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

Nomination Form
Anadromous Waters Catalog

Region: South Central

USGS Quad(s): Tyonek A4

Anadromous Waters Catalog Number of Waterway: 247-20-10010-2030-3009

Name of Waterway: "Middle Creek"

☐ USGS Name ☒ Local Name

☒ Addition ☐ Deletion ~~☒ Correction~~ ☐ Backup Information

Add Coho spawning

For Office Use

Nomination #	130030		8/27/13
		Fisheries Scientist	Date
Revision Year:	2014		8/27/13
Revision to: Atlas ____ Catalog ____		Habitat Operations Manager	Date
Both X			1/31/13
		AWC Project Biologist	Date
Revision Code:	B-2, C-9		9/16/13
		Cartographer	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
Coho Salmon (14+)	9/20/07	X		X	X
					☐
					☐
Add coho salmon spawning to stream					☐
Revise hydrography					☐

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: Several adult coho salmon observed during environmental baseline studies (OASIS, 2008). Adult coho were in spawning condition and actively building redds. Spawning salmon observed during foot surveys by OASIS staff, including myself (J Brekken).

Name of Observer (please print): JOSH BREKKEN

Signature: Josh B

Date: 11/14/12

Agency: ADFG

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: _____

ALASKA DEPT. OF FISH & GAME
JAN 18 2013

02/08 Revision

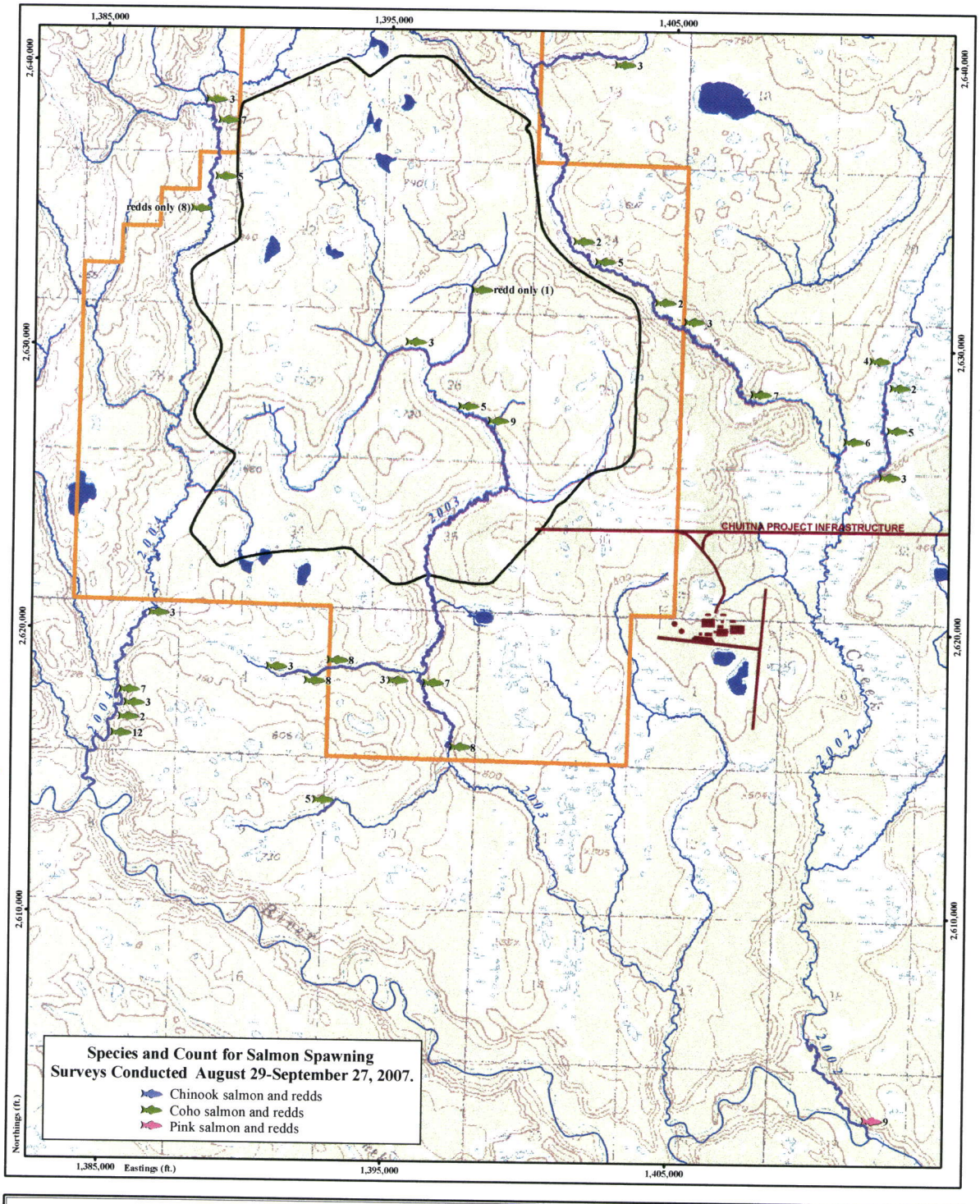


FIGURE 3.1-23
AUGUST 23 TO SEPTEMBER 27, 2007 SALMON SPAWNING SURVEY COVERAGE AND COUNT FOR STREAMS 2002, 2003, AND 2004.

N

0 0.25 0.5 1 Miles

0 0.5 1 1.5 Kilometers

1:42,000 1 inch equals 3,500 feet

Projection: NAD83 AK State Plane Zone 4 (feet)

CHUITNA COAL PROJECT

PACRIM COAL

PacRim Coal, LP
711 H Street, Suite 350
Anchorage, AK 99501 USA
Phone: (907) 276-6868

Legend

- Surveyed Stream Reach
- Project Area Stream
- Project Area Lake
- Proposed Road & Conveyor
- Proposed Facilities
- Lease Mining Unit-1 Boundary
- Lease Boundary

Data Sources:
Salmon Spawning Survey Data, Oasis, 2007.
Mine Infrastructure, Mine Engineers, 2006.
Hydrology, Oasis, 2007
USGS Topographic Quadrangle, 1:63360, Tyonek Sheets A2, A5, & A7, 1958.

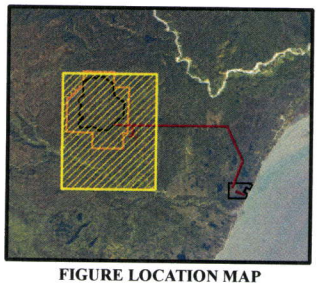
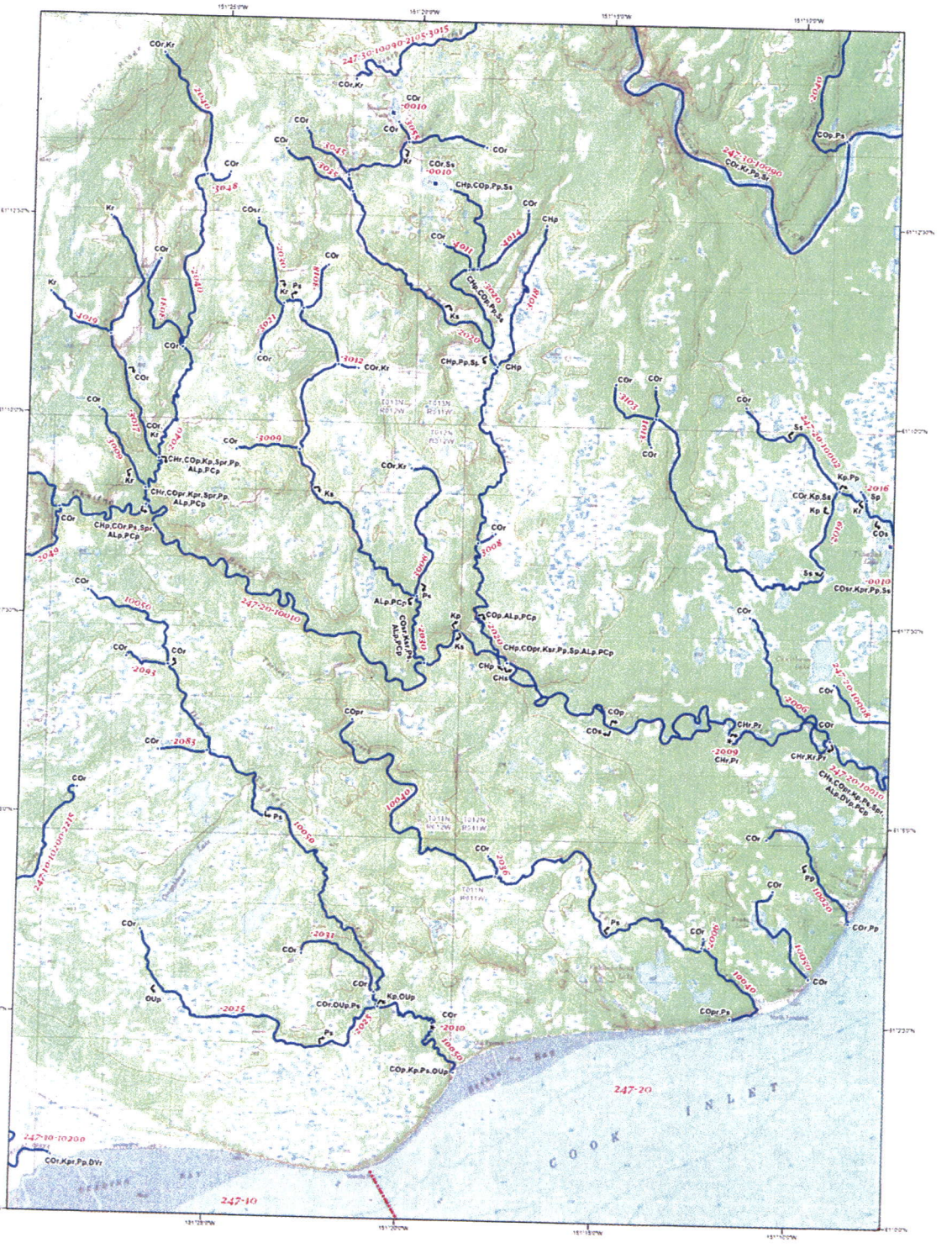


FIGURE LOCATION MAP



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, tracking, 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-5	TYO B-4	TYO B-3
TYO A-5	TYO A-4	TYO A-3
KEN D-5	KEN D-4	KEN D-3

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

LIFESTAGE CODES

p	Present
m	Migration
r	Rearing
s	Spawning

Produced By
State of Alaska
Department of
Fish and Game

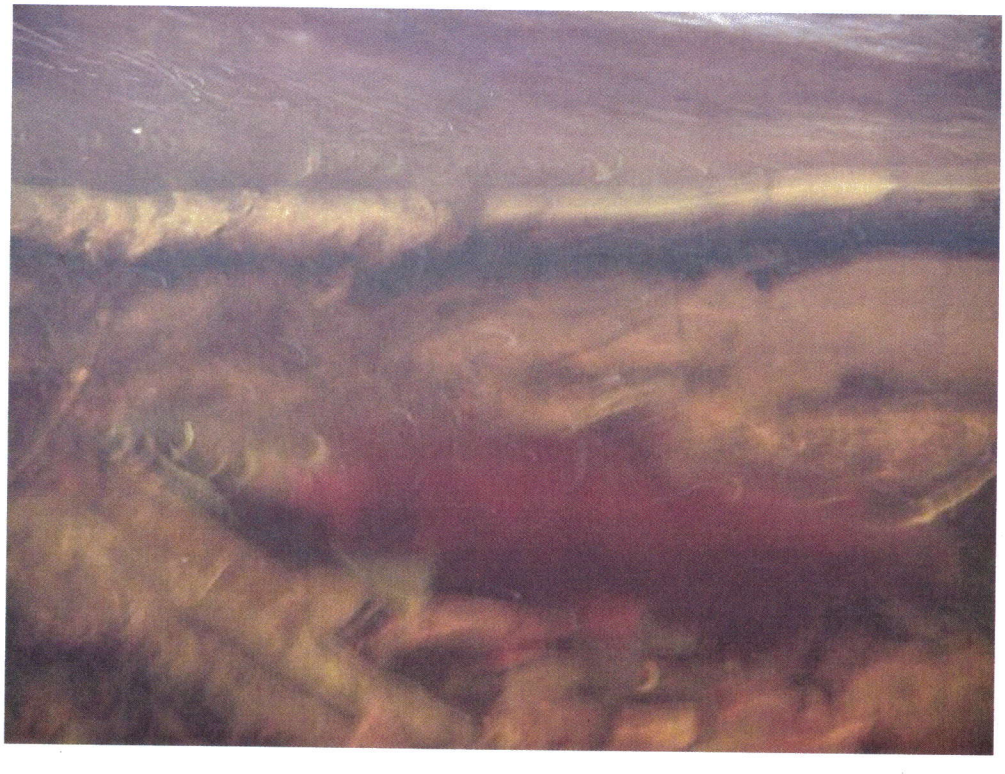
Anadromous Waters Atlas

Quad No. 059 (TYO)

Tyonek
A- 4

Revision Date 12/12/2011

Stream and fish observed during foot survey on 9/20/07



Date: 9/20/07 Time: 11:20 Names: AT LS Page ___ of ___

Tributary: Trib to 2003 enters @ Minnow trap 2003-05 Weather: pt cloudy Water Clarity: Poor (Fair) Great tannins

Depth (ft): 1.4 pool / 0.6 riffle } took in both habitats

Velocity (ft/sec): 0.9 pool / 1.3

	CK	PK	CO	DV	RT
Fish			3		
Redds			unk		

Substrate Size-

D: gravel S: sm. gravel

Photo # 118-1160 (camwalls) 118-1161

Habitat: P R RF RP

GPS Pt. ID #: ___

GPS Pt. Name: ___

Cover-

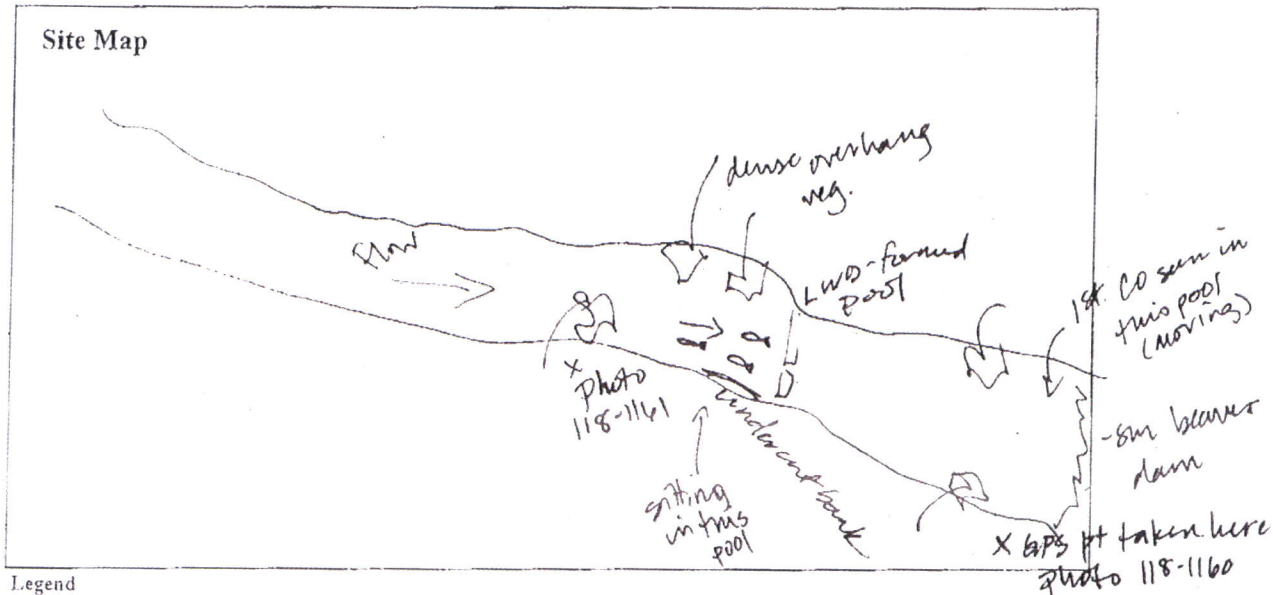
Distance from redd (ft): ___

Type: UC LWD EV OV DP

Comments: Appeared to be either moving upstrm or assessing potential spawning locations. no actual redds observed

Behavior Observed: Spawning Digging Fighting Other: Holding/possible spawning

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV - dolly varden, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV- overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/07 Time: _____ Names: AT LS

Page___ of ___

Tributary: _____ Weather: pt. cloudy Water Clarity: Poor (Fair) Great (tanning)

Depth (ft): 1'

Velocity (ft/sec): .8

	CK	PK	CO	DV	RT
Fish			1 ♀ 1 ♂		
Redds					

Substrate Size-

D: gravel S: sand

Cover-

Photo # 118-1163, 118-1164 (camera 15)

N 61°09'375" **Distance from redd (ft):** _____

Habitat (P) R RF RP **GPS Pt. ID #:** W 151°23'49.4"

GPS Pt. Name: 3-5-5 Type: UC LWD EV (OV) DP

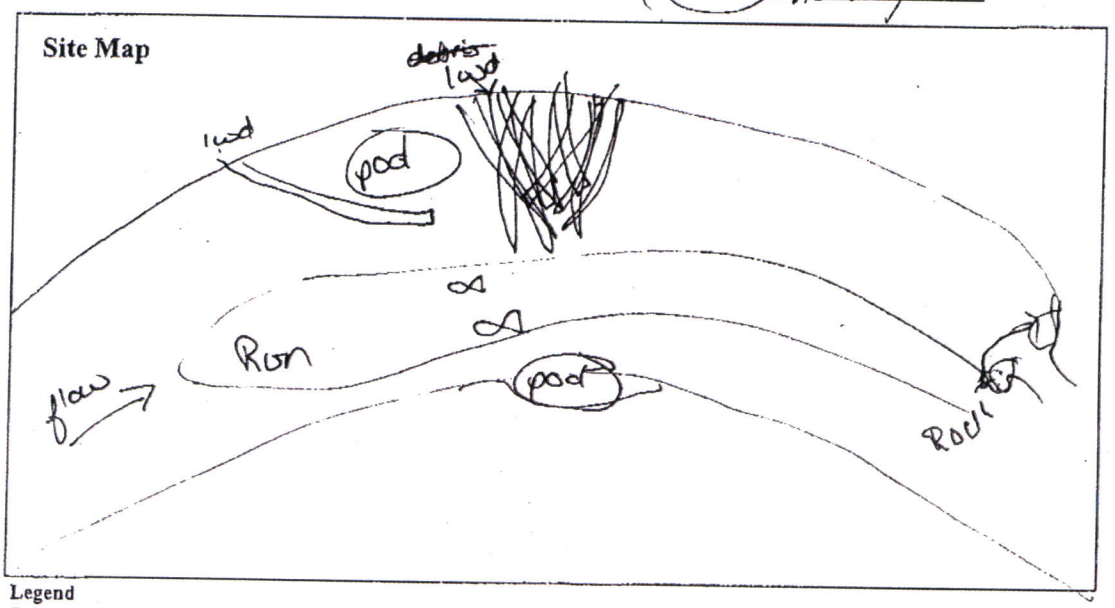
Comments: holding looking for potential

N 61.160416°

W 151.39705°

Behavior Observed: Spawning Digging Fighting (Other:) holding

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varden, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV– overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/07 Time: _____ Names: AJ LS

Page ___ of ___

Tributary: ~~@ 2003-5~~ Trip to 2003 Weather: pt cloudy Water Clarity: Poor Fair Great

Depth (ft): 1.0

Velocity (ft/sec): 0.46

Substrate Size-

D: sand S: gravel

	CK	PK	CO	DV	RT
Fish			~~2~~ 1		
Redds			1		

Cover-

Distance from redd (ft): _____

Photo # 118-1167, 118-1168 (camera 15) → fish from last site

GPS Pt. ID #: N 61°09'35.1" W 151°24' 10.4"

Habitat: P R RF RP

GPS Pt. Name: 3-5 Type: UC LWD EV OV DP

upstream end of spawning area: ~~N 61°09'35.1" W 151°24'10.4"~~ ~~N 61°9'35.7 W 151°24'20.4"~~

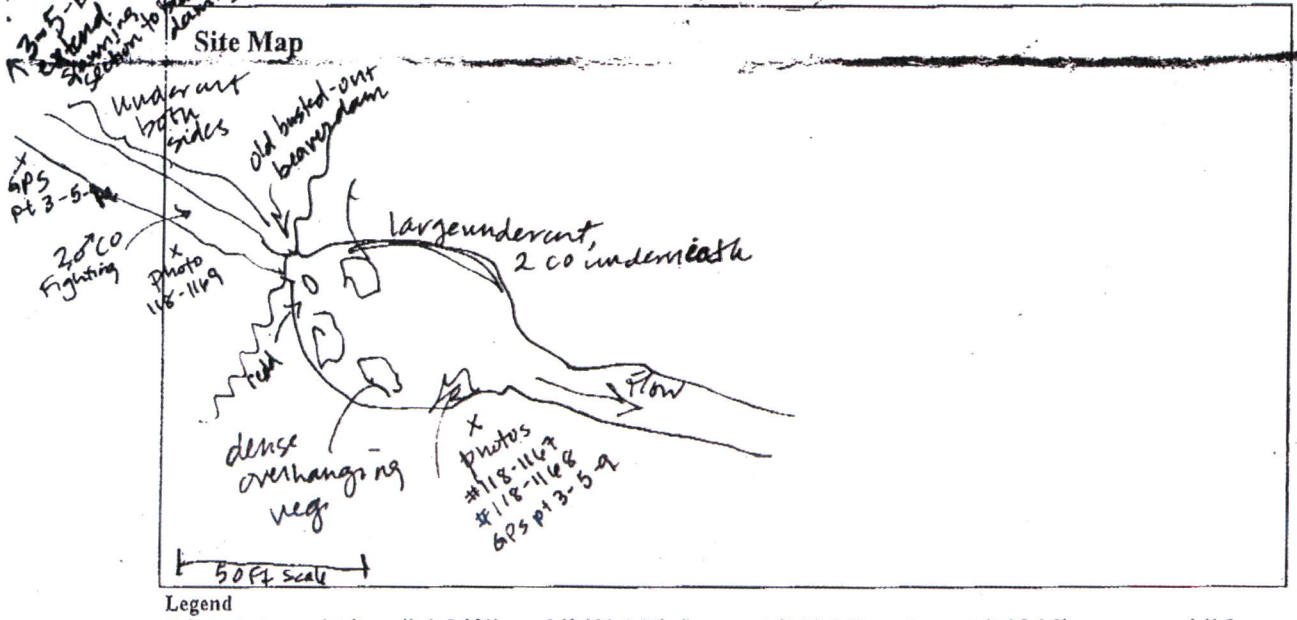
N 61.159749°
W 151.40567

Comments:

GPS'd a lower and upper pt for a ~150 m section of nice spawning area (gravels, undercut-banks)

Behavior Observed: Spawning Digging Fighting Other: Holding, possibly spawning

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varden, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV– overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/07 Time: 12:20 Names: LS AT Page___ of ___

Tributary: Trib @ Minnow trap 2003-5 Weather: pt cloudy Water Clarity: Poor (Fair) Great

Depth (ft): 0.5

Velocity (ft/sec): 2.8

Substrate Size-

D: Gravel S: Sm gravel/sand

	CK	PK	CO	DV	RT
Fish			3		
Redds					

Cover-

Distance from redd (ft): _____

Photo # _____

Habitat: P R RF RP

GPS Pt. ID #: N61°9'38.1" W151°23'54.3"

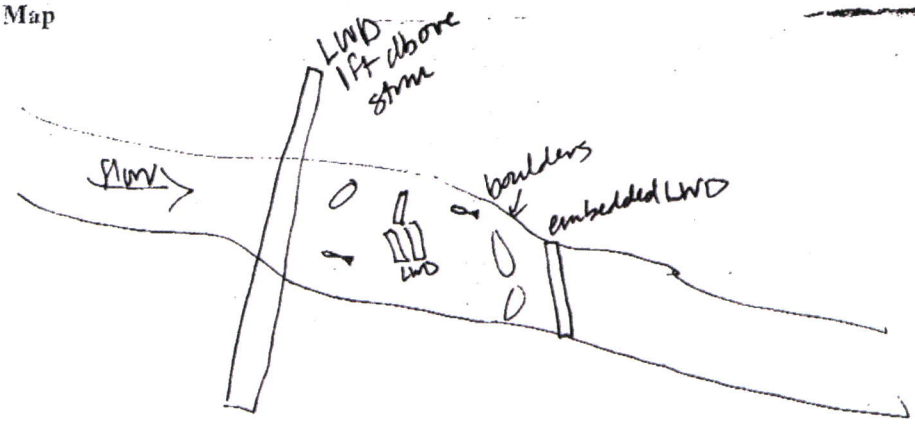
61.16058
151.39841

GPS Pt. Name: 3-5-6 Type: UC (LWD) EV (OV) DP

Comments: CO either holding or spawning - observed possible excavation of redd. CO moving throughout pool/riffle section.

Behavior Observed: Spawning (Digging) Fighting Other: holding; ~~pool~~

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varden, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV– overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/09 Time: 1321 Names: LS AT Page ___ of ___

Tributary: ~~stream 2~~ 3-5 trip @ minnow trap Weather: p. Cloudy Water Clarity: Poor Fair Great tannet

Depth (ft): .9'

Velocity (ft/sec): 1.37

	CK	PK	CO	DV	RT
Fish			3 (2 male 1 female)		
Redds			1		

Substrate Size-

D: med. gravel S: sm gravel/sand

Cover-

Photo # _____ N. 61°09'37.0" Distance from redd (ft): 0' N 61.16028°

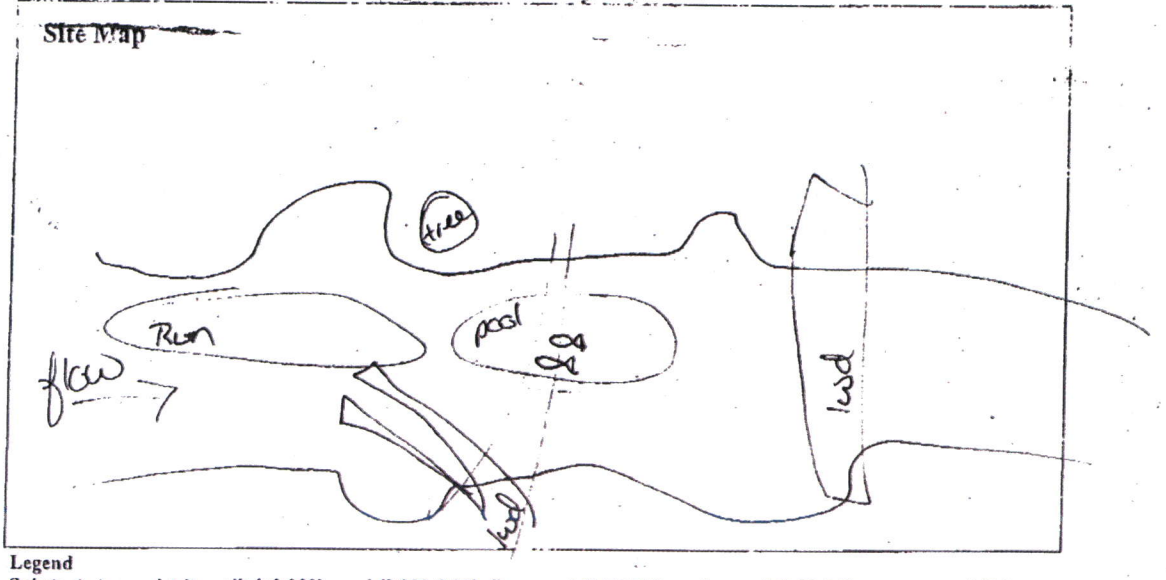
Habitat: P R RF RP **GPS Pt. ID #:** W 151°24'.1.5" W 151.40041

GPS Pt. Name: 3-5-7 Type: UC LWD EV OV DP

Comments: cleaning gravel; possible side pool in run

Behavior Observed: Spawning Digging Fighting Other: _____

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varden, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV– overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 7/20/07 Time: 14:10 Names: AT LS Page ___ of ___

Tributary: 3-5 Weather: p. cloudy Water Clarity: Poor Fair Great (tannins)

Depth (ft): 1.3'

Velocity (ft/sec): .8

	CK	PK	CO	DV	RT
Fish			2		
Redds					

Substrate Size-

D: fines S: patches gravel

Cover-

Distance from redd (ft): _____

Photo # _____

GPS Pt. ID #: N. 61°09'35.1 W. 151°24'10.4

Habitat: P R RF RP

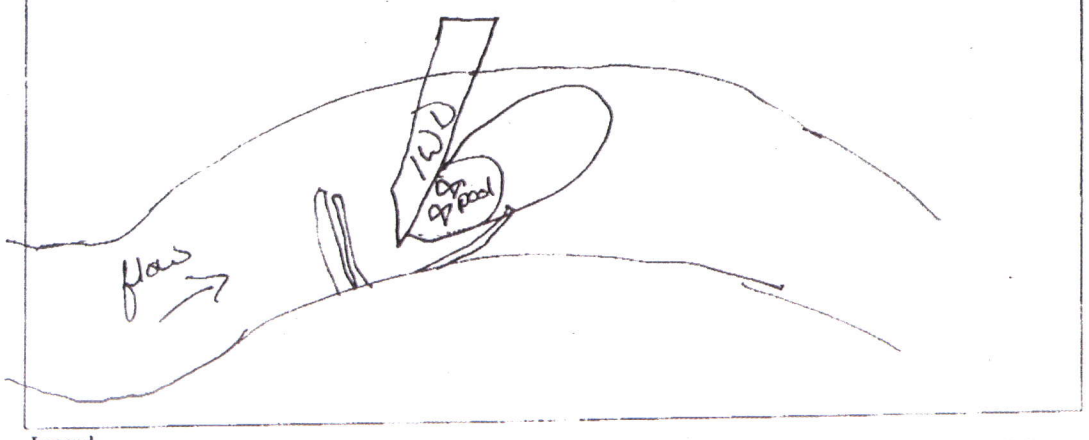
GPS Pt. Name: 3-5-8

Type: UC LWD EV OV DP

Comments: hiding under LWD

Behavior Observed: Spawning Digging Fighting Other: holding/possible spawning

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varder, RT– rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV– emergent/aquatic vegetation; OV-- overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/07 Time: 10:40 Names: AT LS

Page ___ of ___

Tributary: Trib entering Minnewaska 2003-05 Weather: pt cloudy Water Clarity: Poor (Fair) Great (Hannins)

Depth (ft): 0.5

Velocity (ft/sec): 2.45

	CK	PK	CO	DV	RT
Fish			3		
Redds			1		

Substrate Size-

D: gravel S: sand

Camera 15

Photo # 118-1158, 118-1159

N61°09'39.1"

GPS Pt. ID #: W151°23'36.9"

Habitat: (P) R RF RP

GPS Pt. Name: 3-5-3 Garmin II

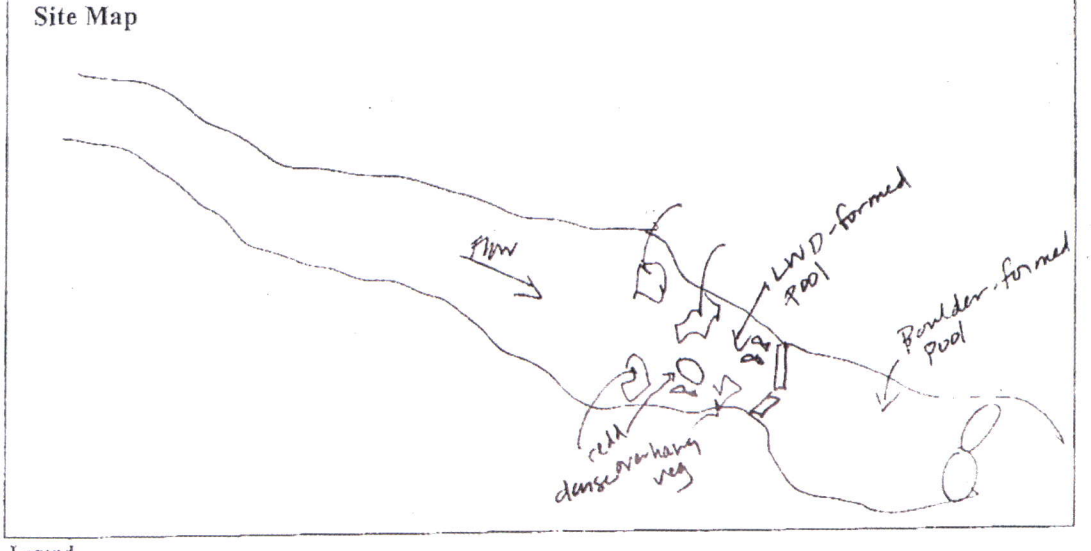
Cover- Distance from redd (ft): _____

Type: UC LWD EV (OV) DP

Comments: All great spawning habitat from this pt (gravels, pools, runs, mid-gradient, overhanging dense veg.)

Behavior Observed: (Spawning) Digging Fighting Other: _____

Site Map



Legend

Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK– Chinook, PK– Pink, CO-Coho, DV– dolly varden, RT-- rainbow trout

Cover Types: UC– under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV– overhanging vegetation; DP– deep pool

Habitat Types: P– pool; R– run; RF– riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover

Date: 9/20/07 Time: 8:50 Names: LS AT Page___ of___

Tributary: Enters 2003 @ Minnow trap 2003-05 Weather: Pt cloudy Water Clarity: Poor (Fair) Great (tannins)

Depth (ft): ~~0.62~~ 1.2

Velocity (ft/sec): 0.62

	CK	PK	(CO)	DV	RT
Fish			3		
Redds			1		

Substrate Size-

D: gravel S: Small gravel | sand

Cover-

Distance from redd (ft): _____

Photo # 118-1156, 118-1157 (Camera 15)

GPS Pt. ID #: 61°9' 36.5" 151°23' 14.3"

Habitat (P) R RF RP

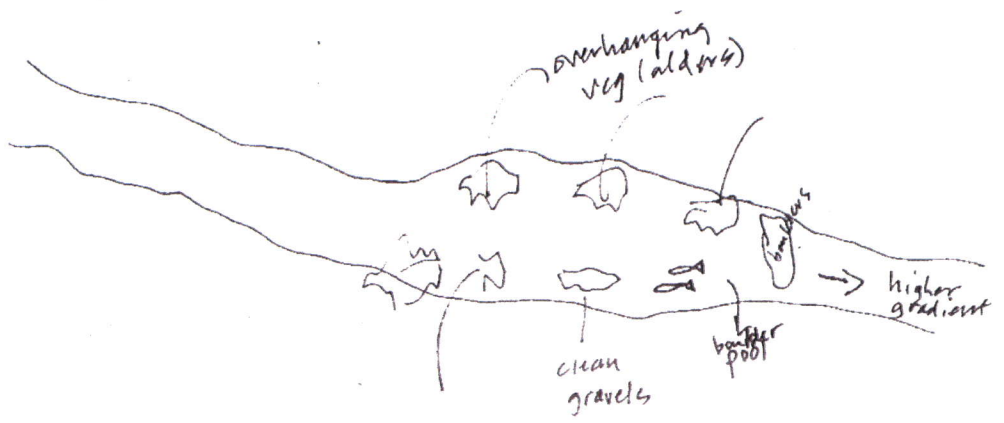
GPS Pt. Name: 3-5-1 (Garmin II)

Type: UC LWD EV (OV) DP

Comments: Observed clean gravel, likely redd. CO sitting in pool

Behavior Observed: (Spawning) Digging Fighting Other: _____

Site Map



Legend

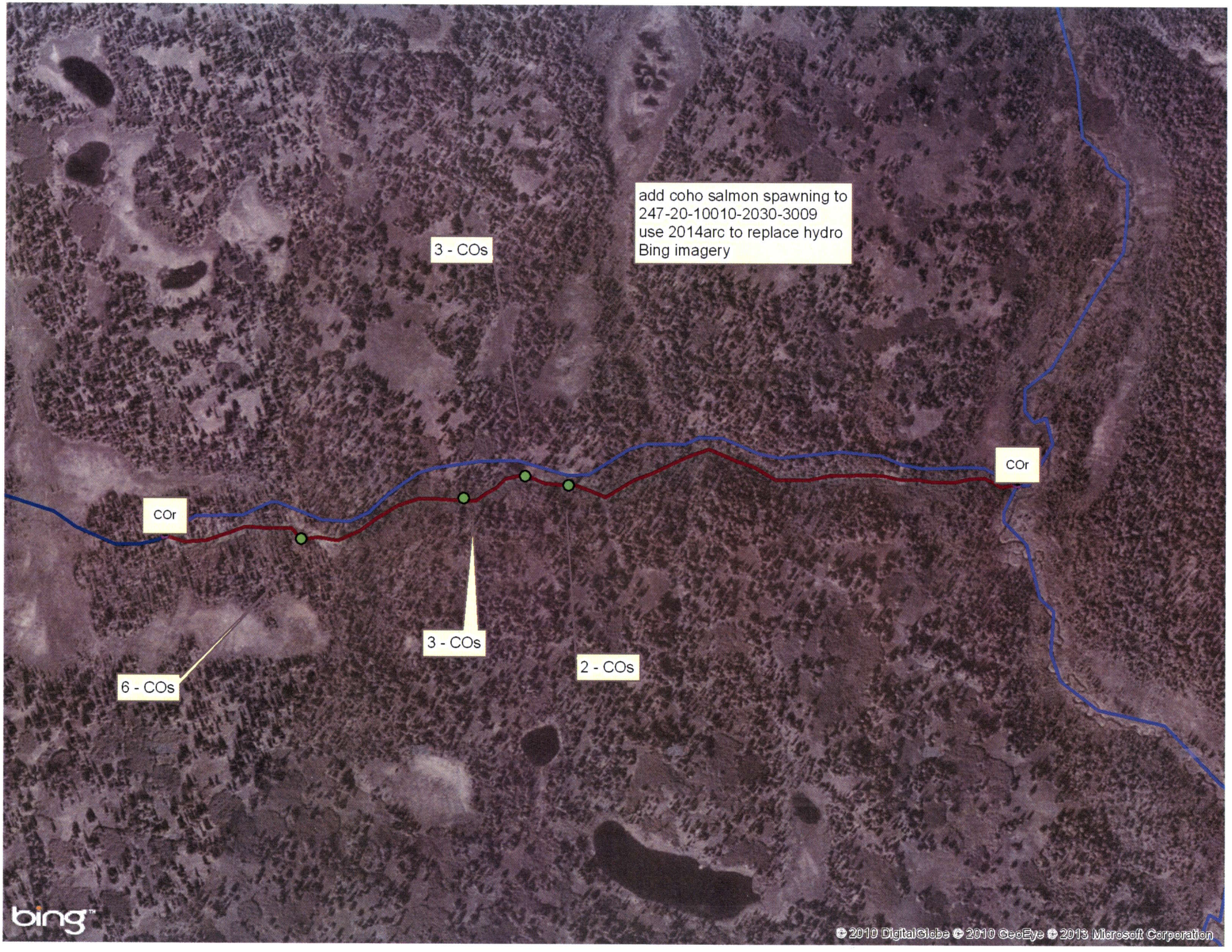
Substrate types: detritus, silt (<0.002), sand (0.002-0.08), fine gravel (0.08-0.3), med. gravel (0.25-1.3), coarse gravel (1.3-2.5), small cobble (2.5-5.0), large cobble (5.0-10.0), boulder (>10.0), bedrock

Fish: CK-- Chinook, PK-- Pink, CO-Coho, DV-- dolly varden, RT-- rainbow trout

Cover Types: UC-- under cut bank; LWD- large wood debris; EV-emergent/aquatic vegetation; OV-- overhanging vegetation; DP-- deep pool

Habitat Types: P-- pool; R-- run; RF-- riffle; RP-run/pool

Include in Site Map: direction of flow, location of redd, locations of fish, gravel bars, cover types, distance of redd from cover


add coho salmon spawning to
247-20-10010-2030-3009
use 2014arc to replace hydro
Bing imagery
3 - COs
COr
COr
3 - COs
2 - COs
6 - COs
bing
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