

Eli Nasogaluak
Environmental Assessment Coordinator
Environmental Impact Review Board
P.O. Box 2121 Inuvik, NT X0E 0T0
eirb@jointsec.nt.ca

August 28, 2012

[VIA EMAIL]

Dear Mr. Nasogaluak:

Re: Vegetation and Wildlife Habitat Suitability Calculations – Inuvik to Tuktoyaktuk Highway

KAVIK-STANTEC Inc. has completed vegetation classification and wildlife habitat potential mapping related to the Inuvik to Tuktoyaktuk Highway (ITH). On behalf of the Developers, KAVIK-STANTEC has submitted the results of these studies to the Environmental Impact Review Board in two reports and associated map atlases:

Inuvik to Tuktoyaktuk Highway - Baseline Data Acquisition Program: Preliminary Vegetation Mapping April 2012.

Inuvik to Tuktoyaktuk Highway - Baseline Data Acquisition Program: Wildlife Habitat Potential Mapping – Final Report. August 2012. (Includes 5 map atlases)

On behalf of the Developers, KAVIK-STANTEC is providing four additional supplemental map atlases of potential habitat at borrow sources 177, 174, 309 and PW2 which were not included in the original maps:

Inuvik to Tuktoyaktuk Highway – Wildlife Habitat Potential Supplemental Maps for Borrow Sources 177, 174, 309 and PW2. August 2012: Rusty Blackbird, Horned Grebe, Short-eared Owl, Grizzly Bear

KAVIK-STANTEC is also providing additional calculations of vegetation class cover and wildlife habitat suitability within the Project study area and at borrow sources to support the assessment of effects to species at risk.

Tables 1 to 6 below present wildlife habitat and vegetation metrics specifically related to three bird species at risk found in the Project area (Horned Grebe, Rusty Blackbird and Short-eared Owl, waterbirds, and Grizzly bear). The information presented reflects the Developer's current proposed use of Borrow Sources 177, 170, 174, 309, 314/325 and PW2 as primary sources for granular material.

Calculations of the amount of habitat occurring within the Project study area, as well as within certain distances of the alignment and borrow sources, are included in tables for each species. Specific zones of influence for Horned Grebe, Short-eared Owl and Rusty Blackbird as presented in Tables 1, 2 and 3, were determined through discussions with Environment Canada – Canadian Wildlife Service. The 500 m zone of influence study area for Grizzly bear as presented in Table 5 is based on the Developer's commitment to maintain a 500 m setback from active Grizzly bear dens. The 1.5 km zone of influence for

Grizzly bear is based on a conservative estimate of the propagation distance of audible sound generated by construction activities.

Table 6 presents the distribution of vegetation classes within the Project study area and at borrow sources.

The following terminology is used in the tables:

Project Study Area:	the area within 500 m of either side of the Preferred Alignment and within 500m of borrow sources
28 m Footprint:	the average roadway width on the ground
Zone of Influence:	Distance from edge of roadway within which species could be affected

We are prepared to answer questions regarding the information presented .

Sincerely,



Erica Bonhomme
Senior Consultant, Environmental Services
KAVIK-STANTEC Inc.
erica.bonhomme@stantec.com

Summary of Project Study Area and Borrow Sources used in Tables 1 - 4:

Project Study Area: **23,072.6 Hectares**

Borrow Sources: 170, 174, 177, 309, 314/325 & PW2 (included within the Study Area)

Total Borrow Source Area: **1,629.0 Hectares**

Table 1a: Total potential habitat for Horned Grebe within Project study area, road footprint and at borrow sources

Horned Grebe Habitat Potential	Project Study Area (ha)	28m Footprint (ha)	Borrow Source 170 (ha)	Borrow Source 174 (ha)	Borrow Source 177 (ha)	Borrow Source 309 (ha)	Borrow Source 314/325 (ha)	Borrow Source PW2 (ha)	Project Study Area (%)
Low	697.6	0.0	0.0	101.7	3.0	90.1	0.0	0.0	3.0
Medium	3,096.9	0.0	0.0	5.0	9.7	2.6	0.0	0.0	13.4
High	109.6	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.5
Total	3,904.1	0.0	0.0	108.1	12.7	92.7	0.0	0.0	16.9

Table 1b: Potential Horned Grebe habitat occurrences within 100 m of Preferred Route and borrow sources

Horned Grebe Habitat Potential	Number of Habitat Occurrences 0 - 100 m from Preferred Route	Number of Habitat Occurrences 0 - 100 m from Borrow Sources
Medium	77	6
High	16	4
Total	93	10

Table 2: Total potential habitat for Short-eared Owl within Project study area, road footprint and at borrow sources

Short-eared Owl Habitat Potential	Project Study Area (ha)	28m Footprint (ha)	Borrow Source 170 (ha)	Borrow Source 174 (ha)	Borrow Source 177 (ha)	Borrow Source 309 (ha)	Borrow Source 314/325 (ha)	Borrow Source PW2 (ha)	Project Study Area (%)
Low	15,407.5	315.0	40.2	468.6	121.5	206.1	1.6	174.6	66.8
Medium	2,221.6	42.0	1.6	33.5	15.1	7.1	1.0	0.0	9.6
High	482.8	4.9	1.6	20.0	10.2	0.0	153.6	0.0	2.1
Total	18,111.9	361.9	43.4	522.1	146.8	213.2	156.2	174.6	78.5

Table 3a: Total potential habitat for Rusty Blackbird within Project study area, road footprint and at borrow sources

Rusty Blackbird Habitat Potential	Project Study Area (ha)	28m Footprint (ha)	Borrow Source 170 (ha)	Borrow Source 174 (ha)	Borrow Source 177 (ha)	Borrow Source 309 (ha)	Borrow Source 314/325 (ha)	Borrow Source PW2 (ha)	Project Study Area (%)
Suitable	776.3	15.9	0.4	1.6	5.8	0.0	1.0	0.9	3.36

Table 3b: Potential Suitable Rusty Blackbird habitat within zones of influence

Area of Suitable Habitat 0 – 150 m from Preferred Route (ha)	Area of Suitable Habitat 0 – 300 m from Preferred Route (ha)	Percent Suitable Habitat 0 – 150 m from Preferred Route (%)	Percent Suitable Habitat 0 – 300 m from Preferred Route (%)
186.5	393.0	4.6	4.8

Table 4: Total potential habitat for Waterbirds within Project study area and road footprint

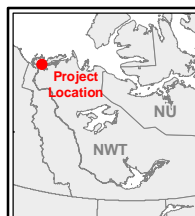
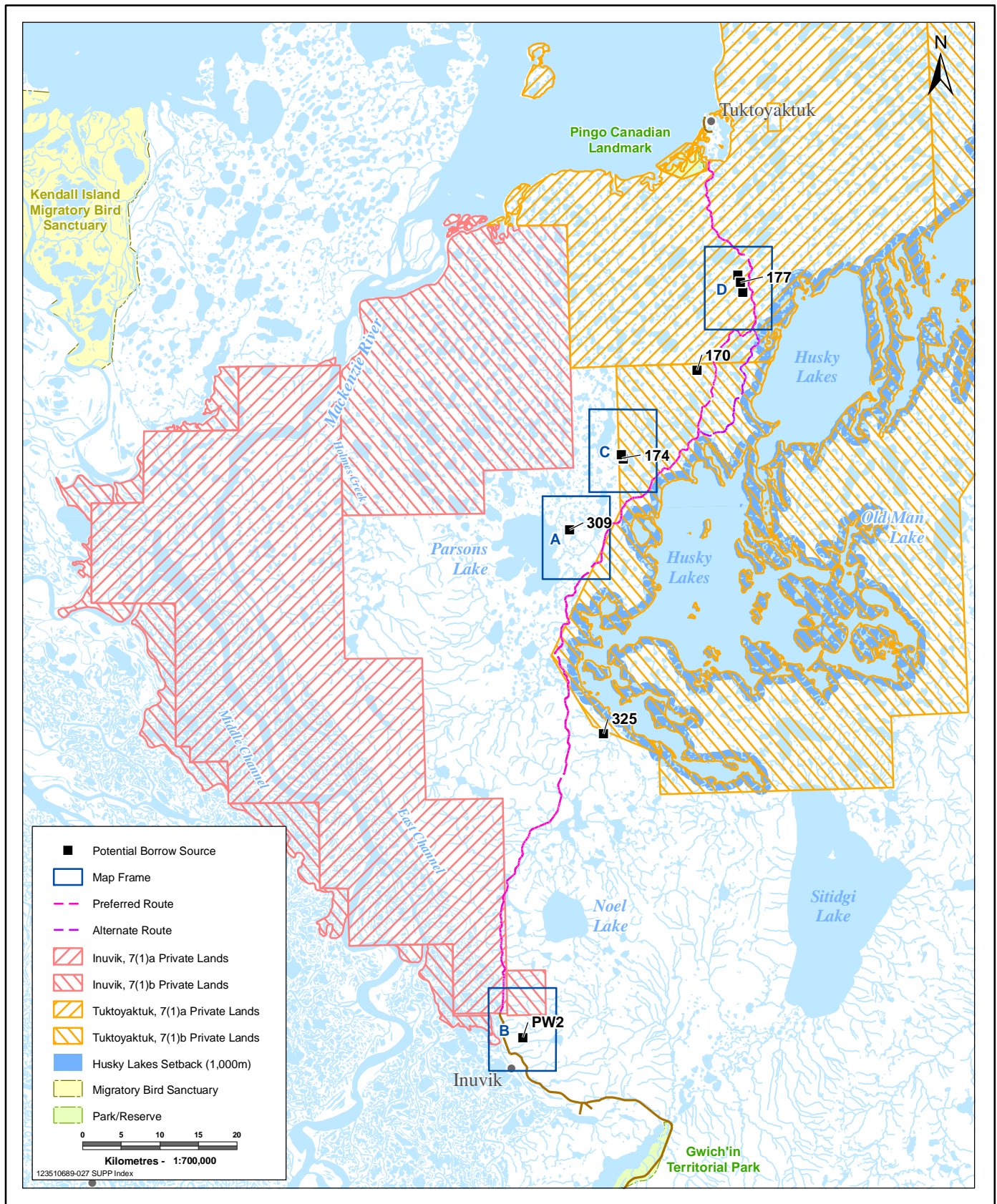
Waterfowl Habitat Potential	Project Study Area (ha)	28m Footprint (ha)	Project Study Area (%)
Medium	9,991.2	211.5	43.3
High	4,230.8	3.4	18.3
Total	14,222.0	214.9	61.6

Table 5: Total potential Grizzly bear den habitat within the Project study area and Preferred Route

	500 m Buffered Study Area			1.5 km Buffered Study Area			Percent Habitat	
Habitat Suitability	Area of Habitat within 500 m of Preferred Route (ha)	Area of Habitat within 500 m of Borrow Sources	Total Area of Habitat within 500 m of Preferred Route and Borrow Sources (ha)	Area of Habitat within 1.5 km of Preferred Route (based on LiDAR only)	Area of Habitat within 1.5 km of Borrow Sources (based on LiDAR only)	Total Area of Habitat within 1.5 km of Preferred Route and Borrow Sources	Percent Habitat within 500 m of Preferred Route and Borrow Sources	Percent Habitat within 1.5 km of Preferred Route and Borrow Sources
Higher Suitability	239.82	239.50	471.01	822.48	647.17	1,376.45	2.6	2.6
Lower Suitability	1,973.51	1,394.82	3,335.48	5,749.82	3,201.76	8,545.0	18.1	16.3
Total	2,213.33	1,634.32	3,806.49	6572.3	3,848.93	9921.45	20.7	18.9

Table 6: Distribution of vegetation classes within study area and at borrow sources (ha)

Vegetation Class	Project Study Area	28m Footprint	Borrow Source 170	Borrow Source 174	Borrow Source 177	Borrow Source 309	Borrow Source 314/325	Borrow Source PW2	Project Study Area (%)
01 Dry Saxifrage Tundra	454.44	0.2	35.31	113.65	4.64	49.65	0.0	0.0	1.97
02 Dwarf Shrub Heath	6,111.96	148.99	0.97	50.77	19.54	53.58	0.0	0.0	26.5
03 Dwarf Shrub Heath/Upland Shrub	7,791.02	147.04	3.54	301.74	90.39	102.90	0.57	173.72	33.78
04 Cotton-Grass Tussock	482.83	4.91	1.57	20.00	10.21	0.0	153.58	0.0	2.09
05 High-Centred Polygons	2,065.24	41.38	1.55	33.52	0.08	7.05	0.97	0.0	8.96
06 Low-Centred Polygons	156.33	0.61	0.0	0.0	0.0	0.0	0.0	0.0	0.68
07 Riparian Shrub	740.22	15.36	0.36	1.60	5.80	0.0	0.98	0.87	3.22
08 Riparian Sedge - Cotton-Grass	309.86	3.42	0.0	0.85	1.15	0.0	0.01	0.0	1.35
13 Riparian Black Spruce/Shrub	36.09	0.49	0.0	0.0	0.0	0.0	0.0	0.0	0.16
d5 Upland Alaska Birch - Spruce	731.40	14.55	0.0	0.0	0.0	0.0	0.0	61.85	3.17
h3 Black Spruce/Ground Birch	242.87	2.81	0.0	0.0	0.0	0.0	0.0	18.22	1.05
Dist Disturbed	13.57	0.0	0.0	0.0	6.03	3.79	0.0	2.38	0.00
99 Unknown	32.63	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.15
00 Water	3,904.1	0.0	0.0	108.05	12.7	92.69	0.0	0.0	16.92
Total	23,072.56	379.76	43.3	630.19	150.54	309.66	156.11	257.04	100.0



Inuvik - Tuktoyaktuk Highway

Potential Rusty Blackbird Habitat Supplemental Overview

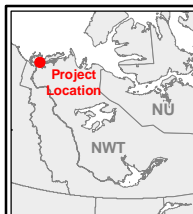
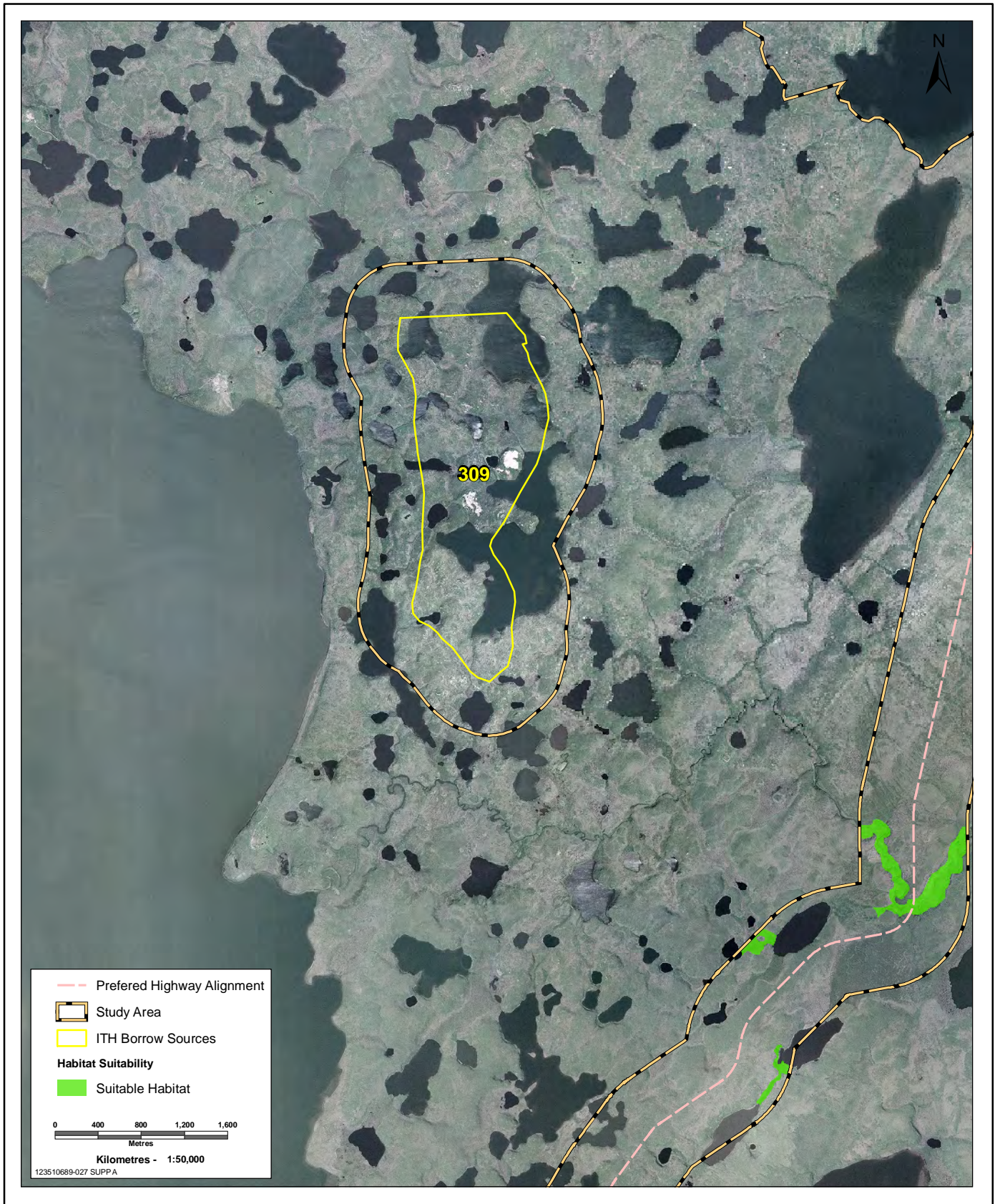
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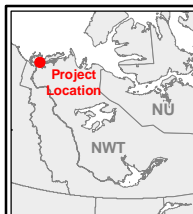
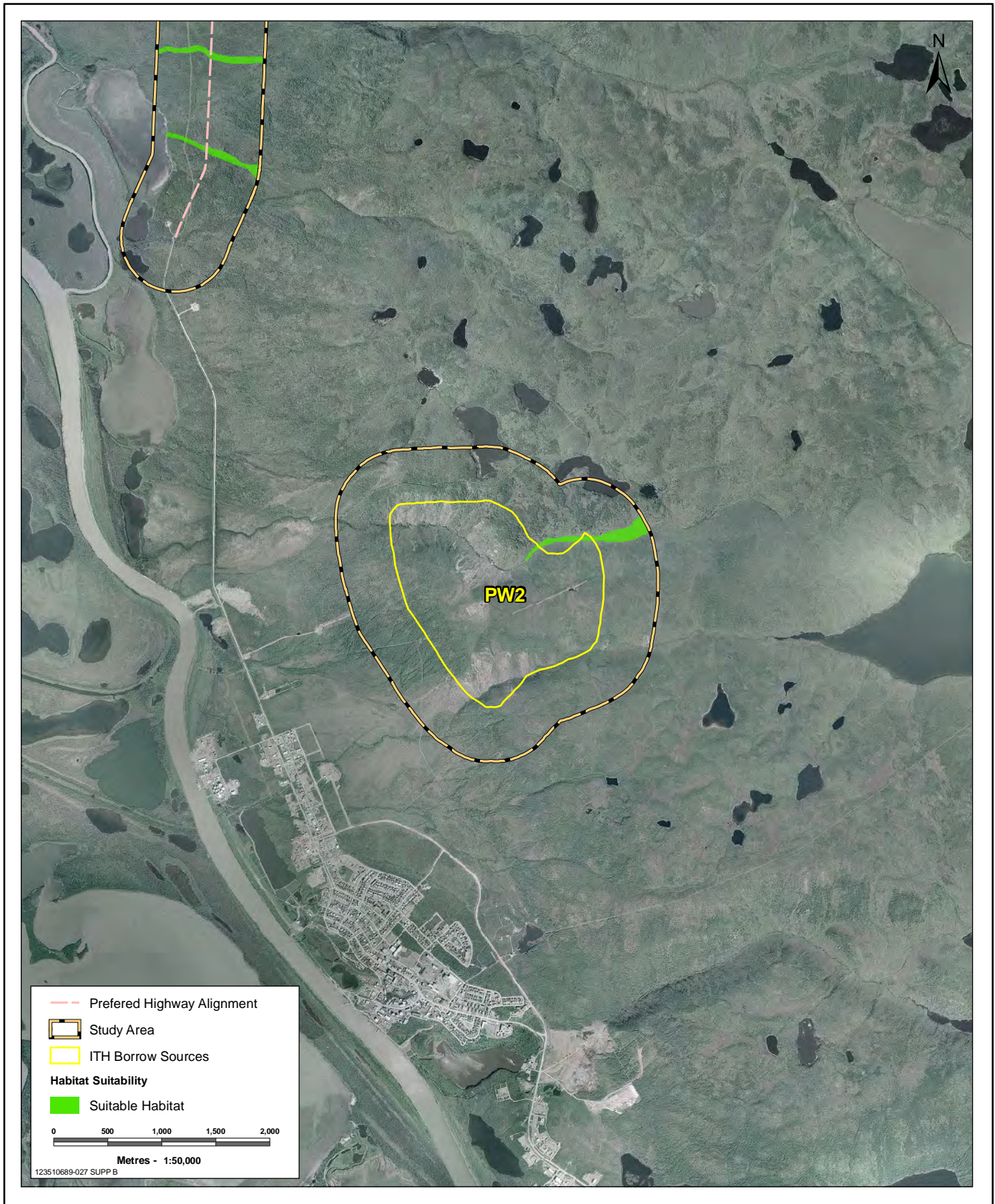
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Potential Rusty Blackbird Habitat at Borrow Source 309

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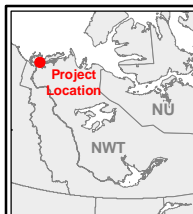
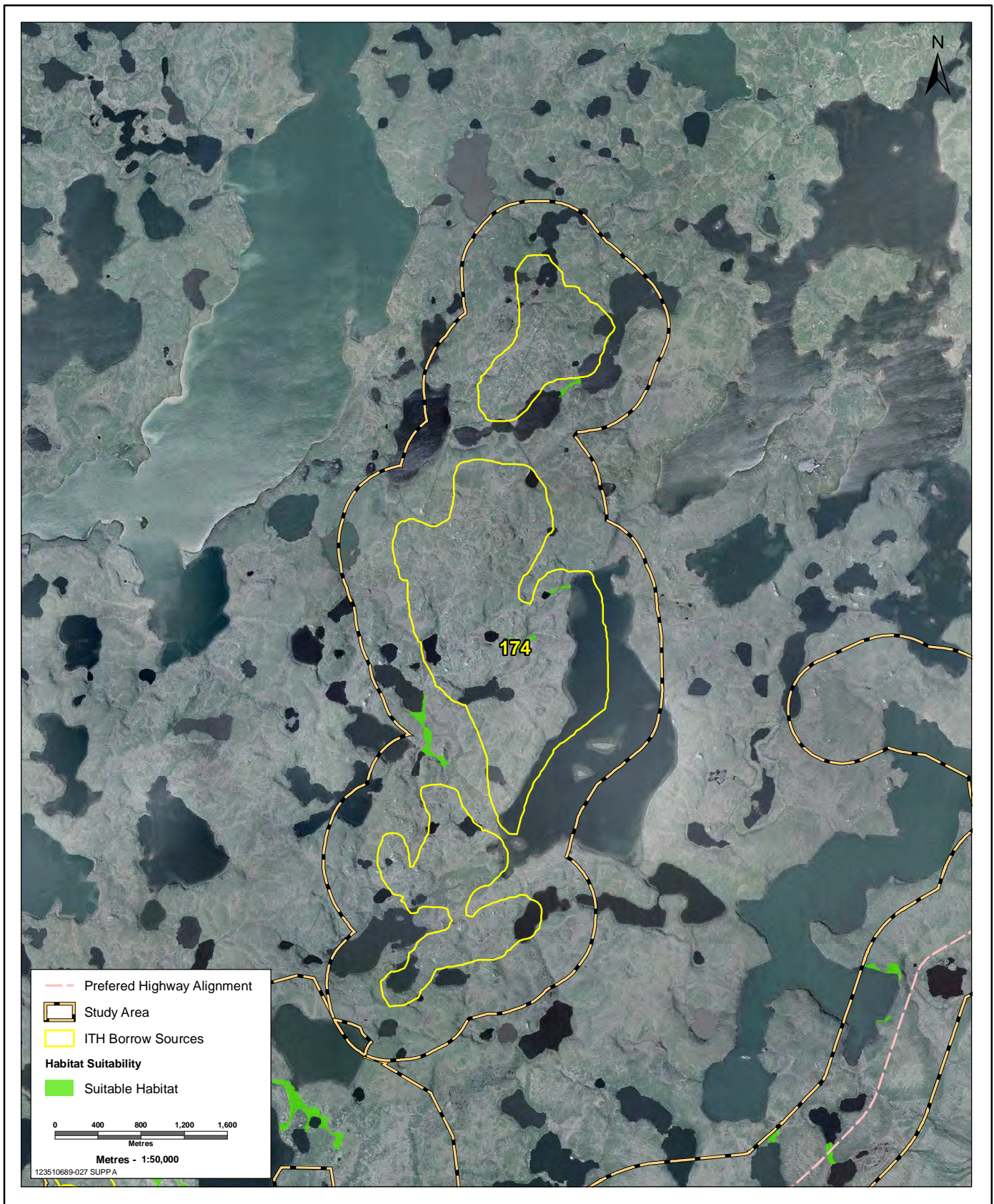
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Potential Rusty Blackbird Habitat at Borrow Source PW2

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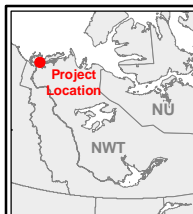
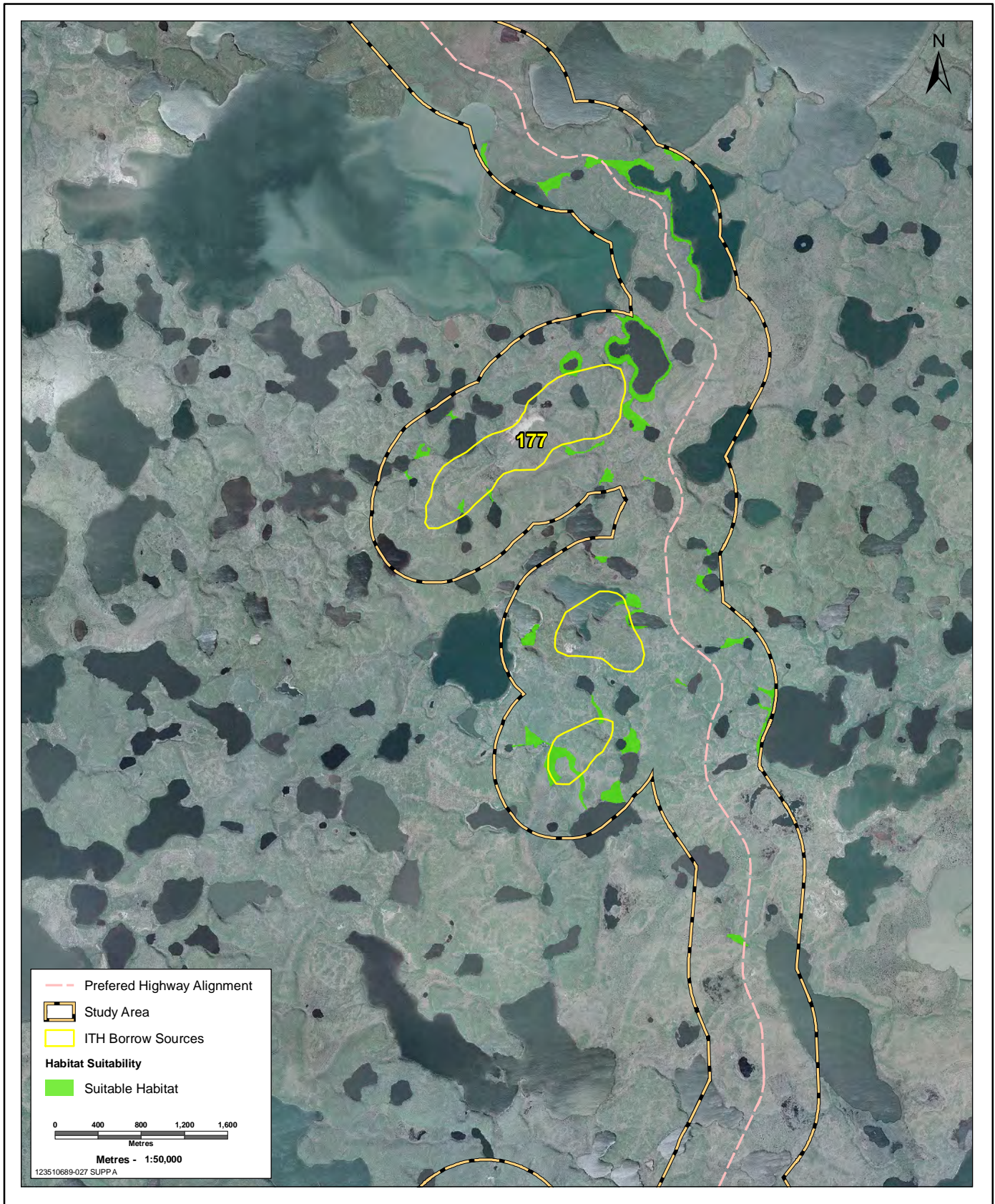
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Potential Rusty Blackbird Habitat at Borrow Source 174

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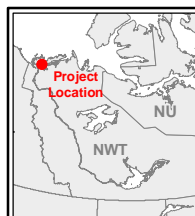
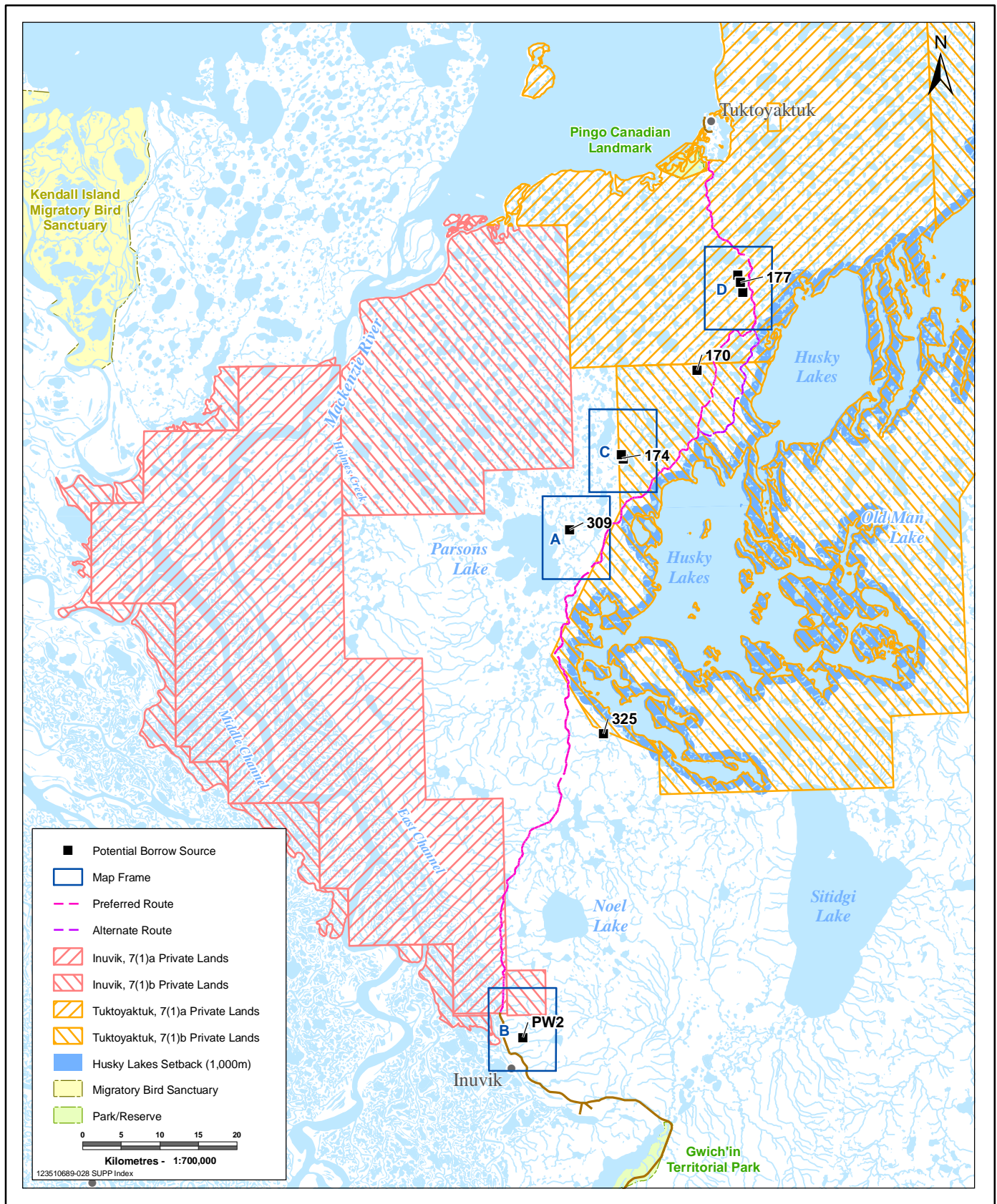
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Potential Rusty Blackbird Habitat at Borrow Source 177

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Potential Short-eared Owl Habitat Supplemental Overview

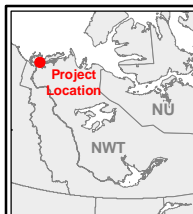
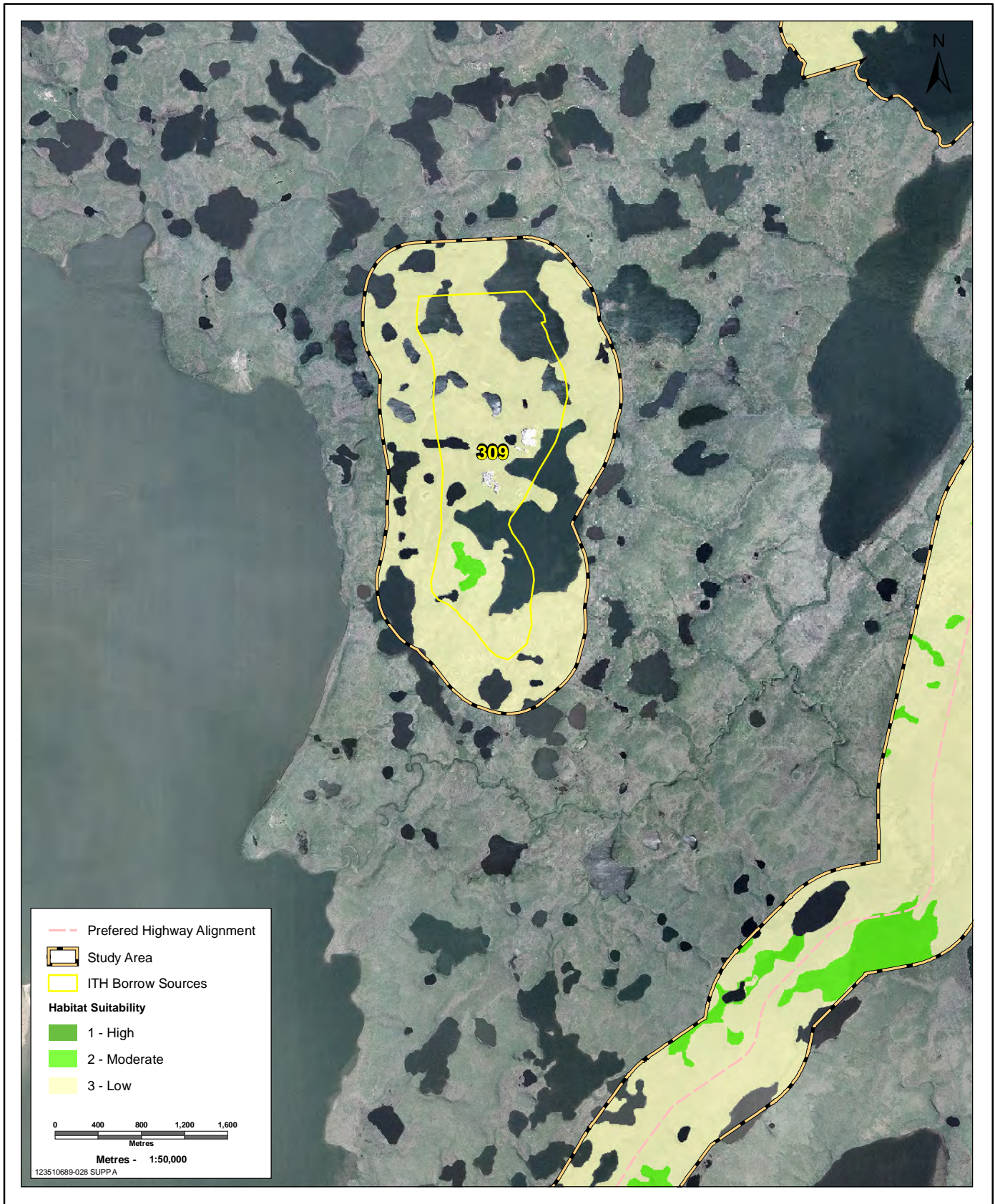
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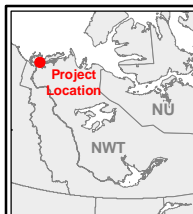
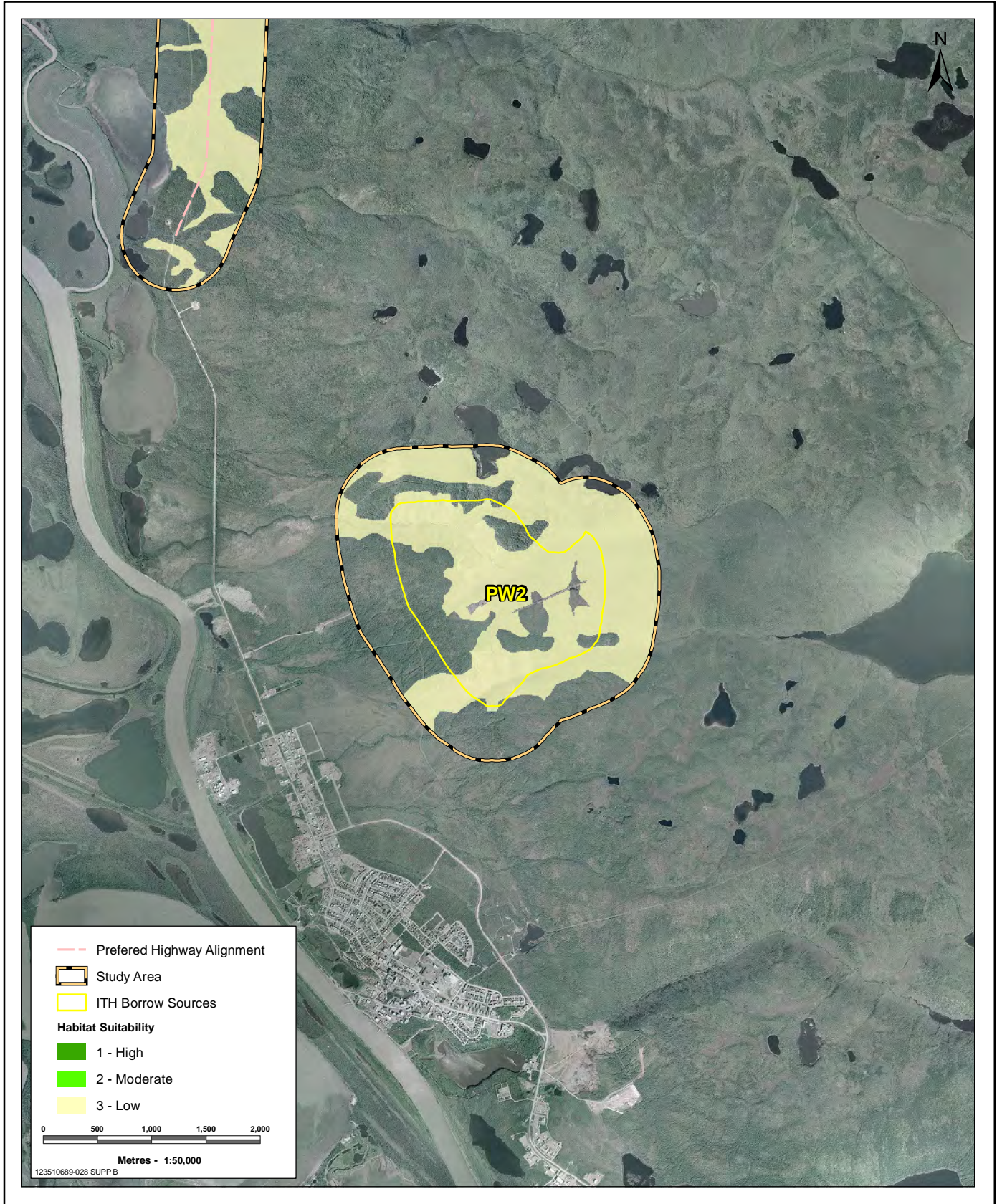
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Potential Short-eared Owl Habitat at Borrow Source 309

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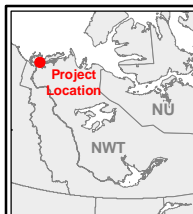
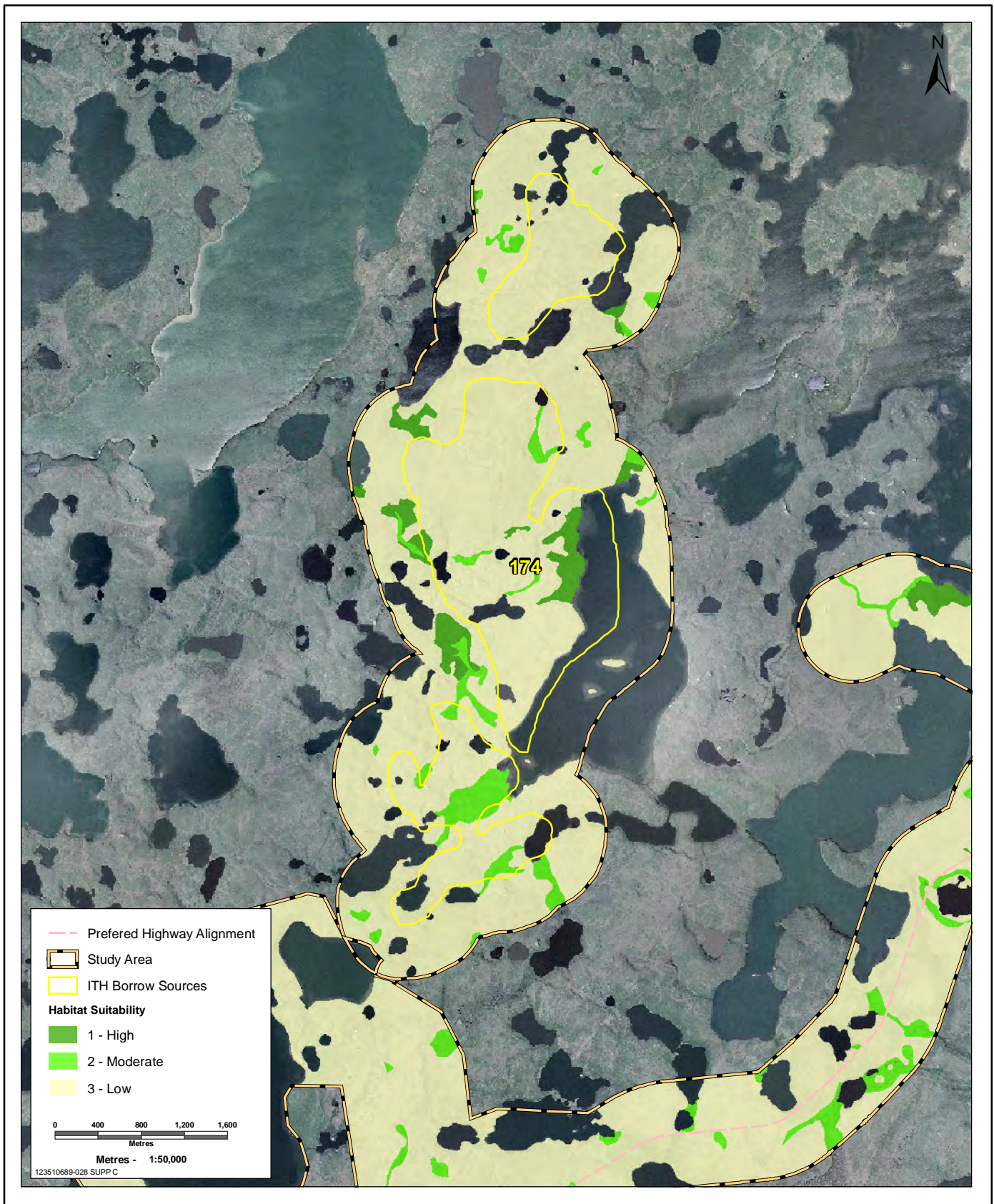
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Potential Short-eared Owl Habitat at Borrow Source PW2

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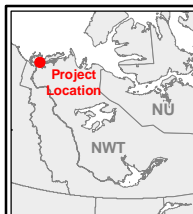
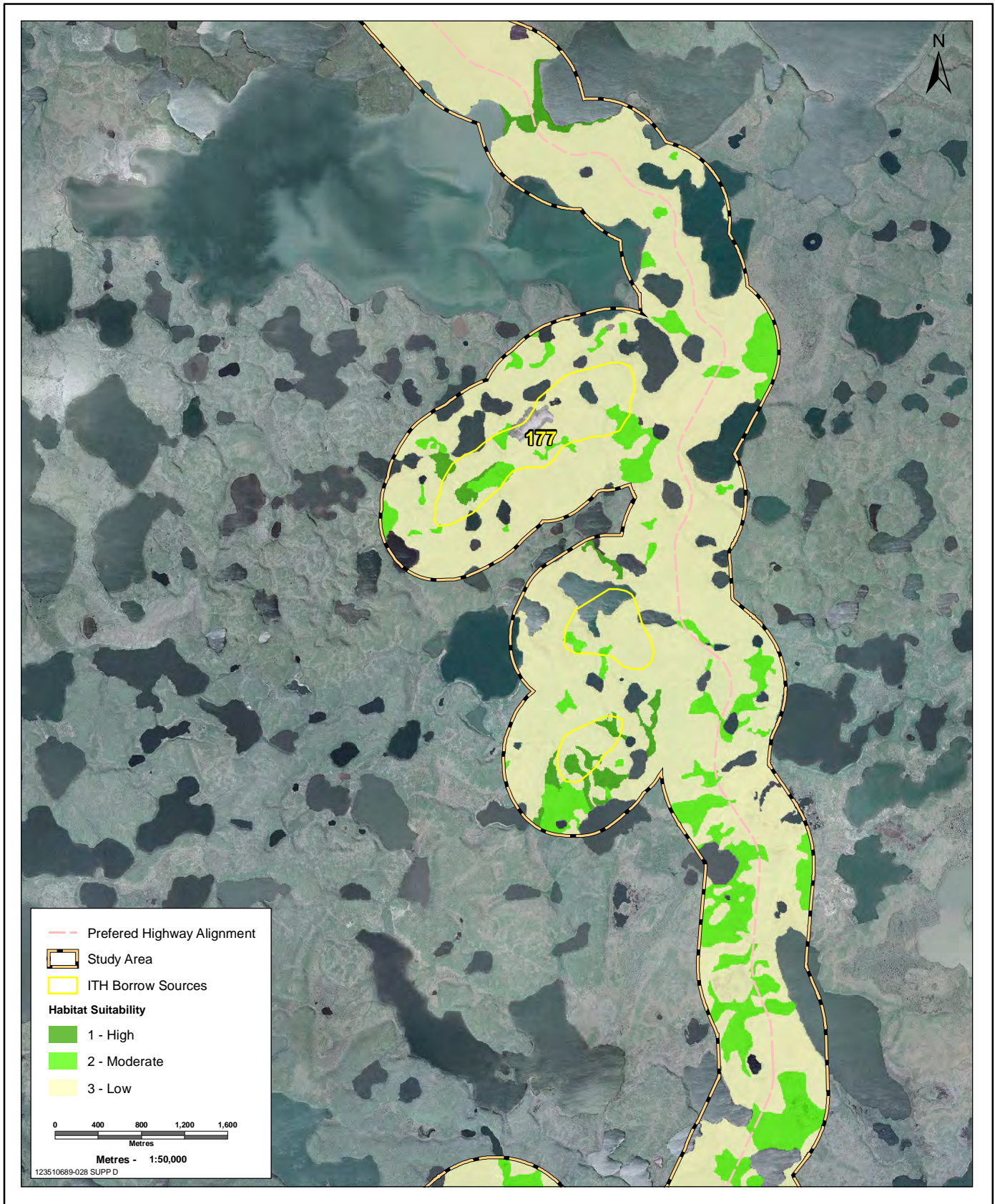
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Potential Short-eared Owl Habitat at Borrow Source 174

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Potential Short-eared Owl Habitat at Borrow Source 177

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