AWC DATABASE CATALOG/ATLAS
CORRECTION FORM

CORRECTION TO: Atlas X Catalog X

Region: SCN

Map: Tyonek A-4, Tyonek 1:250

Water Body Number: 247-20-10010-2030, -0010, -0020, -0030

Describe Change(s): water body hydrology mapping was found to be in error,

fish documented on this nomination were found in lake @ 61.208318, 151.402859

which was reached thru new stream 247-20-10010-2030-3018-4031 (nom #14-262)(14-263)

remove extension of 247-20-10010-2030 & new lakes 247-20-10010-2030-0010

247-20-10010-2030-0020, & 247-20-10010-2030-0030

Change Requested By: Johnson 2/5/2015 Date

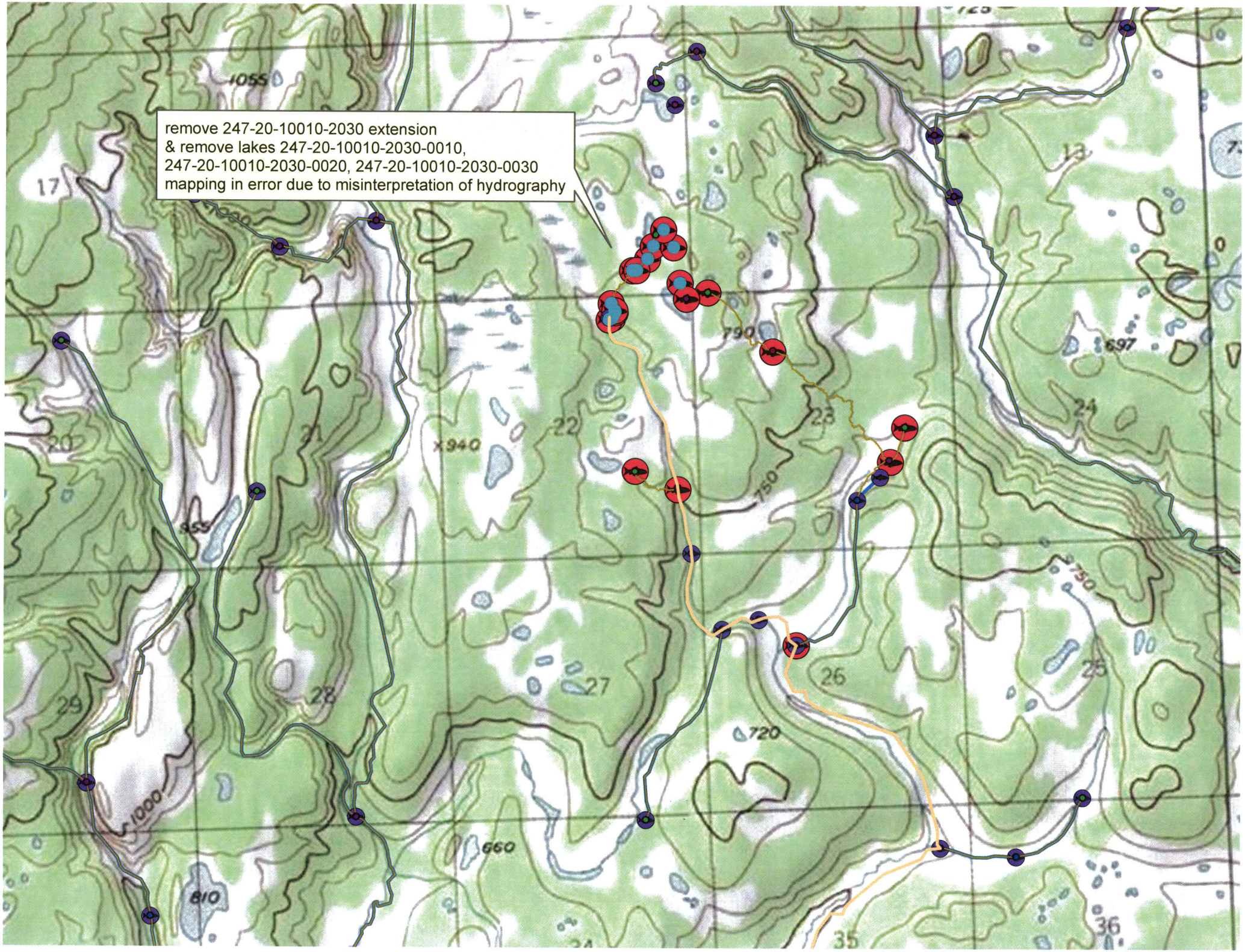
Drafted/Digitized By: [signature] 3 23 15 Date

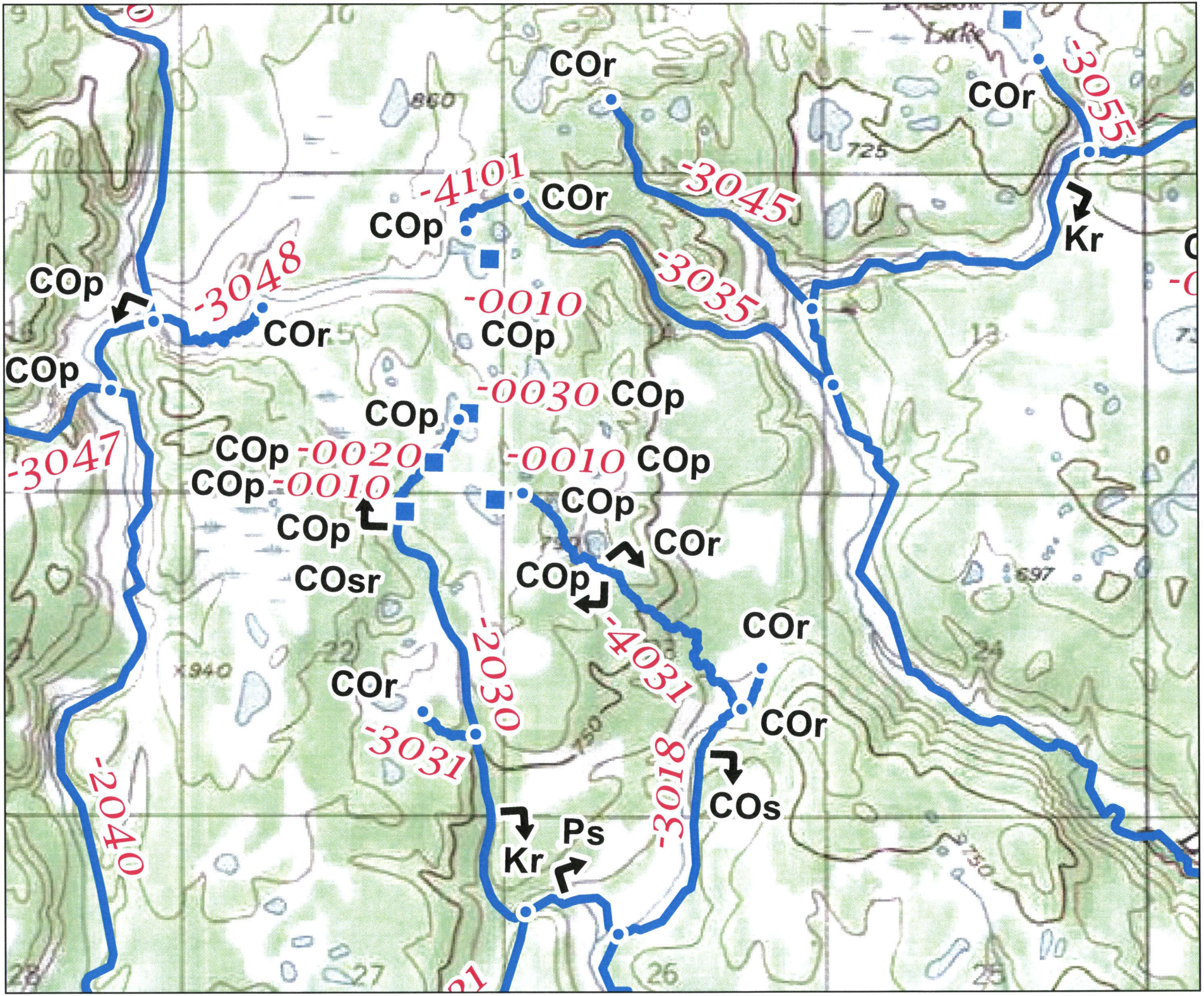
Revision Code: D-2

Nomination Number: 14-051

ATTACH THIS FORM TO EXISTING NOMINATION FORM

(Rev 05/07)


remove 247-20-10010-2030 extension
& remove lakes 247-20-10010-2030-0010,
247-20-10010-2030-0020, 247-20-10010-2030-0030
mapping in error due to misinterpretation of hydrography
1055
17
13
790
697
24
23
22
21
20
x940
750
955
750
26
25
27
28
29
720
1000
660
810
35
36


COr
COr
-3055
-4101
COr
COp
-3045
Kr
-3048
-0010
COr
COp
-3035
COp
COp
-0030 COp
-3047
COp
COp -0020
-0010 COp
COp -0010
COp
COr
COsr
COp
-4031
COr
-2030
COr
-3031
COr
-2040
Kr
Ps
-3018
COs

State of Alaska
Department of Fish and Game
Division of Sport Fish

Nomination Form
Anadromous Waters Catalog

Region: Southcentral

USGS Quad(s): Tyonek A-4

AWC Number of Water Body: Connects to 247-20-100-10-2030 - -0010-C020 C030

Name of Water body: Unnamed Lake ("Lake 4")

☐ USGS Name ☒ Local Name

☒ Addition ☐ Deletion ☐ Correction ☐ Backup Information

For Office Use

Nomination #	140051	James J Hasbrouck	9/3/2014
		Fisheries Scientist	Date
Revision Year:	2015	[signature]	9/3/14
		Habitat Operations Manager	Date
Revision to: Atlas ____ Catalog ____ Both Y		[signature]	3/18/14
		AWC Project Biologist	Date
Revision Code:	A-2, A-1, B-2 B-6	[signature]	9/5/14
		GIS Analyst	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
coho salmon	7/21/06 (juvenile)		X	X	☒
coho salmon	8/19/07 (adult)			X	☒
					☐
Add new	Incr. wl coho salmon present				☐
extend	stream wl coho salmon present				☐

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

Comments

Two coho salmon captured with limited sampling effort. One juvenile coho salmon (41 mm) was captured in a minnow trap set for 17 hrs. The juvenile coho was deceased and partially consumed by dragonfly larvae (it is possible that other captured juveniles were also consumed). One adult coho salmon (430 mm FL) was captured in a 125' multi-mesh gill net set for 4.5 hours. Four salmonids (281mm and larger) were captured in the gill net and identified as rainbow trout, but a picture was taken of one of these fish and it is clearly identifiable as a coho salmon. Based on this one photograph, it is likely that all of these salmonids were actually coho.

ALASKA DEPT. OF FISH & GAME 2014

Name of Observer (please print): Josh Brekken

Signature: [signature]

Date: 2-26-14

Agency: ADF&G

Address: 333 Raspberry Rd
Anchorage, AK 99518

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Anadromous Waters Catalog.

Signature of Area Biologist: _____ Date: _____

Name of Area Biologist (please print):

Revision 11/13

2006 Fish Total Length Measurement Datasheet
(Fig 2)

DATE: 7/21/06 SITE ID: ML4A
CHECK TIME: 0935 INITIALS: Ho JB

	SPECIES	LENGTH (mm)		SPECIES	LENGTH (mm)
1	Co	41	35		
2	tadpole	54	36		
3			37		
4			38		
5			39		
6			40		
7			41		
8			42		
9			43		
10			44		
11			45		
12			46		
13			47		
14			48		
15			49		
16			50		
17			51	T° = 17.07	
18			52		
19			53	Do =	
20	depth = 3.3		54		
21			55	cond 18	
22	v = 0.0		56		
23			57	pH = 6.60	
24			58		
25			59		
26			60		
27			61		
28	61°12'34.94 N		62		
29	151°23'28.0[redacted] W		63		
30			64		
31			65		
32			66		
33			67		
34			68		

SP CODES:							
	CK	CHINOOK	RT	RAINBOW TROUT	SL SC	SLIMY SCULPIN
	CO	COHO	DV	DOLLY VARDEN	CO SC	COASTRANGE
	PK	PINK	9-STB	9 SPINE STICKLEE	OT	OTHER
	SO	SOCKEYE	3-STB	3 SPINE STICKLEE	UN	UNKNOWN
	CM	CHUM	LA	LAMPREY SP.		

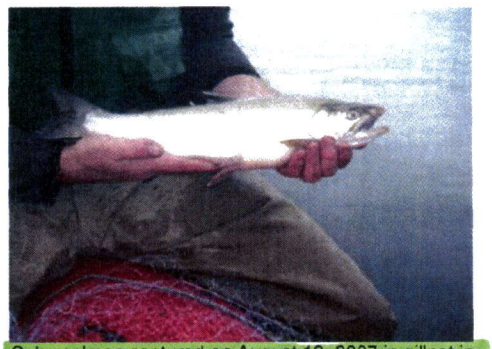
Co dead - DF larvae feeding on it
cranefliies - 6 total 1 collected in vial 2
1 dragonfly larvae

Table 3.1-18. Lake Survey Results Summary

General Location	Lake ID	Fish Captured		
		2007 w/ gillnets and traps	2006 (OASIS, 2007) w/ traps and/or hook & line	1982-1984 (ERT, 1984) w/ gillnets
Within Mine Area	Lake 1	NF	NF	NS
	Lake 2	NF	NF	NS
	Lake 3	NF	NF	NS
	Lake 4	**Coho salmon; Rainbow Trout**	**Coho salmon**	**NS**
	Lake 7	NF	NF	NS
	Lake 9	**Rainbow Trout; Dolly Varden**	**Coho salmon**	**NS**
Adjacent to Mine Area or Project Infrastructure	**Lake 5**	**Coho salmon**	**NF**	**NS**
	Lake 6	NF	NF	NS
	Lake 8	**NS**	**Threespine stickleback**	**NS**
	Lake 10	NF	NF	NS
	Lake 11	NF	NF	NS
	Lake 12	NF	NF	NS
	Pond 5	NF	NF	NS
	Denslow Lake	**NS**	**Threespine stickleback; ninespine stickleback**	**Coho salmon; Dolly Varden; threespine stickleback**
	Lake 955	**NS**	**NF**	**Coho salmon; Dolly Varden**
	Lake 725	**NS**	**NF**	**Dolly Varden**
	Lake 730	**Coho salmon; threespine stickleback**	**Three-spine stickleback**	**Coho salmon; Dolly Varden; threespine stickleback**
Within Ladd Landing	**LL1**	**NS**	**Three-spine stickleback**	**NS**
	LL2	**Coho salmon; threespine stickleback; long-nose suckers**	**Coho salmon; threespine stickleback**	**NS**
	LL3	NS	NF	NS

NS = Not surveyed
NF = Netted and/or trapped, but no fish captured
BOLD = Fish Lakes, or lakes where fish have been captured

Physical measurements and habitat notes for lakes surveyed in 2007 are included in Table 3.1-19. Lakes were surveyed once during the season from August to mid-October. Lake depths are variable, but generally shallow, with the maximum depth of lakes being near 25 feet. Water clarity was usually good, but slightly compromised by tannins that are common in the area's surface water.



Coho salmon captured on August 19, 2007 in gillnet in Lake 4

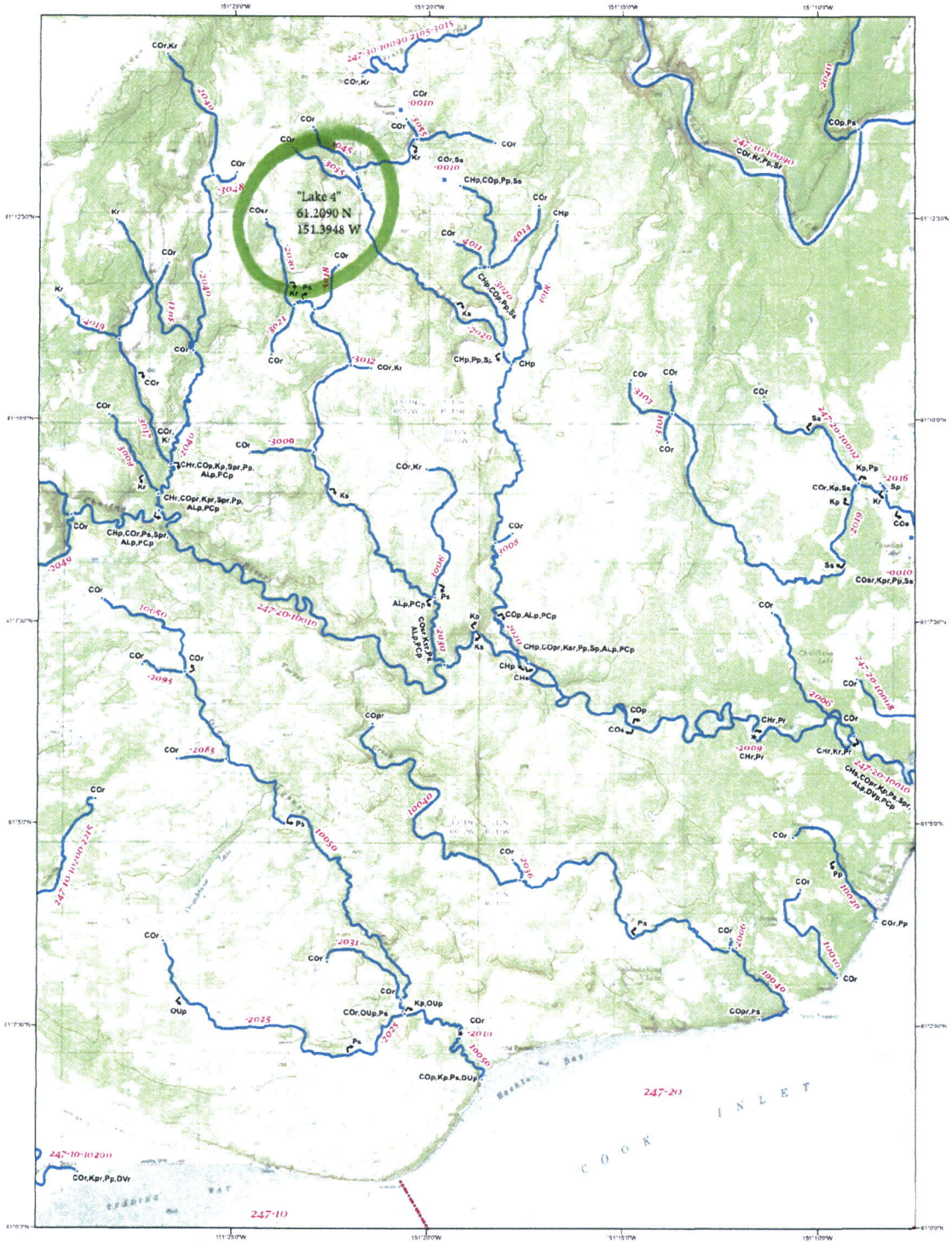
Longnose sucker captured on October 17, 2007 at LL2

Dolly Varden were captured in one of the six lakes surveyed within the proposed mine area, but none of the eight lakes that were gillnetted outside of the proposed mine area. Historically, ERT documented Dolly Varden in three additional lakes which are located outside the proposed mine area. Dolly Varden are migratory and adaptable, able to use a wide range of habitat types and tend to overwinter in lakes (Morrow 1980). Additionally, the southern form of Dolly Varden homes to the same lacustrine watershed when overwintering in fresh water (Bernard and Hepler 1995), but may also overwinter at sea some seasons, hence it is likely these fish are still present in these lakes or will enter the lakes at other times. All lakes within the proposed mine area appeared consistent with habitat in lakes that do support Dolly Varden and are considered, in the least, capable of supporting rearing or overwintering Dolly Varden.

Five out of twenty surveyed lakes contain ninespine and/or threespine sticklebacks based on minnow trap results. Two of the lakes are located in the Ladd Landing Area, one is in the Threemile Creek drainage, and the other two are larger large lakes in the headwaters of the 2002 drainage. Although these are not commercially important fish species, they play an important role in local ecosystems and may form a significant part of the food of large fishes. They are an important forage species for Dolly Varden and other predaceous fish (Morrow 1980). These fish also provide food for a variety of bird species further adding to their importance in the overall food chain.

Rainbow trout were captured in two of the lakes surveyed. Both are located in the 2003 drainage within the proposed mine area. Trout captured in gillnets ranged from 28 to 30 cm in size, but no juvenile trout were captured in the minnow traps. These fish are likely entering the lakes to feed and could stay for part of or across seasons, but are most likely leaving to spawn. Available food in the lakes includes insect larvae, plankton, crustaceans, tadpoles, leeches, and small fish or fish eggs. Most lakes within the proposed mine area could probably support rainbow trout in some capacity, either for feeding or overwintering, with spawning occurring in flowing waters, including inlet or outlet streams.

Unique to Ladd Lake 2, longnose suckers were captured in gillnets, ranging in size from 23 to 30 cm. This is the only species of sucker located in Alaska and can be found in both lakes and streams where the water temperature is usually clear and cold. Suckers sometimes travel to streams to spawn, but can also spawn in lakes (Mansfield 2004). Lake-dwelling adults feed mainly on crustaceans, mollusks, insect larvae, and sometimes algae (Morrow 1980).



Base map created with TOPO! ©2006 National Geographic Maps. All Rights Reserved

The geographical base map data are based on USGS topographic maps, USGS elevation data, and the USGS Geographic Names Information System. Please consider carefully the fact that the geographic data may not be adequate for purposes requiring precision in depiction of geographic features, exact measurement of direction or distance, or for similar purposes including but not limited to navigation, tracing, or emergency response.

Access this map on the web at
http://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.maps

SCALE 1:63,360

0 0.5 1 2 3 4 Miles
0 5,000 10,000 20,000 30,000 Feet
0 1 2 4 6 8 Kilometers

Universal Transverse Mercator projection. Zone 5. 1983 North American datum

TYO B-3	TYO B-4	TYC B-5
TYO A-5	TYO A-4	TYO A-3
KEN D-5	KEN D-4	KEN D-3

Location Map

ALASKA

- Lower/Upper Point of Stream
- Midstream Species Begin/End Point
- Short Stream (Under 660 feet)
- Lake
- Barrier
- Anadromous Streams
- Anadromous Areas
- AWC Stat Area
- Regional Boundary

Waters important to Anadromous Fish are listed pursuant to AS 16.05.871. Specified species distribution and life functions reflect known data. Actual distribution and use may extend beyond specified limits. Migration upstream and/or downstream is assumed for specified stream reaches.

SPECIES CODES

CO	coho salmon	AC	Arctic char	LV	river lamprey
CH	chum salmon	AL	Arctic lamprey	OL	longfin smelt
K	chinook salmon (king)	AW	Arctic cisco	OM	rainbow smelt
P	pink salmon	BC	broad whitefish	OU	eulachon
S	sockeye salmon	BW	Bering cisco	PC	Pacific lamprey
		CT	cutthroat trout	SF	inconnu (sheefish)
		DV	Dolly Varden	SH	steelhead trout
		GS	green sturgeon	SM	smelt, undifferentiated
		HW	humpback whitefish	ST	sturgeon, undifferentiated
		LC	least cisco	W	whitefish, undifferentiated
		LP	lamprey, undifferentiated	WS	white sturgeon

LIFESTAGE CODES

p	Present
m	Migration
r	Rearing
s	Spawning

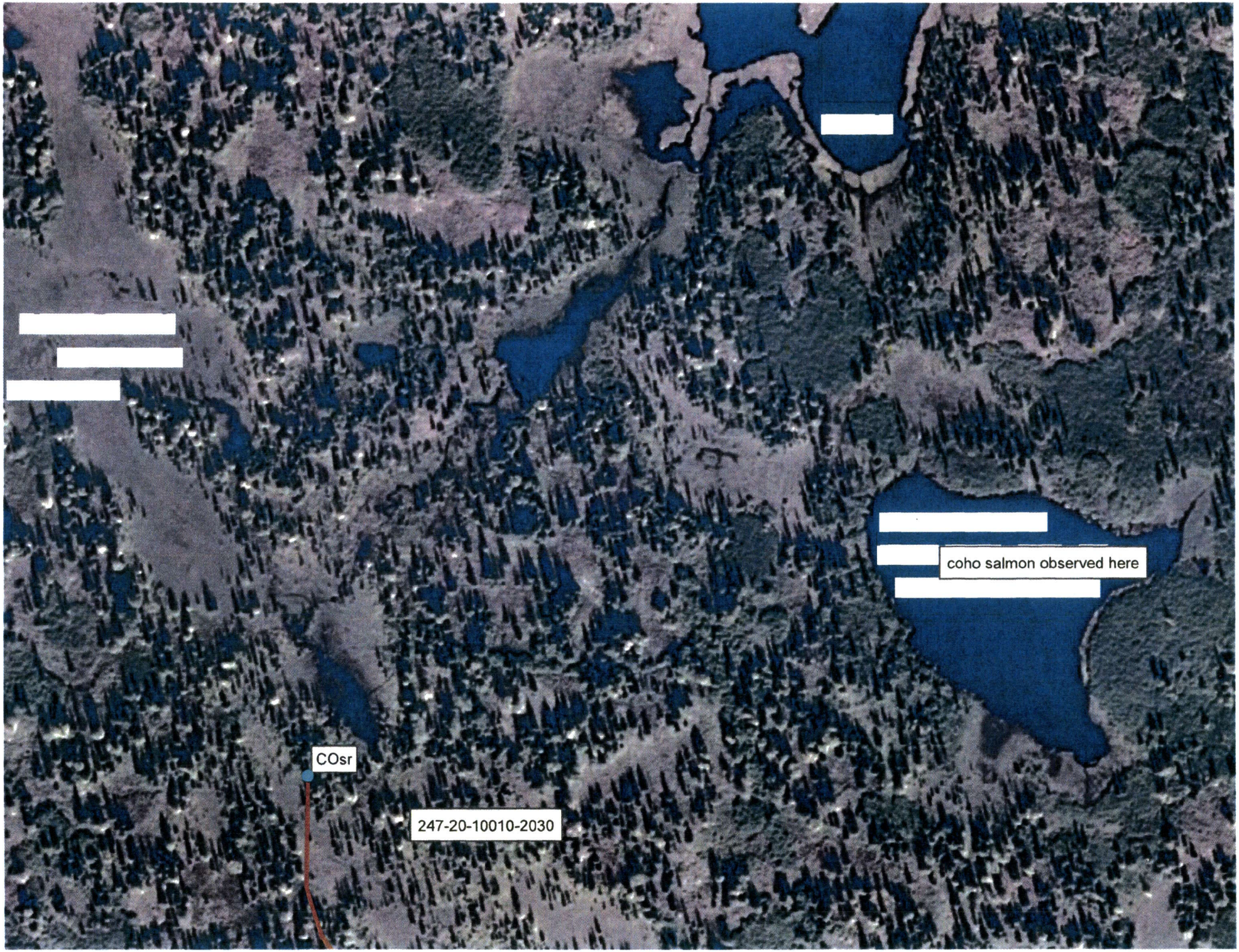
Produced By
State of Alaska
Department of
Fish and Game

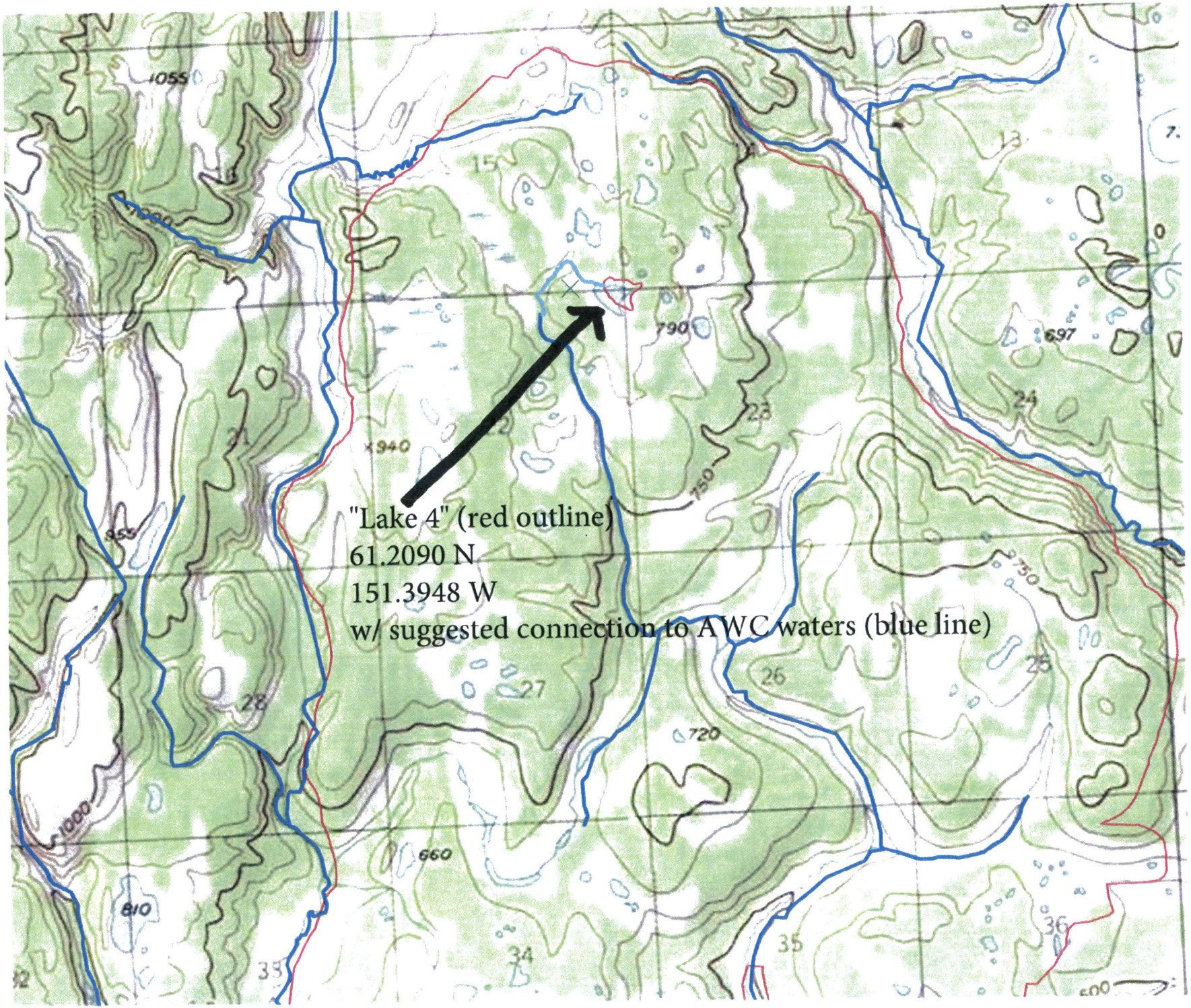
Anadromous Waters Atlas

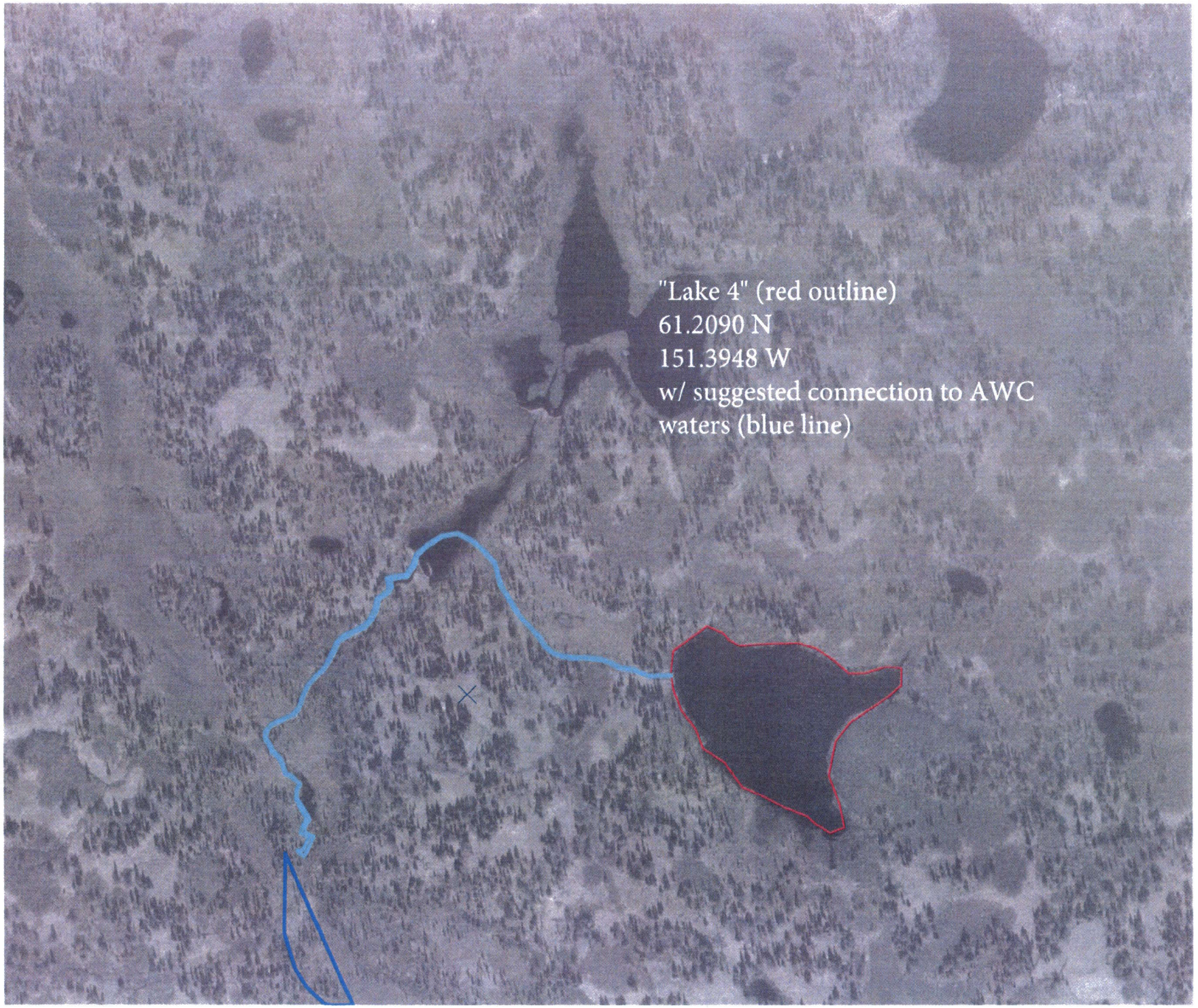
Quad No. 059 (TYO)

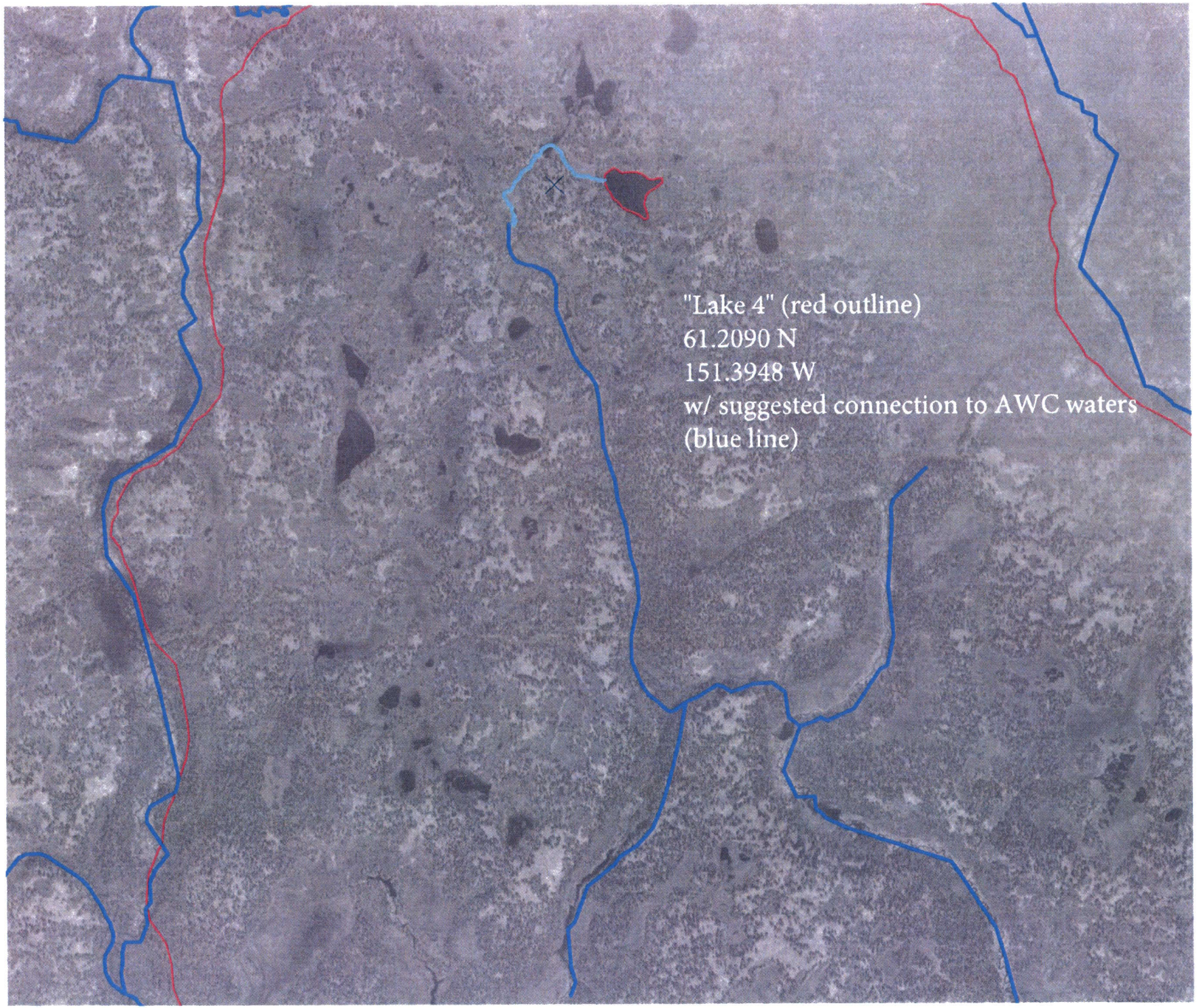
Tyonek
A- 4

Revision Date 1/21/2011


coho salmon observed here
COsr
247-20-10010-2030


"Lake 4" (red outline)
61.2090 N
151.3948 W
w/ suggested connection to AWC waters (blue line)


"Lake 4" (red outline)
61.2090 N
151.3948 W
w/ suggested connection to AWC
waters (blue line)


"Lake 4" (red outline)
61.2090 N
151.3948 W
w/ suggested connection to AWC waters
(blue line)

14-051

Johnson, J D (DFG)

From: Brekken, Josh M (DFG)
Sent: Monday, March 17, 2014 11:43 AM
To: Johnson, J D (DFG)
Subject: RE: 14-051
Attachments: AWC_Nomination_Lake4_Brekken.zip

J.

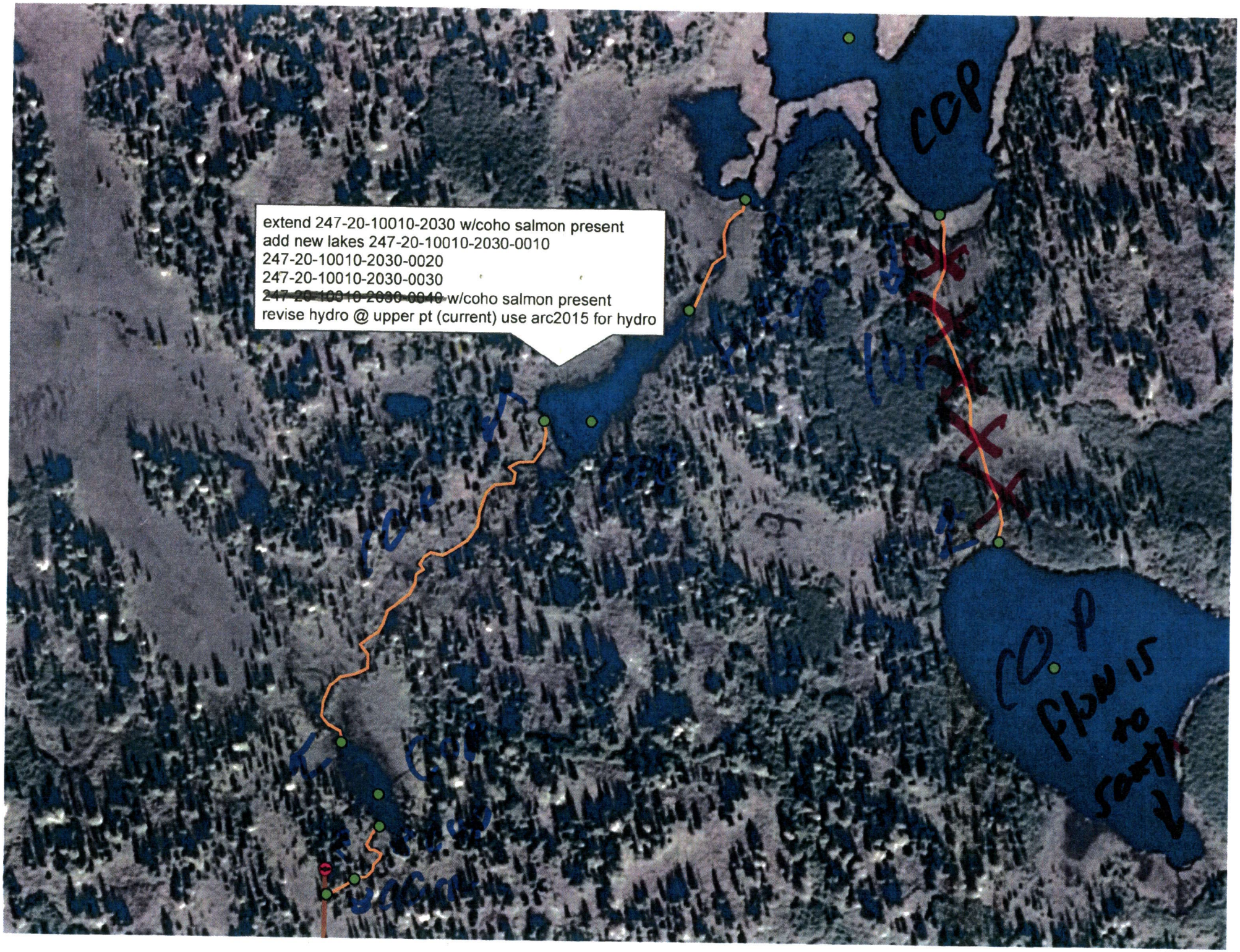
I looked back over the imagery with your comment in mind ('extension meanders thru at least two lake-like water bodies...'). It looks like "Lake 4" could drain to the north or northwest and then 247-20-100-10-2030. I am a little unsure about the exact location of the outlet drainage. I redrew the stream draining more to the north and into the two lake-like water bodies. Let me know what you think and thanks for the help.
Josh

From: Johnson, J D (DFG)
Sent: Friday, March 07, 2014 11:02 AM
To: Brekken, Josh M (DFG)
Subject: 14-051

Josh

Do you have a polyline shape file for stream continuation of 247-20-10010-2030?
Also orthoimagery suggest that extension actually meanders thru at least two lake-like water bodies before reaching "Lake 4".
Expect to be pretty busy w/finalizing 2014 AWC update next week so it may be a challenge to address this next week
Attached is ortho-snippet from area

J. Johnson
AWC Project Biologist
907-267-2337


extend 247-20-10010-2030 w/coho salmon present
add new lakes 247-20-10010-2030-0010
247-20-10010-2030-0020
247-20-10010-2030-0030
~~247-20-10010-2030-0040~~ w/coho salmon present
revise hydro @ upper pt (current) use arc2015 for hydro
CCP