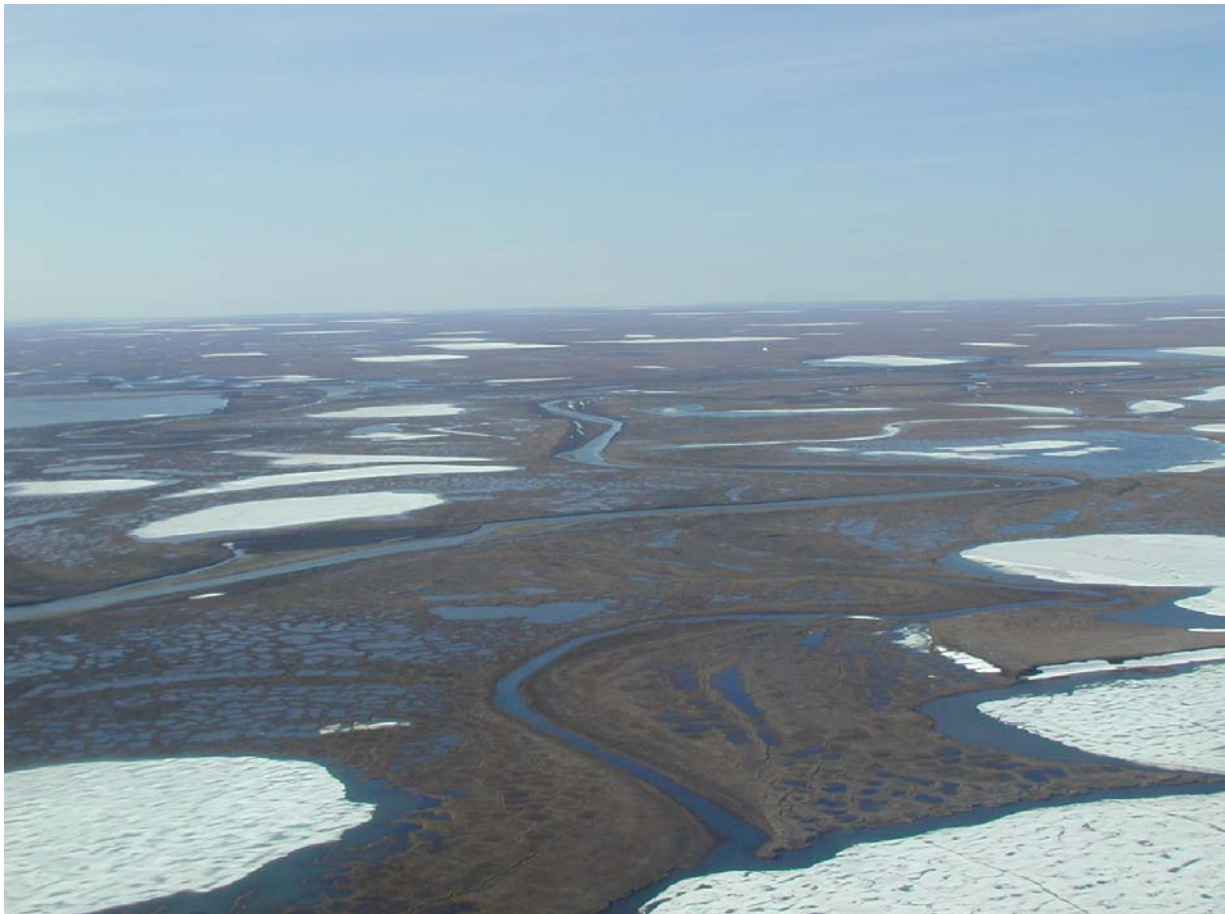


# **SURVEY OF LAKES IN ASSOCIATION WITH THE IAPETUS EXPLORATION PROSPECT: 2003-2004**

**Data Packet in Support of Permitting**

**August 2004**



**Prepared by:**

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**Prepared for:**

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Table 1. Summary of lakes sampled for the Iapetus prospect in 2003-2004.

<b>Lake Name</b>	<b>Latitude (NAD83)</b>	<b>Longitude</b>	<b>Town</b>	<b>Range</b>	<b>Section</b>	<b>Surface Area (acres)</b>	<b>Maximum Depth (feet)</b>	<b>Calculated Volume (mill. gals)</b>
L9304A	N70.34671	W151.09886	12N	4E	34	60.3	15.2	174.11
L9304B	N70.34006	W151.10376	12N	4E	34	13.6	14.8	36.29
L9304C	N70.35103	W151.09009	12N	4E	3	28.3	17.7	72.19
L9501	N70.34975	W151.14055	12N	4E	33	475.0	6.0	407.86
L9601	N70.33771	W151.21956	11N	4E	6	61.4	4.5	51.45
L9915	N70.31097	W151.49100	11N	2E	18	23.2	15.4	59.85
M0329	N70.36431	W151.42214	12N	3E	29	27.8	16.9	79.60
M0330	N70.34422	W151.42728	12N	3E	32	160.3	13.0	299.24
M0331	N70.35520	W151.41139	12N	3E	32/33	201.7	15.7	423.21
M0332	N70.36793	W151.39936	12N	3E	28	237.1	15.7	615.47
M0333	N70.32528	W151.43930	11N	3E	5/8	129.5	19.1	412.87
M0334	N70.36269	W151.43465	12N	3E	29	44.6	13.4	66.99
M0335	N70.35522	W151.45120	12N	3E	32	76.4	13.1	157.42
M0336	N70.34422	W151.45949	12N	3E	31	27.0	9.1	50.14
M0337	N70.33684	W151.48483	11N	3E	6	366.4	16.4	890.78
M0338	N70.36894	W151.48096	12N	3E	30	175.0	11.3	275.12
M0339	N70.37414	W151.49299	12N	3E	19	78.2	8.9	104.19
M0340	N70.32051	W151.52906	11N	2E	11/12	383.8	26.1	1,213.22
M0341	N70.31487	W151.58962	11N	2E	10	62.4	11.7	85.43
M0342	N70.31632	W151.61238	11N	2E	10/15	159.0	16.5	431.19
M0343	N70.30504	W151.63213	11N	2E	15/16	310.1	17.7	679.19
M0344	N70.32080	W151.67465	11N	2E	8/9	360.0	9.1	475.92
M0345	N70.29318	W151.75388	11N	1/2E	24/19	124.2	12.9	211.11
M0346	N70.33144	W151.42279	11N	3E	5	19.8	13.4	36.83
M0347	N70.29830	W151.67925	11N	2E	20/21	108.5	14.9	225.20
M0348	N70.36550	W151.37254	12N	3E	27/28	38.3	18.8	91.25
M0349	N70.33131	W151.41304	11N	3E	4/5	17.8	14.9	35.48
M0350	N70.38436	W151.33495	12N	3E	22	33.5	14.4	50.32
M0351	N70.37740	W151.36183	12N	3E	22	39.4	16.5	66.45

Table 2. Catches of fish from lakes sampled for the Iapetus prospect, 2003-2004.

Lake Name	Sample Date	Gill Nets		Minnow Traps		Seine and Observation	
		Set Duration (hours)	Fish Species <sup>1</sup>	Set Duration (hours)	Fish Species <sup>2</sup>	Number of Hauls	Fish Species <sup>2</sup>
L9304	8/1-3/03	67.9	LSCS, SLSC, NSSB (by fyke net)				
L9501	8/3/04	6.5	none	10.2	none	2	NSSB
L9601	8/3/04	4.6	none	6.5	none	3	none
L9915	7/27/99	5.7	LSCS	0.0		0	
M0329	7/27/03	not sampled, connected to M0334					
M0330	7/26/03	6.9	LSCS	9.7	none	observed	BKFH
M0331	7/31/03	5.1	BDWF,LSCS	8.7	none	0	
M0332	7/26/03	1.5	BDWF,HBWF,LSCS	6.0	none	0	
M0333	7/26/03	2.5	LSCS	5.7	none	0	
M0334	7/27/03	not sampled, connected to M0335					
M0335	7/27/03	8.0	LSCS	8.4	none	0	
M0336	7/29/03	4.7	none	4.7	NSSB	0	
	7/30/03	5.8	none	0.0		0	
M0337	7/28/03	6.2	BDWF,LSCS	0.0		0	
M0338	7/28/03	6.4	none	10.9	none	1	NSSB
M0339	7/28/03	6.4	none	10.9	none	1	NSSB
M0340	8/4/03	0.0		0.0		observed	GRAY
M0341	8/3/03	not sampled, connected to M0343		0.0		observed	NSSB
M0342	8/2/03	not sampled, connected to M0343					
M0343	8/2/03	7.0	BDWF,LSCS,GRAY	13.0	none	0	
M0344	8/2/03	6.1	none	9.7	none	observed	NSSB
M0345	8/4/03	6.3	none	0.0		observed	NSSB
M0346	8/5/03	not sampled, connected to river					
M0347	8/3/03	6.0	LSCS	8.7	none	0	
M0348	8/6/03	6.6	none	8.0	none	observed	NSSB
M0349	8/5/03	not sampled, connected to river					
M0350	8/6/03	lake flooded by coastal water, not sampled					
M0351	8/6/03	not sampled, connected to river					

<sup>1</sup> BDWF = broad whitefish, HBWF = humpback whitefish, LSCS = least cisco, GRAY = arctic grayling, SLSC = slimy sculpin

<sup>2</sup> BKFH = Alaska blackfish, NSSB = ninespine stickleback

Table 3. Water chemistry parameters measured in conjunction with lake sampling for the Iapetus prospect, 2003-2004.

Lake	Date	Water Temp (°C)	Dissolved Oxygen		Specific Conductance (microS/cm)	pH	Turbidity (NTU)	Ions <sup>1</sup>				Total Hardness [CaCO <sub>3</sub> ] (mg/l)
			(mg/l)	(%)				Ca <sup>+</sup> (mg/l)	Mg <sup>+</sup> (mg/l)	Cl <sup>-</sup> (mg/l)	Na <sup>+</sup> (mg/l)	
L9304	8/3/03	8.9	11.32	98.2	210.5	7.75	1.2	4	13.0	36.0	34.0	49
L9501	8/3/04	5.7	13.38	104.3	335.5	7.77	4.9	8	30.0	106.0	106.0	108
L9601	8/3/04	5.0	11.23	92.7	158.3	7.63	1.2					
L9915	8/3/03	8.9	12.01	103.7	162.3	7.87	0.8	22	3.2	15.0	6.8	67
M0329	7/27/03	10.0	10.50	94.8	551.4	8.06	2.8	24	9.9	110.0	67.0	100
M0330	7/26/03	9.8	10.49	92.5	121.9	7.91	1.3	16	2.8	9.2	4.6	51
M0331	7/31/03	8.0	12.31	104.2	193.0	8.07	2.0	22	3.9	21.0	11.0	72
M0332	7/26/03	10.4	10.80	98.2	5402.6	8.23	2.0	64	100	1600	1000	590
M0333	7/26/03	11.7	10.46	95.2	119.3	8.07	0.8	17	2.8	6.2	3.5	53
M0334	7/27/03	9.2	10.88	95.0	317.7	8.03	2.1	20	5.8	59.0	32.0	75
M0335	7/27/03	9.5	11.13	97.9	267.3	8.07	2.6	22	4.8	42.0	23.0	75
M0336	7/29/03	8.1	11.22	95.3	209.7	8.01	2.6	21	5.3	26.0	13.0	74
M0337	7/28/03	9.0	11.39	98.5	223.1	8.20	1.6	32	4.1	20.0	8.9	96
M0338	7/28/03	7.6	11.21	94.1	109.9	7.54	1.5	8	2.1	17.0	6.8	29
M0339	7/28/03	6.8	11.97	98.2	70.8	7.45	1.6	7	1.7	12.0	5.2	23
M0340	8/4/03	9.8	11.78	104.6	131.9	8.02	0.6	16	2.6	9.6	4.2	50
M0341	8/3/03	8.3	11.35	97.4	100.7	7.76	1.4	13	2.3	9.6	3.5	42
M0342	8/2/03	9.9	11.75	104.2	94.6	7.74	1.1	11	2.1	9.7	3.6	36
M0343	8/2/03	10.3	10.72	95.3	103.3	7.74	1.9	12	2.3	11.0	3.7	40
M0344	8/2/03	8.5	12.10	104.5	107.5	7.92	2.8	13	2.1	10.0	3.5	42
M0345	8/4/03	8.1	11.69	99.4	223.6	7.96	2.0	22	5.2	28.0	9.7	76
M0346	8/5/03	6.0	11.09	90.2	107.8	7.63	2.2	14	2.2	5.1	2.4	44
M0347	8/3/03	8.2	11.09	94.3	113.1	7.77	2.0	16	2.7	7.4	3.3	50
M0348	8/7/03	8.1	12.11	103.8	2709.6	8.54	1.5	62	43	720	420	370
M0349	8/5/03	6.8	11.15	90.4	140.7	7.84	1.1	17	3.1	7.7	3.7	56
M0350	8/7/03	7.8	11.06	102.1	2292.0	8.15	5.4	200	550	7200	3600	2800
M0351	8/7/03	6.8	10.97	96.3	1824.1	8.14	3.8	190	440	5500	2400	2300

<sup>1</sup> Ions:

Ca<sup>+</sup> = Calcium

Mg<sup>+</sup> = Magnesium

NA<sup>+</sup> = Sodium

Cl<sup>-</sup> = Chloride

Table 4. Estimated water volumes available for winter withdrawal from surveyed lakes near the Iapetus prospect in 2003-2004.

(requested water based on 15% of winter volume deeper than 7 ft when sensitive species are present  
50% of winter volume deeper than 5 ft when resistant or no fish are likely to be present)

Lake	Surface Area (acres)	Max. Depth (feet)	Calculated Volume (mil. gals)	Volume Under 4ft of Ice (mil. gals)	30% of 5 ft Winter Volume (mil. gals)	15% of 7 ft Winter Volume (mil. gals)	Sensitive Fish Species Present <sup>1</sup>	Resistant Fish Species Present <sup>2</sup>	Requested Water (mil. gals)
L9304A	60.3	15.2	174.11	106.17	27.28	9.30	LSCS,SLSC	NSSB	9.30
L9304B	13.6	14.8	36.29	21.59	5.55	1.91	LSCS,SLSC	NSSB	1.91
L9304C	28.3	17.7	72.19	41.45	10.46	3.41	LSCS,SLSC	NSSB	3.41
L9501	475.0	6.0	407.86	2.23	0.00	0.00	none	NSSB	0.00
L9601	61.4	4.5	51.45	0.01	0.00	0.00	none	none	0.01
L9915	23.2	15.4	59.85	32.71	8.04	2.44	LSCS	none	2.44
M0329	27.8	16.9	79.60	47.63	12.09	3.95	LSCS	none	3.95
M0330	160.3	13.0	299.24	113.83	22.75	3.29	LSCS	BKFH	3.29
M0331	201.7	15.7	423.21	223.04	54.46	15.66	BDWF,LSCS	none	15.66
M0332	237.1	15.7	615.47	339.50	83.73	25.98	BDWF,HBWF,LSCS	none	25.98
M0333	129.5	19.1	412.87	260.92	67.96	24.21	LSCS	none	24.21
M0334	44.6	13.4	66.99	18.99	3.18	0.38	LSCS	none	0.38
M0335	76.4	13.1	157.42	72.60	16.20	3.59	LSCS	none	3.59
M0336	27.0	9.1	50.14	18.52	3.52	0.28	none	NSSB	3.52
M0337	366.4	16.4	890.78	478.43	9.34	0.16	BDWF,LSCS	none	0.16
M0338	175.0	11.3	275.12	112.73	2.41	0.05	none	NSSB	2.41
M0339	78.2	8.9	104.19	26.57	4.29	0.18	none	NSSB	4.29
M0340	383.8	26.1	1,213.22	763.55	198.85	71.05	GRAY	none	71.05
M0341	62.4	11.7	85.43	26.97	4.82	0.11	BDWF,LSCS,GRAY	NSSB	0.11
M0342	159.0	16.5	431.19	245.56	61.35	19.31	BDWF,LSCS,GRAY	NSSB	19.31
M0343	310.1	17.7	679.19	335.92	80.00	22.80	BDWF,LSCS,GRAY	NSSB	22.80
M0344	360.0	9.1	475.92	156.91	29.54	1.59	none	NSSB	29.54
M0345	124.2	12.9	211.11	86.76	19.61	4.41	none	NSSB	19.61
M0346	19.8	13.4	36.83	15.67	3.51	0.88	BDWF,LSCS,GRAY	unknown	0.88
M0347	108.5	14.9	225.20	100.06	21.96	5.15	LSCS	none	5.15
M0348	38.3	18.8	91.25	51.32	12.90	4.21	none	NSSB	12.90
M0349	17.8	14.9	35.48	16.64	3.93	1.06	BDWF,LSCS	unknown	1.06
M0350	33.5	14.4	50.32	16.05	2.93	0.44	BDWF,LSCS	unknown	0.44
M0351	39.4	16.5	66.45	27.31	5.92	1.12	BDWF,LSCS	unknown	1.12

<sup>1</sup> Sensitive species include grayling, whitefishes, char, burbot, slimy sculpin, etc

<sup>2</sup> Resistant species are Alaska blackfish (BKFH) and ninespine stickleback (NSSB)

Table 5. Estimated area available for removing ice aggregate, based on the area covered by water shallower than 4 feet, for lakes surveyed for the Iapetus prospect, 2003-2004.

<b>Lake Name</b>	<b>Surface Area (acres)</b>	<b>Acres covered</b>	
		<b>Maximum Depth (feet)</b>	<b>by Water shallower than 4 feet</b>
L9304A	60.3	15.2	12.7
L9304B	13.6	14.8	4.0
L9304C	28.3	17.7	7.6
L9501	475.0	6.0	454.4
L9601	61.4	4.5	61.4
L9915	23.2	15.4	4.5
M0329	27.8	16.9	5.0
M0330	160.3	13.0	33.3
M0331	201.7	15.7	71.5
M0332	237.1	15.7	44.2
M0333	129.5	19.1	22.2
M0334	44.6	13.4	14.8
M0335	76.4	13.1	16.7
M0336	27.0	9.1	4.7
M0337	366.4	16.4	75.8
M0338	175.0	11.3	72.7
M0339	78.2	8.9	34.9
M0340	383.8	26.1	68.6
M0341	62.4	11.7	26.4
M0342	159.0	16.5	29.9
M0343	310.1	17.7	84.0
M0344	360.0	9.1	173.9
M0345	124.2	12.9	53.7
M0346	19.8	13.4	6.5
M0347	108.5	14.9	21.9
M0348	38.3	18.8	12.0
M0349	17.8	14.9	6.4
M0350	33.5	14.4	12.1
M0351	39.4	16.5	14.9

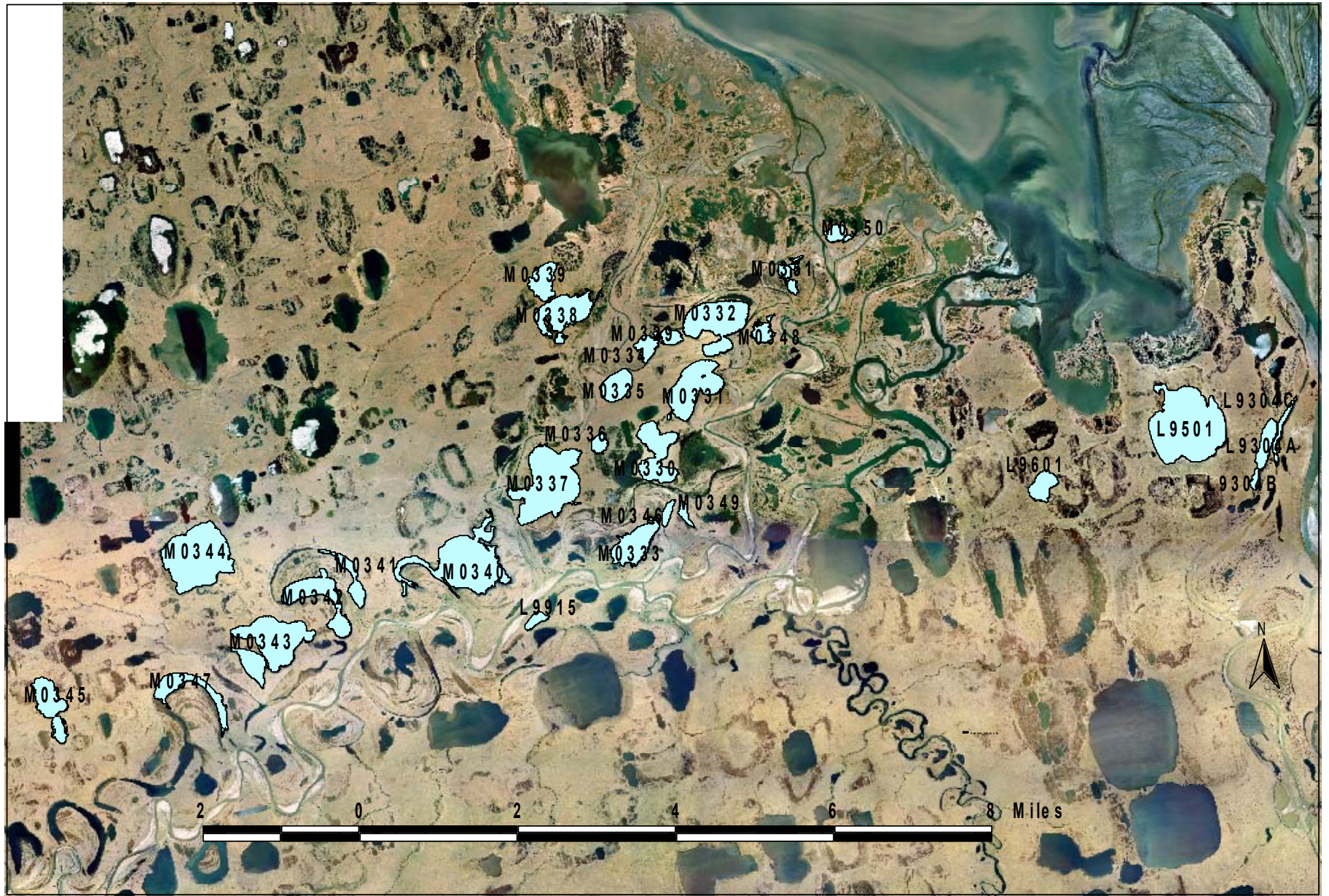


Figure 1. Lakes surveyed for water availability and fish presence in the vicinity of the Iapetus Prospect, 2003-2004.

## **Lake Summaries**





900 0 900 1800 Feet

Depth contours of lake L9304, based on transects surveyed on July 20, 2004  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake L9304**

**Other Names:** M9716 (Basin B)  
**Location:** 70.34671°N 151.09886°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R4E Sec. 3/34  
**Habitat:** Perched Lake

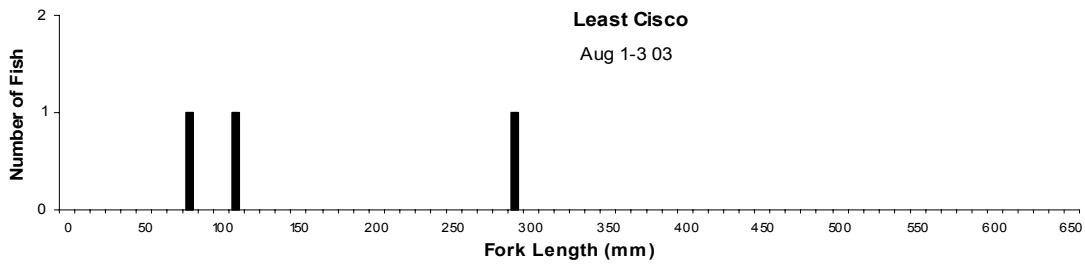
	<b>Basin A</b>	<b>Basin B</b>	<b>Basin C</b>
<b>Area:</b>	60.3	13.6	28.3 acres
<b>Maximum Depth:</b>	15.2	14.8	17.7 feet
<b>Active Outlet:</b>	No	No	No
<b>Calculated Volume:</b>	174.1	36.3	72.2 million gallons
<b>Permittable Volume</b>	9.30	1.91	3.41 million gallons
<b>Potential Aggregate</b>	12.7	4.0	7.6 acres (water 4 ft or less)

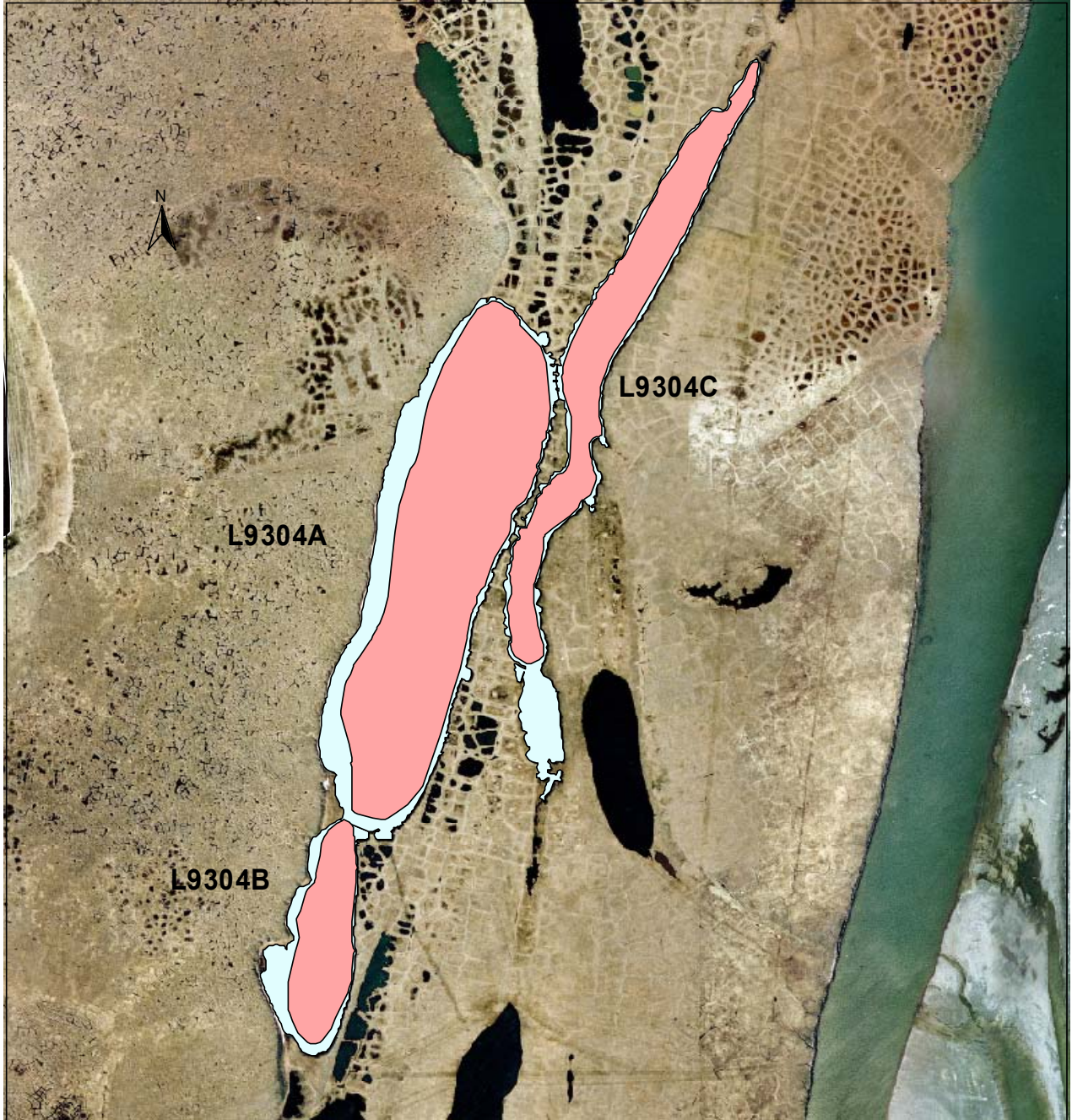
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
1995	4.2	13.0	36.0	34.0	49				Lobdell
2004						189	2.0	7.62	This Study

**Catch Record:**

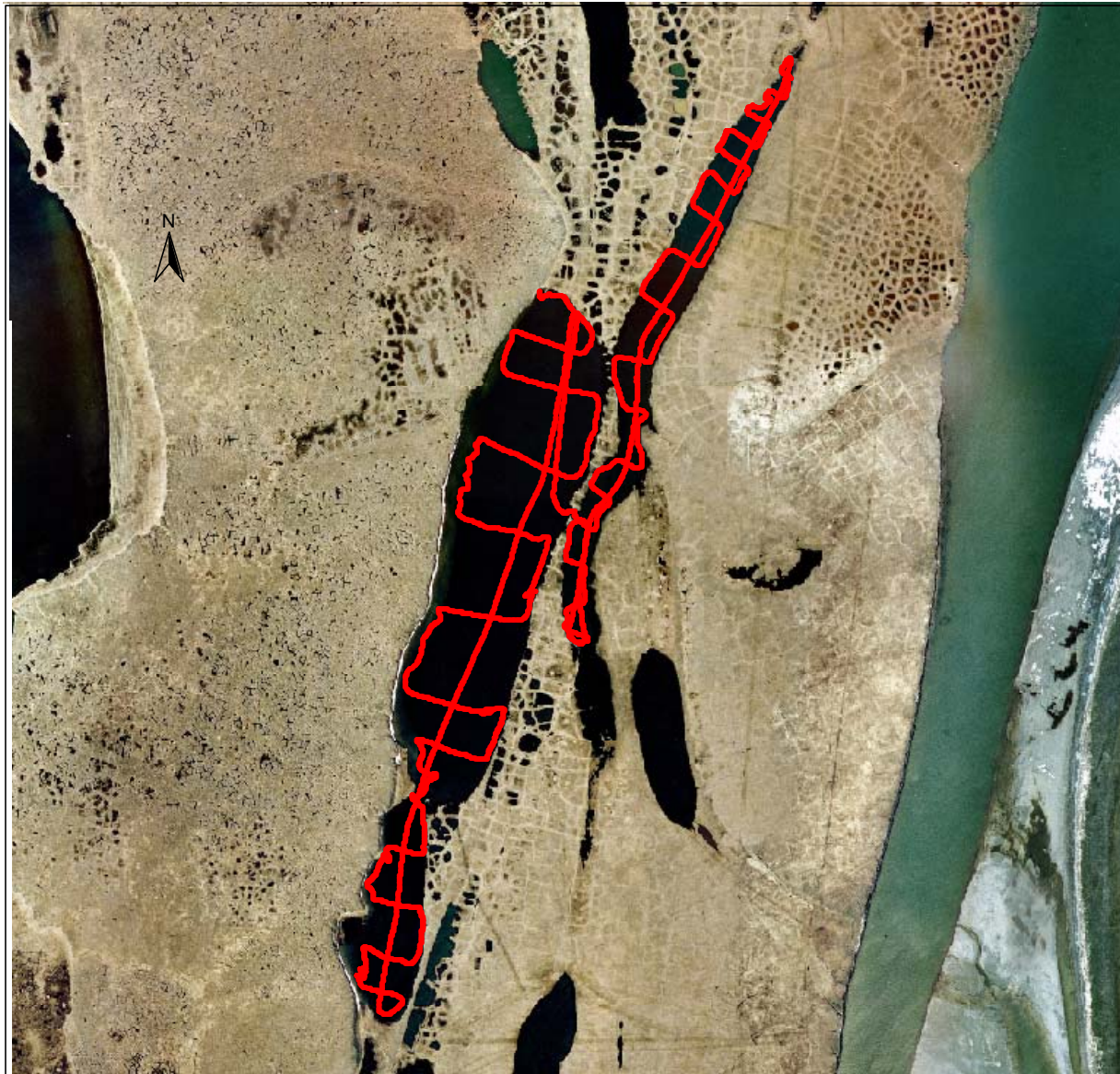
Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Fyke Net	Aug 1-3 03	67.9	Least cisco	3	87-294
			Slimy sculpin	4	41-62
			Ninespine stickelback	195	





Regions of lake L9304 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 20, 2004.

(not to be used for navigation or to direct use of heavy equipment)



1000 0 1000 2000 3000 Feet

Depth transects surveyed at lake L9304 on July 20, 2004.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake L9501, based on transects surveyed on August 3, 2004  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake L9501

**Other Names:****Location:** 70.34975°N 151.14055°W**USGS Quad Sheet:** Harrison Bay B-3: T12N R4E Sec. 33**Habitat:** Tundra Lake**Area:** 475.0 acres**Maximum Depth:** 6.0 feet**Active Outlet:** No**Calculated Volume:****Permittable Volume:****Potential Aggregate:** acres (water depth 4 ft or less)**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
1995	8.1	30.0	106.0	106.0	108				Lobdell
2004						335	4.9	7.77	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Aug 3 04	6.5	None	
Minnow trap	Aug 3 04	10.2	None	
Seine	Aug 3 04	2 hauls	Ninespine stickleback	3



Regions of lake L9501 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 3, 2004.

(not to be used for navigation or to direct use of heavy equipment)

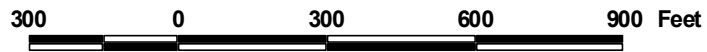


1000 0 1000 2000 Feet

Depth transects surveyed at lake L9501 on August 3, 2004.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake L9601, based on transects surveyed on August 3, 2004  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake L9601

**Other Names:****Location:** 70.33771°N 151.21956°W**USGS Quad Sheet:** Harrison Bay B-3: T11N R4E Sec. 6**Habitat:** Tundra Lake**Area:** 61.4 acres**Maximum Depth:** 4.5 feet**Active Outlet:** No**Calculated Volume:****Permittable Volume:****Potential Aggregate:** acres (water depth 4 ft or less)**Water Chemistry:**

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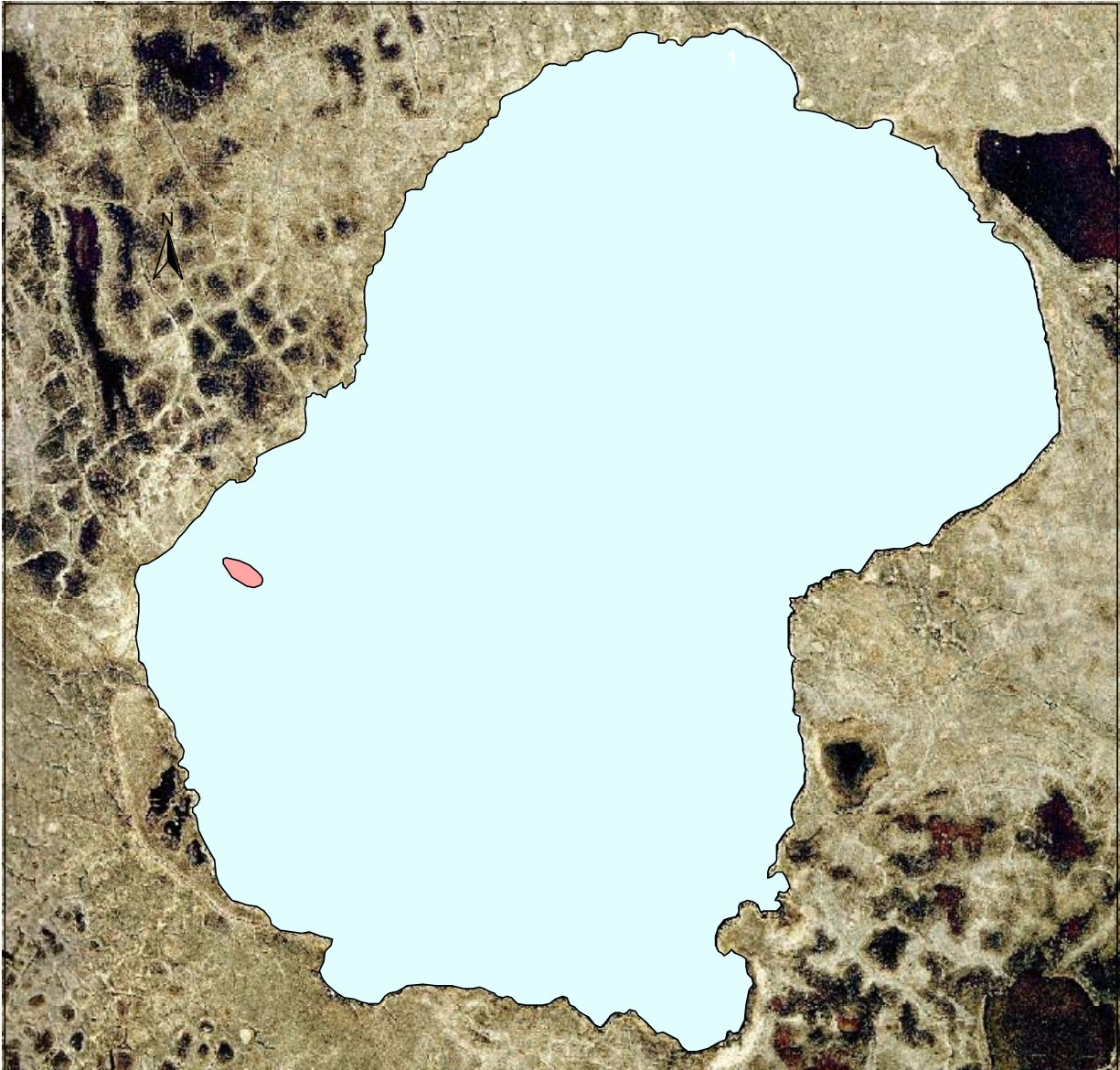
Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2004						158	1.2	7.63	This Study

**Catch Record:**

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Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Aug 3 04	4.6	None	0
Minnow trap	Aug 3 04	6.5	None	0
Seine	Aug 3 04	3 hauls	None	0

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400 0 400 800 Feet

Regions of lake L9601 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 3, 2004.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake L9601 on August 3, 2004.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake L9915, based on transects surveyed on August 3, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake L9915**

**Other Names:**

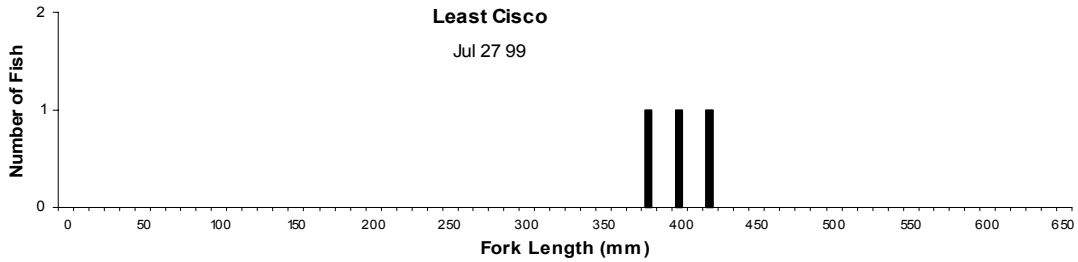
**Location:** 70.31097°N 151.49100°W  
**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 18  
**Habitat:** Perched Lake  
**Area:** 23.2 acres  
**Maximum Depth:** 15.4 feet  
**Active Outlet:** No  
**Calculated Volume:** 59.85 million gallons  
**Permittable Volume:** 2.44 million gallons  
**Potential Aggregate:** 4.5 acres (water depth 4 ft or less)

**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	22.0	3.2	15.0	6.8	67	162	0.8	7.87	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 27 99	5.7	Least cisco	3	388-428

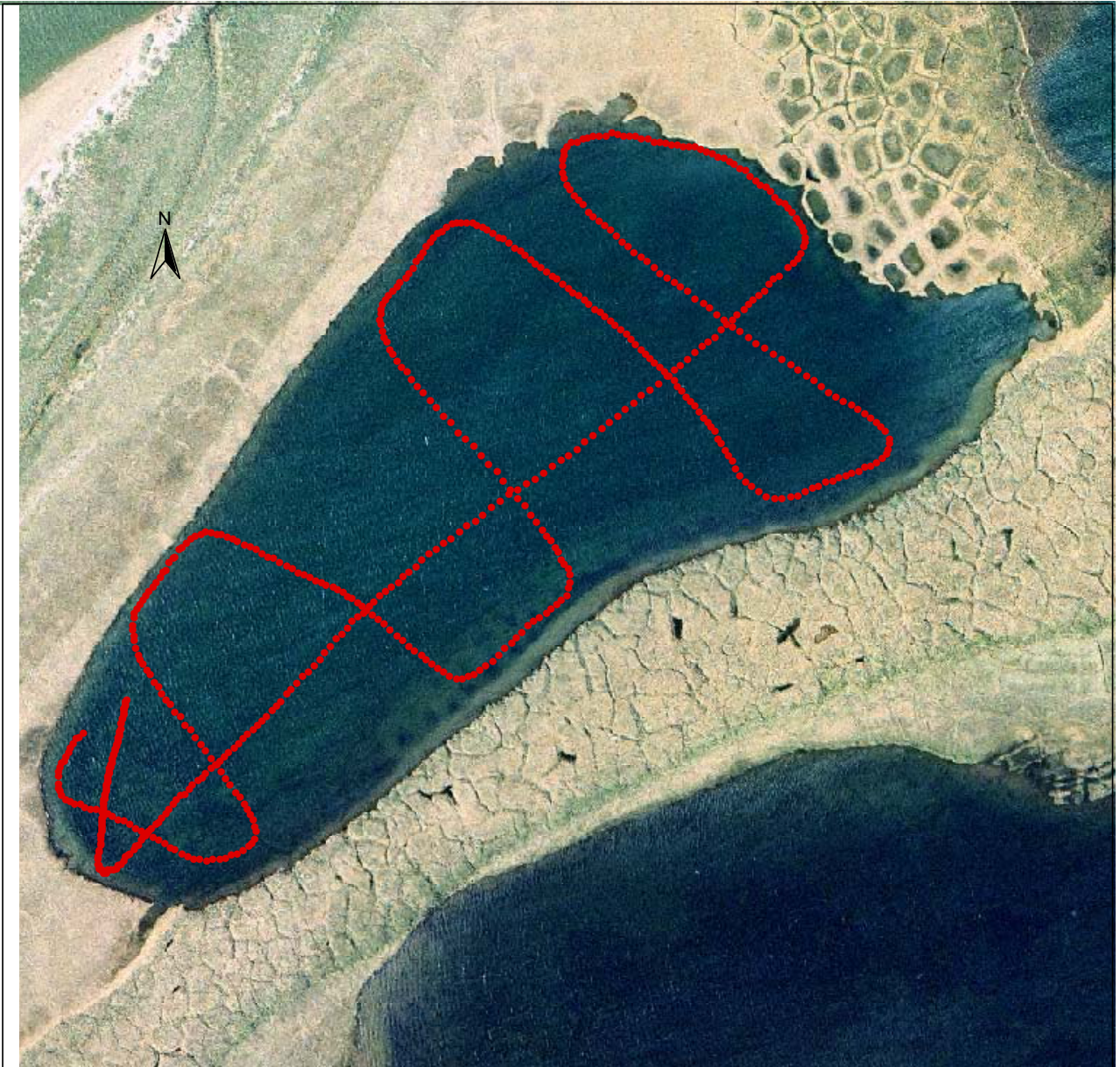




250 0 250 500 750 Feet

Regions of lake L9915 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 3, 2003

(not to be used for navigation or to direct use of heavy equipment)

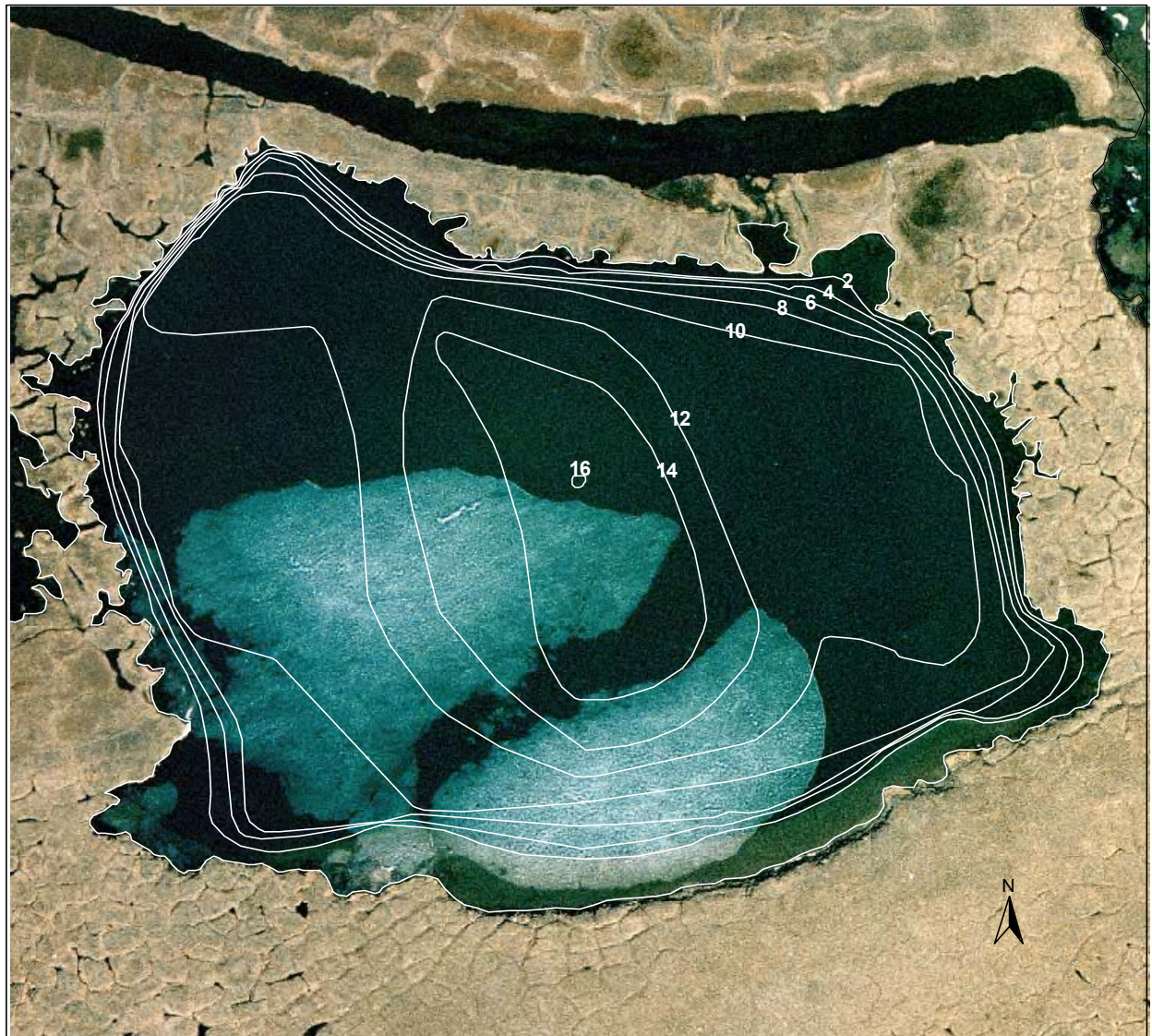


250 0 250 500 750 Feet

Depth transects surveyed at lake L9915 on August 3, 2003

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0329, based on transects surveyed on July 27, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0329

### Other Names:

**Location:** 70.36431°N 151.42214°W

**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 29

**Habitat:** Perched Lake

**Area:** 27.8 acres

**Maximum Depth:** 16.9 feet

**Active Outlet:** Yes

**Calculated Volume:** 79.60

**Permittable Volume** 3.95065

**Potential Aggregate** 5.0 acres (water depth 4 ft or less)

### Water Chemistry:

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Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	24.0	9.9	110.0	67.0	100	551	2.8	8.06	This Study

### Catch Record:

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Gear	Date	Effort (hours)	Species	Number Caught
not sampled, connected to M0334				

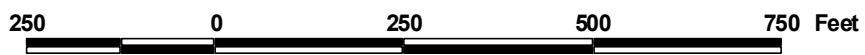
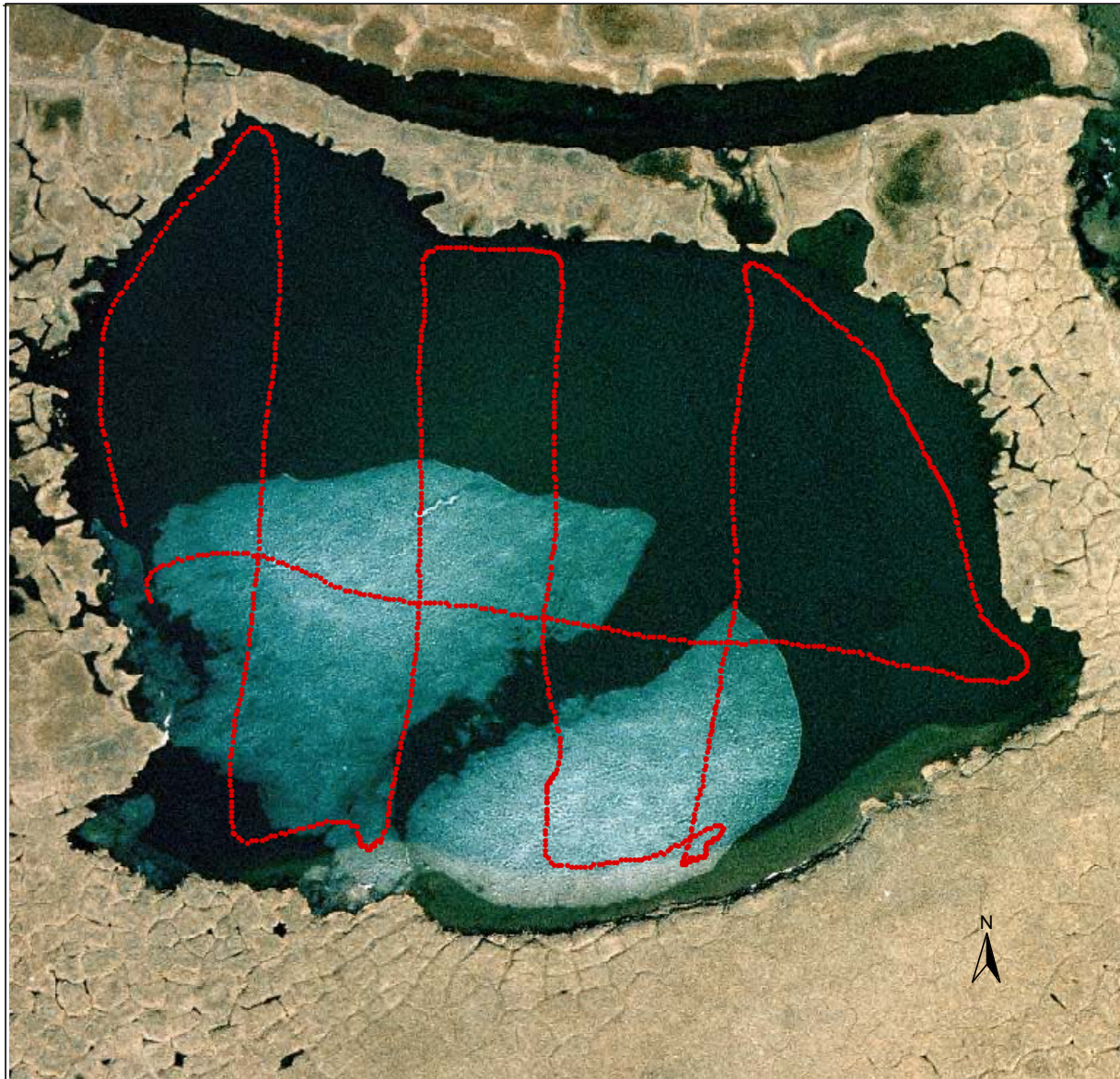
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250 0 250 500 Feet

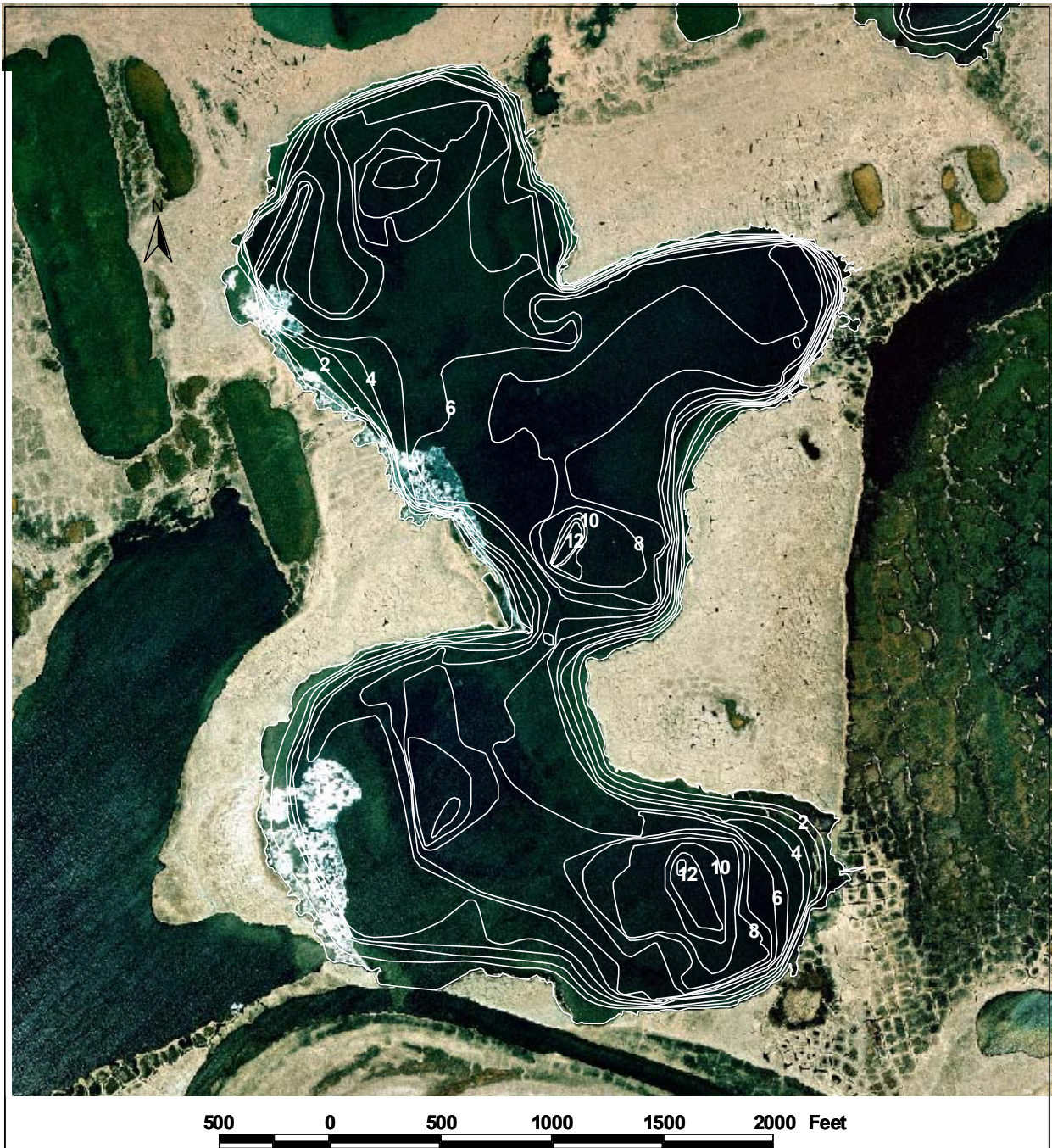
Regions of lake M0329 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 27, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0329 on July 27, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0330, based on transects surveyed on July 26 and August 1, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0330**

**Other Names:**

**Location:** 70.34422°N 151.42728°W

**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 32

**Habitat:** Tapped Lake

**Area:** 160.3 acres

**Maximum Depth:** 13.0 feet

**Active Outlet:** Yes

**Calculated Volume:** 299.24 million gallons

**Permittable Volume:** 3.29 million gallons

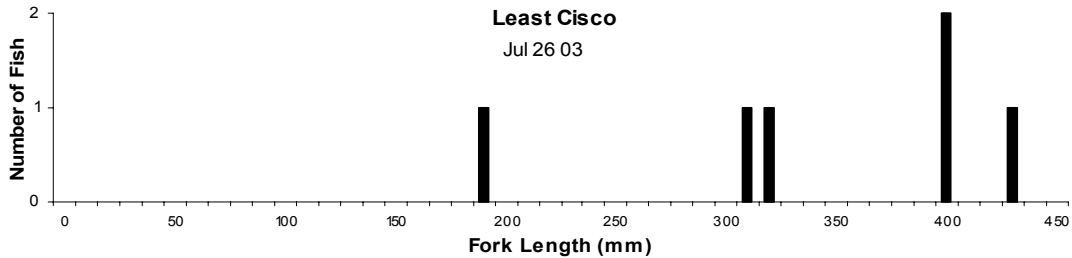
**Potential Aggregate:** 33.3 acres (water depth 4 ft or less)

**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total	Specific	Turbidity (NTU)	pH	Source
					Hardness [CaCO3] (mg/l)	Conductance (microS/cm)			
2003	16.0	2.8	9.2	4.6	51	122	1.3	7.91	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 26 03	6.9	Least cisco	6	195-430
Minnow trap	Jul 26 03	9.7	none	0	
Observed	Jul 26 03		Alaska blackfish	1	





500 0 500 1000 1500 2000 Feet

Regions of lake M0329 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 26 and August 1, 2003.

(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth transects surveyed at lake M0330 on July 26 and August 1, 2003.

(not to be used for navigation or to direct use of heavy equipment)





500 0 500 1000 1500 2000 Feet

Depth contours of lake M0331, based on transects surveyed on July 31, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0331**

**Other Names:**

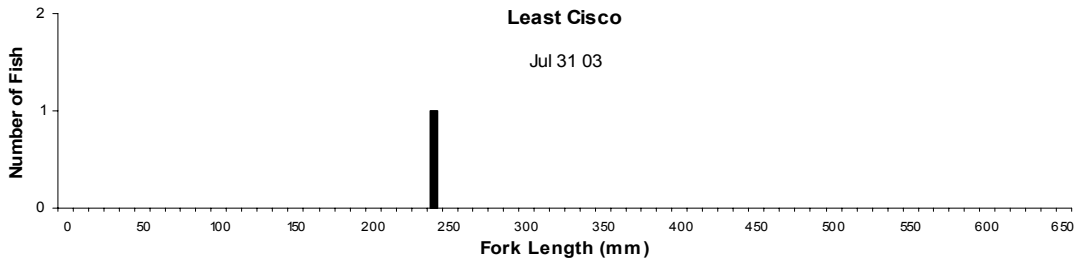
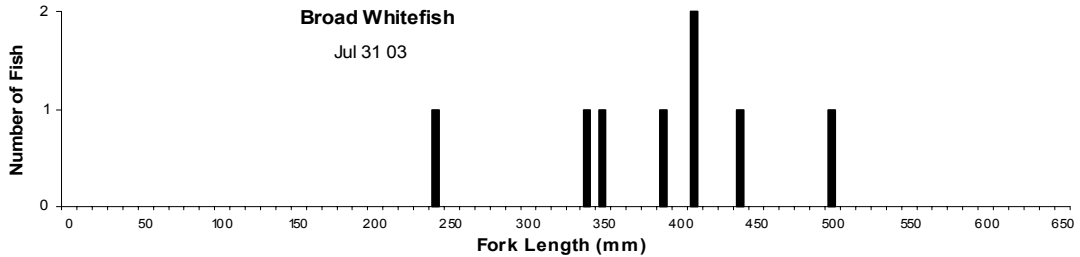
**Location:** 70.35520°N 151.41139°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 32/33  
**Habitat:** Perched Lake  
**Area:** 201.7 acres  
**Maximum Depth:** 15.7 feet  
**Active Outlet:** No  
**Calculated Volume:** 423.21 million gallons  
**Permittable Volume:** 15.66 million gallons  
**Potential Aggregate:** 71.5 acres (water depth 4 ft or less)

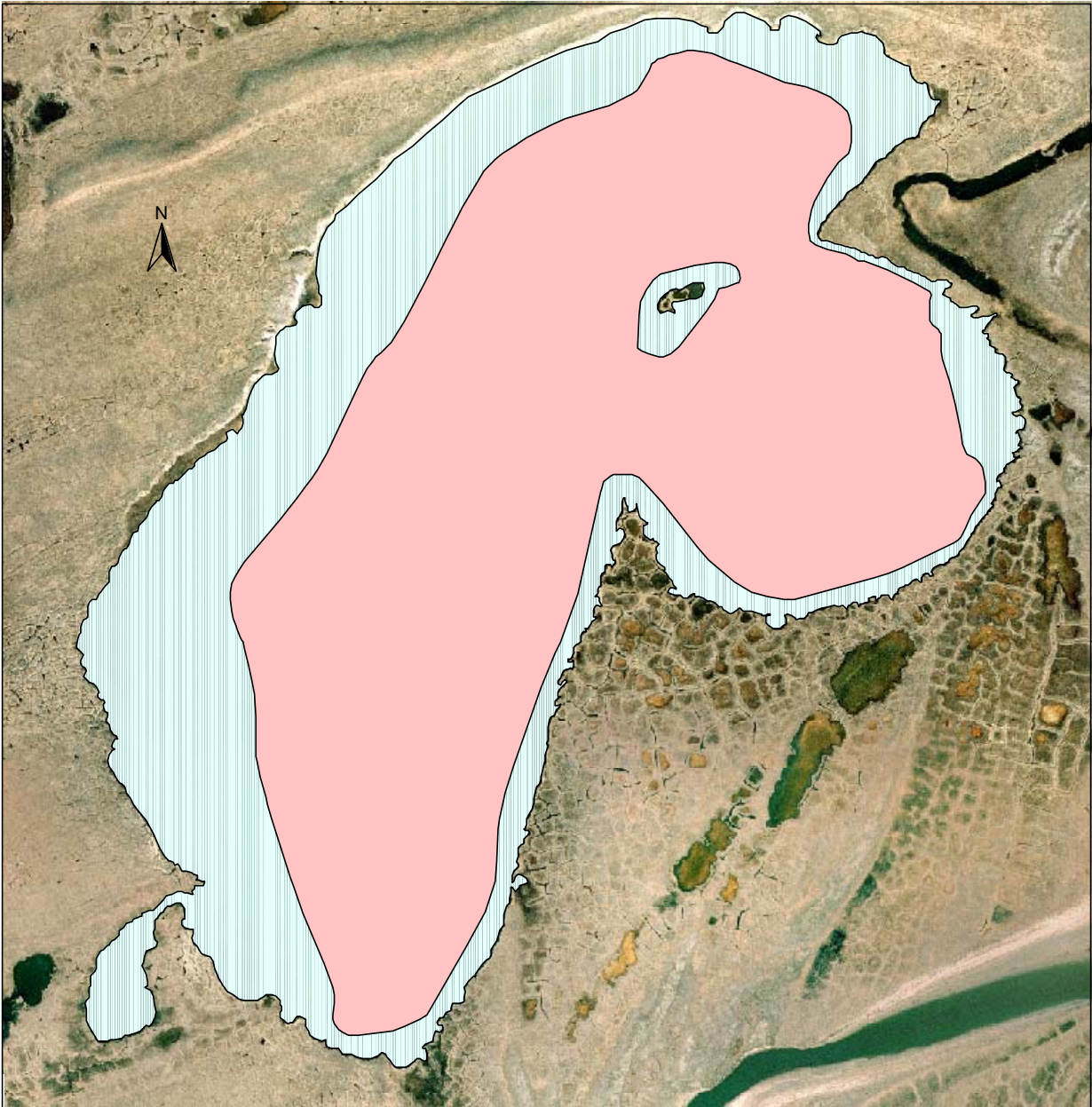
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	22.0	3.9	21.0	11.0	72	193	2.0	8.07	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 31 03	5.1	Broad whitefish	7	341-500
			Least cisco	1	240
Minnow trap	Jul 31 03	8.7	none	0	
Seine		0 hauls			





500 0 500 1000 1500 2000 Feet

Regions of lake M0331 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 31, 2003.

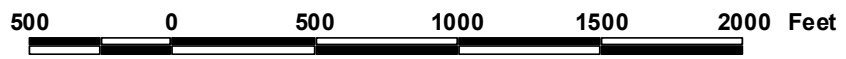
(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth transects surveyed at lake M0331 on July 31, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0332, based on transects surveyed on July 26, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0332**

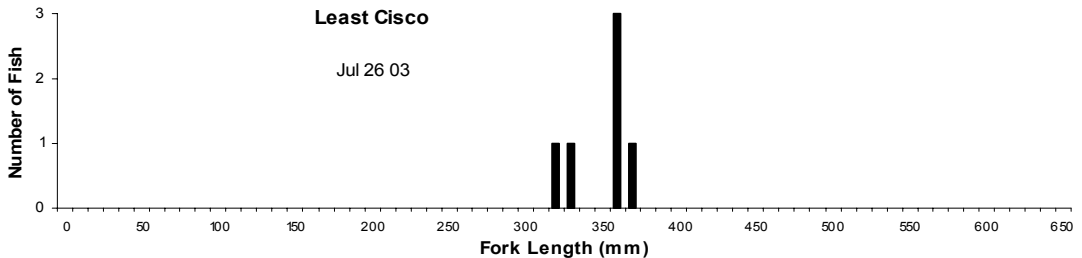
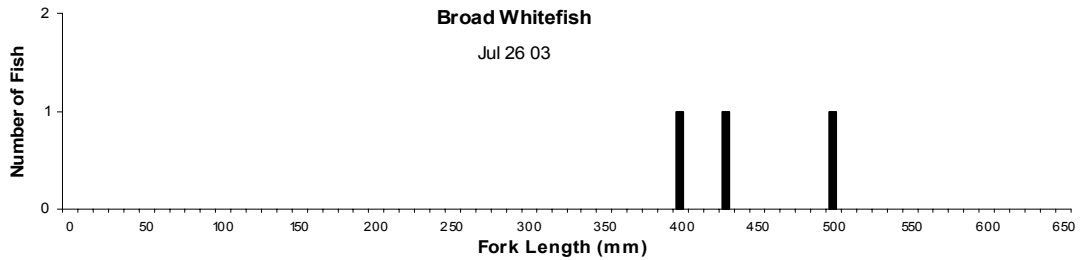
**Other Names:**  
**Location:** 70.36793°N 151.39936°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 28  
**Habitat:** Tapped Lake  
**Area:** 237.1 acres  
**Maximum Depth:** 15.7 feet  
**Active Outlet:** Yes  
**Calculated Volume:** 615.47 million gallons  
**Permittable Volume:** 25.98 million gallons  
**Potential Aggregate:** 44.2 acres (water depth 4 ft or less)

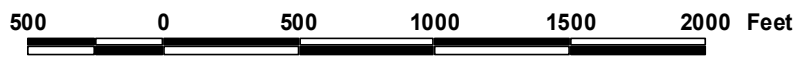
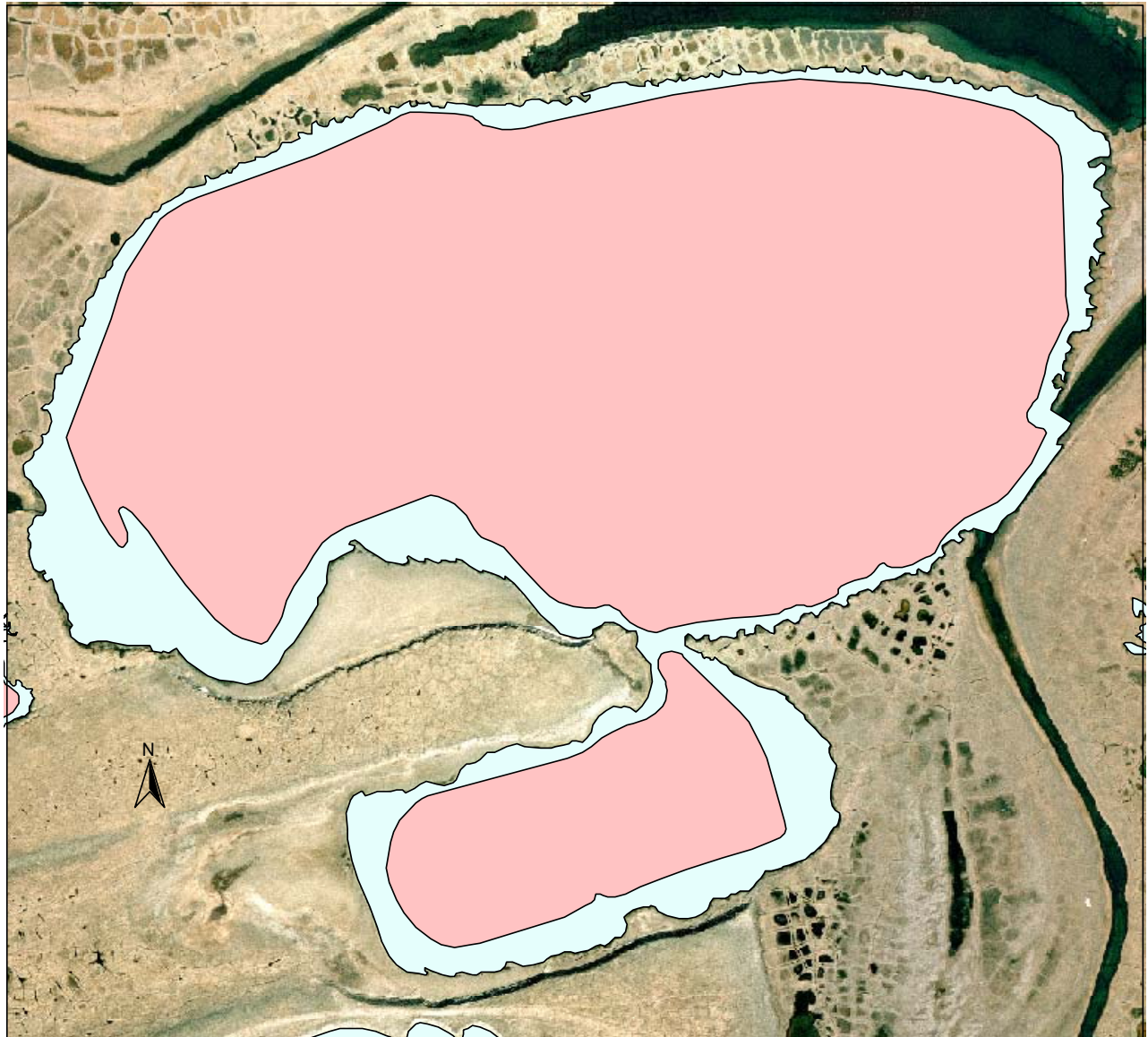
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	64.0	100.0	1600.0	1000.0	590	5403	2.0	8.23	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 26 03	5.1	Broad whitefish	3	402-500
			Humpback whitefish	1	315
			Least cisco	6	327-372
Minnow trap	Jul 26 03	8.7	none	0	
Observed			Ninespine stickleback	2	





Regions of lake M0332 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 26, 2003.

(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth transects surveyed at lake M0332 on July 26, 2003.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0333, based on transects surveyed on July 26, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0333**

**Other Names:**

**Location:** 70.32528°N 151.43930°W

**USGS Quad Sheet:** Harrison Bay B-3: T11N R3E Sec. 5/8

**Habitat:** Perched Lake

**Area:** 129.5 acres

**Maximum Depth:** 19.1 feet

**Active Outlet:** No

**Calculated Volume:** 412.87 million gallons

**Permittable Volume:** 24.21 million gallons

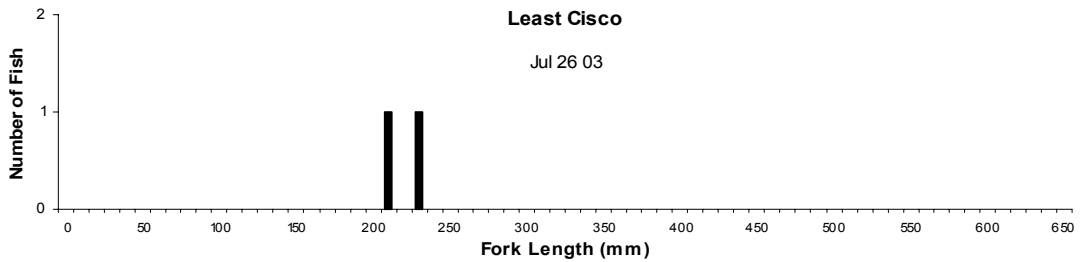
**Potential Aggregate:** 22.2 acres (water depth 4 ft or less)

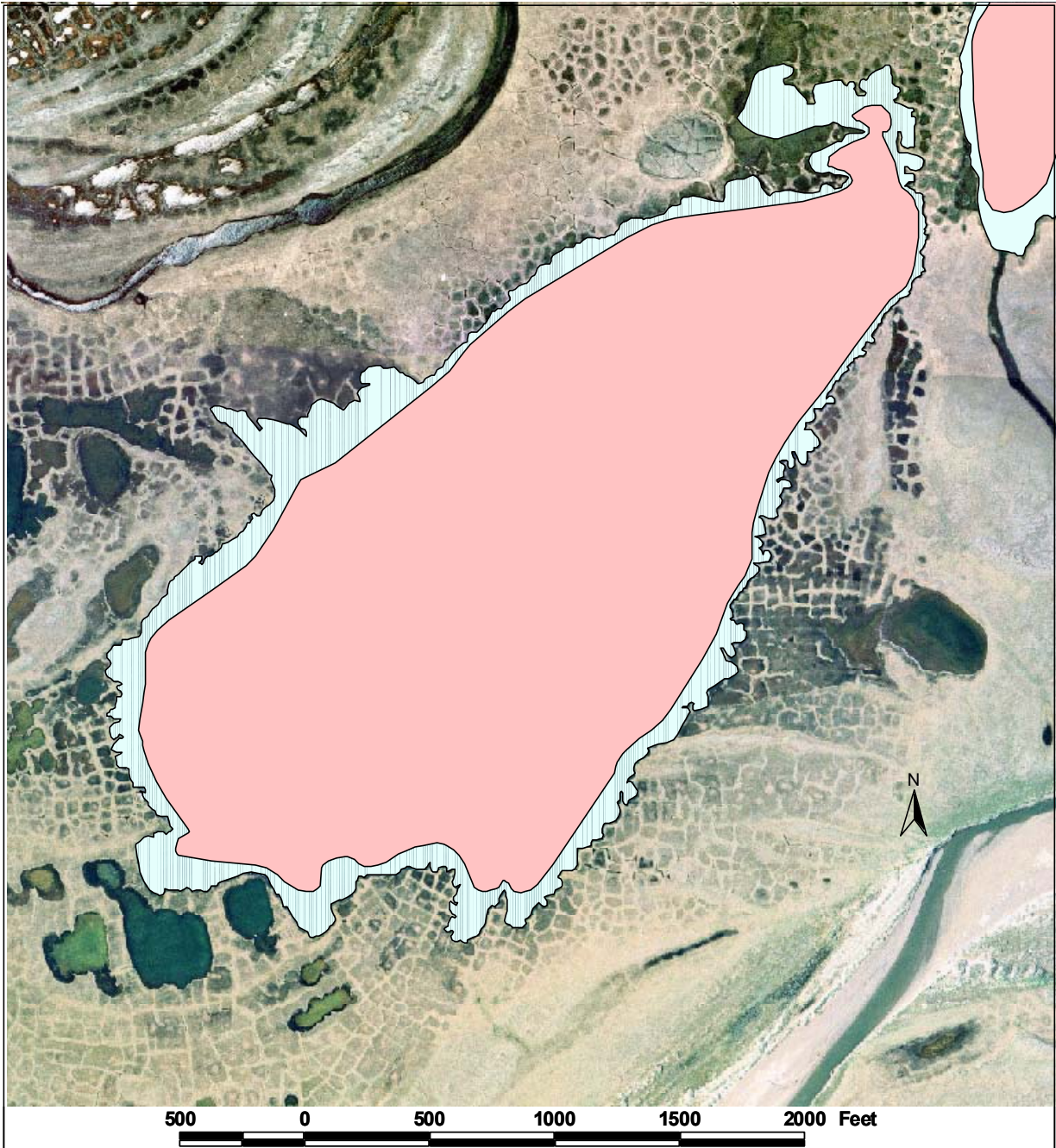
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	17.0	2.8	6.2	3.5	53	119	0.8	8.07	This Study

**Catch Record:**

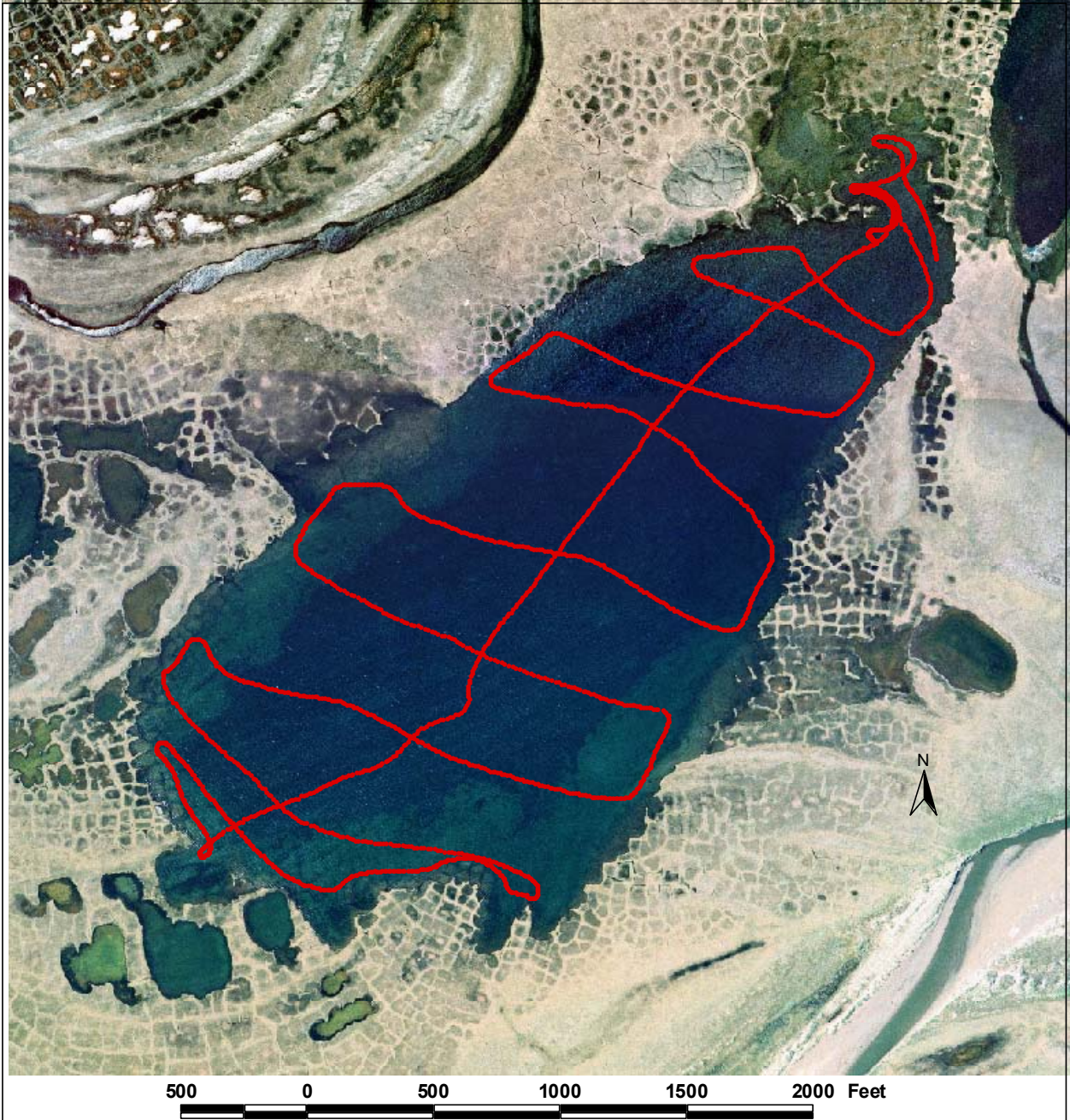
Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 26 03	2.5	Least cisco	2	216-233
Minnow trap	Jul 26 03	5.7	none	0	
Seine		0 hauls			





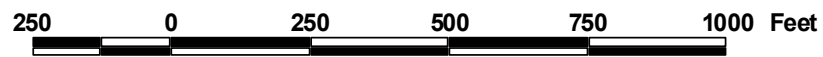
Regions of lake M0333 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 26, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0333 on July 26, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0334, based on transects surveyed on July 27, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0334

**Other Names:****Location:** 70.36269°N 151.43465°W**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 29**Habitat:** Perched Lake**Area:** 44.6 acres**Maximum Depth:** 13.4 feet**Active Outlet:** Yes**Calculated Volume:** 67.0 million gallons**Permittable Volume:** 0.38 million gallons**Potential Aggregate:** 14.8 acres (water depth 4 ft or less)**Water Chemistry:**

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Year	Calcium	Magnesium	Chloride	Sodium	Total	Specific	Turbidity	pH	Source
of	(mg/l)	(mg/l)	(mg/l)	(mg/l)	Hardness	Conductance	(NTU)		
Test					[CaCO <sub>3</sub> ]	(microS/cm)			
					(mg/l)				
2003	20.0	5.8	59.0	32.0	75	318	2.1	8.03	This Study

**Catch Record:**

---

Gear	Date	Effort	Species	Number
		(hours)		Caught
not sampled, connected to M0335				

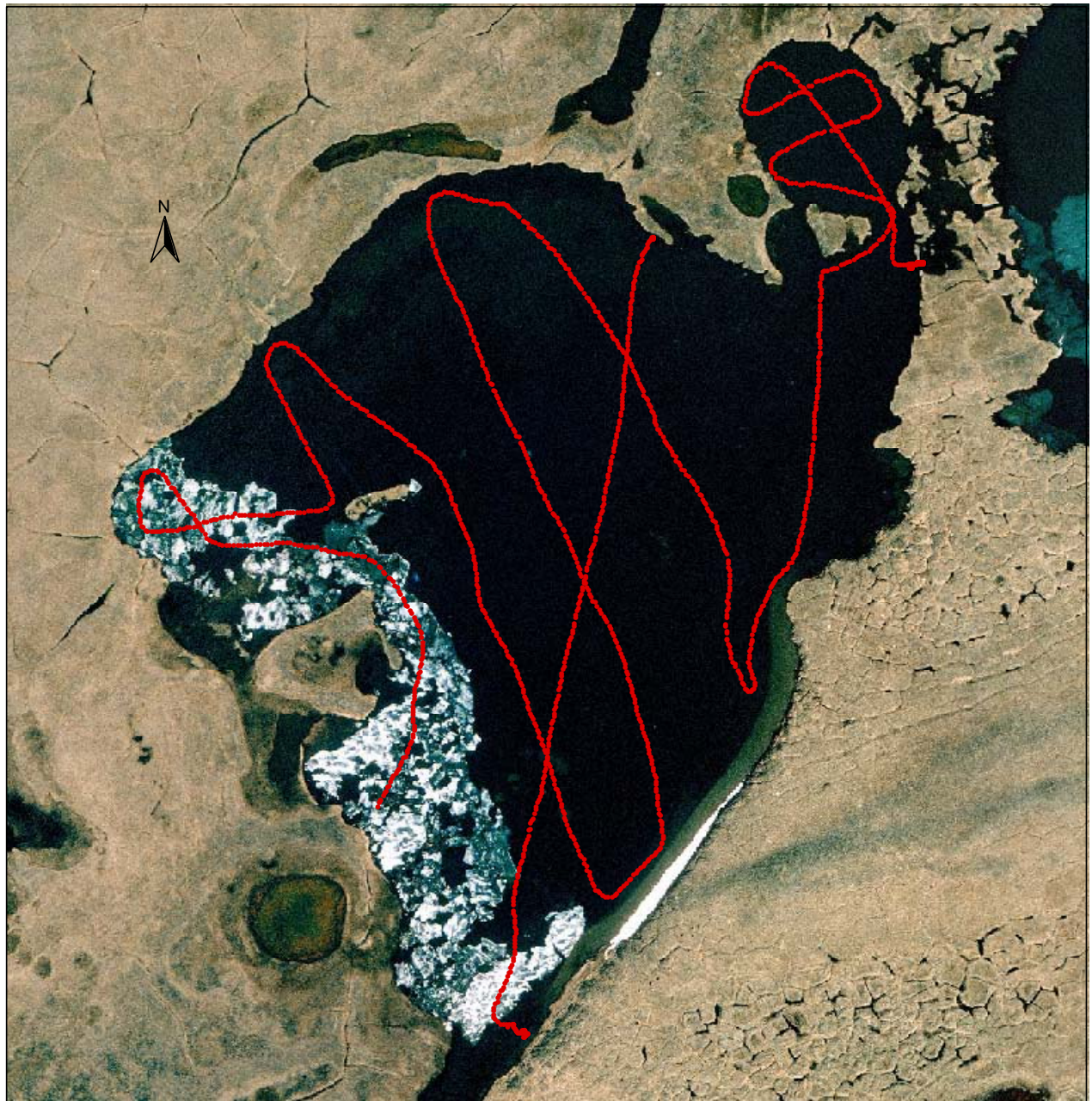
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250 0 250 500 750 1000 Feet

Regions of lake M0334 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 27, 2003.

(not to be used for navigation or to direct use of heavy equipment)



250 0 250 500 750 1000 Feet

Depth transects surveyed at lake M0334 on July 27, 2003.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0335, based on transects surveyed on July 27 and 28, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0335**

**Other Names:**

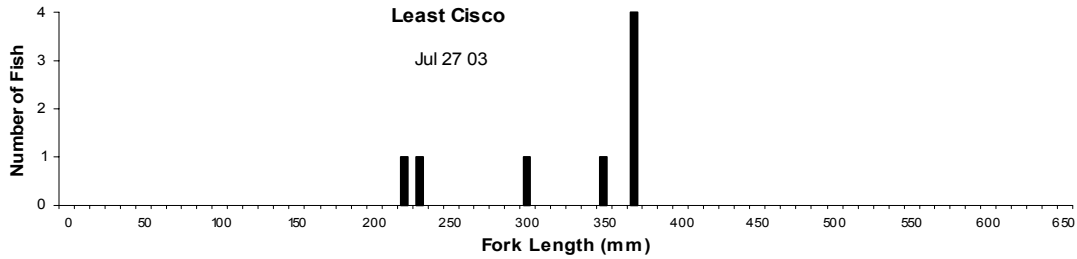
**Location:** 70.35522°N 151.45120°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 32  
**Habitat:** Perched Lake  
**Area:** 76.4 acres  
**Maximum Depth:** 13.1 feet  
**Active Outlet:** Yes  
**Calculated Volume:** 157.4 million gallons  
**Permittable Volume:** 3.59 million gallons  
**Potential Aggregate:** 16.7 acres (water depth 4 ft or less)

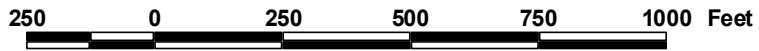
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	22.0	4.8	42.0	23.0	75	267	2.6	8.07	This Study

**Catch Record:**

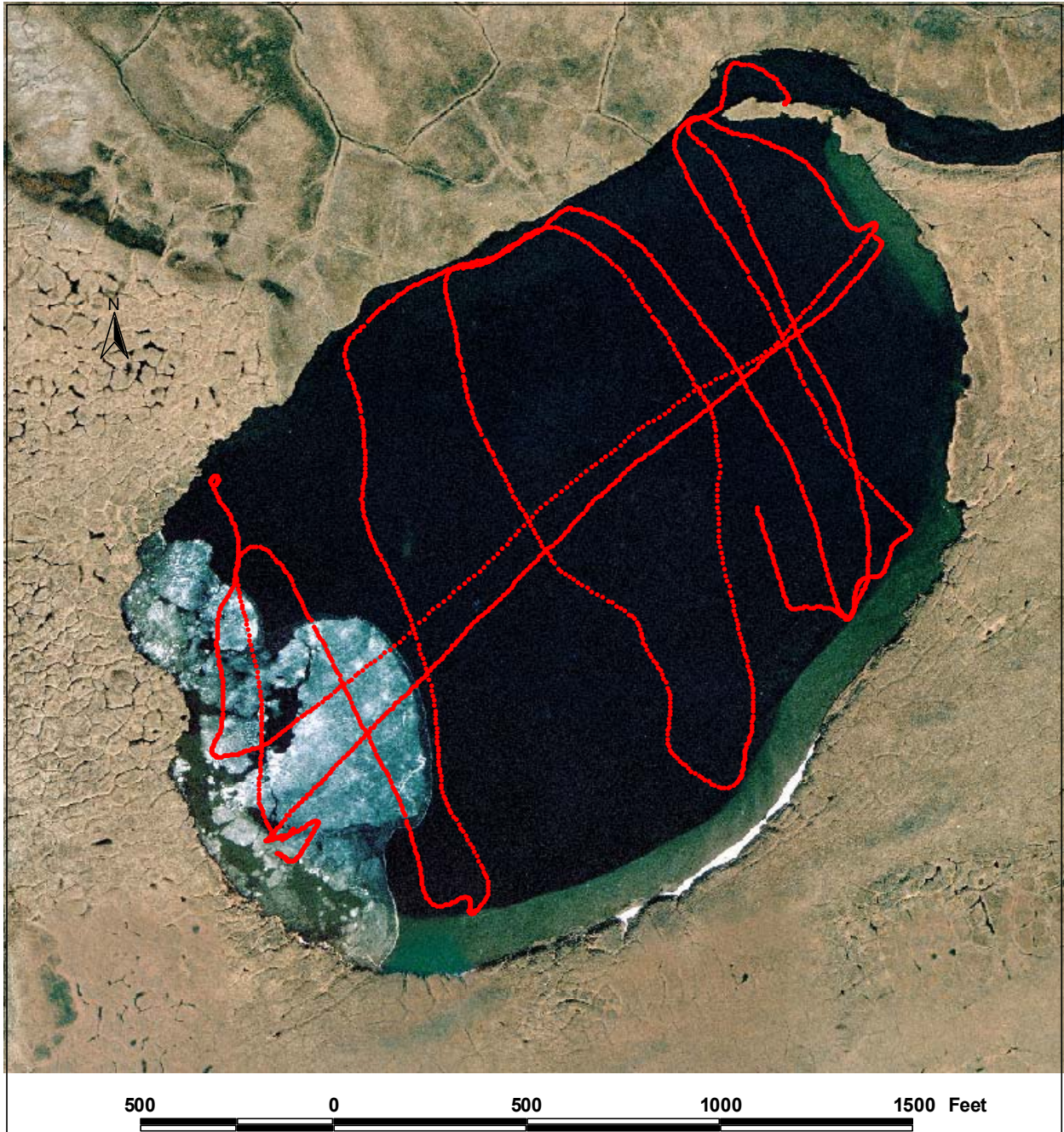
Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 27 03	8.0	Least cisco	8	227-375
Minnow trap	Jul 27 03	8.4	none	0	
Seine		0 hauls			





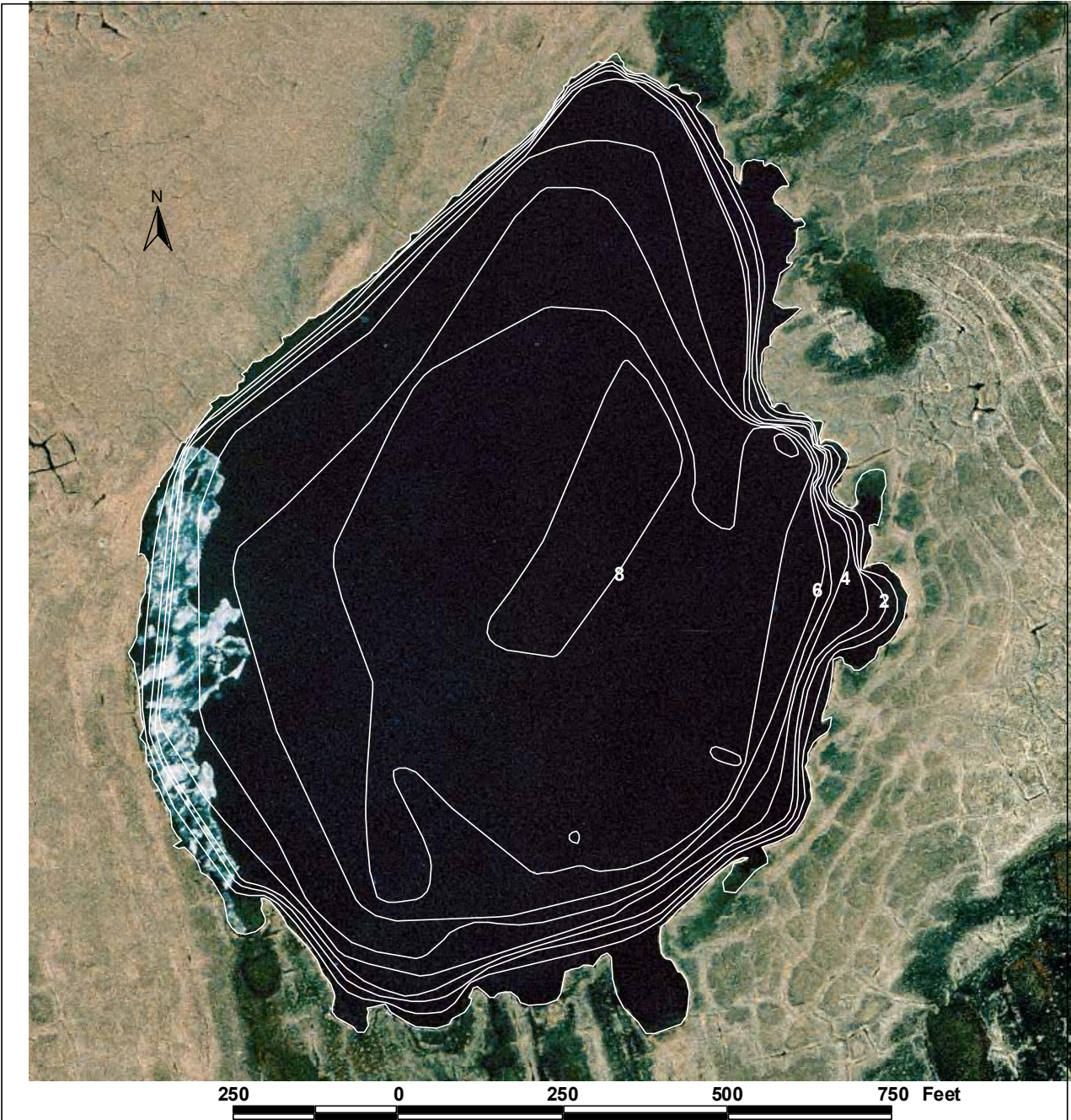
Regions of lake M0335 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 27 and 28, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0335 on July 27 and 28, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0336, based on transects surveyed on July 30, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0336**

**Other Names:**

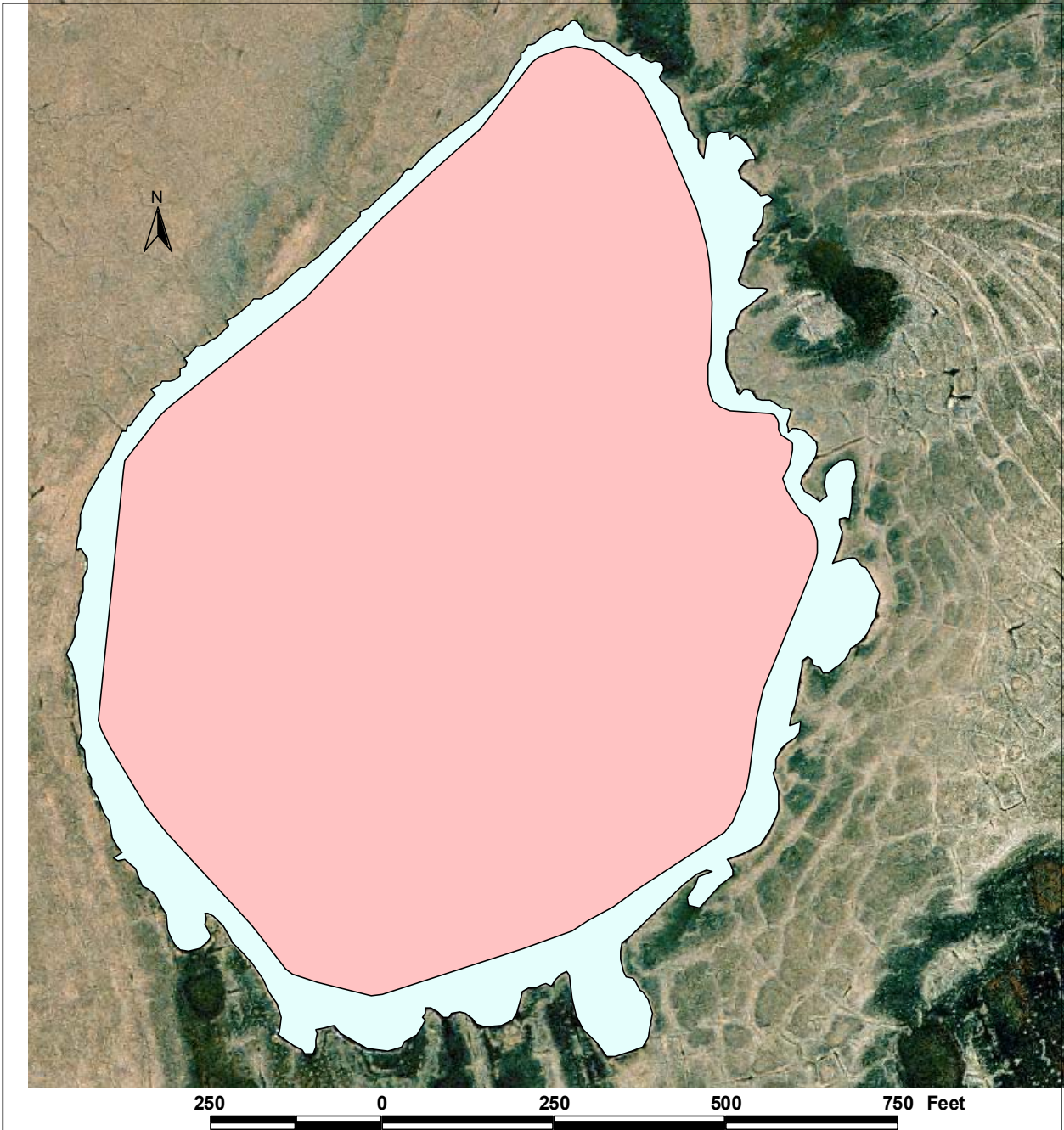
**Location:** 70.34422°N 151.45949°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 31  
**Habitat:** Perched Lake  
**Area:** 27.0 acres  
**Maximum Depth:** 9.1 feet  
**Active Outlet:** No  
**Calculated Volume:** 50.14 million gallons  
**Permittable Volume:** 3.52 million gallons  
**Potential Aggregate:** 4.7 acres (water depth 4 ft or less)

**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	21.0	5.3	26.0	13.0	74	210	2.6	8.01	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Jul 29-30 03	10.4	None	0
Minnow Trap	Jul 29 03	4.7	Ninespine stickleback	1
Seine		0 hauls		



Regions of lake M0336 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 30, 2003.

**(not to be used for navigation or to direct use of heavy equipment)**



250 0 250 500 750 1000 Feet

Depth transects surveyed at lake M0336 on July 30, 2003.

(not to be used for navigation or to direct use of heavy equipment)





1000 0 1000 2000 Feet

Depth contours of lake M0337, based on transects surveyed on July 30 and 31, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0337**

**Other Names:**

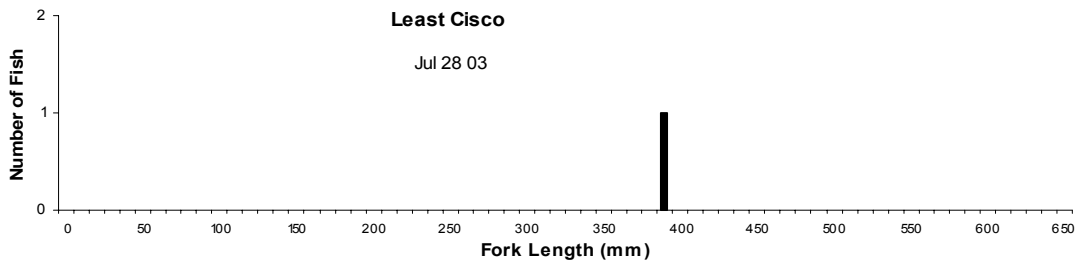
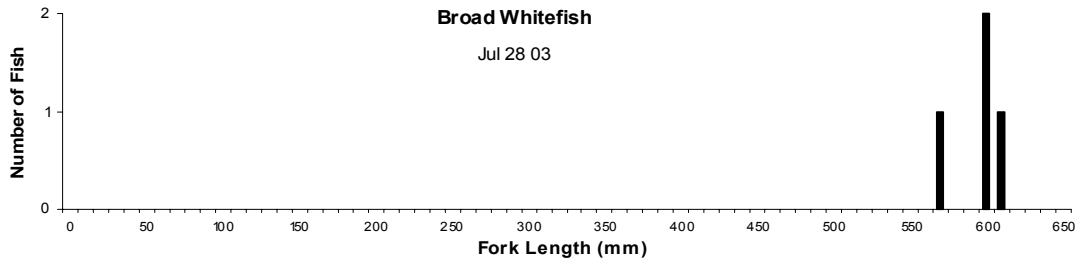
**Location:** 70.33684°N 151.48483°W  
**USGS Quad Sheet:** Harrison Bay B-3: T11N R3E Sec. 6  
**Habitat:** Perched Lake  
**Area:** 366.4 acres  
**Maximum Depth:** 16.4 feet  
**Active Outlet:** No  
**Calculated Volume:** 890.78 million gallons  
**Permittable Volume:** 0.16 million gallons  
**Potential Aggregate:** 75.8 acres (water depth 4 ft or less)

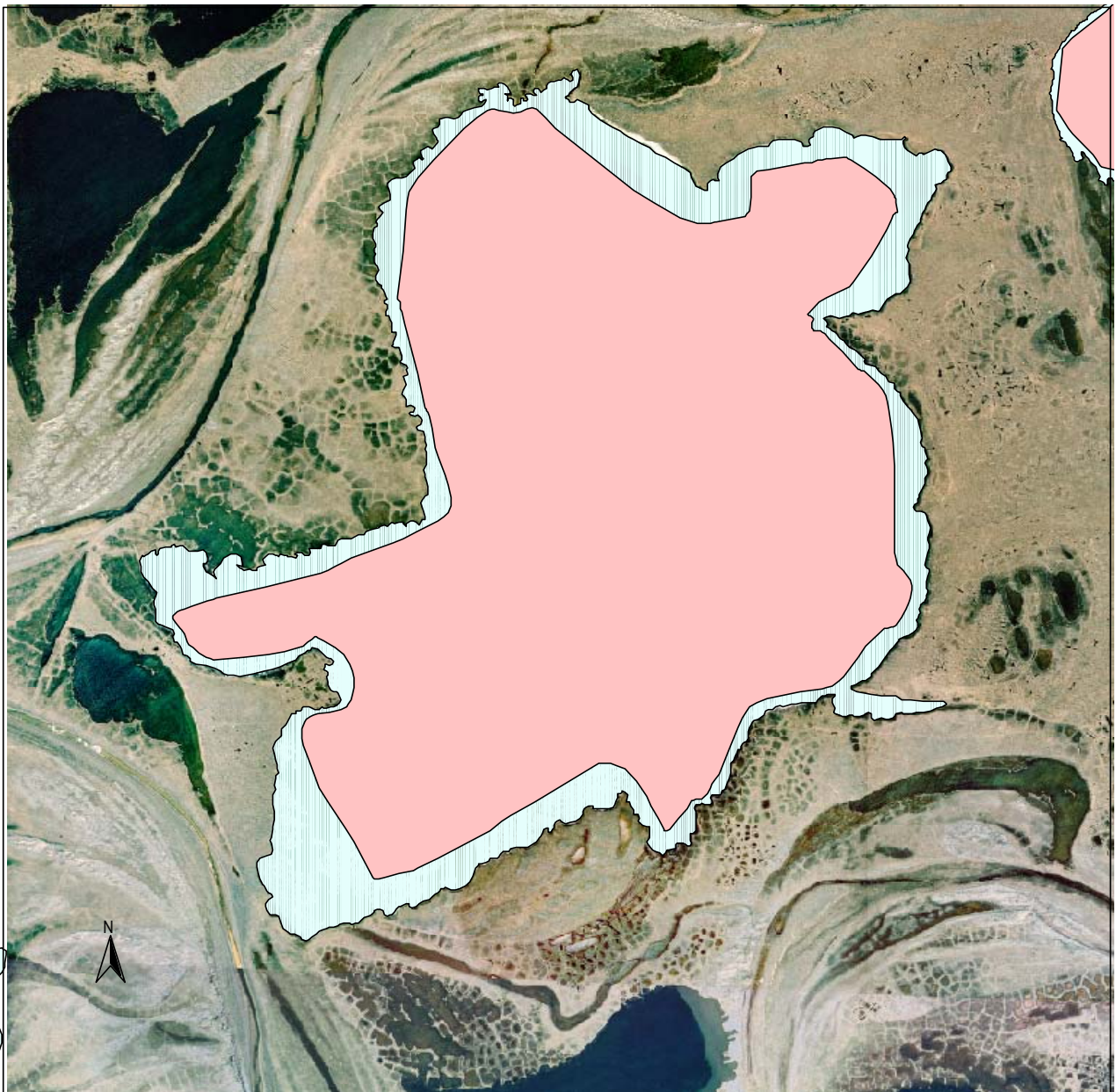
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	32.0	4.1	20.0	8.9	96	223	1.6	8.20	This Study

**Catch Record:**

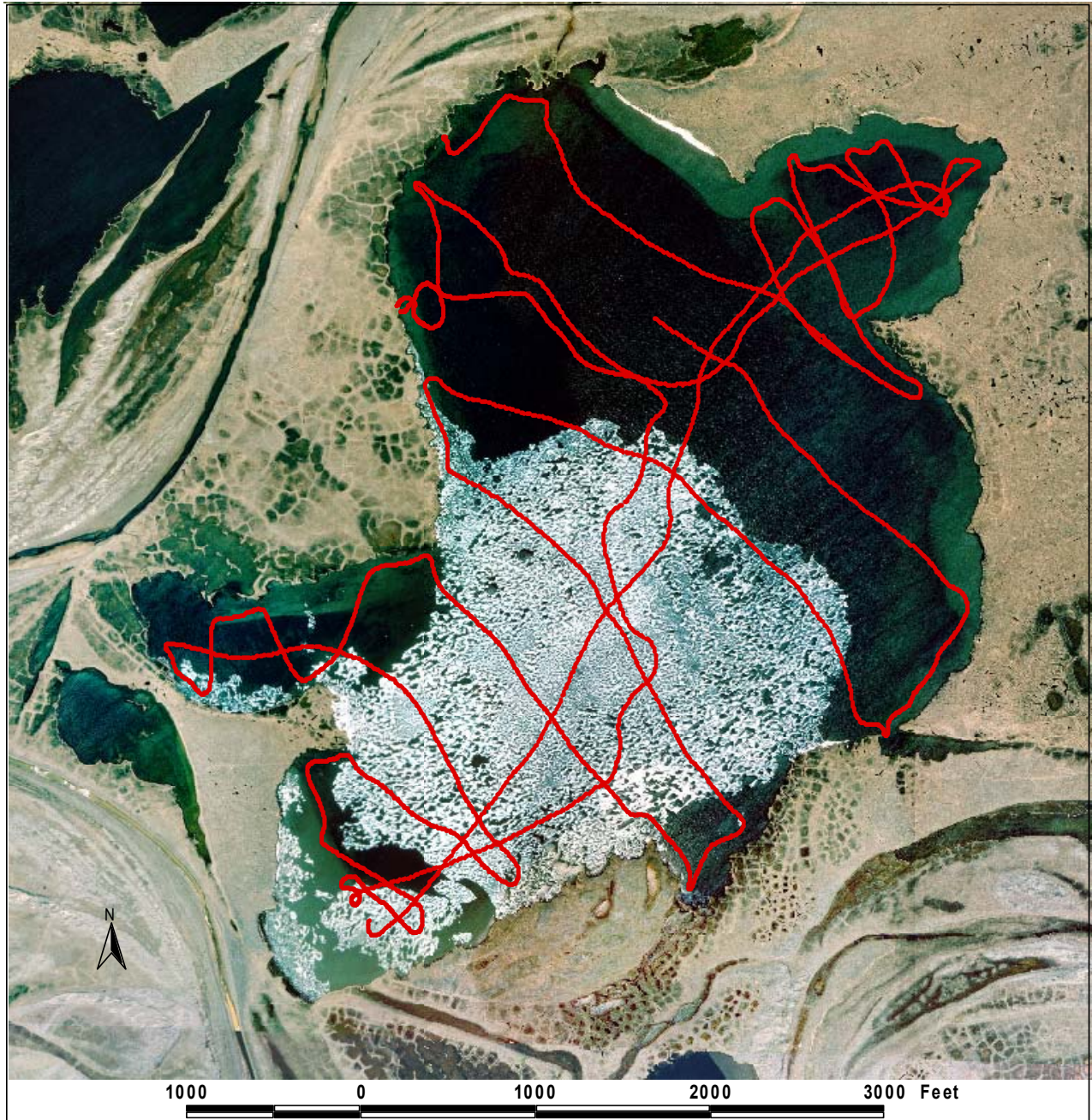
Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Jul 28 03	6.2	Broad whitefish	4	575-614
			Least cisco	1	390
Minnow Trap	Jul 28 03	0.0			
Seine		0 hauls			





Regions of lake M0337 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 30 and 31, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0337.on July 28, 2003.

(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth contours of lake M0338, based on transects surveyed on July 28, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0338

**Other Names:**

**Location:** 70.36894°N 151.48096°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 30  
**Habitat:** Perched Lake  
**Area:** 175.0 acres  
**Maximum Depth:** 11.3 feet  
**Active Outlet:** No  
**Calculated Volume:** 275.12 million gallons  
**Permittable Volume:** 2.41 million gallons  
**Potential Aggregate:** 72.7 acres (water depth 4 ft or less)

**Water Chemistry:**

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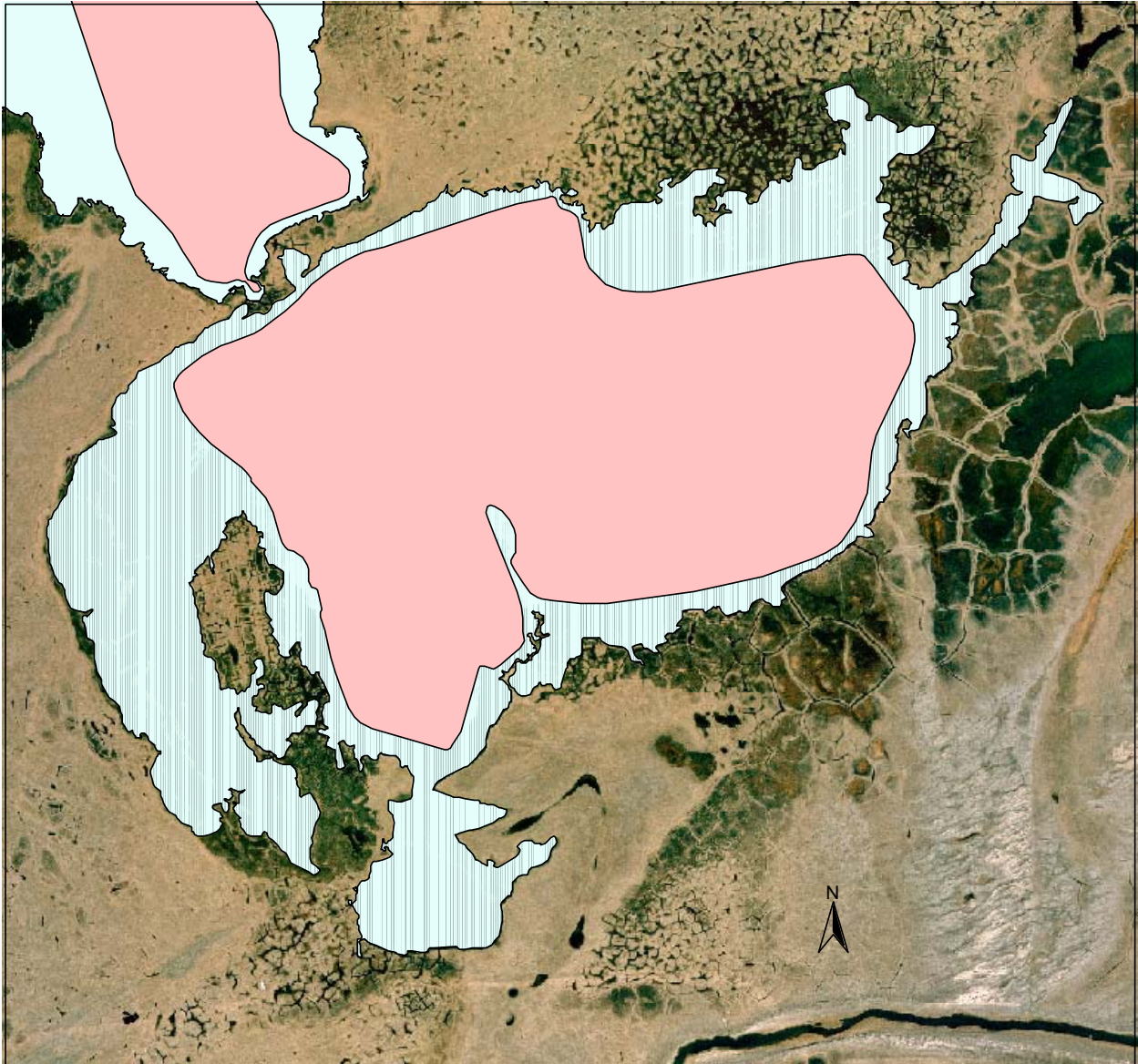
Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	8.2	2.1	17.0	6.8	29	110	1.5	7.54	This Study

**Catch Record:**

---

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Jul 28 03	6.4	None	0
Minnow Trap	Jul 28 03	10.9	None	0
Seine	Jul 28 03	1 haul	Ninespine stickleback	1

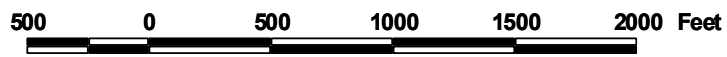
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500 0 500 1000 1500 2000 Feet

Regions of lake M0338 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 28, 2003.

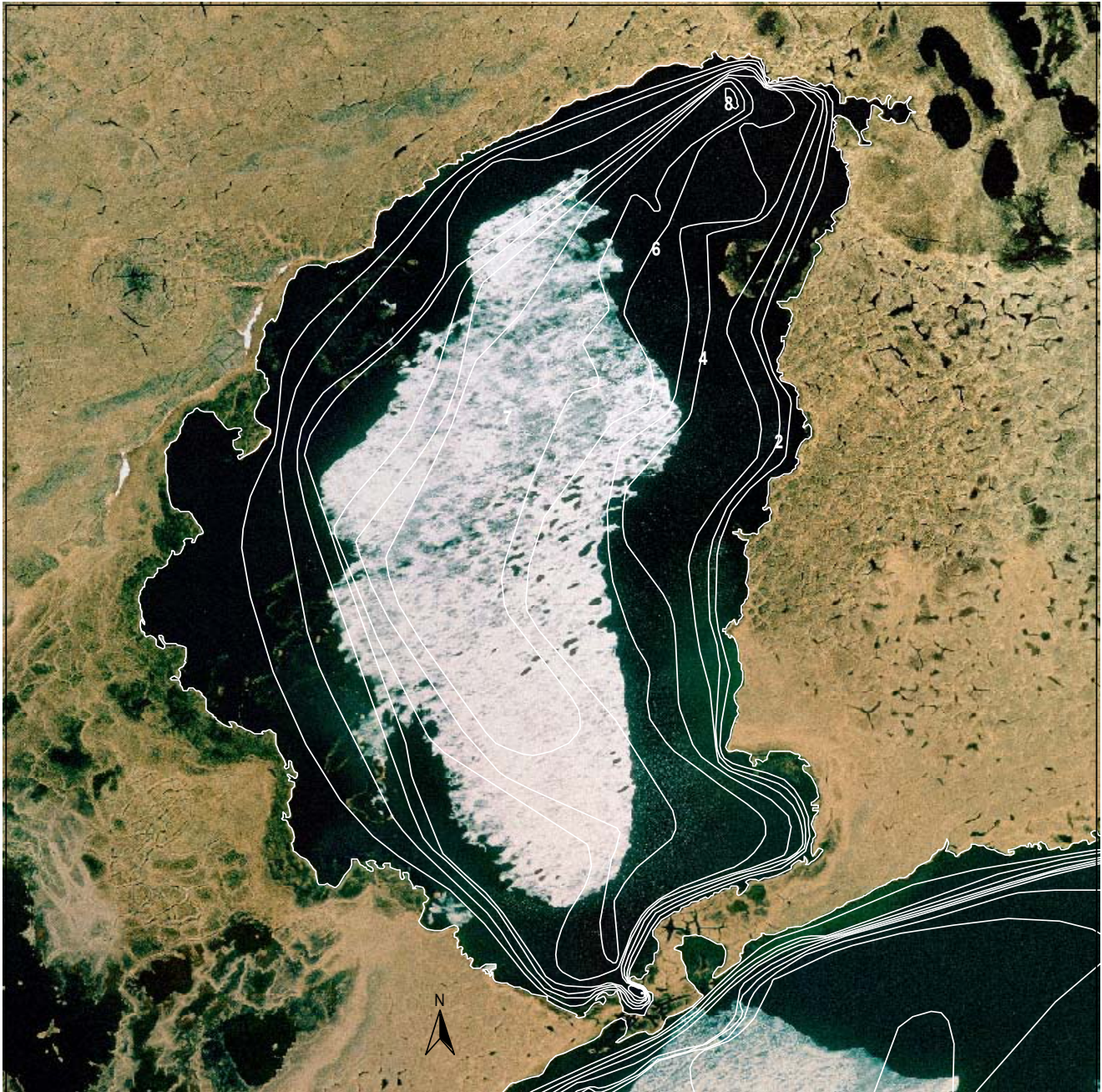
(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0338 on July 28, 2003.

(not to be used for navigation or to direct use of heavy equipment)





500 0 500 1000 Feet

Depth contours of lake M0339, based on transects surveyed on July 28, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0339

**Other Names:**

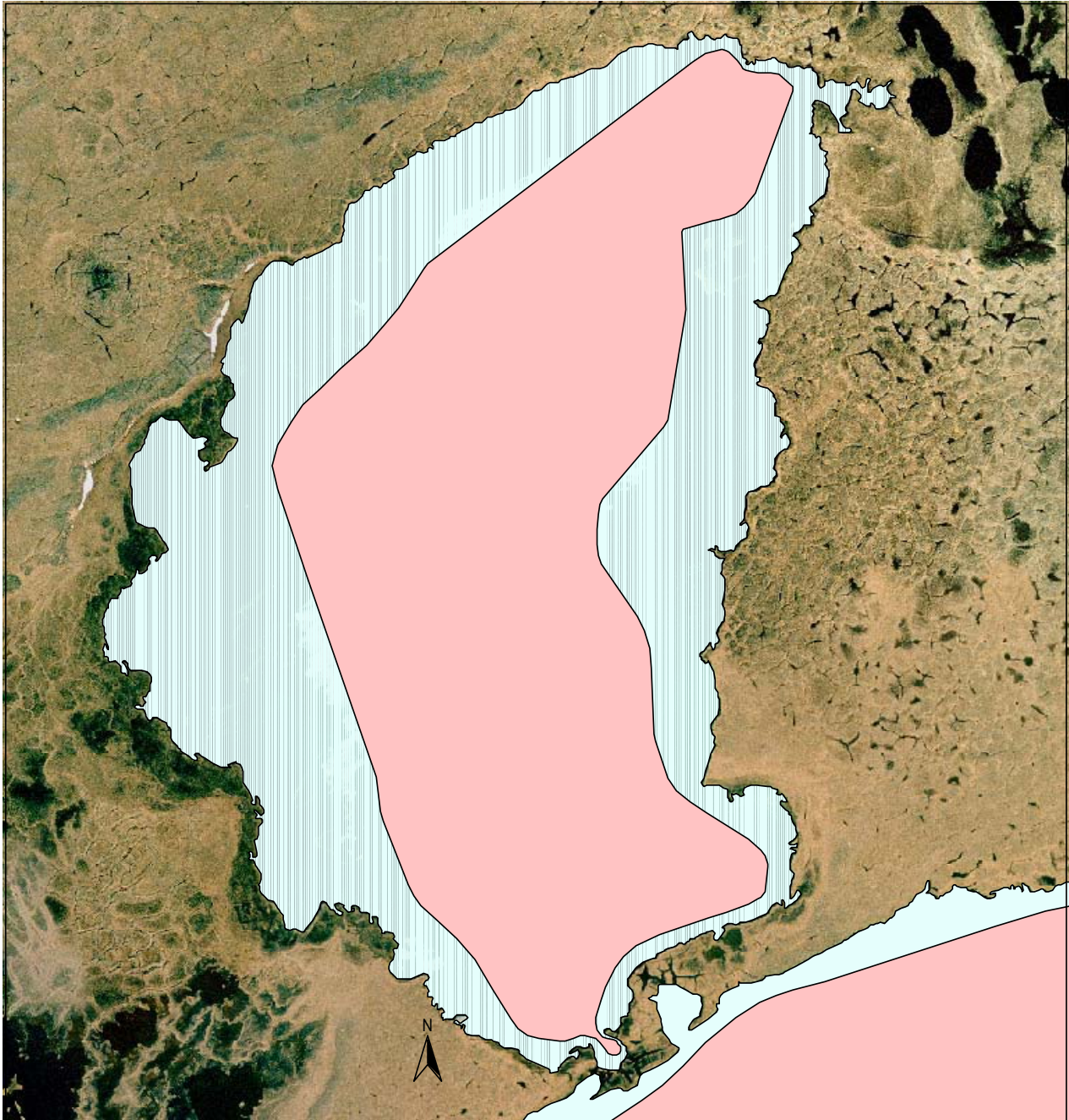
**Location:** 70.37414°N 151.49299°W  
**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 19  
**Habitat:** Perched Lake  
**Area:** 78.2 acres  
**Maximum Depth:** 8.9 feet  
**Active Outlet:** No  
**Calculated Volume:** 104.19 million gallons  
**Permittable Volume:** 4.29 million gallons  
**Potential Aggregate:** 34.9 acres (water 4 ft or less)

**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	6.6	1.7	12.0	5.2	23	71	1.6	7.45	This Study

**Catch Record:**

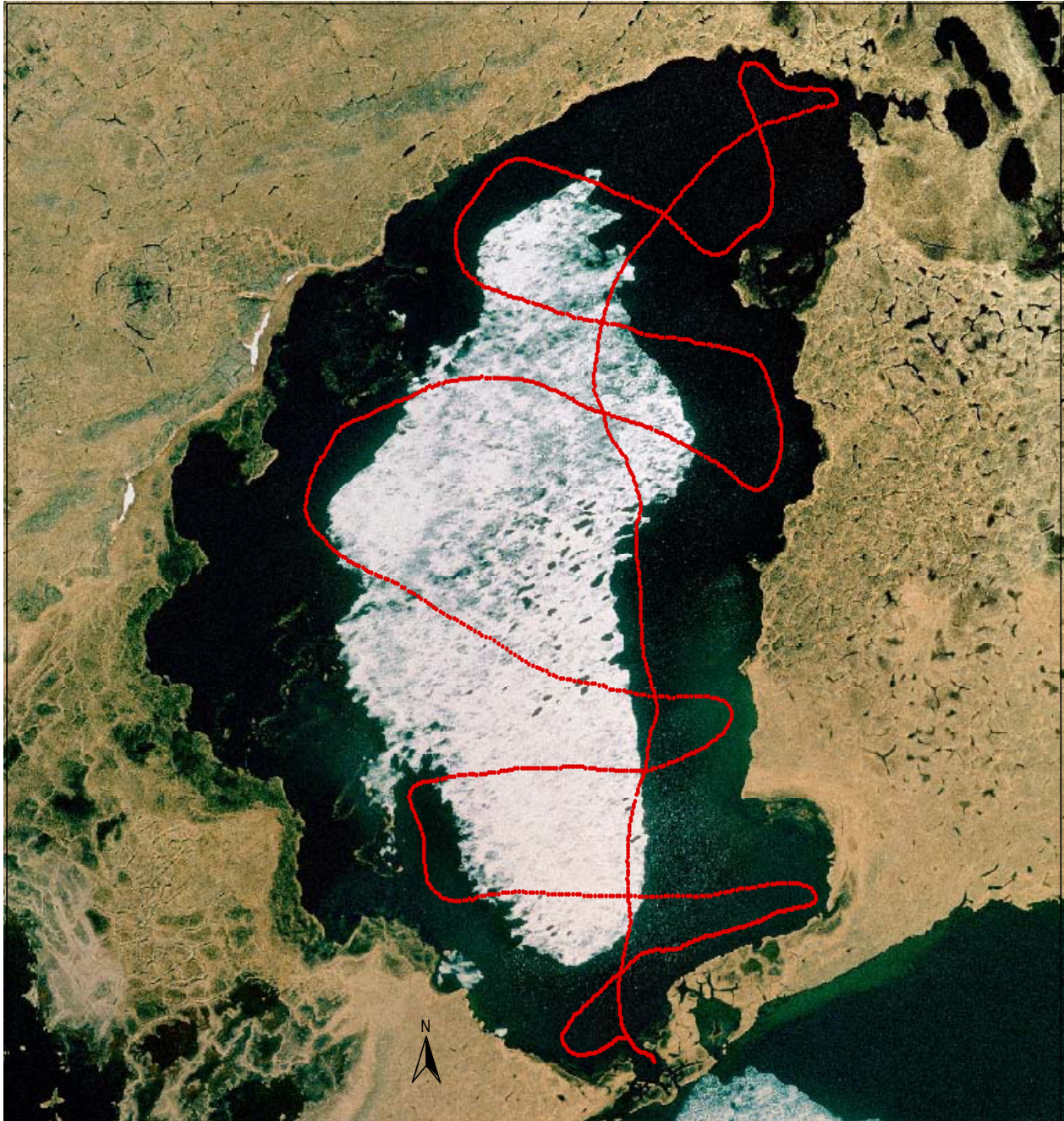
Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Jul 28 03	6.4	None	0
Minnow Trap	Jul 28 03	10.9	None	0
Seine	Jul 28 03	1 haul	Ninespine stickleback	1



500 0 500 1000 Feet

Regions of lake M0339 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on July 28, 2003.

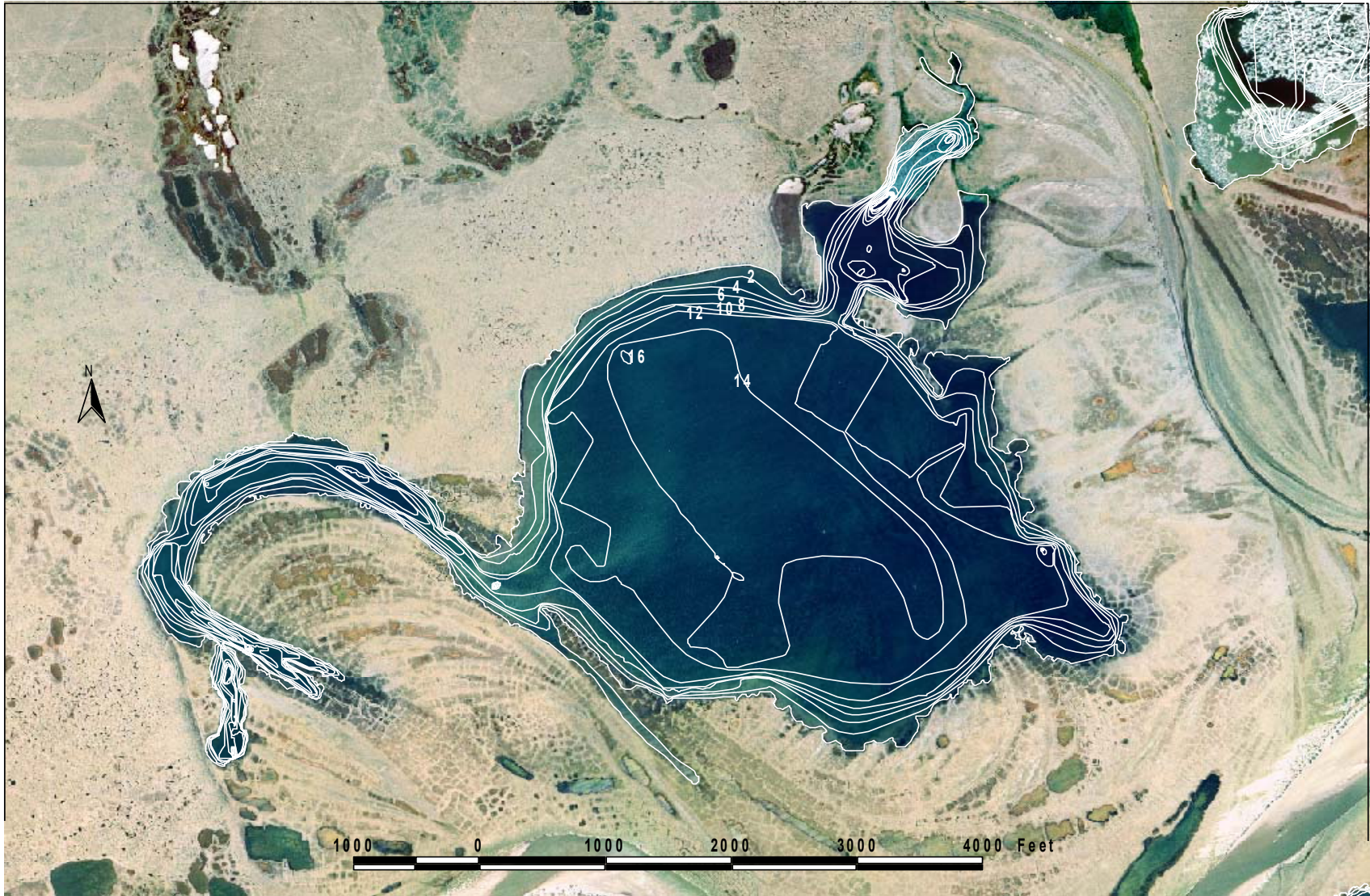
(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 Feet

Depth transects surveyed at lake M0339 on July 28, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M 0340, based on transects surveyed on August 4, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0340

**Other Names:**

**Location:** 70.32051°N 151.52906°W

**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 11/12

**Habitat:** Drainage Lake

**Area:** 383.8 acres

**Maximum Depth:** 26.1 feet

**Active Outlet:** Yes

**Calculated Volume:** 1,213.22 million gallons

**Permittable Volume:** 71.05 million gallons

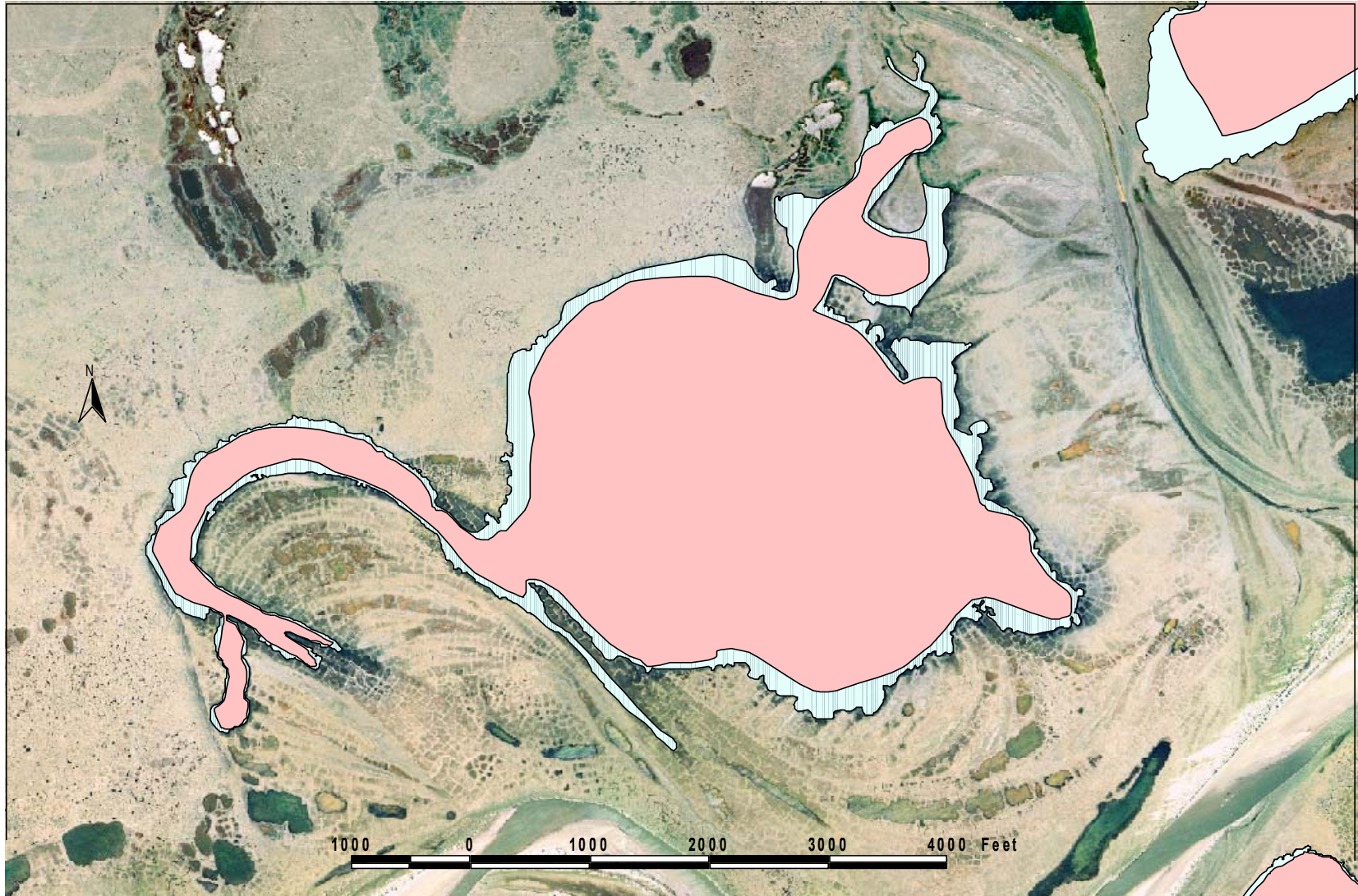
**Potential Aggregate:** 68.6 acres (water depth 4 ft or less)

### Water Chemistry:

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	16.0	2.6	9.6	4.2	50	132	0.6	8.02	This Study

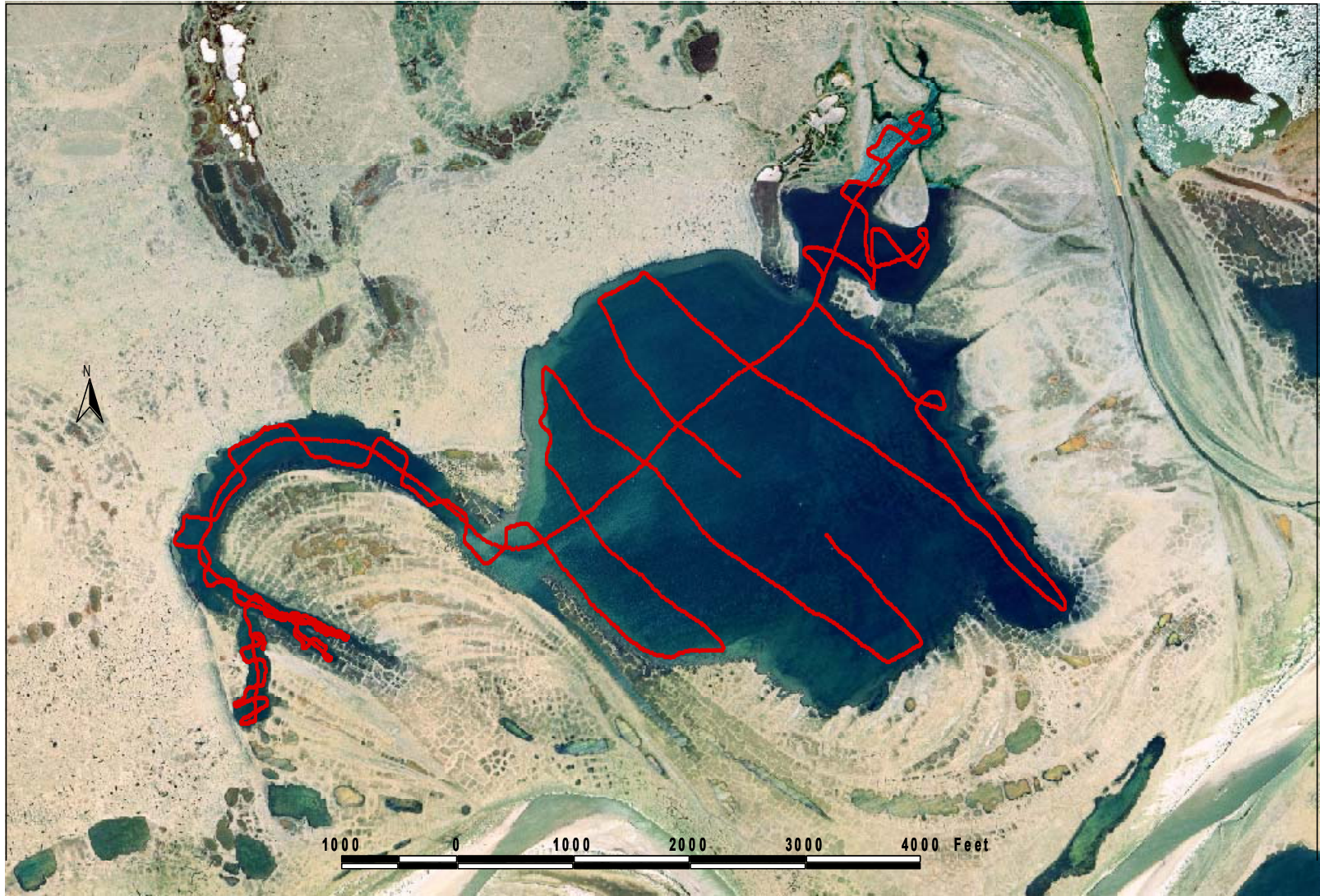
### Catch Record:

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net		0.0		
Minnow Trap		0.0		
Observed	Aug 4 03		Arctic grayling	1



Regions of lake M0340 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 4, 2003.

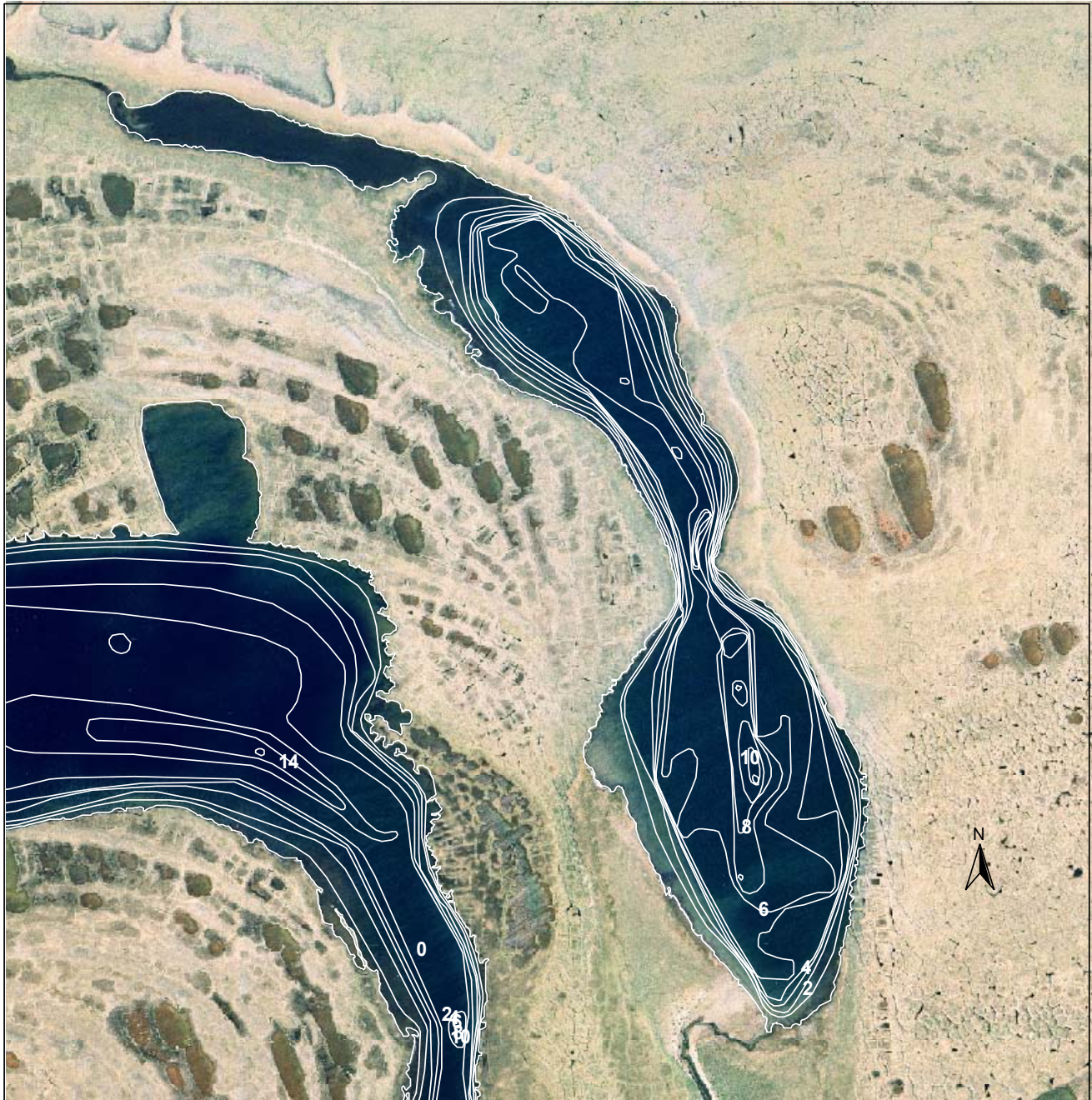
(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M 0340 on August 4, 2003.

(not to be used for navigation or to direct use of heavy equipment)





500 0 500 1000 1500 2000 Feet

Depth contours of lake M0341, based on transects surveyed on August 3, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0341

**Other Names:****Location:** 70.31487°N 151.58962°W**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 10**Habitat:** Drainage Lake**Area:** 62.4 acres**Maximum Depth:** 11.7 feet**Active Outlet:** Yes**Calculated Volume:** 85.43 million gallons**Permittable Volume:** 0.11 million gallons**Potential Aggregate:** 26.4 acres (water 4 ft or less)**Water Chemistry:**

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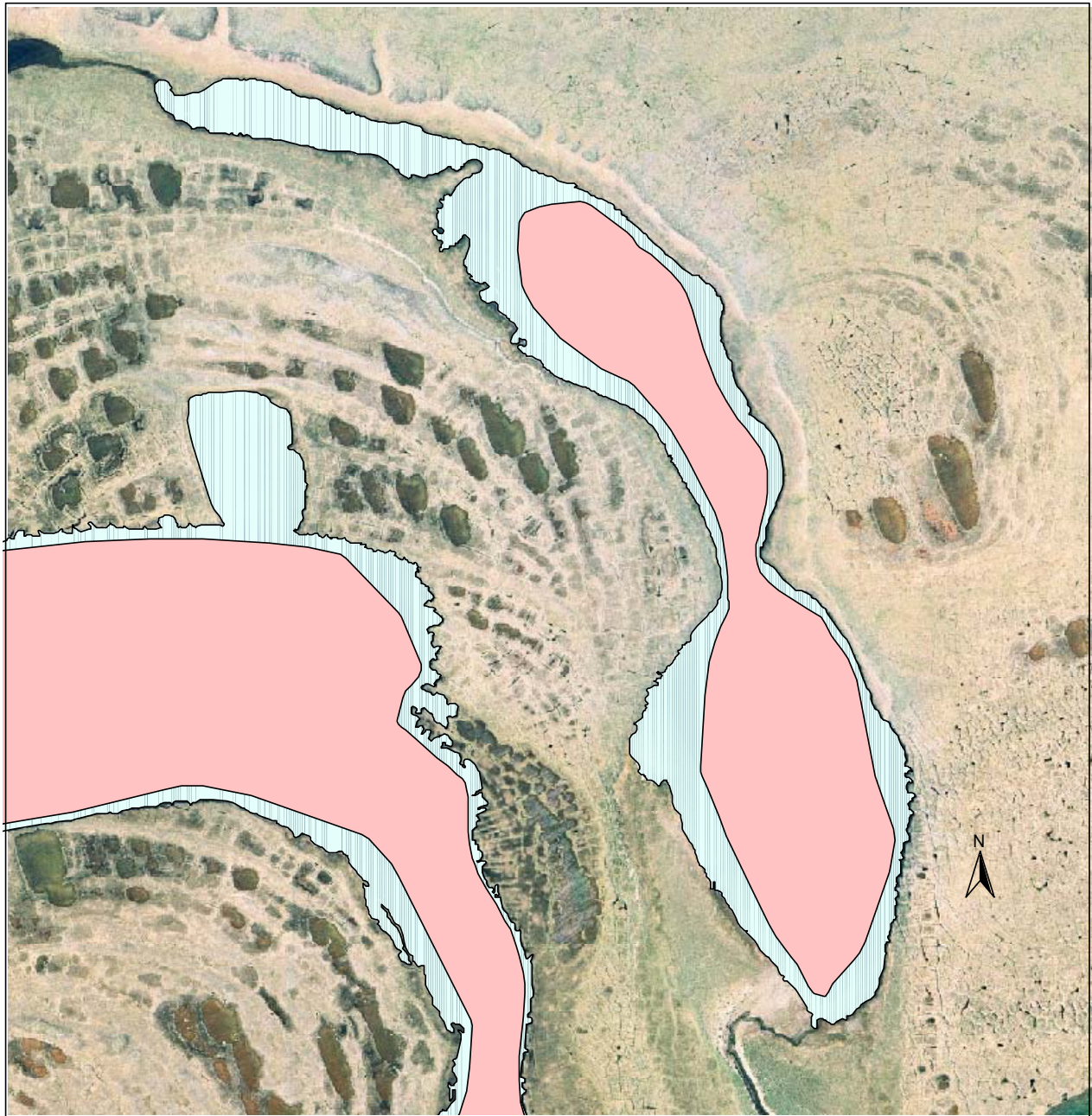
Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	13.0	2.3	9.6	3.5	42	101	1.4	7.76	This Study

**Catch Record:**

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Gear	Date	Species	Number Caught
not sampled, connected to M0343			
Observed		Ninespine stickleback	2

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500 0 500 1000 1500 2000 Feet

Regions of lake M0341 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 3, 2003.

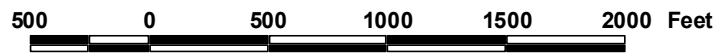
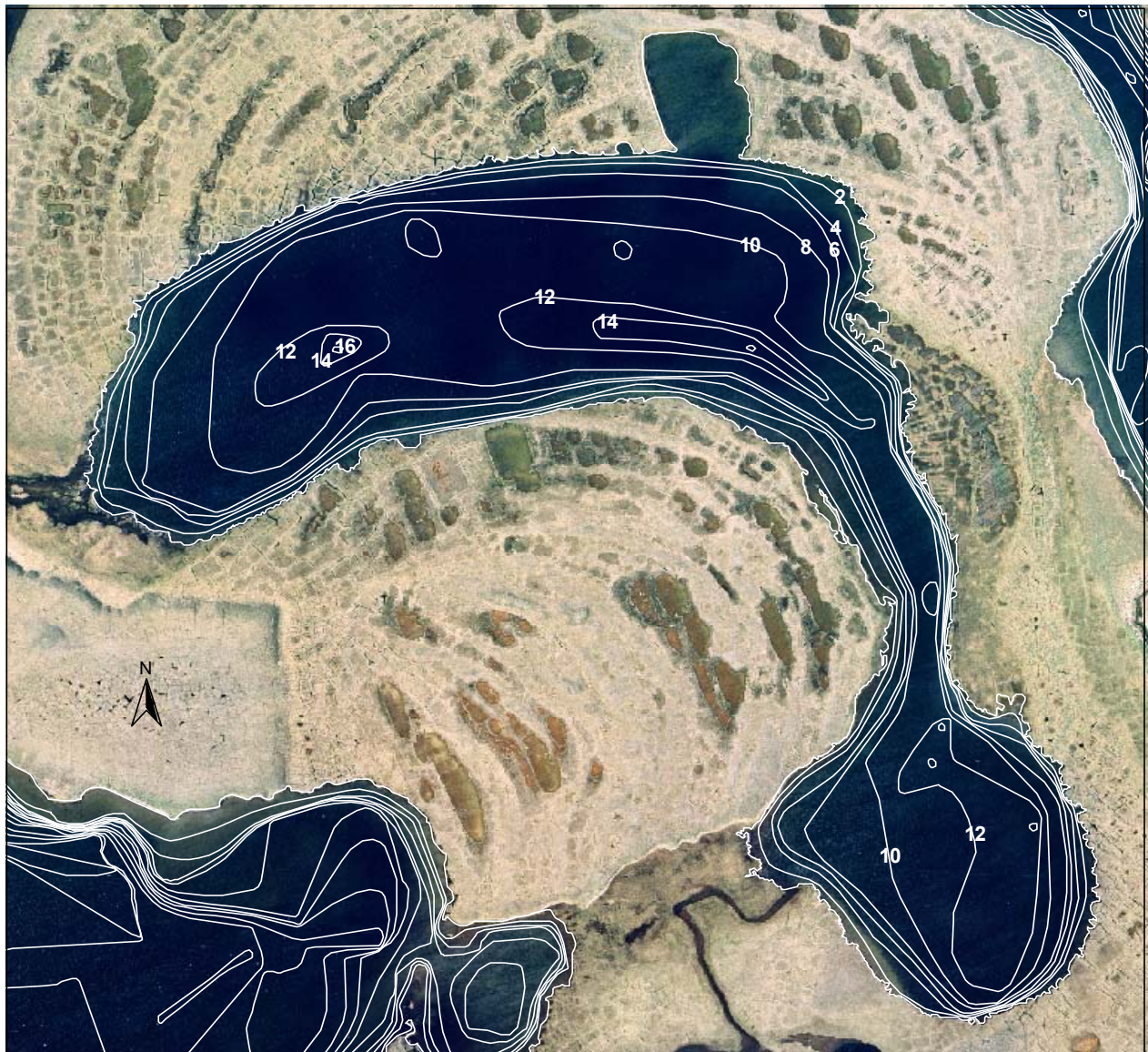
(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth transects surveyed at lake M0341 on August 3, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0342, based on transects surveyed on August 2, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0342

**Other Names:**

**Location:** 70.31632°N 151.61238°W

**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 10/15

**Habitat:** Drainage Lake

**Area:** 159.0 acres

**Maximum Depth:** 16.5 feet

**Active Outlet:** Yes

**Calculated Volume:** 431.19 million gallons

**Permittable Volume:** 19.31 million gallons

**Potential Aggregate:** 29.9 acres (water depth 4 ft or less)

### Water Chemistry:

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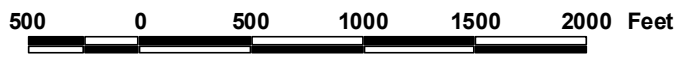
Year	Calcium	Magnesium	Chloride	Sodium	Total Hardness [CaCO <sub>3</sub> ]	Specific Conductance	Turbidity	pH	Source
of Test	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(microS/cm)	(NTU)		
2003	11.0	2.1	9.7	3.6	36	95	1.1	7.74	This Study

### Catch Record:

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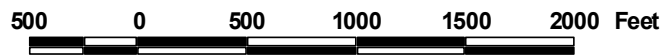
Gear	Date	Effort (hours)	Species	Number Caught
not sampled, connected to M0343				

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Regions of lake M0342 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 2, 2003.

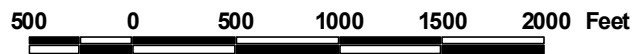
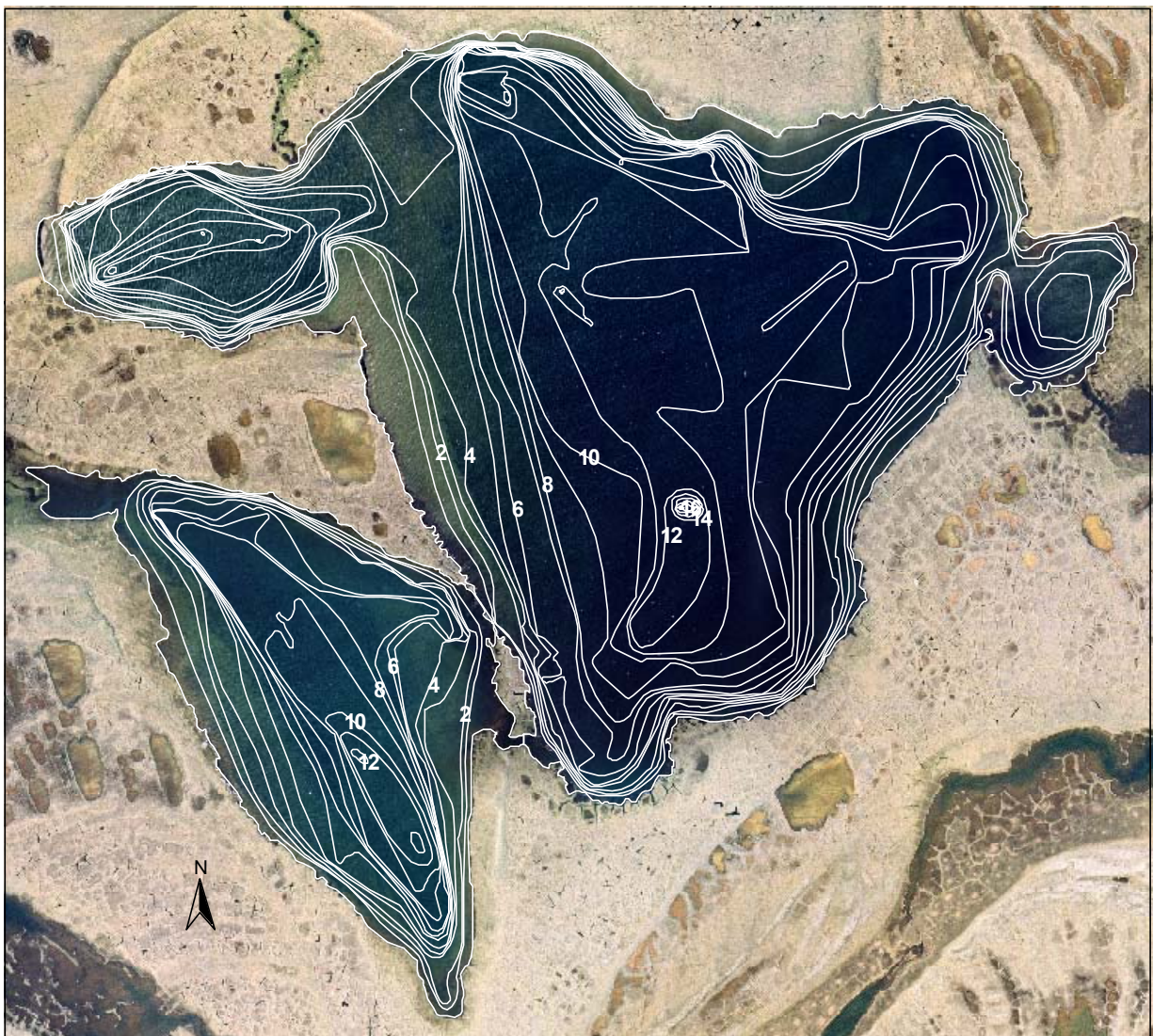
(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0342 on August 2, 2003.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0343, based on transects surveyed on August 2, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0343**

**Other Names:**

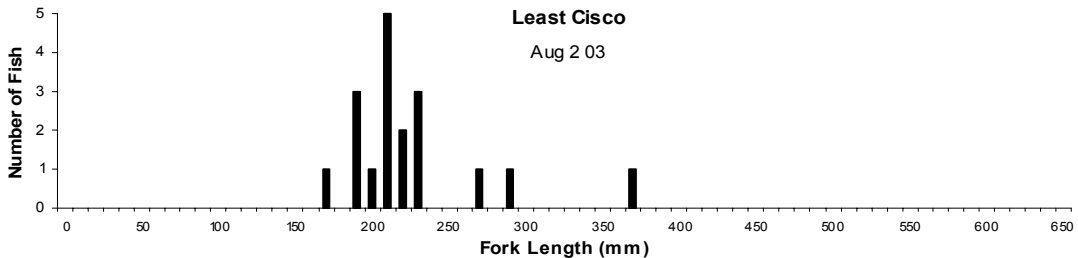
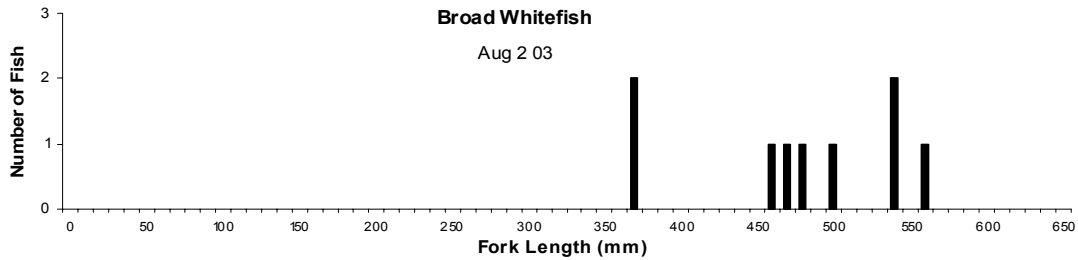
**Location:** 70.30504°N 151.63213°W  
**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 15/16  
**Habitat:** Drainage Lake  
**Area:** 310.1 acres  
**Maximum Depth:** 17.7 feet  
**Active Outlet:** Yes  
**Calculated Volume:** 679.19 million gallons  
**Permittable Volume:** 22.80 million gallons  
**Potential Aggregate:** 84.0 acres (water depth 4 ft or less)

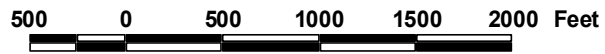
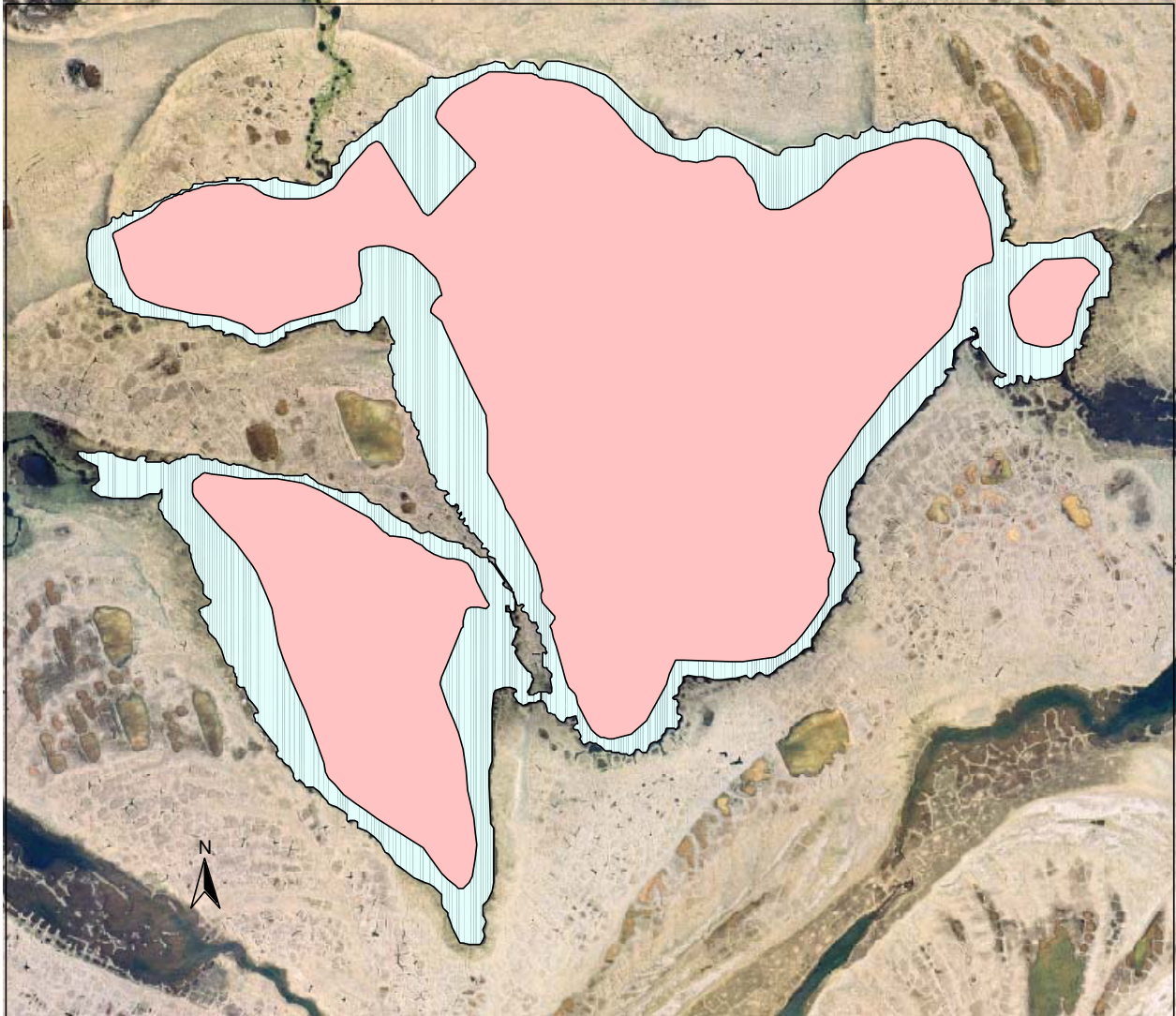
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO3] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	12.0	2.3	11.0	3.7	40	103	1.9	7.74	This Study

**Catch Record:**

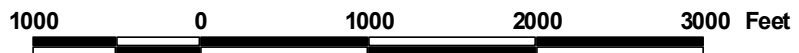
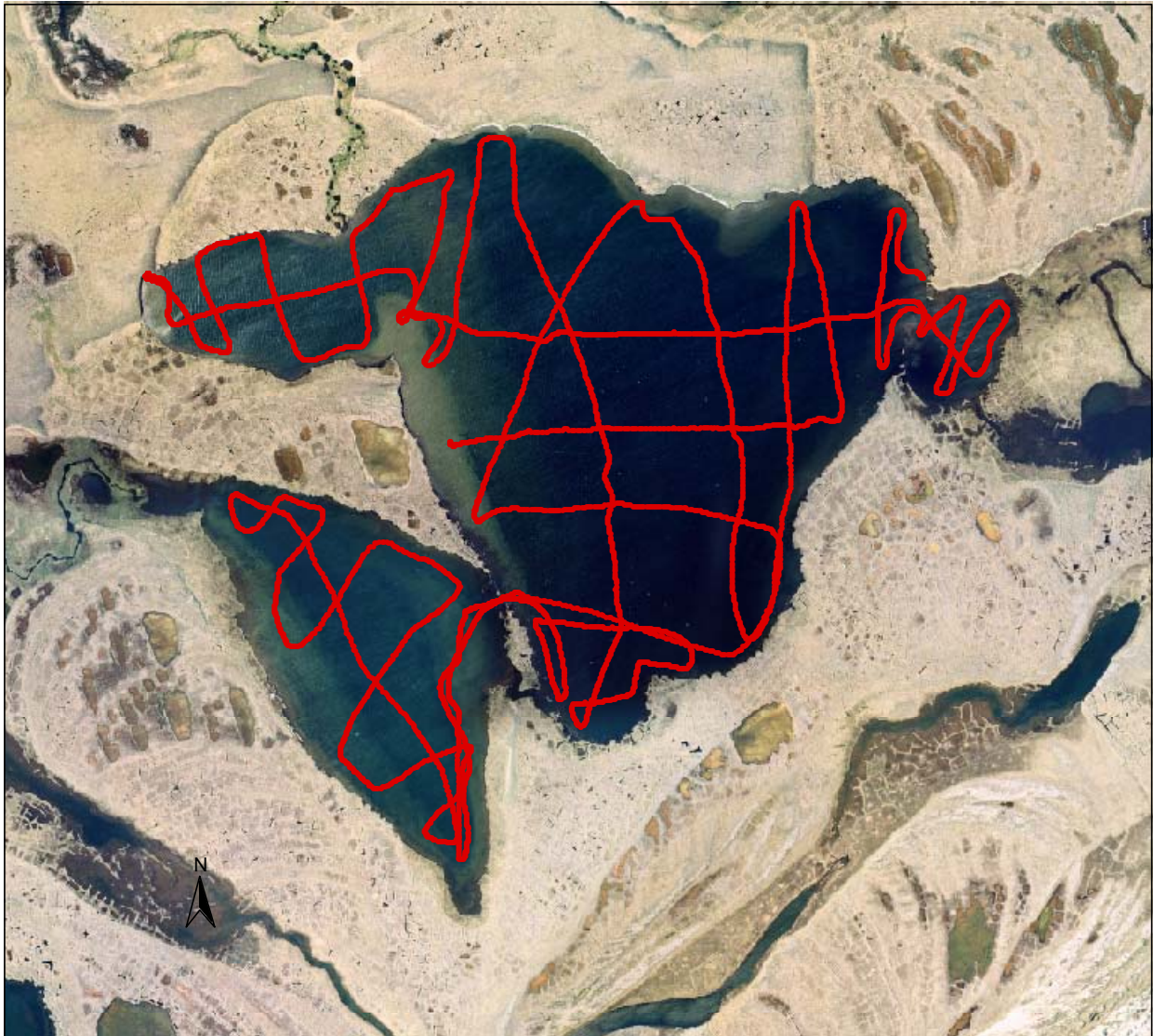
Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Aug 2 03	7.0	Broad whitefish	9	371-560
			Least cisco	18	178-375
			Arctic grayling	1	288
Minnow Trap	Aug 2 03	13.0	None	0	
Seine			0 hauls		





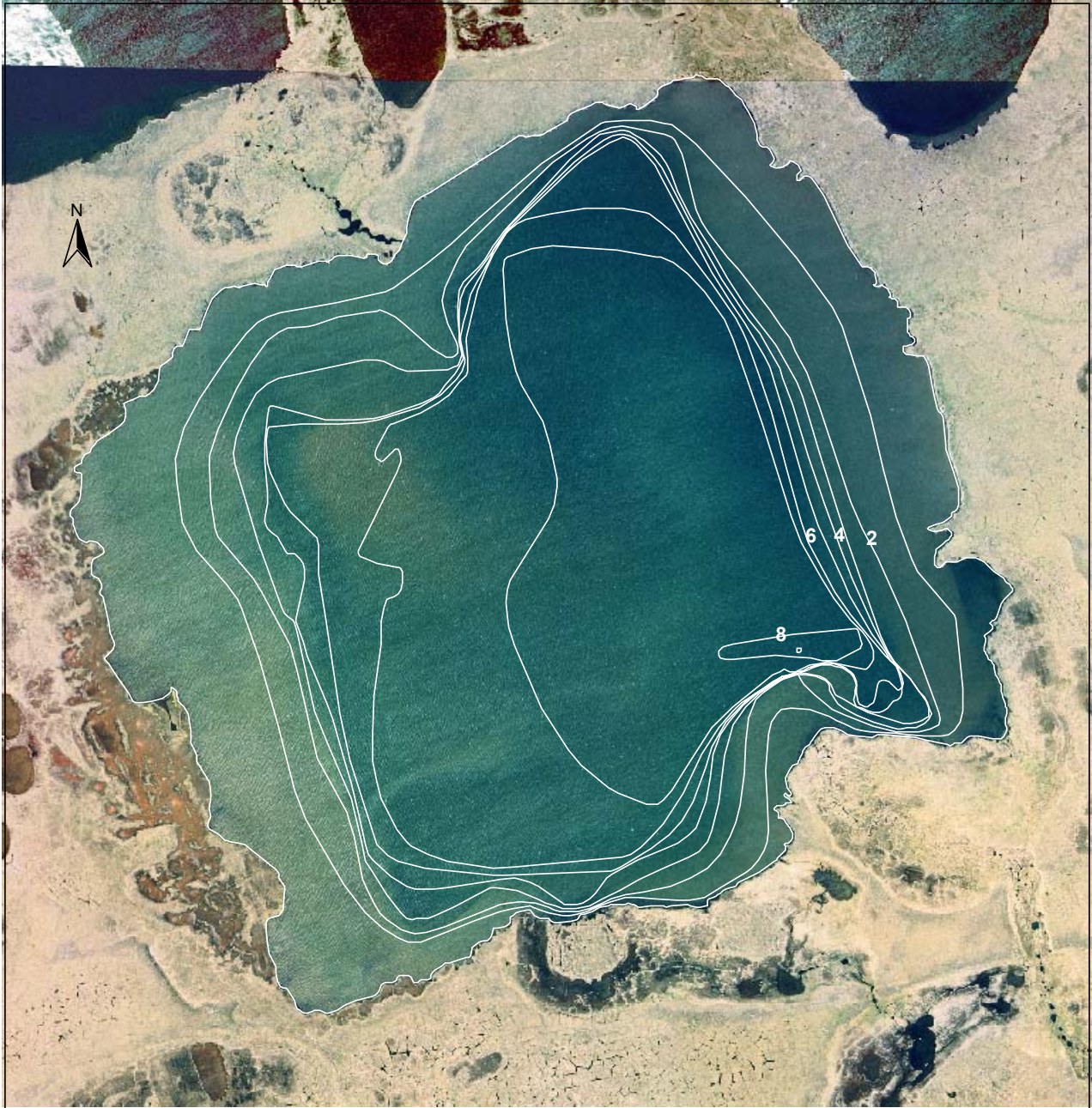
Regions of lake M0343 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 2, 2003.

**(not to be used for navigation or to direct use of heavy equipment)**



Depth transects surveyed at lake M0343 on August 2, 2003.

(not to be used for navigation or to direct use of heavy equipment)



1000 0 1000 2000 Feet

Depth contours of lake M0344, based on transects surveyed on August 2, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0344

**Other Names:**  
**Location:** 70.32080°N 151.67465°W  
**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 8/9  
**Habitat:** Drainage Lake  
**Area:** 360.0 acres  
**Maximum Depth:** 9.1 feet  
**Active Outlet:** Yes  
**Calculated Volume:** 475.92 million gallons  
**Permittable Volume:** 29.54 million gallons  
**Potential Aggregate:** 173.9 acres (water 4 ft or less)

### Water Chemistry:

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	13.0	2.1	10.0	3.5	42	107	2.8	7.92	This Study

### Catch Record:

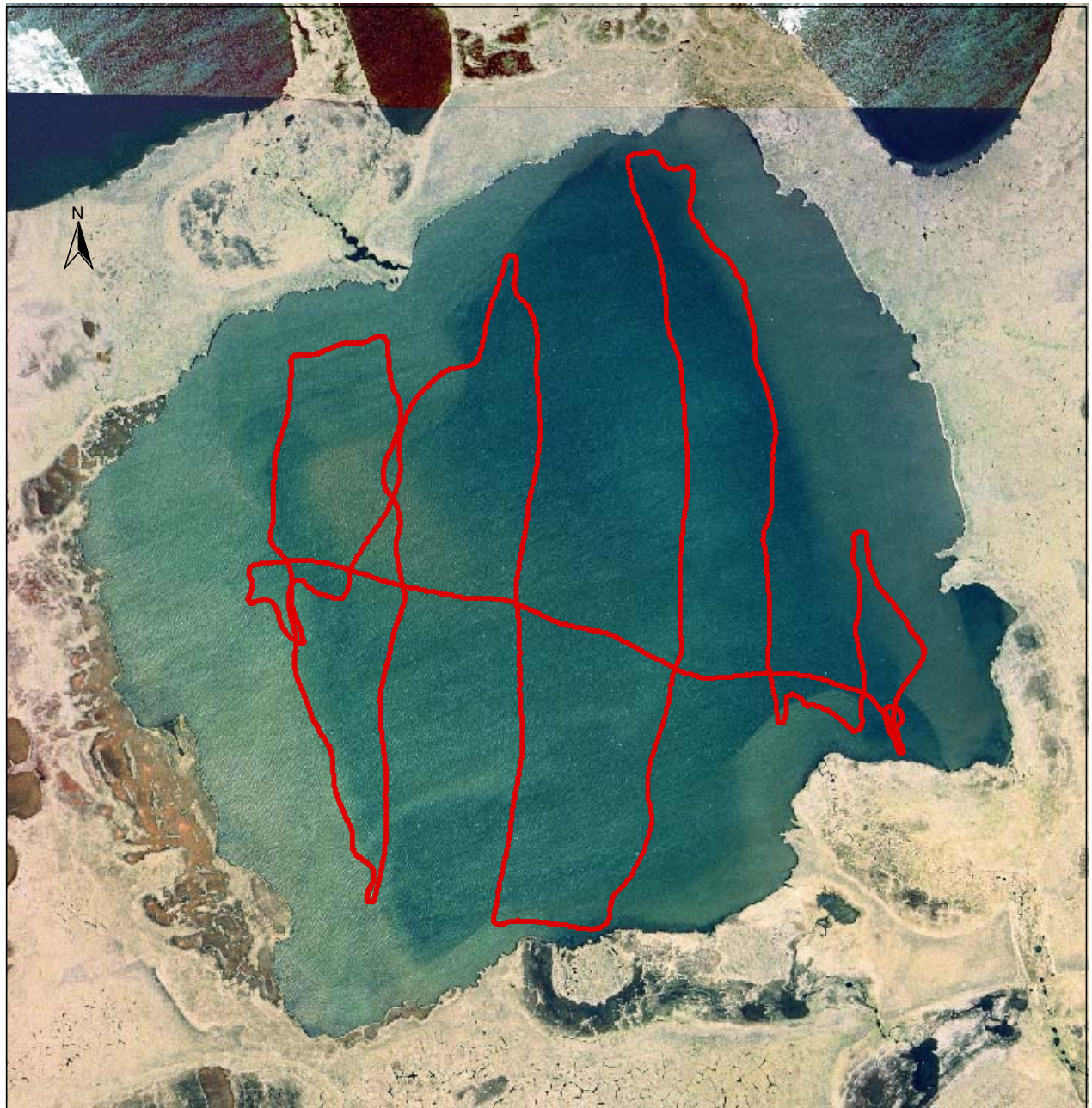
Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Aug 2 03	6.1	None	0
Minnow Trap	Aug 2 03	9.7	None	0
Observed	Aug 2 03		Ninespine stickleback	2



1000 0 1000 2000 Feet

Regions of lake M0344 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 2, 2003.

(not to be used for navigation or to direct use of heavy equipment)

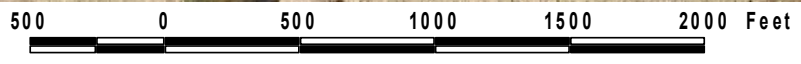


1000 0 1000 2000 Feet

Depth transects surveyed at lake M0344 on August 2, 2003.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0345, based on transects surveyed on August 4, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0345

**Other Names:****Location:** 70.29318°N 151.75388°W**USGS Quad Sheet:** Harrison Bay B-3: T11N R1/2E Sec. 24/19**Habitat:** Tundra Lake**Area:** 124.2 acres**Maximum Depth:** 12.9 feet**Active Outlet:** No**Calculated Volume:** 211.11 million gallons**Permittable Volume:** 19.61 million gallons**Potential Aggregate:** 53.7 acres (water depth 4 ft or less)**Water Chemistry:**

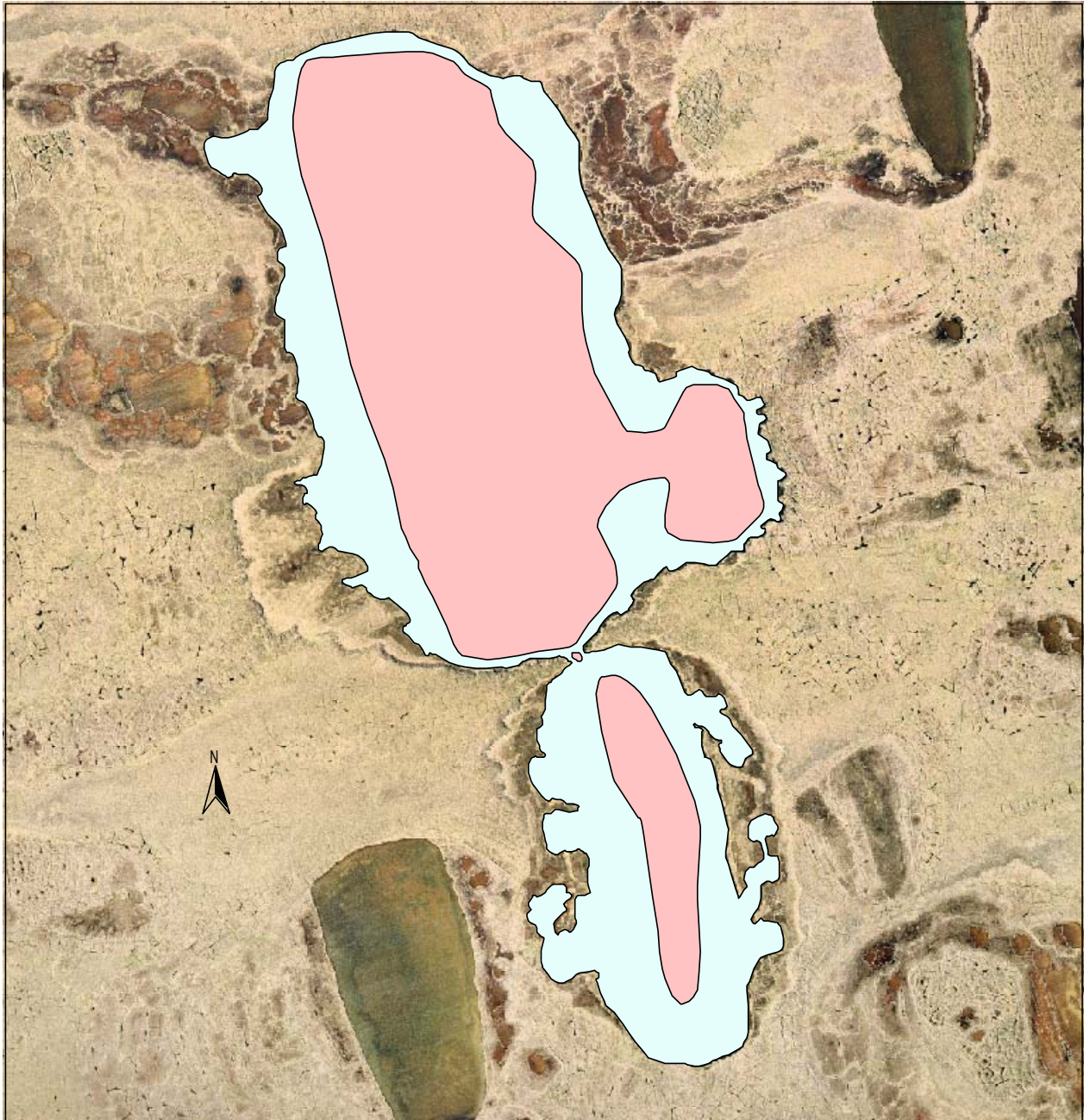
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Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	22.0	5.2	28.0	9.7	76	224	2.0	7.96	This Study

**Catch Record:**

---

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Aug 4 03	6.1	None	0
Minnow Trap	Aug 4 03	9.7	None	0
Observed	Aug 4 03		Ninespine stickleback	2



500 0 500 1000 1500 2000 Feet

Regions of lake M0345 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 4, 2003.

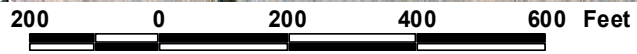
(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 Feet

Depth transects surveyed at lake M 0345 on August 4, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth contours of lake M0346, based on transects surveyed on August 5, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0346

**Other Names:**

**Location:** 70.33144°N 151.42279°W

**USGS Quad Sheet:** Harrison Bay B-3: T11N R3E Sec. 5

**Habitat:** Perched Lake

**Area:** 19.8 acres

**Maximum Depth:** 13.4 feet

**Active Outlet:** Yes

**Calculated Volume:** 36.83 million gallons

**Permittable Volume:** 0.88 million gallons

**Potential Aggregate:** 6.5 acres (water depth 4 ft or less)

**Water Chemistry:**

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Year	Calcium	Magnesium	Chloride	Sodium	Total Hardness [CaCO <sub>3</sub> ]	Specific Conductance	Turbidity	pH	Source
of Test	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(microS/cm)	(NTU)		
2003	14.0	2.2	5.1	2.4	44	108	2.2	7.63	This Study

**Catch Record:**

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Gear	Date	Effort (hours)	Species	Number Caught
not sampled, connected to river				

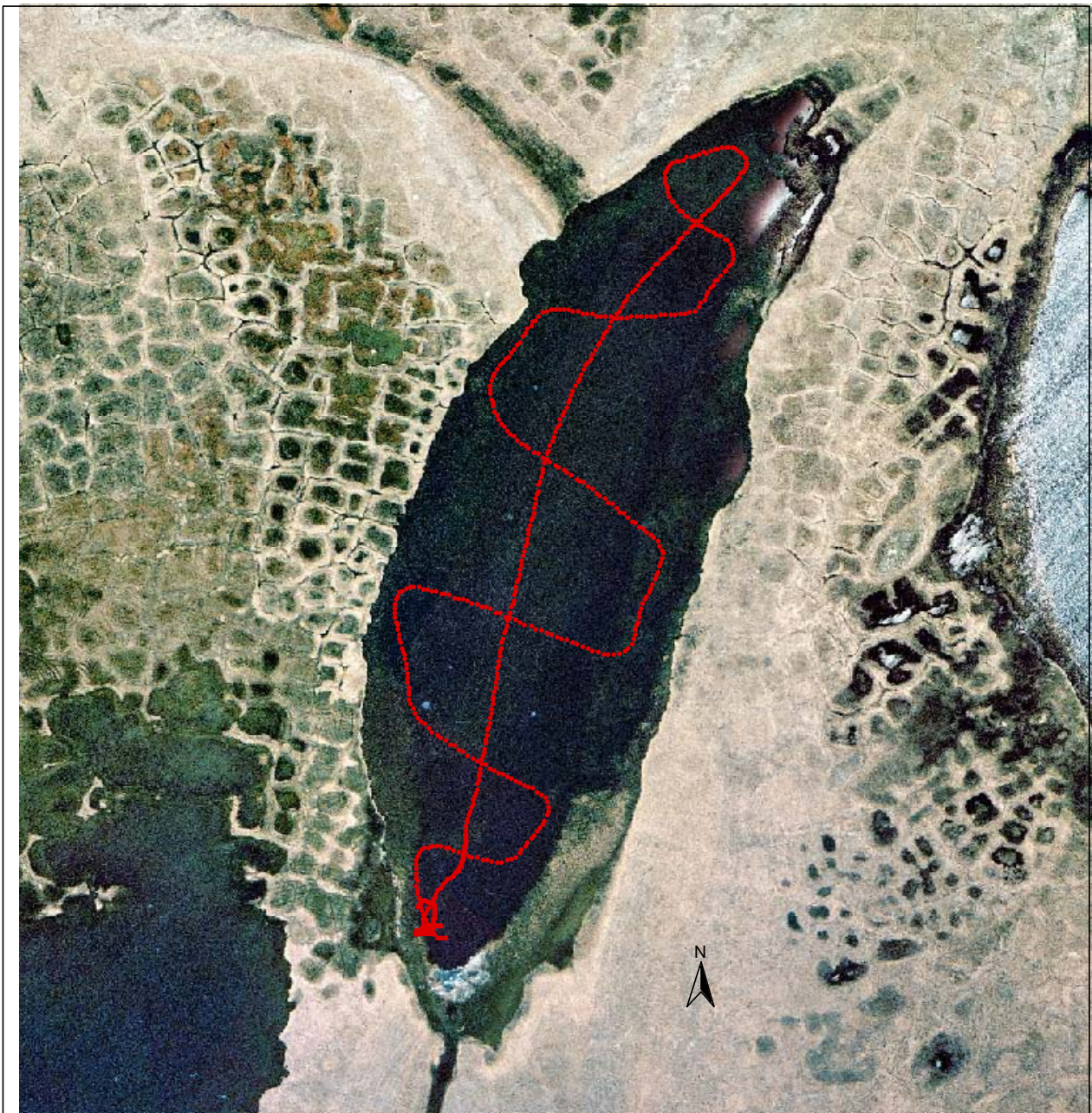
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200 0 200 400 600 Feet

Regions of lake M0346 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 5, 2003.

(not to be used for navigation or to direct use of heavy equipment)

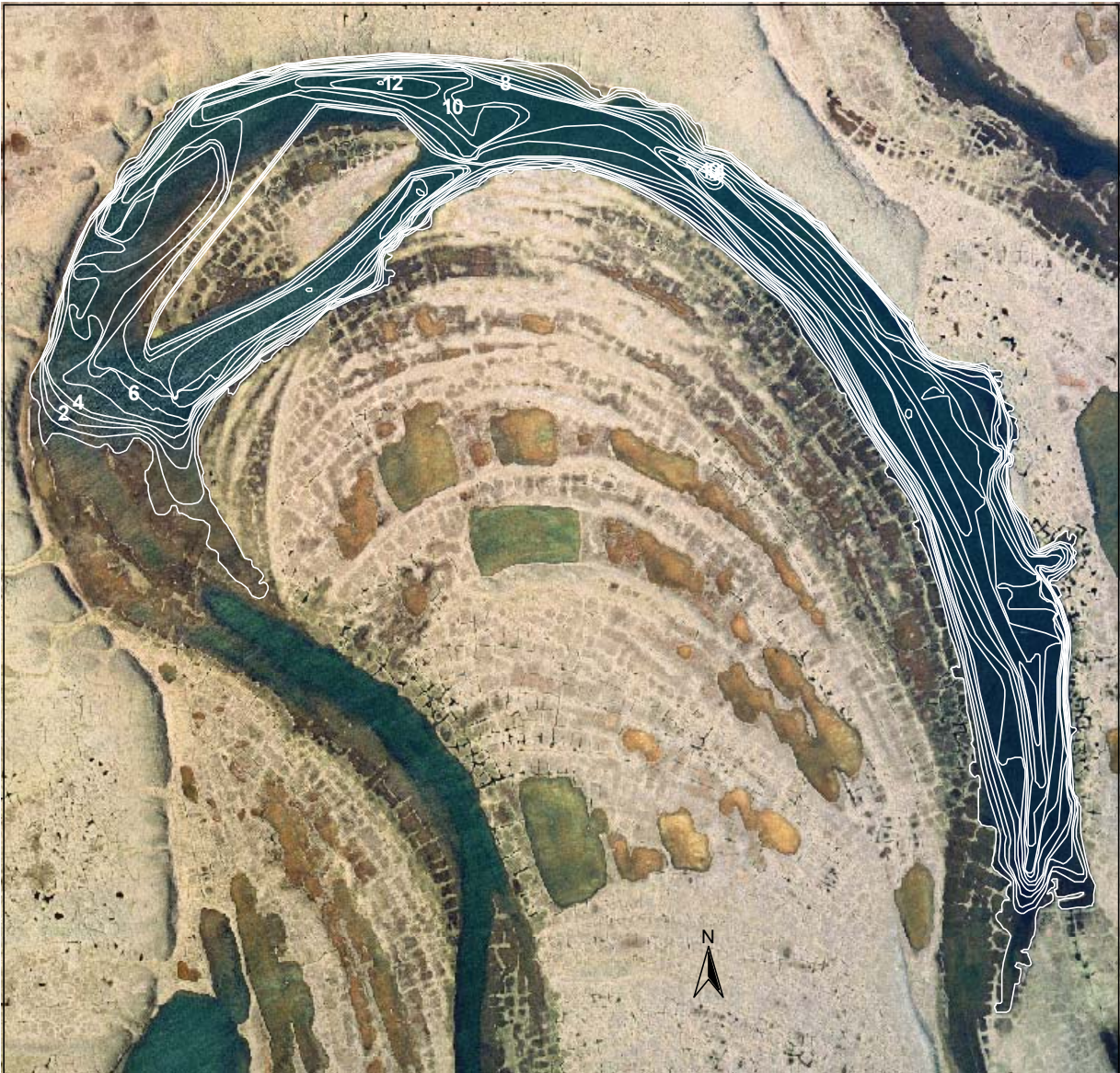


250 0 250 500 750 Feet

Depth transects surveyed at lake M0346 on August 5, 2003.

(not to be used for navigation or to direct use of heavy equipment)





500 0 500 1000 1500 2000 Feet

Depth contours of lake M0347, based on transects surveyed on August 3, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

**Lake M0347**

**Other Names:**

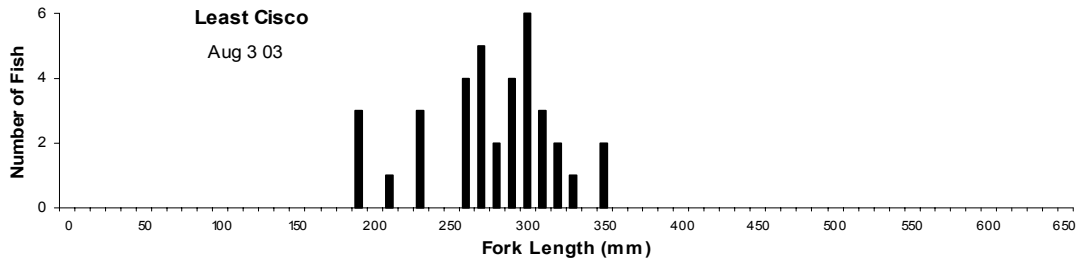
**Location:** 70.29830°N 151.67925°W  
**USGS Quad Sheet:** Harrison Bay B-3: T11N R2E Sec. 20/21  
**Habitat:** Perched Lake  
**Area:** 108.5 acres  
**Maximum Depth:** 14.9 feet  
**Active Outlet:** No  
**Calculated Volume:** 225.20 million gallons  
**Permittable Volume:** 5.15 million gallons  
**Potential Aggregate:** 21.9 acres (water depth 4 ft or less)

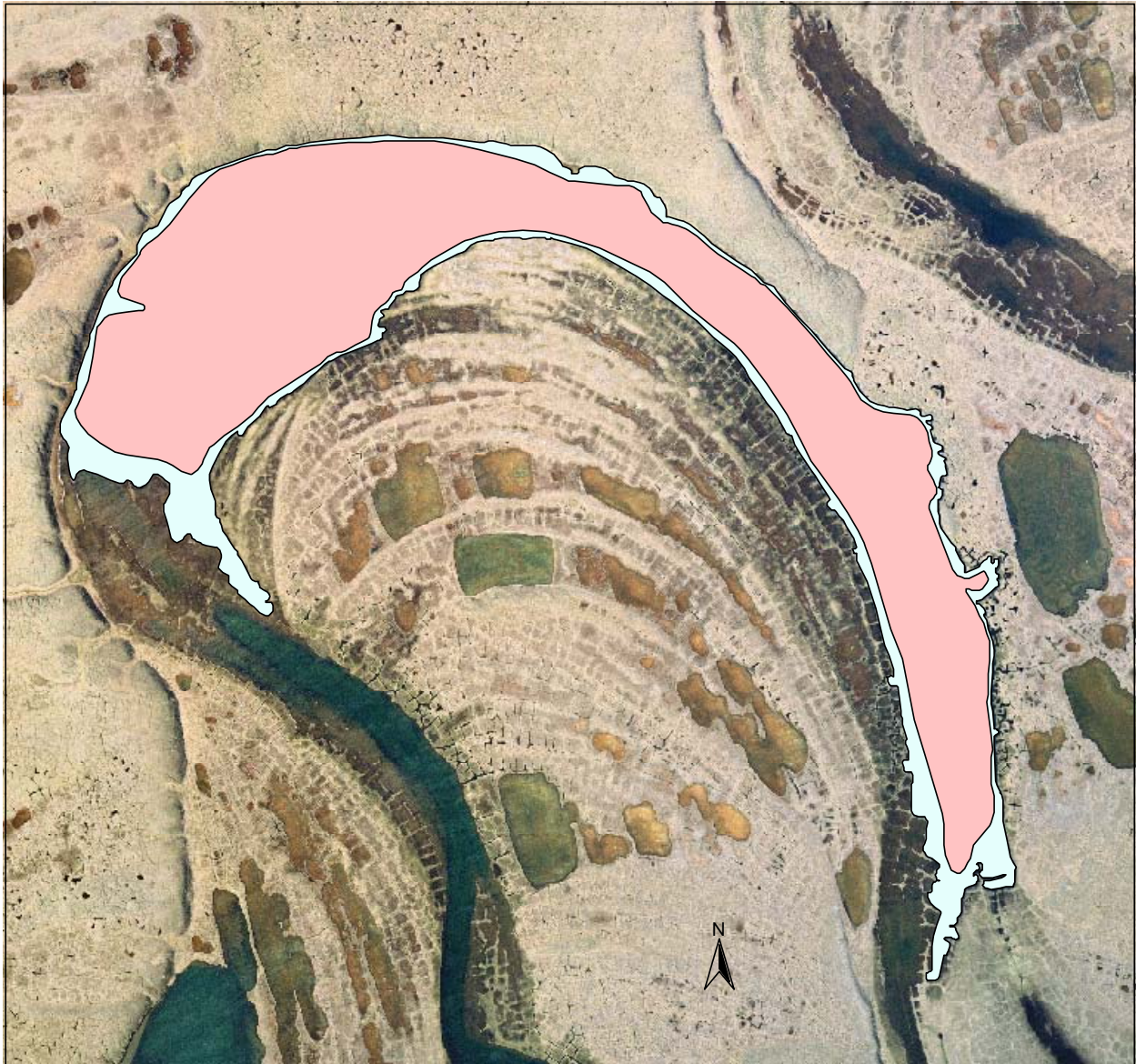
**Water Chemistry:**

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	16.0	2.7	7.4	3.3	50	113	2.0	7.77	This Study

**Catch Record:**

Gear	Date	Effort (hours)	Species	Number Caught	Fork Length (mm)
Gill Net	Aug 3 03	6.0	Least cisco	46	190-359
Minnow Trap	Aug 3 03	8.7	None	0	
Seine		0 hauls	None	0	





500 0 500 1000 1500 2000 2500 Feet

Regions of lake M0347 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 3, 2003.

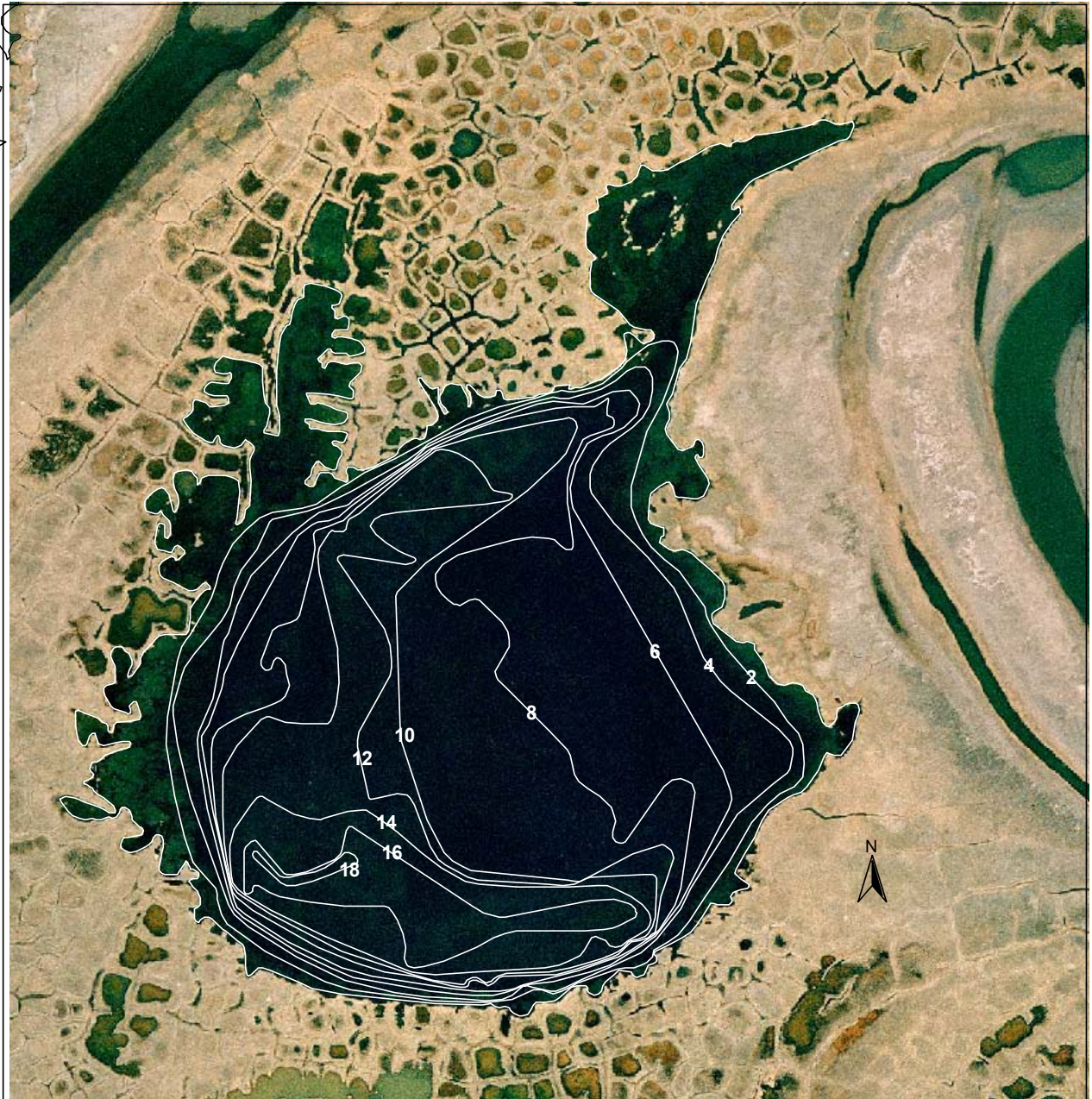
(not to be used for navigation or to direct use of heavy equipment)



500 0 500 1000 1500 2000 2500 Feet

Depth transects surveyed at lake M0347 on August 3, 2003.

(not to be used for navigation or to direct use of heavy equipment)



200 0 200 400 600 800 Feet

Depth contours of lake M0348, based on transects surveyed on August 6, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0348

**Other Names:****Location:** 70.36550°N 151.37254°W**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 27/28**Habitat:** Perched Lake**Area:** 38.3 acres**Maximum Depth:** 18.8 feet**Active Outlet:** No**Calculated Volume:** 91.25 million gallons**Permittable Volume:** 12.90 million gallons**Potential Aggregate:** 12.0 acres (water depth 4 ft or less)**Water Chemistry:**

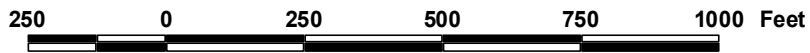
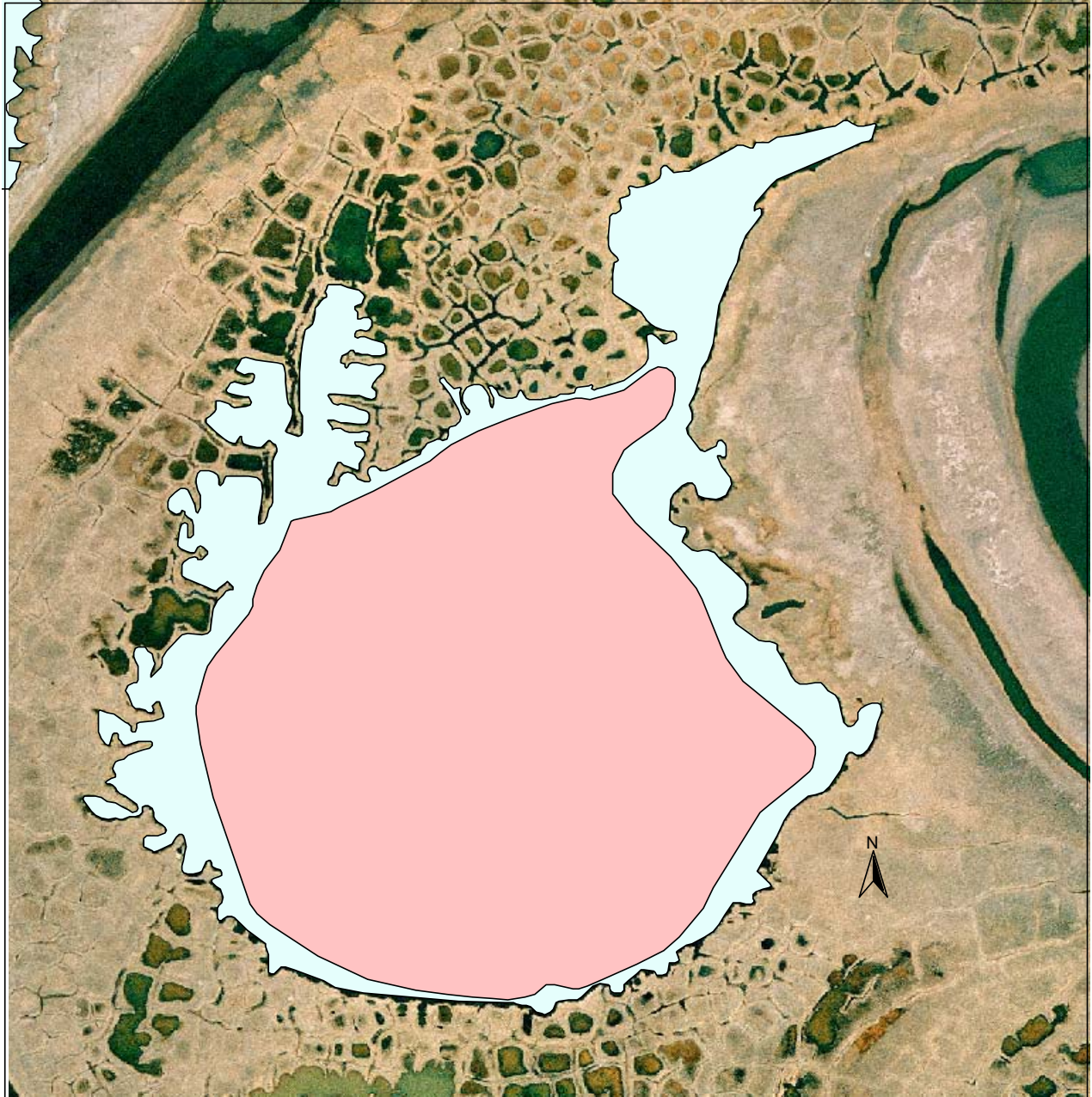
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Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total Hardness [CaCO <sub>3</sub> ] (mg/l)	Specific Conductance (microS/cm)	Turbidity (NTU)	pH	Source
2003	62.0	43.0	720.0	420.0	370	2710	1.5	8.54	This Study

**Catch Record:**

---

Gear	Date	Effort (hours)	Species	Number Caught
Gill Net	Aug 6 03	6.6	None	0
Minnow Trap	Aug 6 03	8.0	None	0
Observed	Aug 6 03		Ninespine stickleback	1



Regions of lake M0348 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 6, 2003.

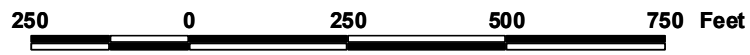
(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0348 on August 6, 2003.

(not to be used for navigation or to direct use of heavy equipment)





Depth contours of lake M0349, based on transects surveyed on August 5, 2003  
(depth intervals in 2 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0349

**Other Names:**

**Location:** 70.33131°N 151.41304°W

**USGS Quad Sheet:** Harrison Bay B-3: T11N R3E Sec. 4/5

**Habitat:** Perched Lake

**Area:** 17.8 acres

**Maximum Depth:** 14.9 feet

**Active Outlet:** Yes

**Calculated Volume:** 35.48 million gallons

**Permittable Volume:** 1.06 million gallons

**Potential Aggregate:** 6.4 acres (water depth 4 ft or less)

### Water Chemistry:

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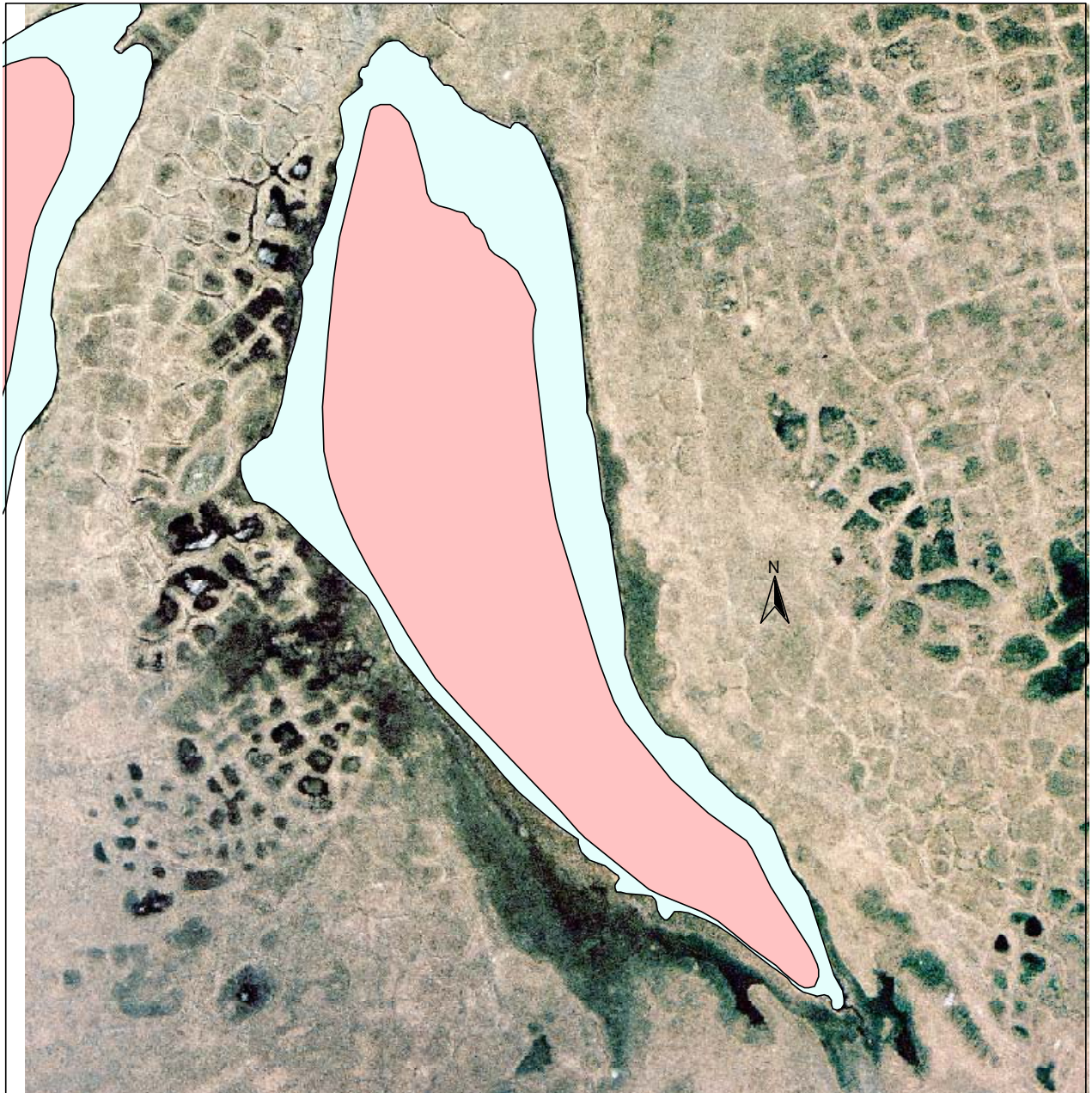
Year	Calcium	Magnesium	Chloride	Sodium	Total Hardness [CaCO <sub>3</sub> ]	Specific Conductance	Turbidity	pH	Source
of Test	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(microS/cm)	(NTU)		
2003	17.0	3.1	7.7	3.7	56	141	1.1	7.84	This Study

### Catch Record:

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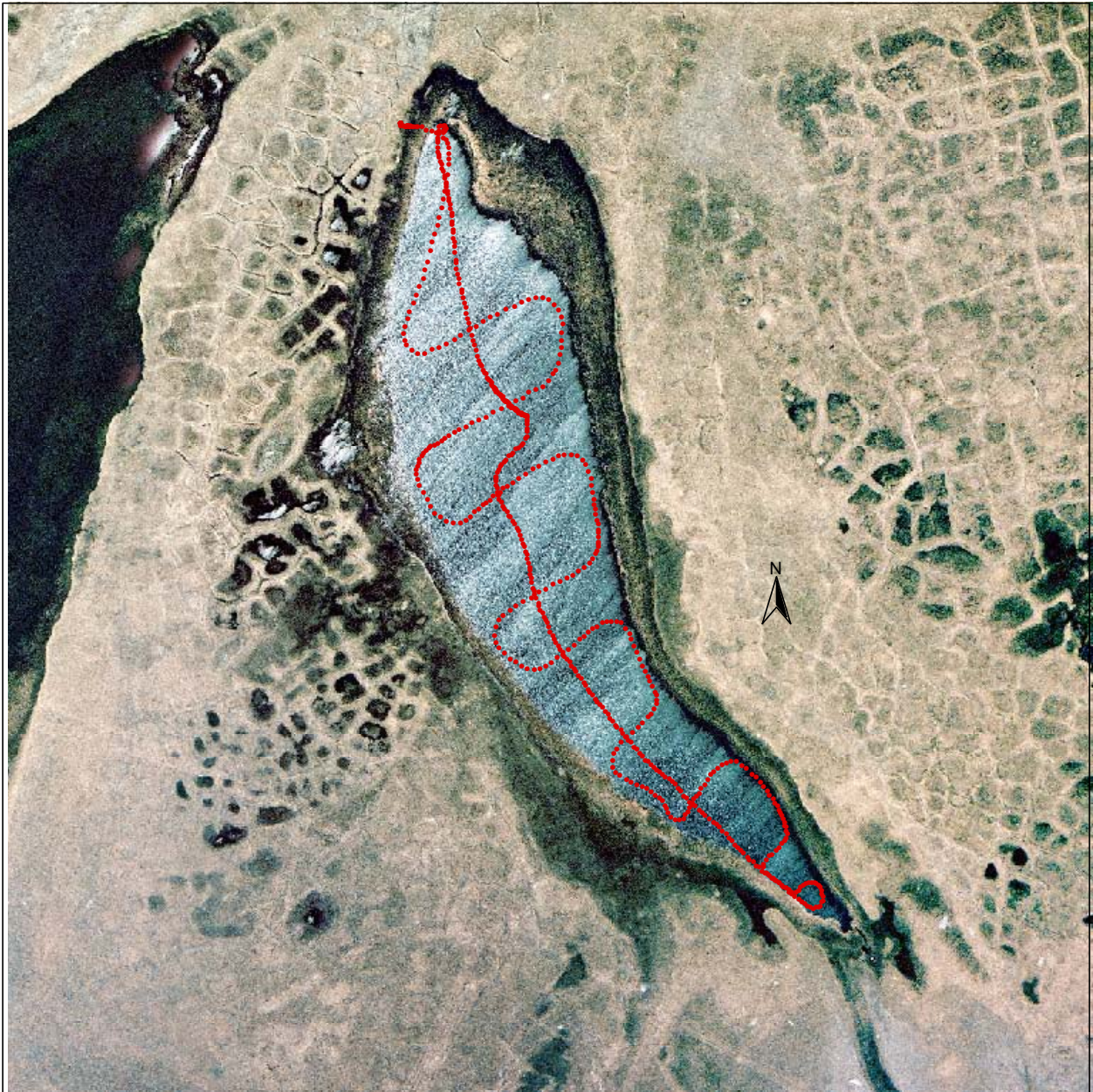
Gear	Date	Effort (hours)	Species	Number Caught
not sampled, connected to river				

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Regions of lake M0349 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 5, 2003.

(not to be used for navigation or to direct use of heavy equipment)



300 0 300 600 900 Feet

Depth transects surveyed at lake M0349 on August 5, 2003.

(not to be used for navigation or to direct use of heavy equipment)



250 0 250 500 750 Feet

Depth contours of lake M0350, based on transects surveyed on August 6, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0350

### Other Names:

**Location:** 70.38436°N 151.33495°W

**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 22

**Habitat:** Tapped

**Area:** 33.5 acres

**Maximum Depth:** 14.4 feet

**Active Outlet:** Yes

**Calculated Volume:** 50.32 million gallons

**Permittable Volume** 0.44 million gallons

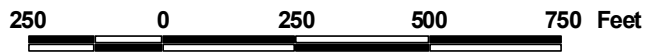
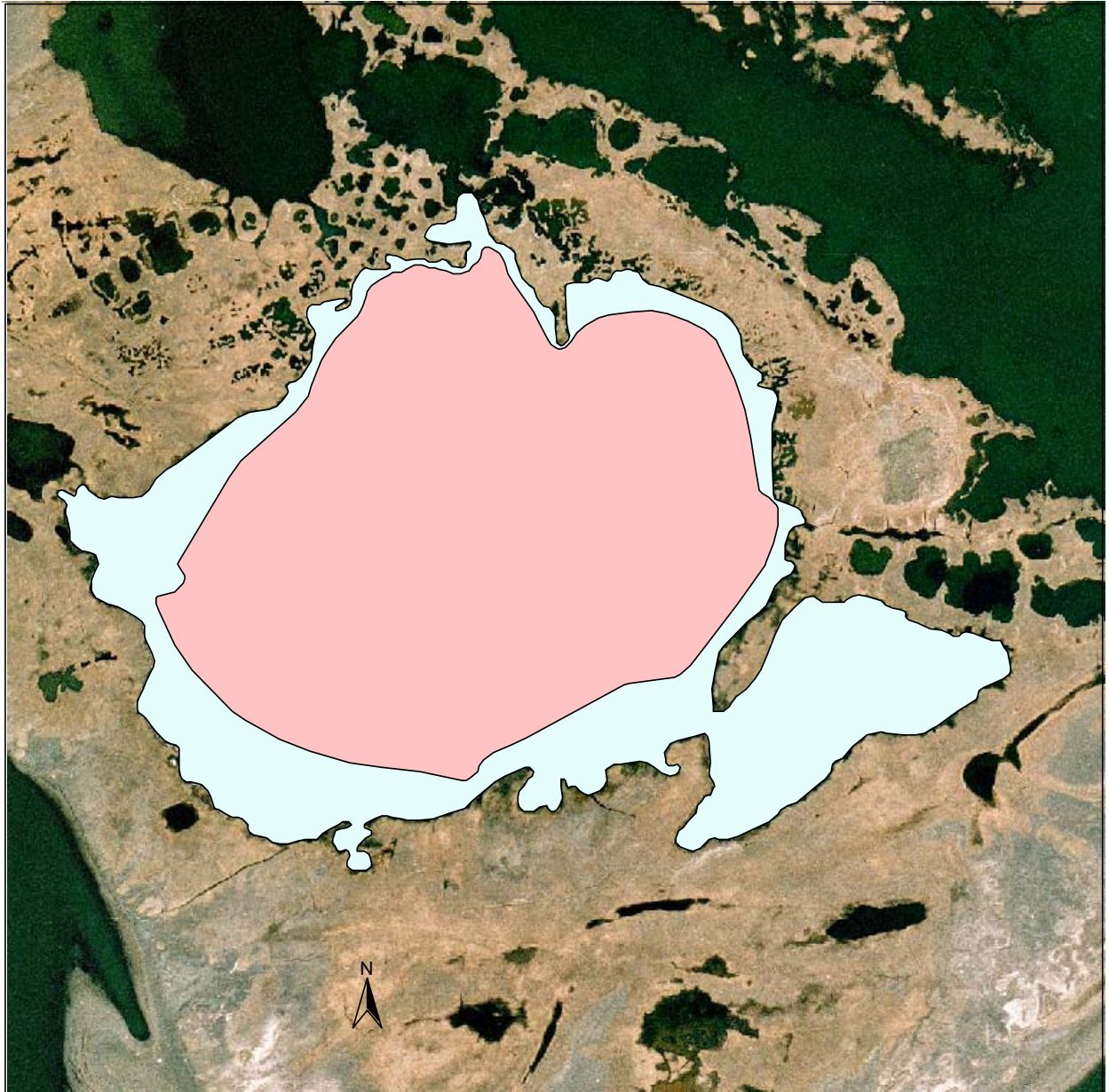
**Potential Aggregate** 12.1 acres (water depth 4 ft or less)

### Water Chemistry:

Year of Test	Calcium (mg/l)	Magnesium (mg/l)	Chloride (mg/l)	Sodium (mg/l)	Total	Specific	Turbidity (NTU)	pH	Source
					Hardness [CaCO <sub>3</sub> ] (mg/l)	Conductance (microS/cm)			
2003	200.0	550.0	7200.0	3600.0	2800	2292	5.4	8.15	This Study

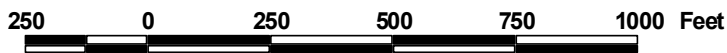
### Catch Record:

Gear	Date	Effort (hours)	Species	Number Caught
lake flooded by coastal water on Aug 6, 2003, not sampled				



Regions of lake M0350 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 6, 2003.

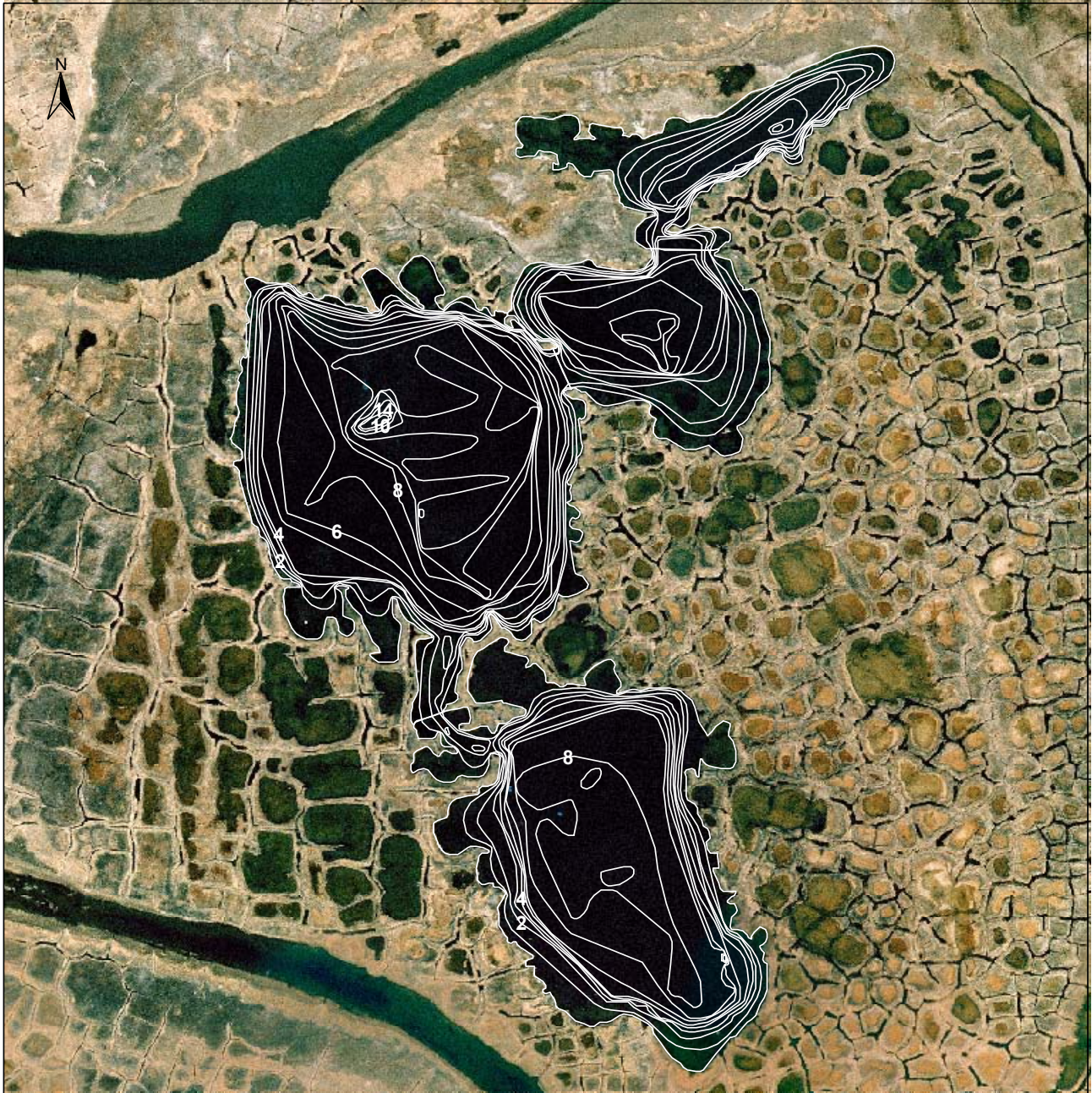
(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0350 on August 6, 2003.

(not to be used for navigation or to direct use of heavy equipment)





500 0 500 1000 Feet

Depth contours of lake M0351, based on transects surveyed on August 6, 2003  
(depth intervals in 1 foot increments)

(not to be used for navigation or to direct use of heavy equipment)

## Lake M0351

**Other Names:****Location:** 70.37740°N 151.36183°W**USGS Quad Sheet:** Harrison Bay B-3: T12N R3E Sec. 22**Habitat:** Perched Lake**Area:** 39.4 acres**Maximum Depth:** 16.5 feet**Active Outlet:** Yes**Calculated Volume:** 66.45 million gallons**Permittable Volume:** 1.12 million gallons**Potential Aggregate:** 14.9 acres (water 4 ft or less)**Water Chemistry:**

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Year	Calcium	Magnesium	Chloride	Sodium	Total Hardness [CaCO <sub>3</sub> ]	Specific Conductance	Turbidity	pH	Source
of Test	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(microS/cm)	(NTU)		
2003	190.0	440.0	5500.0	2400.0	2300	1824	3.8	8.14	This Study

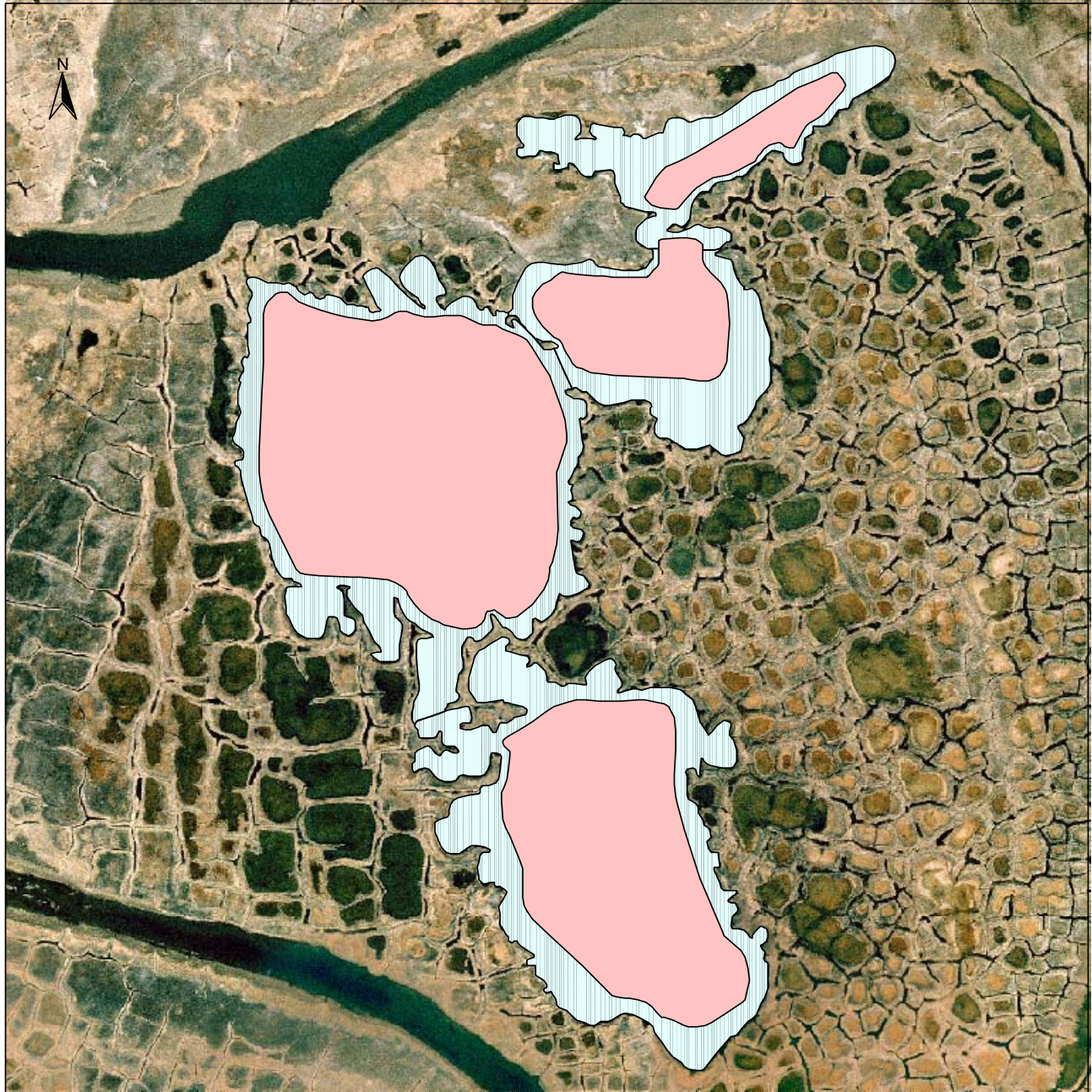
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**Catch Record:**

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Gear	Date	Effort (hours)	Species	Number Caught
not sampled, connected to river				

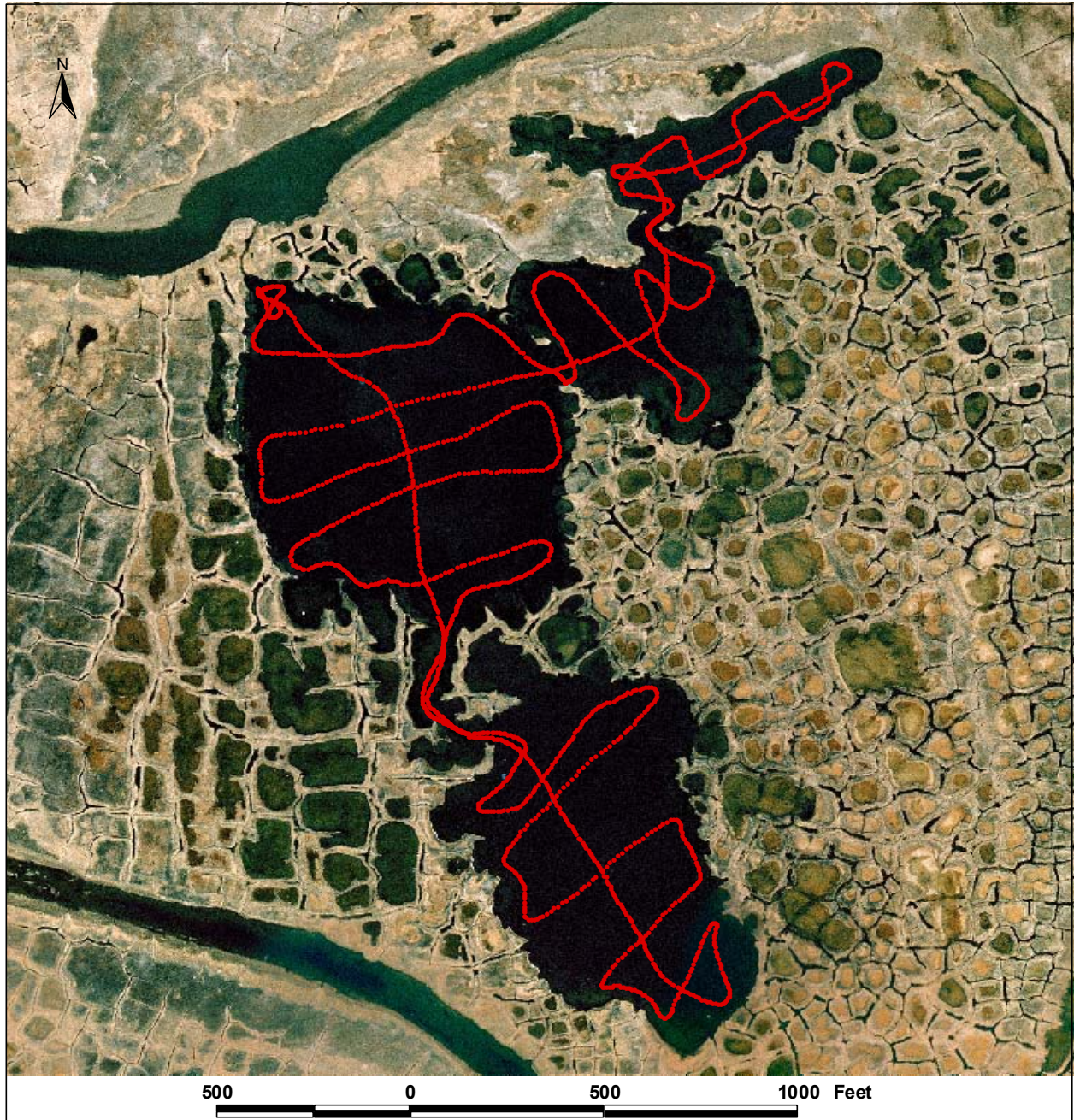
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500 0 500 1000 Feet

Regions of lake M0351 less than 4 ft deep (light shaded), and likely to be available for ice chips, based on transects surveyed on August 6, 2003.

(not to be used for navigation or to direct use of heavy equipment)



Depth transects surveyed at lake M0351 on August 6, 2003.

(not to be used for navigation or to direct use of heavy equipment)