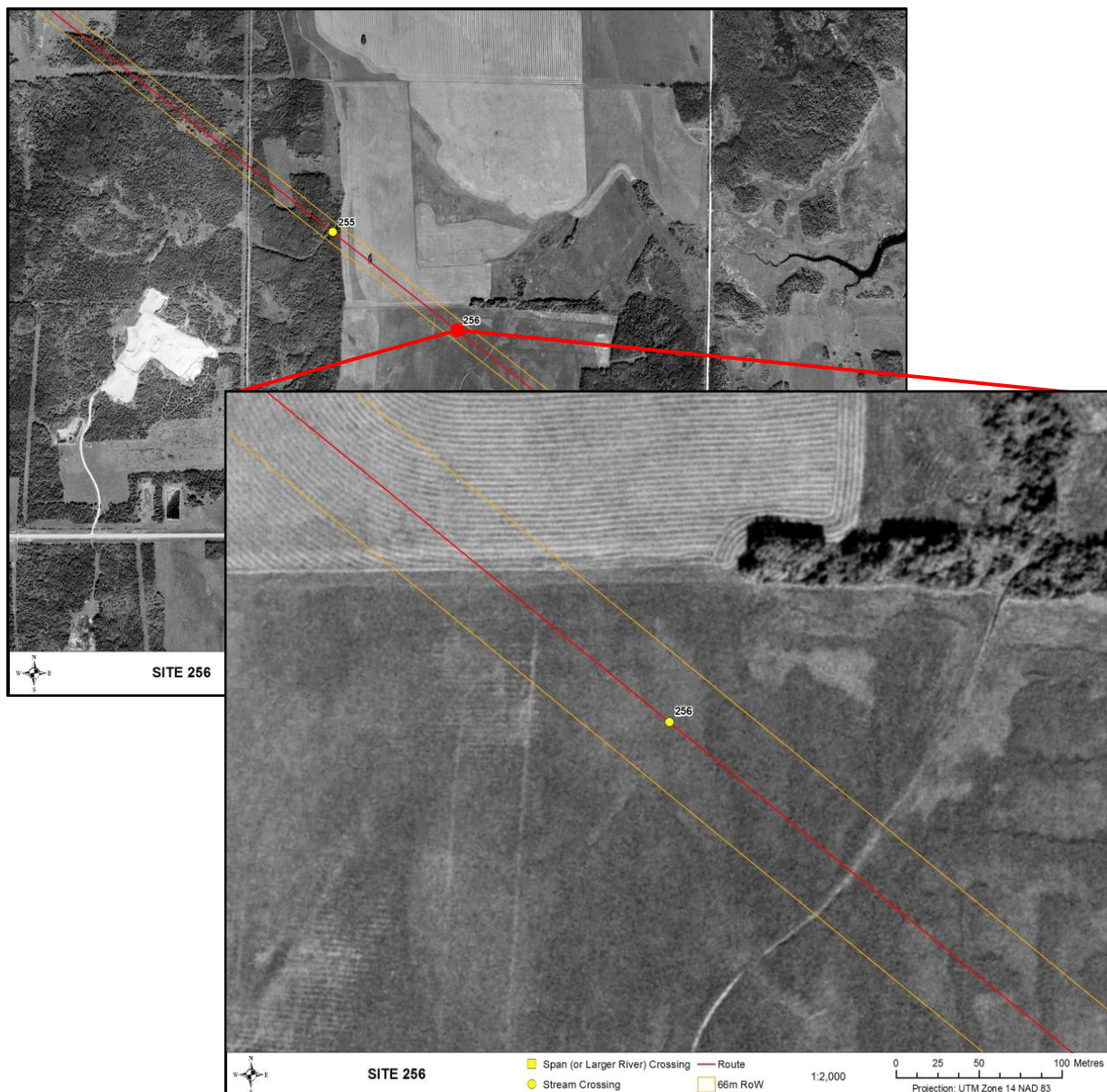
Unnamed tributary of Lake Winnipegosis

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 441458
Northing: 5713805
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 1.8 km²
Distance to Receiving Water: Lake Winnipegosis 2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	4

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The RoW crosses this small stream at its upper most reach where the channel is difficult to discern. In contrast to the DFO rating of type A, the habitat at the RoW is considered Marginal.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Site 257

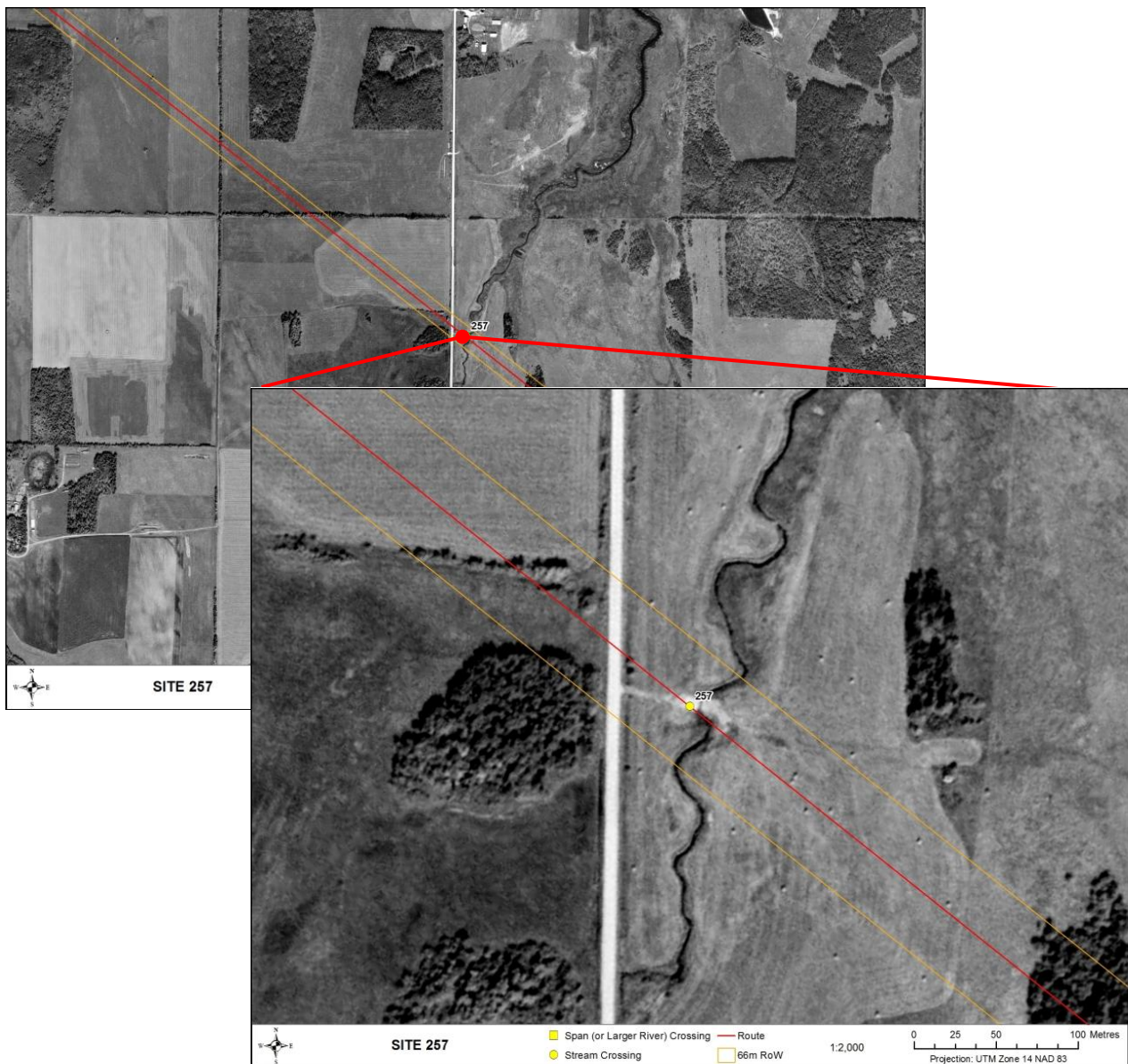
German Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 443998
Northing: 5711807
Data Source: DOI. Site visit

General Morphology

Stream/Lake: Stream
Pattern: IM
Confinement: UN
Stage: -
Flow Regime: Intermittent
Morphology:
U/S Drainage: 15.3 km²
Distance to Receiving Water: Lake Winnipegosis 2 km



Site Conditions

+ Physical Data

Survey Date: 19 October 2010

Stage: Low

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	-	-	-	-	-
Wetted Width (m)	~1.5	-	-	-	-

Water Depths (m)

25%	0.2	-	-	-	-
50%	0.2	-	-	-	-
75%	0.3	-	-	-	-
Max	0.3	-	-	-	-

Banks

Right Bank Stability (%)	80	-	-	-	-
Left Bank Stability (%)	80	-	-	-	-
Right Bank Slope (°)	-	-	-	-	-
Left Bank Slope (°)	-	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~5	-	-	-	-
Left Bank	~5	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	0	-	-	-	-
--	---	---	---	---	---

Substrate

Substrate Type (%)

Fines	90	-	-	-	-
Small Gravel	10	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

	US	DS
Cover Composition (% of Total)	-	-
Large Woody Debris	-	-
Overhanging Vegetation	Tr	-
Instream Vegetation	Tr	-
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Right to left bank view of German Creek at site 257 showing trail crossing.



Downstream view of German Creek at site 257 from crossing.



Downstream view of German Creek at road west of site 257.



Upstream view of German Creek at road west of site 257.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Blacknose dace (FIHCS 2009)

Comments:

German Creek is an intermittent channel providing complex habitat for indicator fish species, with low overwintering potential. The creek could not be assessed at the site; however the site was visible from a nearby road and was assessed from there. There is a trail crossing at the site, with some gravel and bare soil. There is a road crossing upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Relatively stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 258

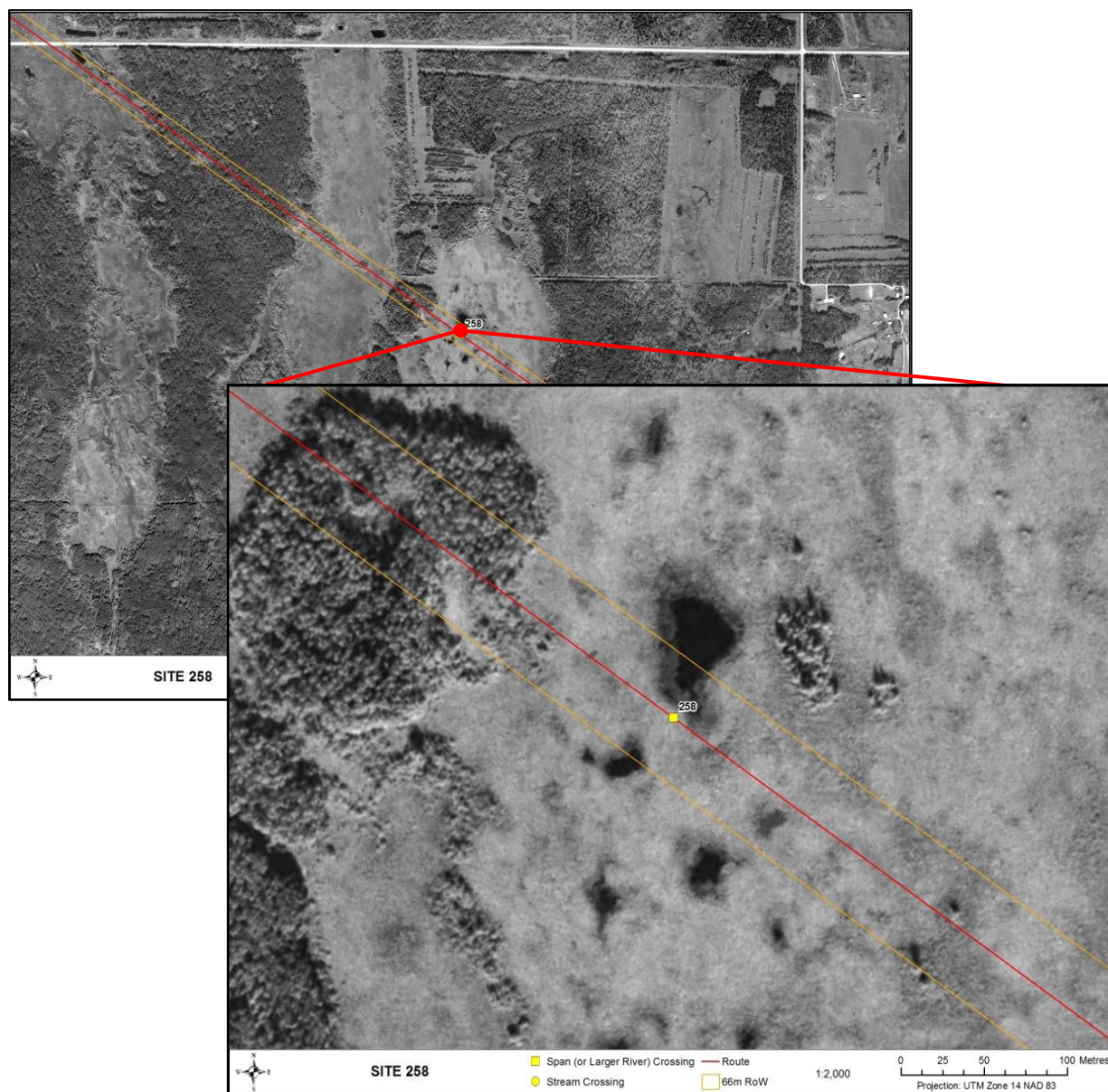
Unnamed pond

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 454017
Northing: 5702214
Data Source: DOL

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	0.24
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No fish habitat

Fish Presence: N/A

Comments:

This unnamed, intermittent pond is unlikely to support fish. The wetland surrounding the pond is 24.6 ha.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 259

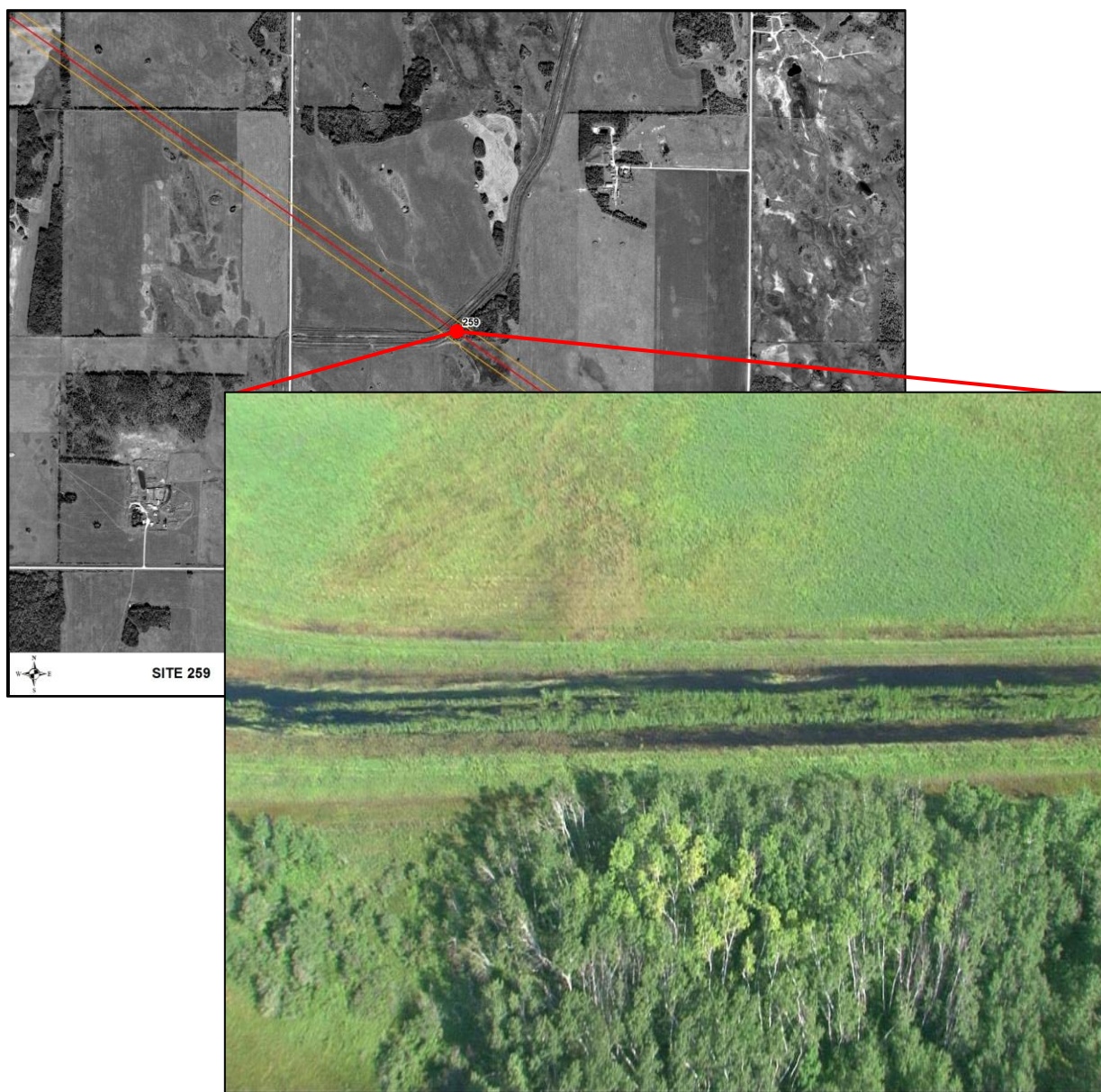
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 460673
Northing: 5697524
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 4.6 km²
Distance to Receiving Water: Lake Manitoba
9.4 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	8
Channel Width (m)	-

Banks (%)

Right Bank Stability	80
Left Bank Stability	80

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	5
Left Bank	6

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed ditch/drain provides only indirect fish habitat, in the form of water and nutrients flowing downstream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Relatively stable banks and very marginal fish habitat result in a low sensitivity rating.

Site 260

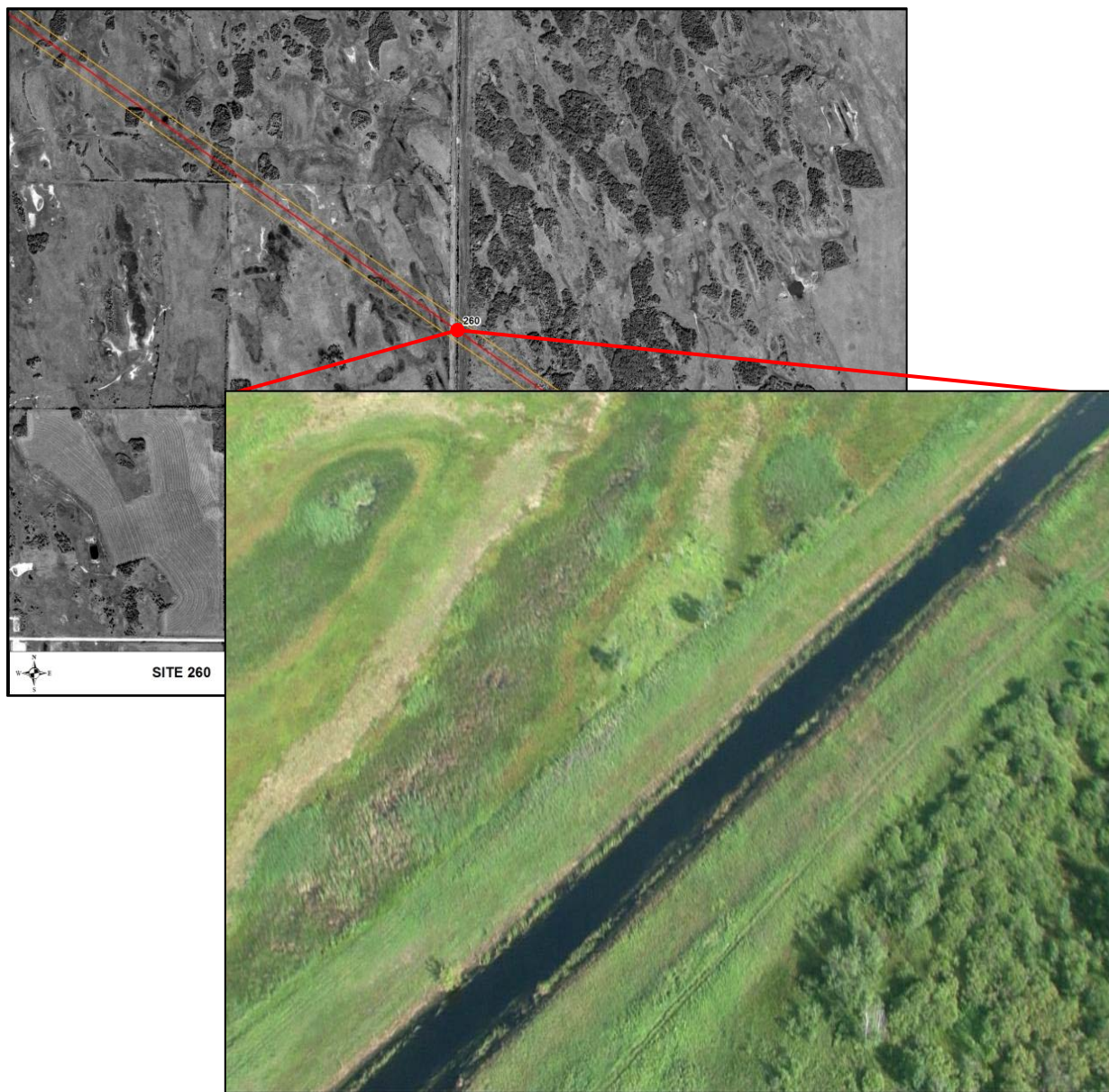
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 464951
Northing: 5694510
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 30.5 km²
Distance to Receiving Water: Lake Manitoba 10.8 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	15

Banks (%)

Right Bank Stability	60
Left Bank Stability	80

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	3

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

30

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

This watercourse is channelized into a ditch and provides simple habitat for indicator fish species..

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Previously disturbed banks (channelized) result in a low sensitivity rating, despite somewhat unstable banks and important fish habitat.

Site 261

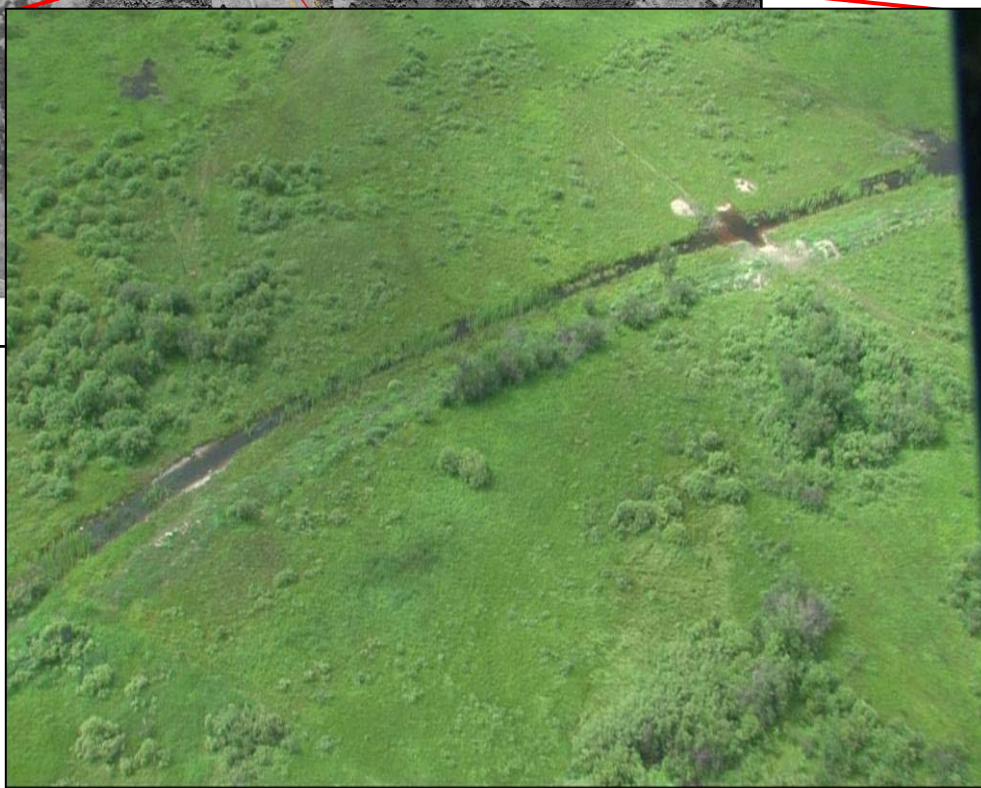
Unnamed tributary of Jarvies Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 500796
Northing: 5637779
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 14.3 km²
Distance to Receiving Water: Jarvies Lake 0.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	-

Banks (%)

Right Bank Stability	80
Left Bank Stability	80

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	3

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

30

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed tributary flows from an unnamed wetland into Jarvies Lake. The stream appears to have been channelized into a drainage ditch and is expected to support forage fish and possibly large-bodied species such as pike from Jarvies Lake.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Relatively stable banks and marginal fish habitat result in a low sensitivity rating.

Site 262

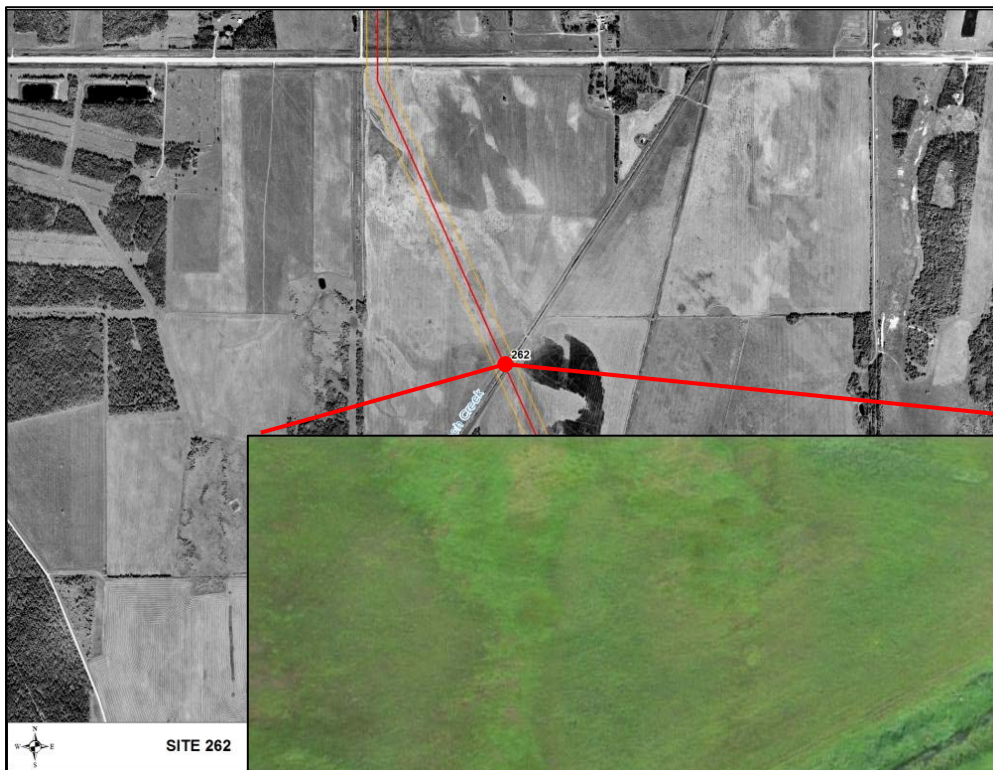
Garrioch Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 503978
Northing: 5626749
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 70.6 km²
Distance to Receiving Water: Lake Manitoba 15.7 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	4
Left Bank	4

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	10
--	----

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	50
Instream Vegetation	50
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Marginal

Fish Presence: White sucker (FIHCS 2009)

Comments:

Garrioch Creek is a channelized agricultural drain at the RoW. It provides simple habitat for indicator fish species, with low overwintering potential. There is a trail crossing downstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 263

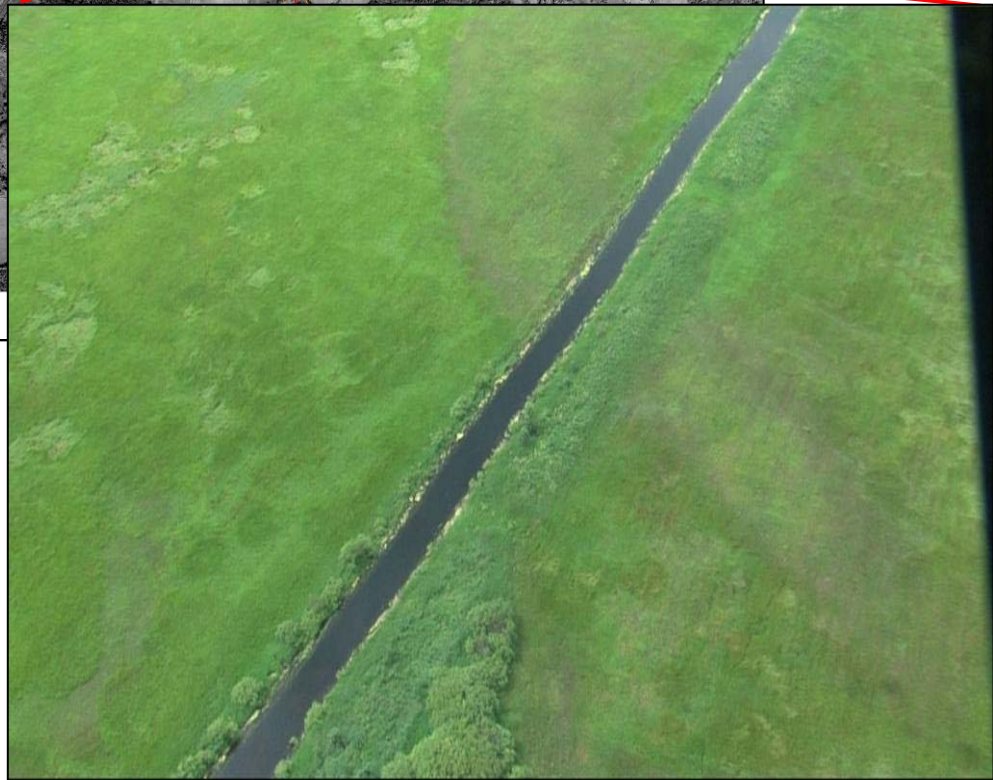
Rocklan Drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 504265
Northing: 5626110
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: High
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 31.7 km²
Distance to Receiving Water: Garrioch Creek 1.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	5

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	Y
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	5
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	50
Instream Vegetation	50
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

The Rocklan Drain is a channelized agricultural drain providing simple habitat for indicator fish species, with low overwintering potential.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 264

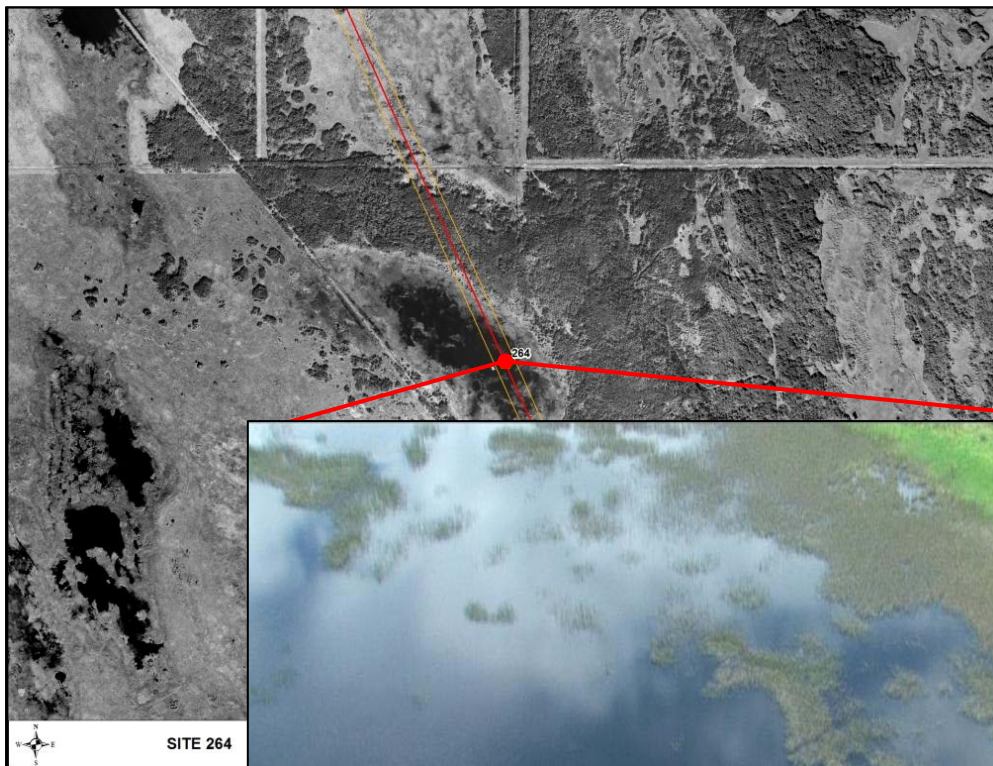
Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 506762
Northing: 5620536
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Perennial
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	9.9
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed, perennial lake is expected to support forage fish tolerant of low dissolved oxygen levels and the lake is unlikely to support large-bodied species due to winter anoxia.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

This small shallow lake has stable well vegetated banks.

Site 265

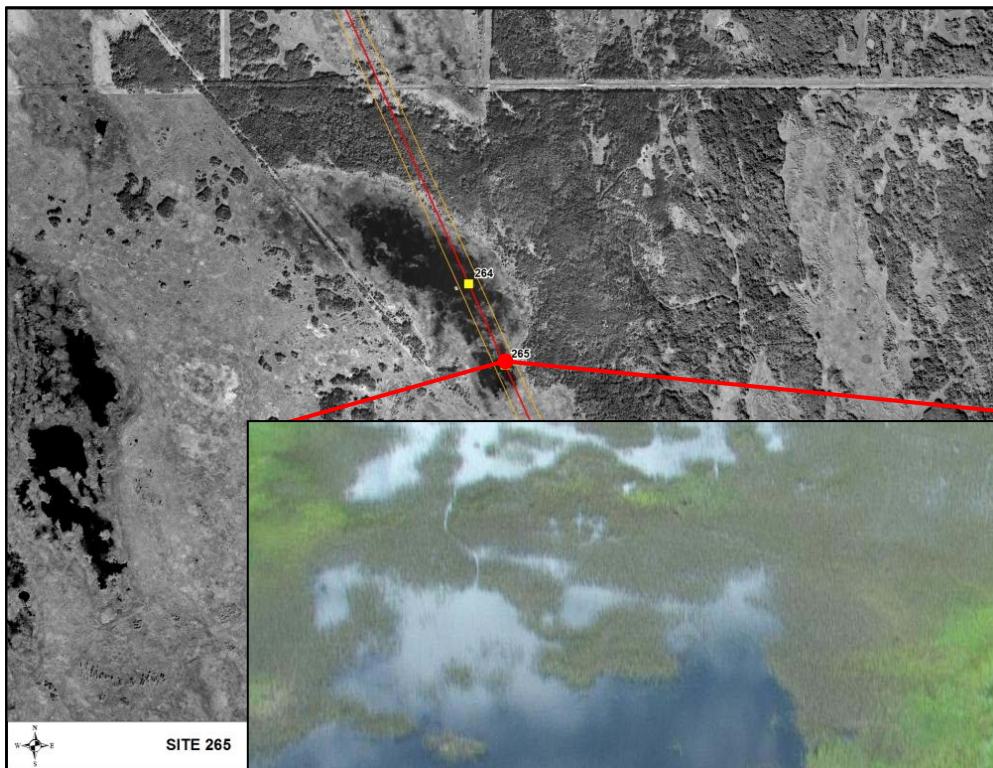
Unnamed pond

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 506879
Northing: 5620276
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Perennial
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	1.6
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed, perennial pond is expected to support forage fish tolerant of low dissolved oxygen concentrations. Large bodied species are unlikely to occur in this pond due to anoxic winter conditions. This pond is connected to site 264 lake under high water conditions.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable well vegetation banks and poor fish habitat results in a low sensitivity rating.

Site 266

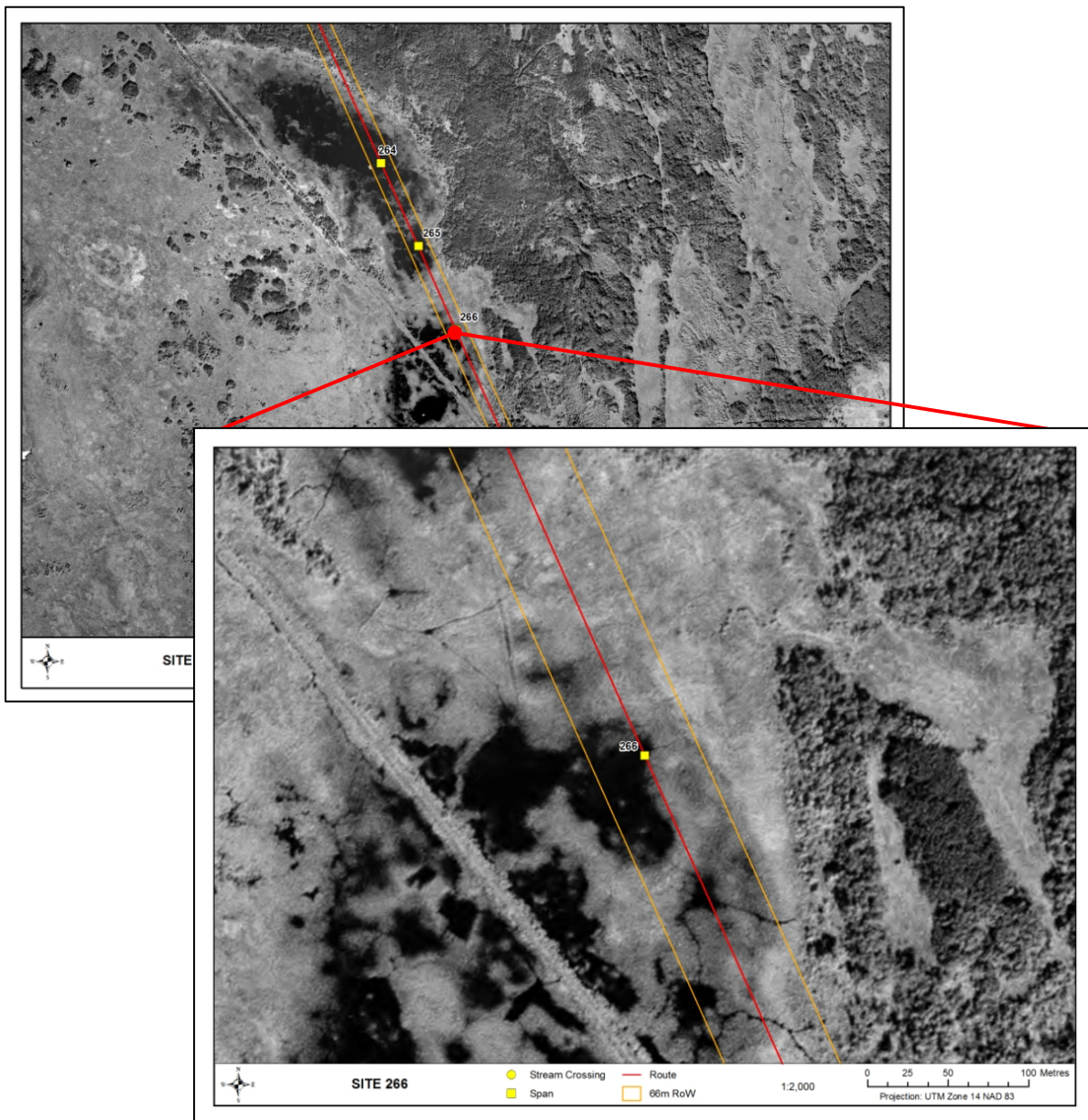
Unnamed Lake

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 506989
Northing: 5620016
Data Source: DOL

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Perennial
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	12.53
Lake width at RoW (m)	204

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	48
Left Bank	52

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

-

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

No

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No Fish Habitat

Fish Presence: N/A

Comments:

This unnamed small lake is not connected to other waterbodies, and is unlikely to provide any fish habitat. It is surrounded by deciduous forest and agricultural fields, and is likely connected to two small lakes north of it at wetter times.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 267

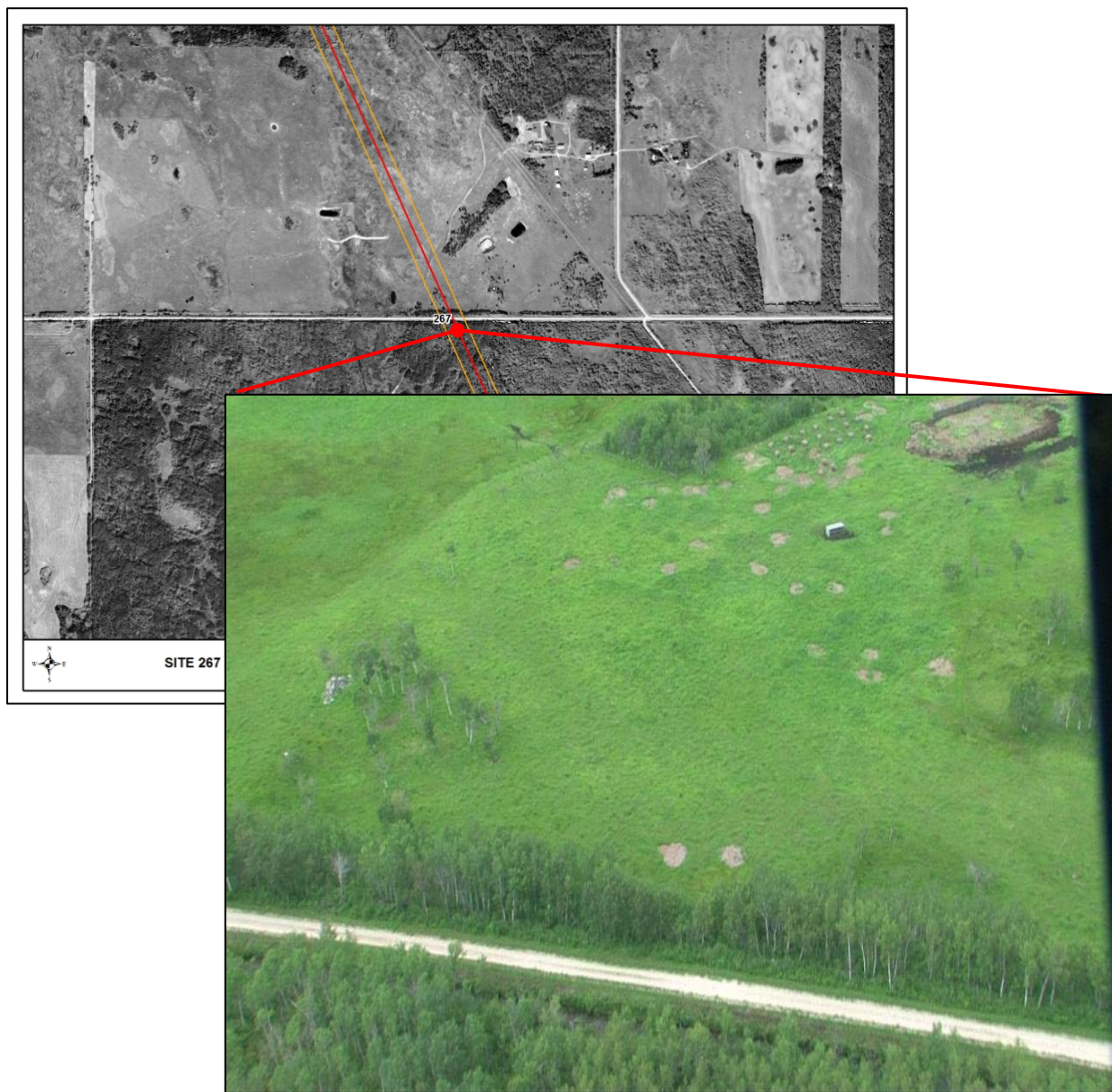
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 507967
Northing: 5617847
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 8.4 km²
Distance to Receiving Water: Marcus Drain 3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	3

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	Y
Mixed Forest	-

Canopy Cover (%)

	50
--	----

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a road ditch at the RoW. It provides only indirect fish habitat, in the form of water and nutrients flowing downstream.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and very marginal fish habitat result in a low sensitivity rating.

Site 268

Whitemud River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 521460
Northing: 5555872
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: High
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 3,554.5 km²
Distance to Receiving Water: Lake Manitoba 30 km



Site Conditions

+ Physical Data

Survey Date: 20 October 2010

Stage: Moderate

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~15	~17	~15	~20	~20
Wetted Width (m)	~15	~15	~15	~20	~20

Water Depths (m)

25%	0.6	-	-	0.3	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	50	50	35	45	25
Left Bank Stability (%)	30	30	30	30	45
Right Bank Slope (°)	~30	~20	~60	~40	~80
Left Bank Slope (°)	~90	~80	~90	~90	~45

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	~100	~100	~80	~100	~15
Left Bank	40.2	30.3	50	24.4	7

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	Y	Y	Y	Y
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	Y	Y	Y	Y
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

Tr	Tr	Tr	Tr	Tr
----	----	----	----	----

Substrate

Substrate Type (%)

Fines	100	100	100	100	100
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	100	100	100	100
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)

US	DS
----	----

Cover Composition (% of Total)

Large Woody Debris	50	50
Overhanging Vegetation	50	Tr
Instream Vegetation	-	50
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-





Upstream view of the Whitemud River at site 268 from crossing.



Downstream view of the Whitemud River at site 268 from crossing.



Right bank approach of the Whitemud River at site 268 from transect 2.



Left bank approach of the Whitemud River at site 268 from transect 5.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Black bullhead, Blacknose dace, Blacknose shiner, Brook stickleback, Burbot, Carp, Cisco, Creek chub, Emerald shiner, Fathead minnow, Finescale dace, Freshwater drum, Johnny darter, Northern pike, Pearl dace, Sand shiner, Sauger, Shorthead redhorse, Spottail shiner, Walleye, White sucker, Yellow perch (FIHCS 2009)

Comments:

The Whitemud River is a perennial river that provides complex habitat for indicator fish species, with high overwintering potential. The banks are unstable with bare soil visible, which is likely due in part to cattle activity. There is a road crossing downstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Unstable banks and important fish habitat result in a moderate sensitivity rating.

Site 269

Squirrel Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 521493
Northing: 5553050
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 17.8 km²
Distance to Receiving Water: Whitemud River
2.6 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	14
Left Bank	7

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

B

Fish Habitat Classification:

Important

Fish Presence: Blacknose dace, Blackside darter, Brook stickleback, Central mudminnow, Fathead minnow, Iowa darter, Johnny darter, Northern pike, Sand shiner, White sucker (FIHCS 2009)

Comments:

Squirrel Creek is channelized as an agricultural drain at the RoW. The creek provides simple habitat for indicator fish species with low overwintering potential but due to the connection to the Whitemud River this creek will be used by migratory fish in the spring. There is a road crossing downstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks result in a low sensitivity rating, despite important fish habitat.

Site 270

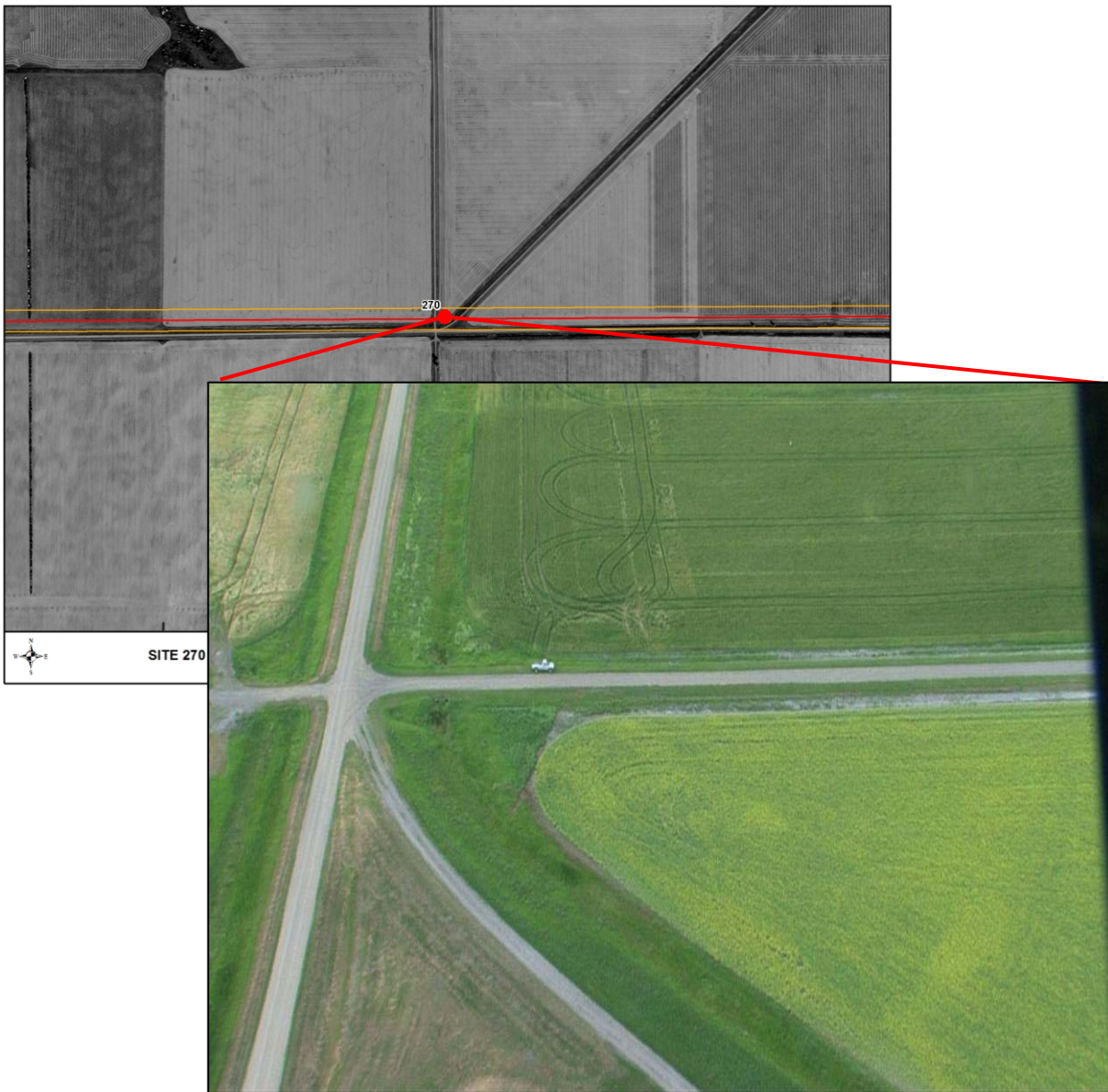
New Beaudin Drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 523274
Northing: 5549087
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 39.3 km²
Distance to Receiving Water: Whitemud River 4.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	3
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	3
Left Bank	3

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

Yes

DFO Manitoba Agricultural Watershed Classification:

B

Fish Habitat Classification:

Marginal

Fish Presence: N/A

Comments:

The New Beaudin Drain provides simple habitat for indicator fish species, with low overwintering potential. This watercourse joins the Whitemud River downstream, and therefore may be used in spring for spawning. There is a road crossing upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 271

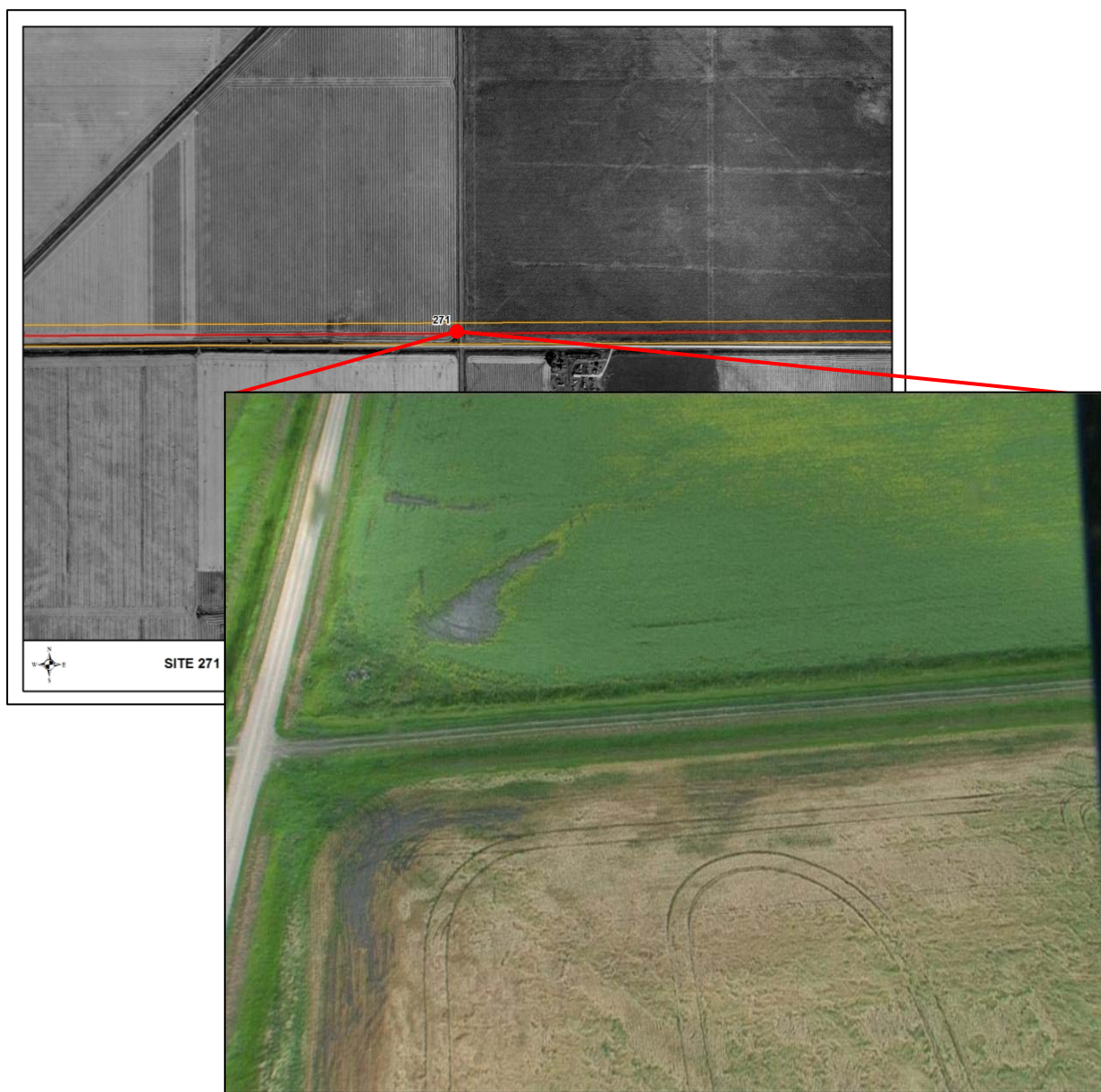
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 524864
Northing: 5549095
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.2 km²
Distance to Receiving Water: Whitemud River 4.3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	11

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a road ditch at the RoW. Although not rated by DFO, it is similar to other drains in the area and may support fish in spring due to its connection to the Whitemud River. However, fish habitat is rated as marginal.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 272

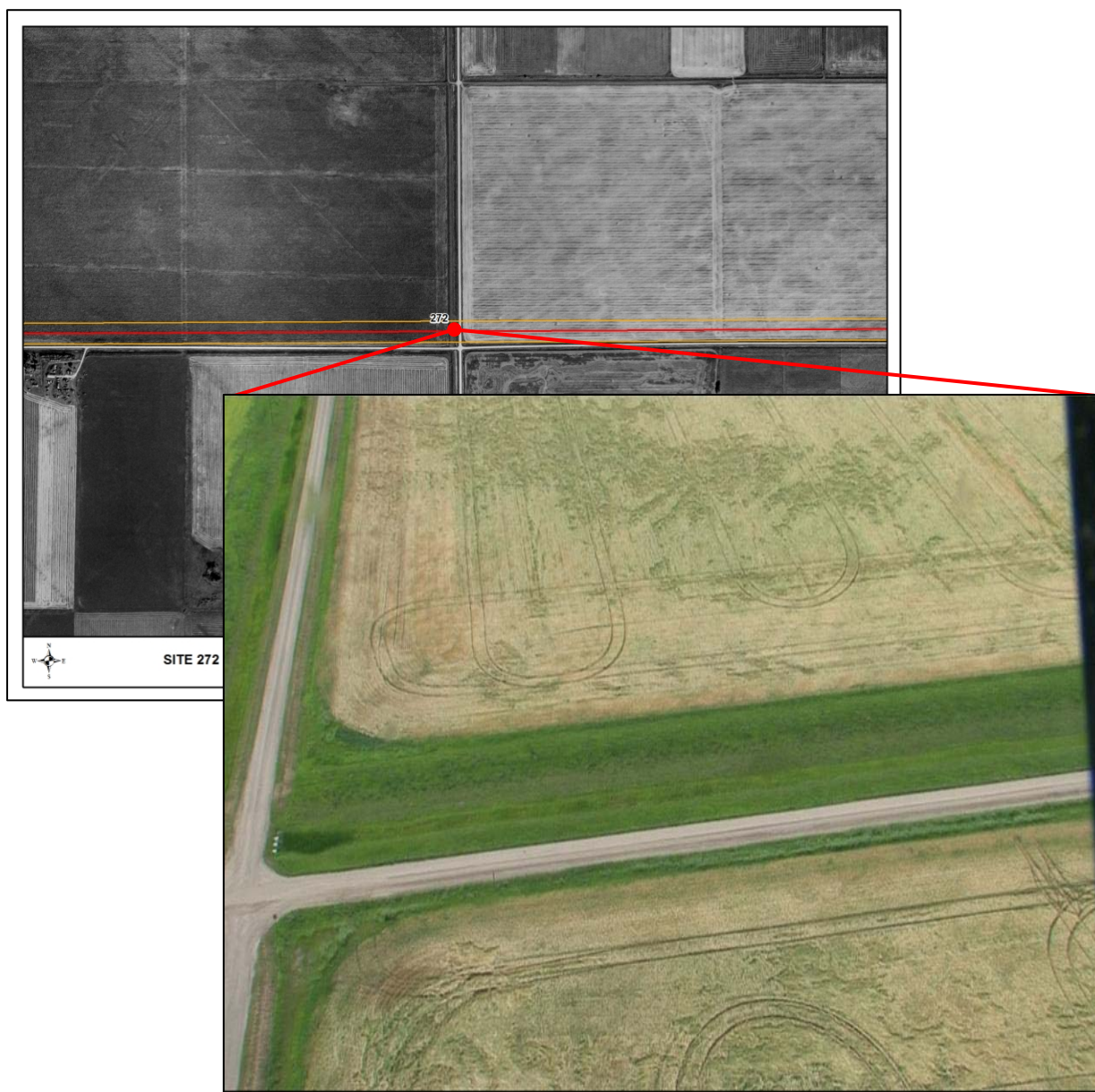
Unnamed agricultural ditch/drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 526502
Northing: 5549103
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Intermittent
Morphology: -
U/S Drainage: 0.4 km²
Distance to Receiving Water: Whitemud River 3 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	8
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	5
Left Bank	5

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	0
--	---

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This unnamed agricultural ditch/drain is channelized as a road ditch at the RoW. Its connection to the Whitemud River provides the opportunity for large and small bodied fish to make use of this drain during spring runoff.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and marginal fish habitat result in a low sensitivity rating.

Site 273

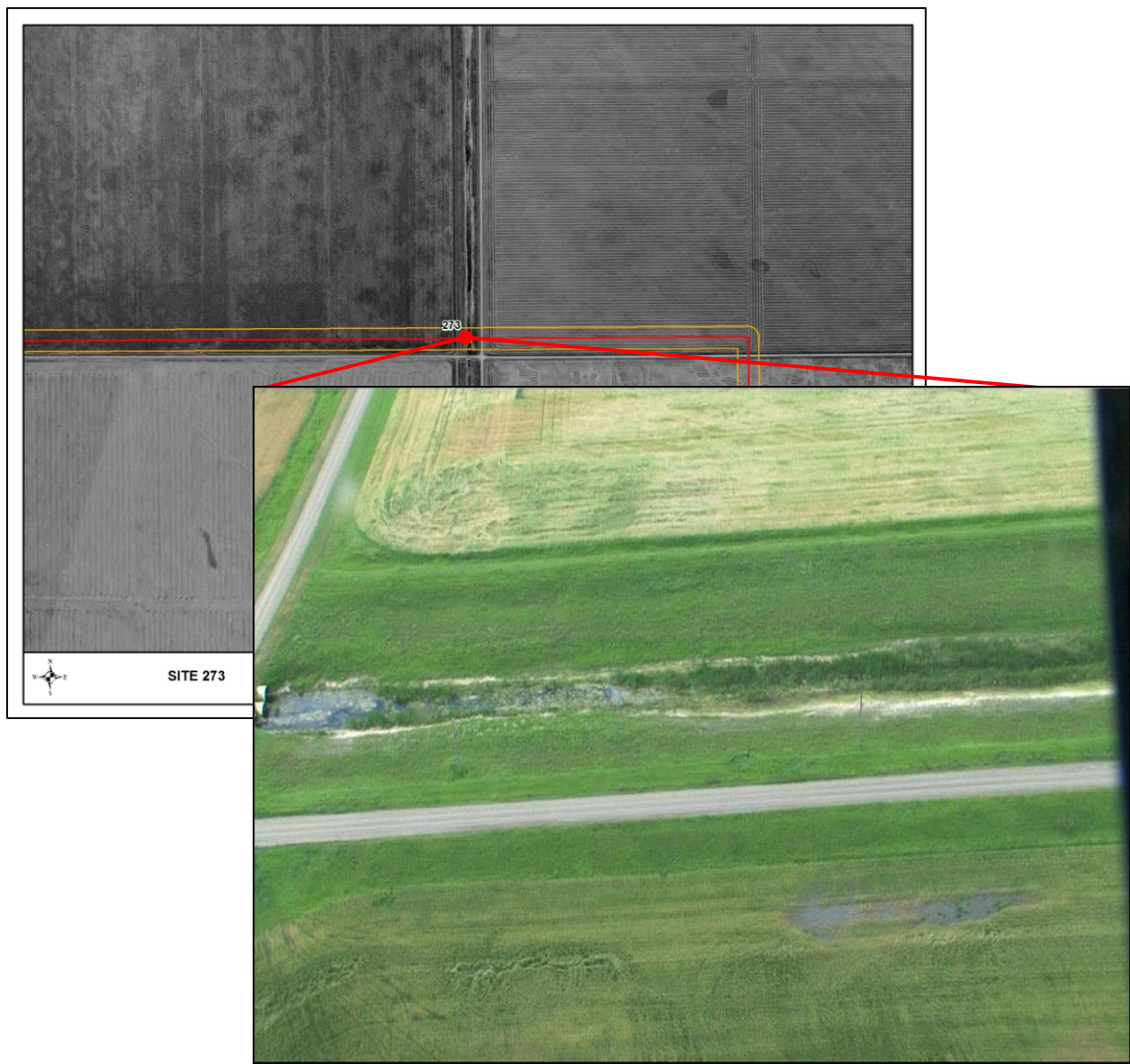
Westbourne Drain

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 531424
Northing: 5549129
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Moderate
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 118.2 km²
Distance to Receiving Water: Whitemud River 5.1 km



Site Conditions

+ Physical Data

Survey Date: 20 October 2010

Stage: Low

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	11.9	-	-	-	-
Wetted Width (m)	8.5	-	-	-	-

Water Depths (m)

25%	0.2	-	-	-	-
50%	0.2	-	-	-	-
75%	0.3	-	-	-	-
Max	0.3	-	-	-	-

Banks

Right Bank Stability (%)	95	-	-	-	-
Left Bank Stability (%)	100	-	-	-	-
Right Bank Slope (°)	~5	-	-	-	-
Left Bank Slope (°)	~5	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	3.8	-	-	-	-
Left Bank	4.3	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	-	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	-	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)	0	-	-	-	-
------------------	---	---	---	---	---

Substrate

Substrate Type (%)

Fines	50	-	-	-	-
Small Gravel	50	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	Tr	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	80	70
Large Woody Debris	-	-
Overhanging Vegetation	10	20
Instream Vegetation	90	80
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-



Upstream view of the Westbourne Drain at site 273 from crossing.



Downstream view of the Westbourne Drain at site 273 from crossing.



Right bank approach of the Westbourne Drain at site 273 from crossing.



Left bank approach of the Westbourne Drain at site 273 from crossing.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	B
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

The Westbourne Drain is channelized agricultural drain that provides simple habitat for indicator fish species, with low overwintering potential. The drain has a considerable upstream drainage area and is connected to the Whitemud River and therefore movements of fish into the drain annually would be expected.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

The contoured ditch is stable and well vegetated.

Site 274

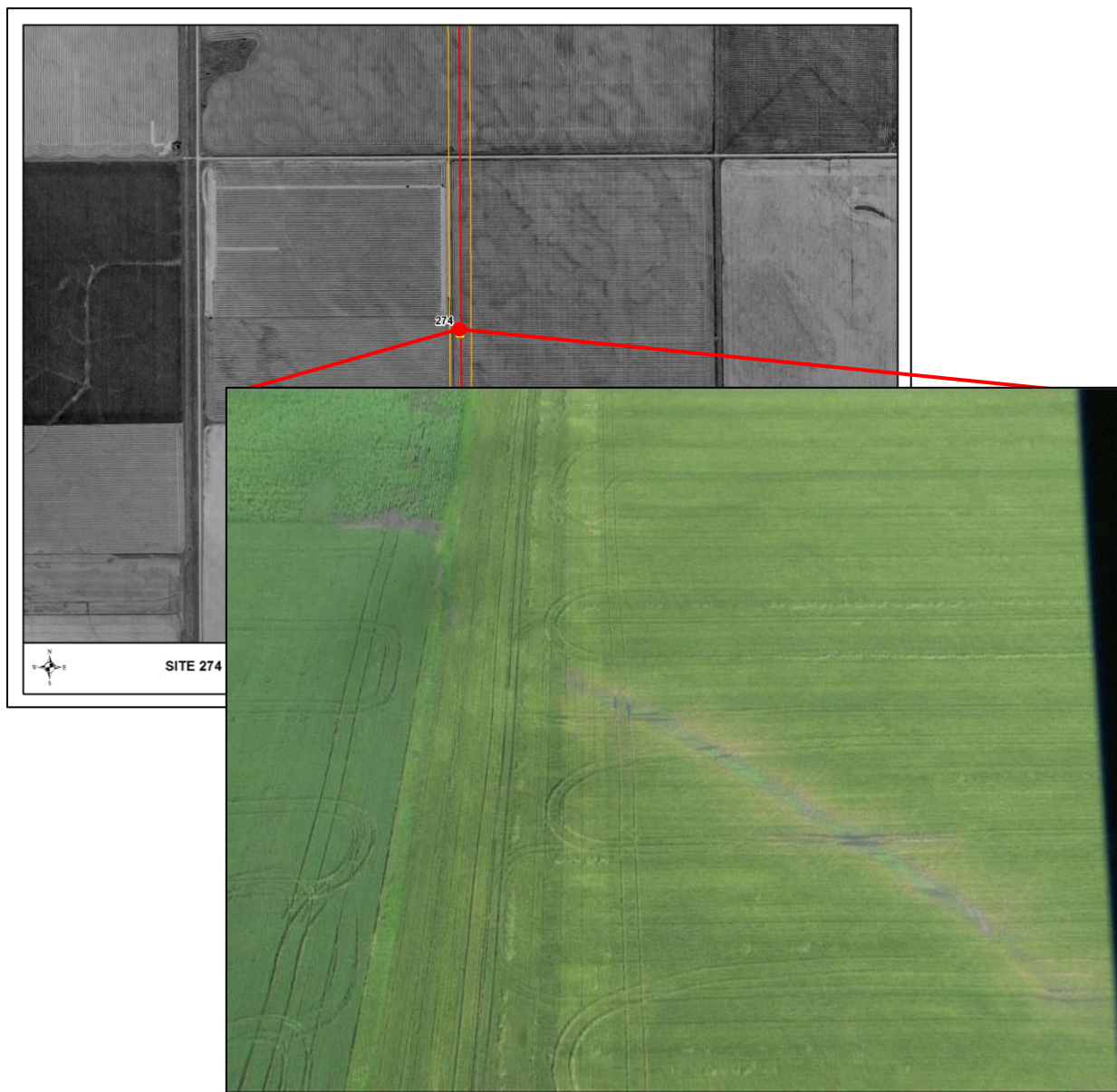
Unnamed pond

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 532311
Northing: 5543610
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	-
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No fish habitat

Fish Presence: N/A

Comments:

This unnamed, ephemeral pond is unlikely to support fish. It appears only as a dry streambed in both the video and orthophoto, with no connection to other waterbodies.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 275

Unnamed tributary of Rat Creek



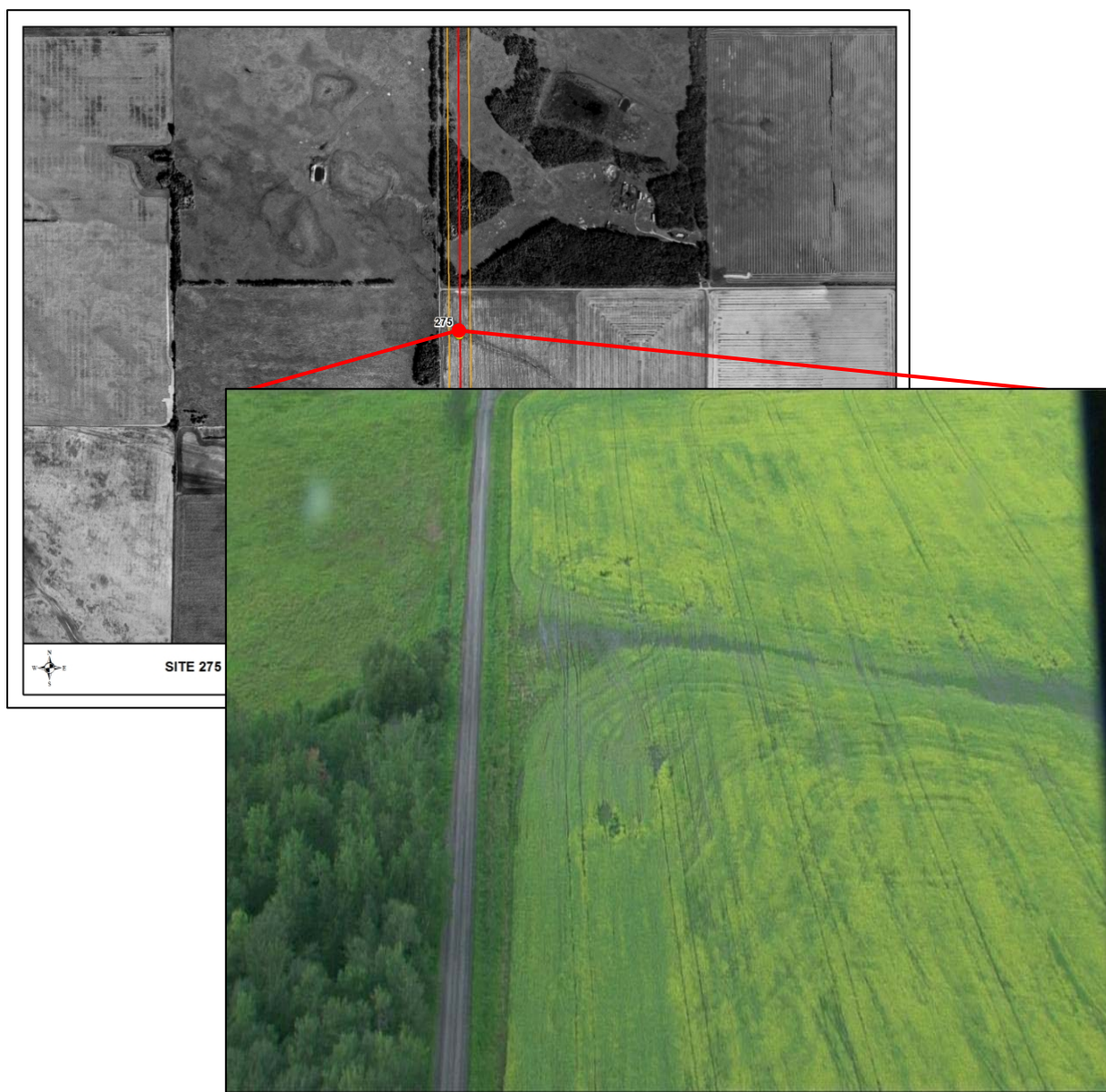
Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529963
Northing: 5530879
Data Source: DOI. Video



General Morphology

Stream/Lake: Stream
Pattern: IR
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.8 km²
Distance to Receiving Water: Rat Creek 1.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	100
Left Bank Stability	100

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

-

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present

No

DFO Manitoba Agricultural Watershed Classification:

-

Fish Habitat Classification:

No fish habitat

Fish Presence: N/A

Comments:

The crossing of this unnamed tributary of Rat Creek is at the uppermost headwaters of this small stream and is cultivated through indicating very low water flow. This stream provides only indirect fish habitat in the form of water and nutrients flowing downstream. The channel flows into a road ditch upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Stable vegetated banks and no fish habitat result in a low sensitivity rating.

Site 276

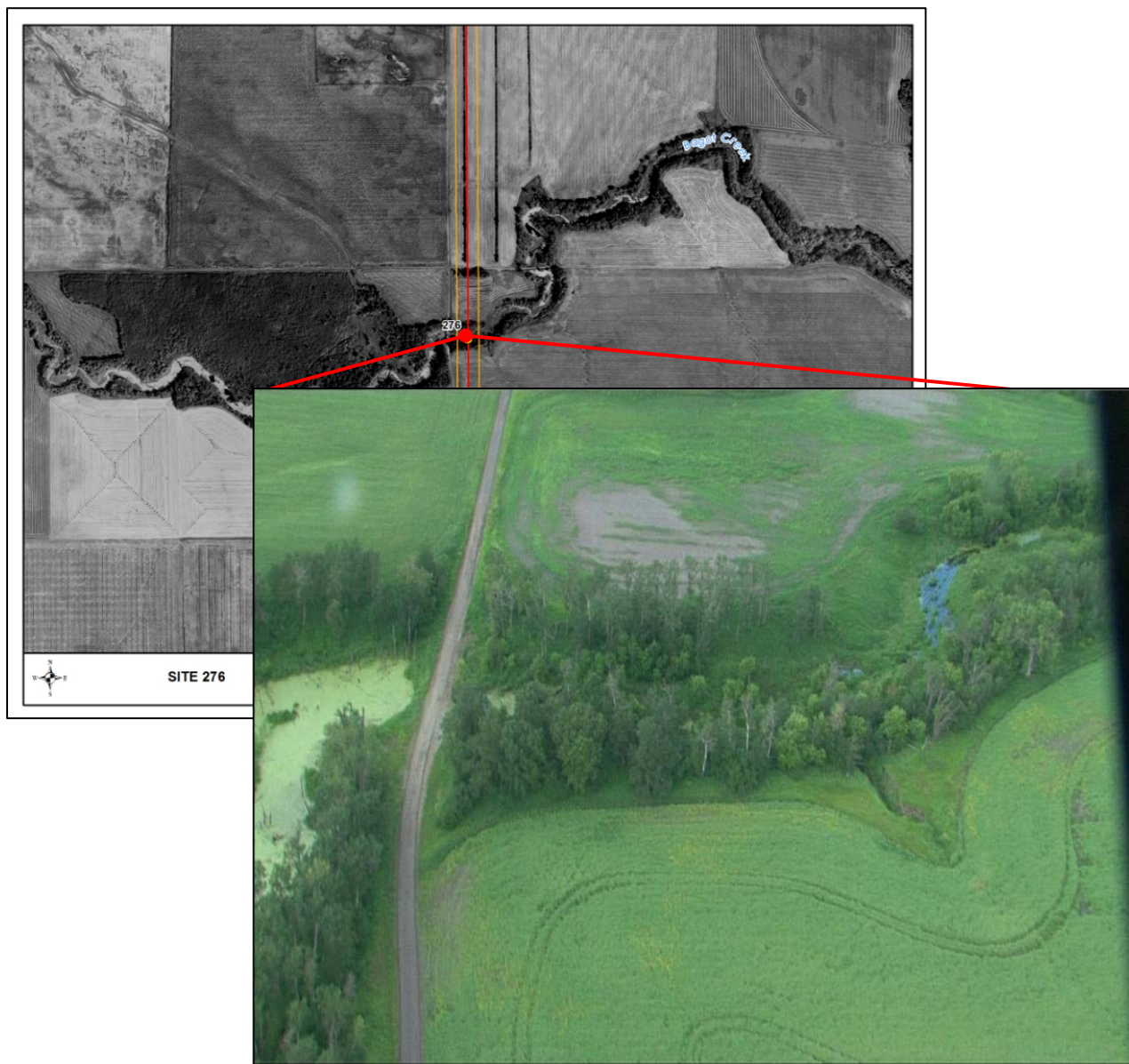
Bagot Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529975
Northing: 5529162
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 80.5 km²
Distance to Receiving Water: Rat Creek 2.2 km



Site Conditions

+ Physical Data

Survey Date: 20 October 2010

Stage: High

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	3	-	-	-	-
Wetted Width (m)	3	-	-	-	-

Water Depths (m)

25%	0.6	-	-	-	-
50%	0.8	-	-	-	-
75%	0.65	-	-	-	-
Max	0.8	-	-	-	-

Banks

Right Bank Stability (%)	100	-	-	-	-
Left Bank Stability (%)	90	-	-	-	-
Right Bank Slope (°)	~45	-	-	-	-
Left Bank Slope (°)	~45	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	9	-	-	-	-
Left Bank	11	-	-	-	-

Riparian Distance (m)

Right Bank	22.5	-	-	-	-
Left Bank	34.4	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	0	-	-	-	-
--	---	---	---	---	---

Substrate

Substrate Type (%)

Fines	100	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	75	60
Large Woody Debris	10	10
Overhanging Vegetation	10	20
Instream Vegetation	80	70
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-



Upstream view of Bagot Creek at site 276 from crossing.



Downstream view of Bagot Creek at site 276 from crossing.



Left bank approach of Bagot Creek at site 276 from crossing.



Road crossing upstream of site 276.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: N/A

Comments:

Bagot Creek is a perennial channel providing complex habitat for indicator fish species, with moderate overwintering potential. The channel is surrounded by a soft floodplain vegetated with cattails and grasses. The left bank riparian area is steeply sloped. There is a road crossing upstream of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Soft floodplain, steeply sloped riparian area, and important fish habitat result in a moderate sensitivity rating.

Site 277

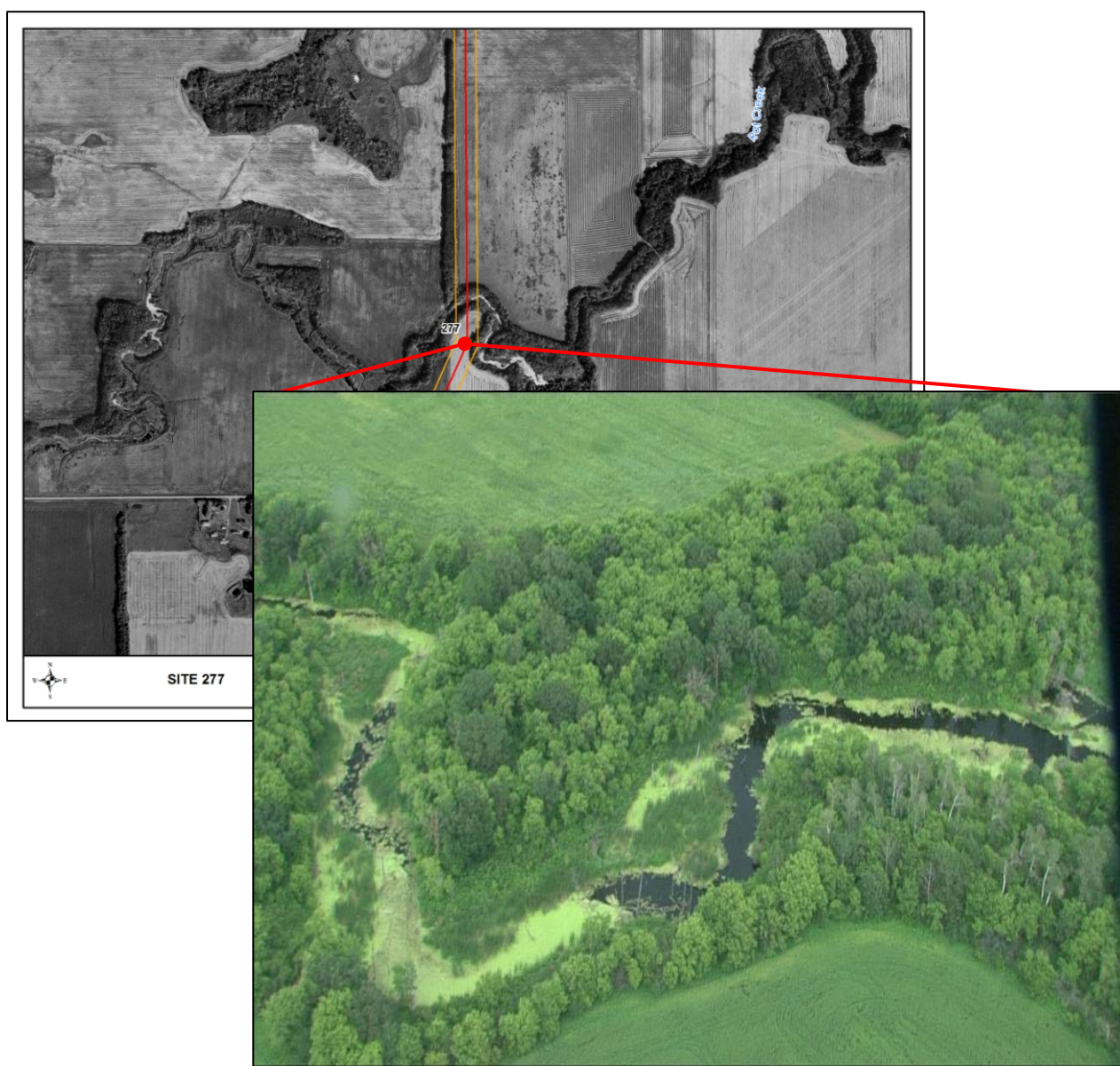
Rat Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529993
Northing: 5526617
Data Source: DOI. Video. Site visit

General Morphology

Stream/Lake: Stream
Pattern: TM
Confinement: UN
Stage: Moderate
Flow Regime: Perennial
Morphology: LC
U/S Drainage: 102.1 km²
Distance to Receiving Water: Whitemud River 39 km



Site Conditions

+ Physical Data

Survey Date: 20 October 2010

Stage: High

Transect

	1	2	3	4	5
Distance from Crossing (m)	0	33 US	33 DS	150 US	150 DS

Channel Profile

Channel and Flow

Channel Width (m)	~20	-	-	-	-
Wetted Width (m)	~20	-	-	-	-

Water Depths (m)

25%	1	-	-	-	-
50%	-	-	-	-	-
75%	-	-	-	-	-
Max	-	-	-	-	-

Banks

Right Bank Stability (%)	100	-	-	-	-
Left Bank Stability (%)	95	-	-	-	-
Right Bank Slope (°)	~20	-	-	-	-
Left Bank Slope (°)	~45	-	-	-	-

Riparian

Floodplain Distance (m)

Right Bank	-	-	-	-	-
Left Bank	-	-	-	-	-

Riparian Distance (m)

Right Bank	8.8	-	-	-	-
Left Bank	14.7	-	-	-	-

Riparian Vegetation Type (Y/N)

None	-	-	-	-	-
Grasses/sedges	Y	-	-	-	-
Shrubs	Y	-	-	-	-
Conifers	-	-	-	-	-
Deciduous	Y	-	-	-	-
Mixed Forest	-	-	-	-	-

Canopy Cover (%)

	25	-	-	-	-
--	----	---	---	---	---

Substrate

Substrate Type (%)

Fines	100	-	-	-	-
Small Gravel	-	-	-	-	-
Large Gravel	-	-	-	-	-
Cobble	-	-	-	-	-
Boulder	-	-	-	-	-

Habitat Type

Habitat Composition (%)

Pool	-	-	-	-	-
Run	100	-	-	-	-
Riffle	-	-	-	-	-

Cover Types

Total Cover Available (%)	US	DS
Cover Composition (% of Total)	80	80
Large Woody Debris	-	Tr
Overhanging Vegetation	10	10
Instream Vegetation	90	90
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-



Upstream view of Rat Creek at site 277 from crossing.



Downstream view of Rat Creek at site 277 from crossing.



Left bank approach of Rat Creek at site 277 from crossing.



Road crossing upstream of site 277.

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	A
Fish Habitat Classification:	Important

Fish Presence: Black bullhead, Brook stickleback, Fathead minnow, Finescale dace, Northern pike, Northern redbelly dace, White sucker (FIHCS 2009)

Comments:

The Rat Creek is a perennial channel providing complex habitat for indicator fish species, with moderate overwintering potential. The channel is highly vegetated, with only a 2.5m open-water area in the middle of the channel. It has a forested riparian, with a large amount of canopy cover. There are a number of potential barriers to fish passage between the RoW and the Whitemud River which would restrict use of the site by large-bodied species of fish.

+ Habitat Sensitivity

Sensitivity Rating: Moderate

Comments:

Large amount of canopy cover and important fish habitat result in a moderate sensitivity rating.

Site 278

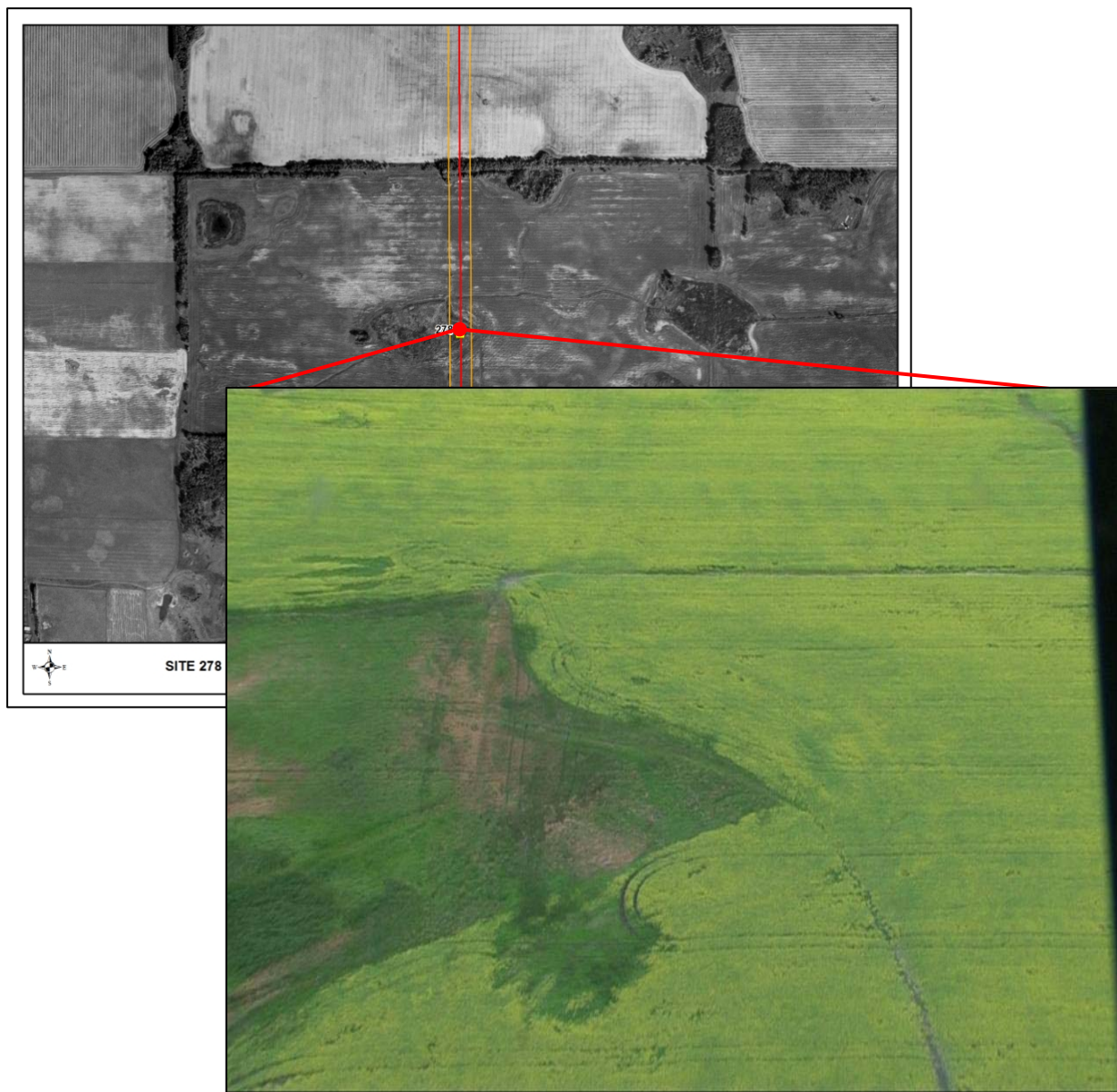
Unnamed wetland

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529812
Northing: 5523967
Data Source: DOI. Video

General Morphology

Stream/Lake: Lake
Pattern: -
Confinement: -
Stage: -
Flow Regime: Intermittent
Morphology: -
U/S Drainage: -
Distance to Receiving Water: -



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Lake size (ha)	-
Lake width at RoW (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

	-
--	---

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	No
DFO Manitoba Agricultural Watershed Classification:	-
Fish Habitat Classification:	No fish habitat

Fish Presence: N/A

Comments:

This unnamed, intermittent wetland is unlikely to support fish. It appears to be connected to other nearby small wetlands by ephemeral streambeds.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

No fish habitat results in a low sensitivity rating.

Site 279

Fetterly Creek

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529844
Northing: 5517873
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: ST
Confinement: CO
Stage: Low
Flow Regime: Intermittent
Morphology: LC
U/S Drainage: 13.2 km²
Distance to Receiving Water: Assiniboine River
7.2 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	70
Left Bank Stability	80

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%)

0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%)

15

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	100
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	100
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

Fetterly Creek is an intermittent channelized stream, providing only indirect fish habitat in the form of water and nutrients flowing downstream. The creek is channelized as a road ditch at the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Relatively stable vegetated banks and very marginal fish habitat result in a low sensitivity rating.

Site 280

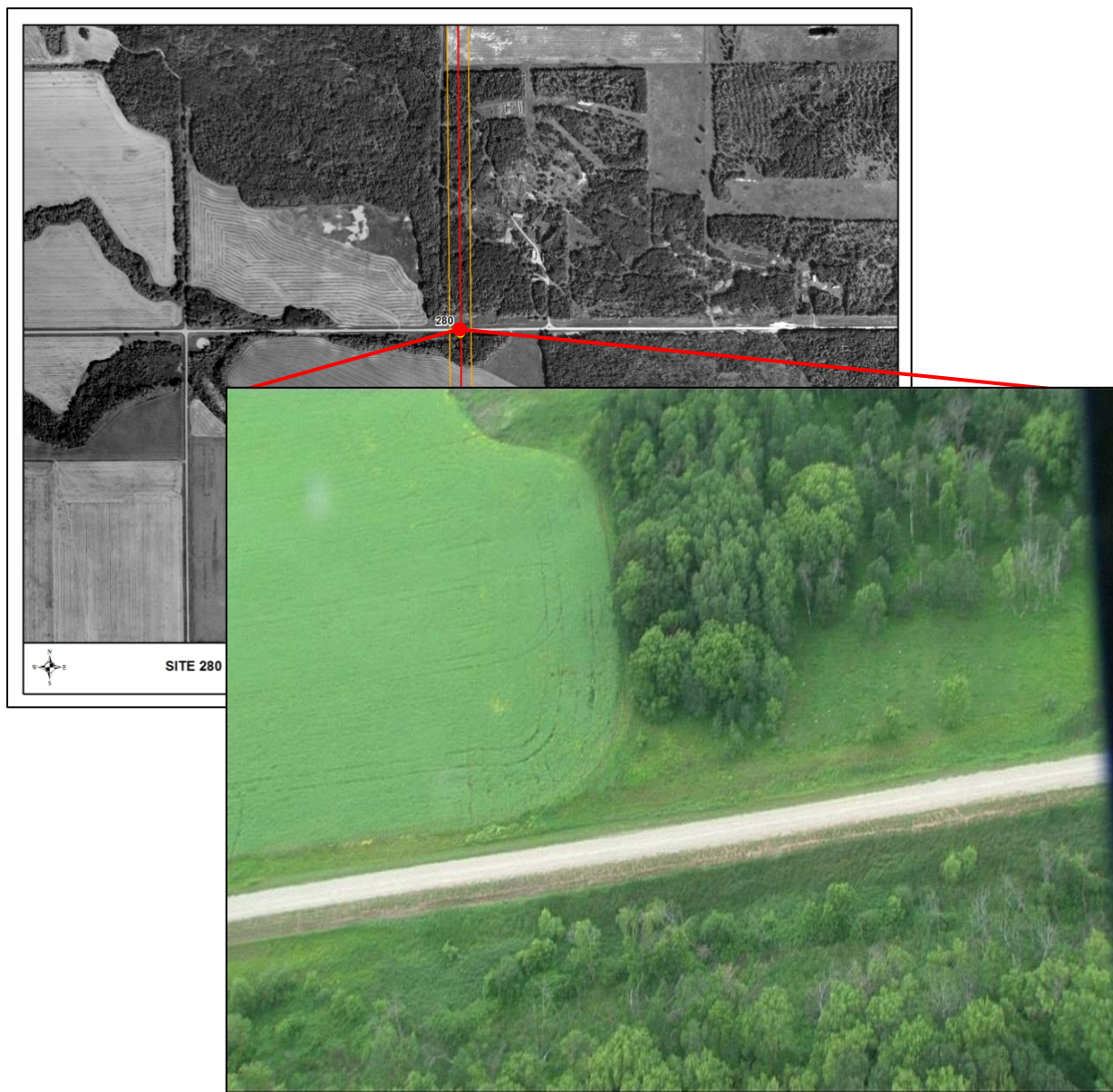
Unnamed tributary of Assiniboine River

Location

Datum: NAD 83
UTM: Zone: 14N
Easting: 529869
Northing: 5514591
Data Source: DOI. Video

General Morphology

Stream/Lake: Stream
Pattern: SI
Confinement: UN
Stage: Low
Flow Regime: Ephemeral
Morphology: -
U/S Drainage: 0.2 km²
Distance to Receiving Water: Assiniboine River
4.9 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Wetted Width (m)	-
Channel Width (m)	-

Banks (%)

Right Bank Stability	-
Left Bank Stability	-

Riparian

Floodplain Distance (m)

Right Bank	-
Left Bank	-

Riparian Distance (m)

Right Bank	-
Left Bank	-

Riparian Vegetation Type (Y/N)

None	-
Grasses/sedges	Y
Shrubs	-
Conifers	-
Deciduous	-
Mixed Forest	-

Canopy Cover (%) 0

Substrate

Substrate Type (%)

Fines	100
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Cover Types

Total Cover Available (%) -

Cover Composition (% of Total)

Large Woody Debris	-
Overhanging Vegetation	-
Instream Vegetation	-
Pool	-
Boulder	-
Undercut Bank	-
Surface Turbulence	-
Turbidity	-

Habitat Type

Habitat Composition

Pool	-
Run	-
Flat	-
Riffle	-
Rapid	-

Fish Habitat Classification and Sensitivity

+ Fish Habitat

Fish Habitat Present	Yes
DFO Manitoba Agricultural Watershed Classification:	E
Fish Habitat Classification:	Marginal

Fish Presence: N/A

Comments:

This ephemeral channel provides only indirect fish habitat, in the form of water and nutrients flowing downstream. The channel is a road ditch at the location of the RoW.

+ Habitat Sensitivity

Sensitivity Rating: Low

Comments:

Very marginal fish habitat results in a low sensitivity rating.