



State of Alaska  
Department of Fish and Game  
Sportfish Division

Nomination Form  
Anadromous Waters Catalog



Region Southeastern USGS Quad(s) SKAGWAY B-4 NW

Anadromous Waters Catalog Number of Waterway 115-32-10250-2077-3159-4009

Name of Waterway Sarah Creek  USGS Name  Local Name  
 Addition  Deletion  Correction  Backup Information

For Office Use

Nomination #	<u>15-631</u>	<u>James J. Hasbrouck</u>	<u>8/31/2015</u>
		Fisheries Scientist	Date
Revision Year:	<u>2016</u>	<u>Michelle [Signature]</u>	<u>8/31/15</u>
		Habitat Operations Manager	Date
Revision to:	<input checked="" type="checkbox"/> Atlas	<u>[Signature]</u>	<u>8 Jun 15</u>
	<input checked="" type="checkbox"/> Catalog	AWC Project Biologist	Date
Revision Code:	<u>B-3, D-1, E-9</u>	<u>TJ</u>	<u>9/24/15</u>
		GIS Analyst	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous

**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:**  
 Please update Sarah Creek to reflect the field-verified route.  
 Coordinates (Lat,Long): Upper(59.4275,-136.338) Lower(59.4263,-136.3124)  
Shorten existing upper reach, remove Chinook salmon from creek

Name of Observer (please print): Tess Quinn  
 Signature: 10.7.168.79 (Web Nomination) Date: 05/27/2015  
 Agency: \_\_\_\_\_  
 Address: PO Box 240927  
Juneau, AK 99801

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: \_\_\_\_\_ Revision 11/14  
 Name of Area Biologist (please print): \_\_\_\_\_



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

Nomination Form  
Anadromous Waters Catalog

M E

Region Sealtheast USGS Quad(s) Stagnary B-4  
 AWC Number of Water Body 115-32-10250-2077-3159  
 Name of Water body Sarah Creek  USGS Name  Local Name  
 Addition  Deletion  Correction  Backup Information

For Office Use

Nomination #	<u>140376</u>	<u>James J Harbouch</u>	<u>10/3/2014</u>
		Fisheries Scientist	Date
Revision Year:	<u>2015</u>	<u>Michelle A</u>	<u>10/3/14</u>
		Habitat Operations Manager	Date
Revision to: Atlas _____ Catalog _____	Both <u>X</u>	<u>JA</u>	<u>9/29/14</u>
		AWC Project Biologist	Date
Revision Code: <u>B-6</u>		<u>T.A</u>	<u>10/9/14</u>
		GIS Analyst	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
<u>Coho</u>	<u>10-17-11</u>			<u>X</u>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

**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** what is the actual change? Map says "extend coho rearing"

Name of Observer (please print): Dawn Schulte  
 Signature: [Signature] Date: 9-17-14  
 Agency: Talishanati Watershed Council  
 Address: P.O. Box 1029  
Haines AK 99827  
 ALASKA DEPT. OF FISH & GAME  
 SEP 23 2014

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: [Signature] Date: 9/23/2014 Revision 11/13  
 Name of Area Biologist (please print): \_\_\_\_\_

## Alaska Sustainable Salmon Fund Semiannual Performance Report

### I. Project Identifiers

AKSSF Project Number: 45970  
Project Title: Haines Salmon Habitat Assessment – Year 3  
Principal Investigator: Brad Ryan, Executive Director  
Takshanuk Watershed Council (TWC)  
PO Box 1029  
Haines, AK 99827  
Phone: (907) 766-3542  
Email: [brad.ryan@gmail.com](mailto:brad.ryan@gmail.com)  
ADF&G Contact: Richard Chapell; (907) 766-2625  
PCSRF Objective: HP&R  
Congressionally Designated: no  
Project Period: Start: 7/1/11 End: 9/30/12  
Reporting Period: 5/1/11 – 10/31/11  
Expenditures thru 10/31/11: \$0 of \$32,638  
Date Prepared: 11/15/2011

### II. Synopsis

This project is a continuation of a salmon distribution assessment in the Chilkat, Chilkoot, and Ferebee watersheds. Takshanuk Watershed Council (TWC) will trap, count, and identify fish in local streams of importance in order to identify and nominate streams for inclusion in the State of Alaska's *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated Atlas (AWC). Listing in the AWC is an essential step to ensuring statutory protection of streams. By increasing the number of listed streams, the project will increase the protection and knowledge of salmon distribution and habitat. A secondary effort will be made to increase life-stage specific knowledge of habitat usage on streams currently catalogued simply as 'species present' as time and funding allows.

### III. Summary of Progress, Results, and Problems

The fish distribution work concentrated on Sawmill and One-Mile Creeks, two of our most urbanized fish bearing streams in Haines. .25 miles of stream were surveyed on Sawmill Creek which resulted in .16 miles of stream being nominated to the Alaska Anadromous Waters Catalog (AWC). .93 miles of stream were surveyed on One-Mile Creek which resulted in .50 miles of stream being nominated to the AWC. TWC will be concentrating their efforts on the project during the summer of 2012.

## **Alaska Sustainable Salmon Fund Semiannual Performance Report**

### **I. Project Identifiers**

AKSSF Project Number: 45976  
Project Title: Porcupine Area Salmon Assessment  
Principal Investigator: Brad Ryan, Executive Director  
Takshanuk Watershed Council  
PO Box 1029  
Haines, AK 99827  
Phone: (907) 766-3542  
Email: [brad.ryan@takshanuk.org](mailto:brad.ryan@takshanuk.org)  
ADF&G Contact: Richard Chapell; 766-2625  
PCSRF Objective: HP&R  
Congressionally Designated: no  
Project Period: Start: 7/1/11 End: 11/30/12  
Reporting Period: 5/1/11 – 10/31/11  
Expenditures thru 10/31/11: \$0 of \$48,948  
Date Prepared: 11/15/2011

### **II. Synopsis**

The Takshanuk Watershed Council (TWC) will conduct a salmon distribution assessment in the Klehini River watershed in and around the Porcupine Mining District near Haines. TWC will trap, count, and identify fish in local streams of importance in order to identify and nominate streams for the State of Alaska's *Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes* and its associated Atlas (AWC). Listing in the AWC is an essential step to ensuring statutory protection of fish habitat. TWC will also gather water quality data for baseline information on anadromous streams as well as springs and ponds affecting these streams in the project area.

### **III. Summary of Progress, Results, and Problems**

TWC completed two sessions of their quarterly fish distribution surveys. TWC set minnow traps in Herman, Cave, Porcupine, Bear, Glacier, and Sarah Creeks in July and then again in late October of 2011. These traps were placed along the fish bearing portions of these creeks and left overnight and pulled out the next day. The fish captured were identified and measured and then released. Visual observations were also made during these trips to spot adult fish returning to spawn or capture juvenile fish that weren't captured by the traps. In some instances, especially in July, some of the juvenile fish were too small for the traps and could swim right through the mesh of the traps so a dip net was used to capture these small fish. The locations of these traps were also recorded and then the complete information package was reproduced on GIS maps.

The first round of water quality testing was performed during the first week of November. The same streams that were fish trapped (Herman, Cave, Porcupine, Bear, Glacier, and Sarah Creeks) plus the Little Jarvis Creek and two locations on the Klehini River, one above the study site and one below were also tested for a variety of water

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Takshanuk Watershed Council  
PO Box 1029  
Haines, AK 99827  
Phone: (907) 766-3542  
Email: [brad.ryan@takshanuk.org](mailto:brad.ryan@takshanuk.org)  
ADF&G Contact: Richard Chapell; 766-2625  
PCSRF Objective: HP&R  
Congressionally Designated: no  
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quality parameters. The water samples were tested for dissolved and total metals (As, Ba, Cd, Cr, Cu, Fe, Pb, Se, Ag, Zn, Mn, Al, and Na), total suspended solids, hardness (Ca & Mg), Hg (dissolved and total), and sulfate. These samples were taken over the course of 2 days and immediately sent to Test America in Tacoma, WA for analysis.

**Alaska Sustainable Salmon Fund  
Project Completion Report**

AKSSF Project Number: 45329  
Project Title: Upper Chilkoot Watershed Assessment  
Principal Investigator:  
Brad Ryan  
Takshanuk Watershed Council  
P. O. Box 1029  
Haines, AK 99827  
Co-Principal Investigator/ Project Manager:  
Brad Ryan, Executive Director  
Takshanuk Watershed Council  
PO Box 1029  
Haines, AK 99827  
Phone: (907) 766-3542  
Email: [brad.ryan@takshanuk.org](mailto:brad.ryan@takshanuk.org)  
Total Funding: \$29951  
Congressionally Designated: No  
Project Period: Start: 07/01/10 End: 06/30/11

Project Objectives:

The primary objective of this project is to find and protect all known and unknown salmon habitat in the Upper Chilkoot Valley.

Preliminary Synopsis:

This project analyzed the location and patterns of salmonid species in the Upper Chilkoot Valley, one of two major watersheds supporting subsistence fisheries in the Haines area. The work continued previous assessment work by the Takshanuk Watershed Council (TWC) that focused on the lower portion of the Chilkoot Valley; this project will expand the geographic scope of the work and complete mapping of the Anadromous Waters Catalog (AWC) in the valley. *This project expands on the cataloging and characterization work begun in AKSSF projects 45825 and 45959.*

Final Synopsis:

This project identified the upper extent of anadromous water of the Chilkoot River and its tributaries. This work continued previous assessment work by TWC that focused on the lower portion of the Chilkoot Valley. Field technicians for TWC walked all accessible tributaries and set minnow traps and used dip nets to determine the fish species that use these waters. The extent of fish habitat was determined to be 9 miles upriver of the north end of Chilkoot Lake 0.3 miles past a major fork that ended in a 200+ foot waterfall of one fork and a chasm with step pool drops in excess of 20 feet in the other. From these points downstream approximately 1 mile only Dolly Vardens were captured. Continuing down from this point (8 miles upriver of Chilkoot Lake), juvenile Coho salmon were found in the Chilkoot River and in most tributaries.

### Project Activities and Results:

*Objective 1: Complete mapping of wetlands and the mainstem and tributaries of the Chilkoot River from the north end of Chilkoot Lake to the northern end of fish habitat:*

All accessible tributaries and wetlands to the Chilkoot River were mapped. Access to these places were mostly on foot with multiple backpacking trips up the “glory hole” road that runs up the West side of the river. To access the upper reaches and tributaries, a helicopter was contracted to drop field crews for 5 days to complete fish trapping and mapping. Accessibility was only denied by high water levels of the Chilkoot River for crossing to access streams on the east side of the river. Later on in the project Alpaca Pack Rafts were used to access some of these sites but time limited a chance to access all of these streams.

*Objective 2: Complete mapping of fish distribution throughout the upper Chilkoot Valley.*

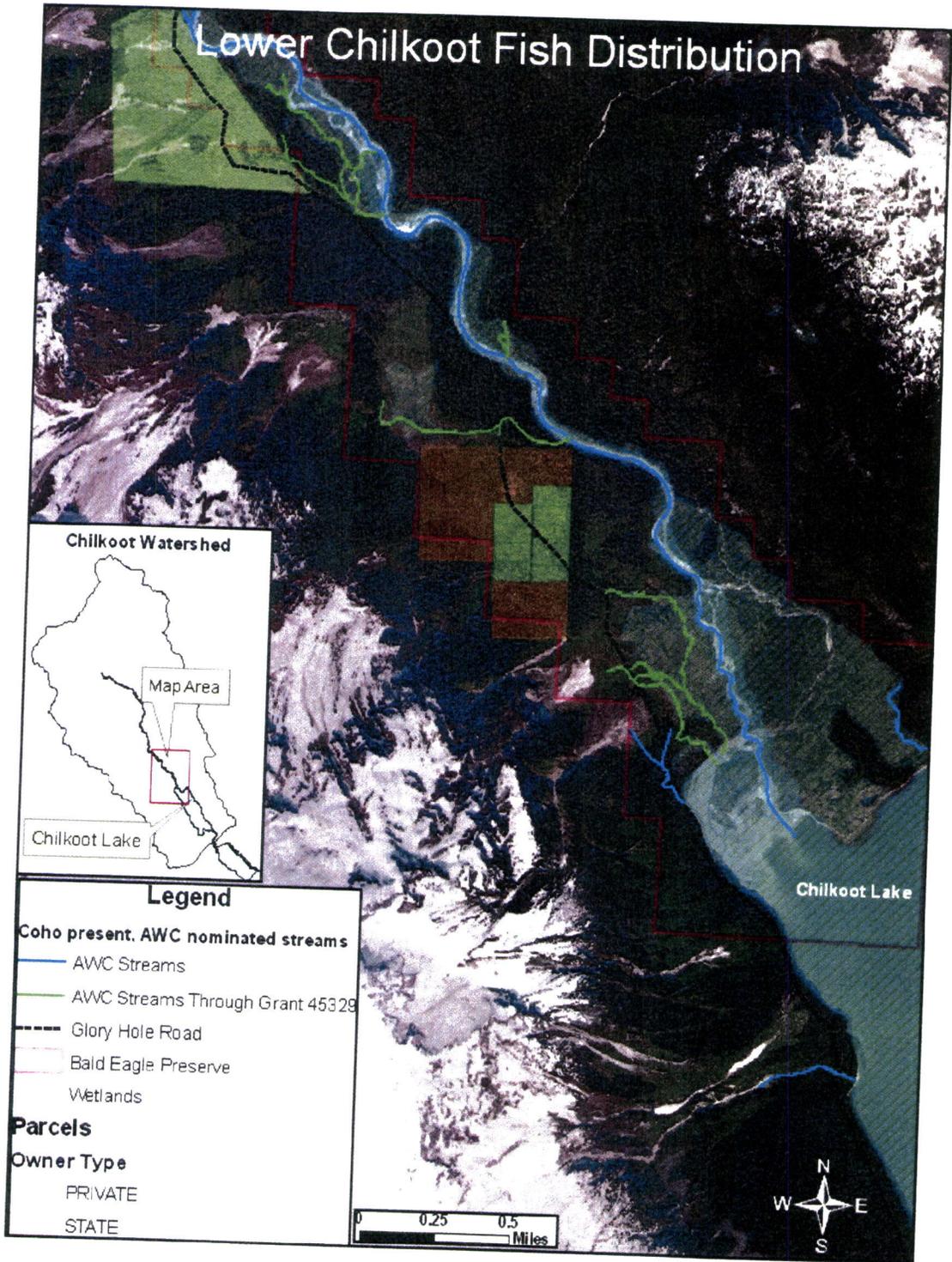
All accessible tributaries and wetlands that were mapped were also trapped for juvenile fish. A concerted effort was taken to access these streams. Multiple backpacking trips were taken and a helicopter was used to gain access to the upper most fish bearing streams. Fish distribution maps are attached.

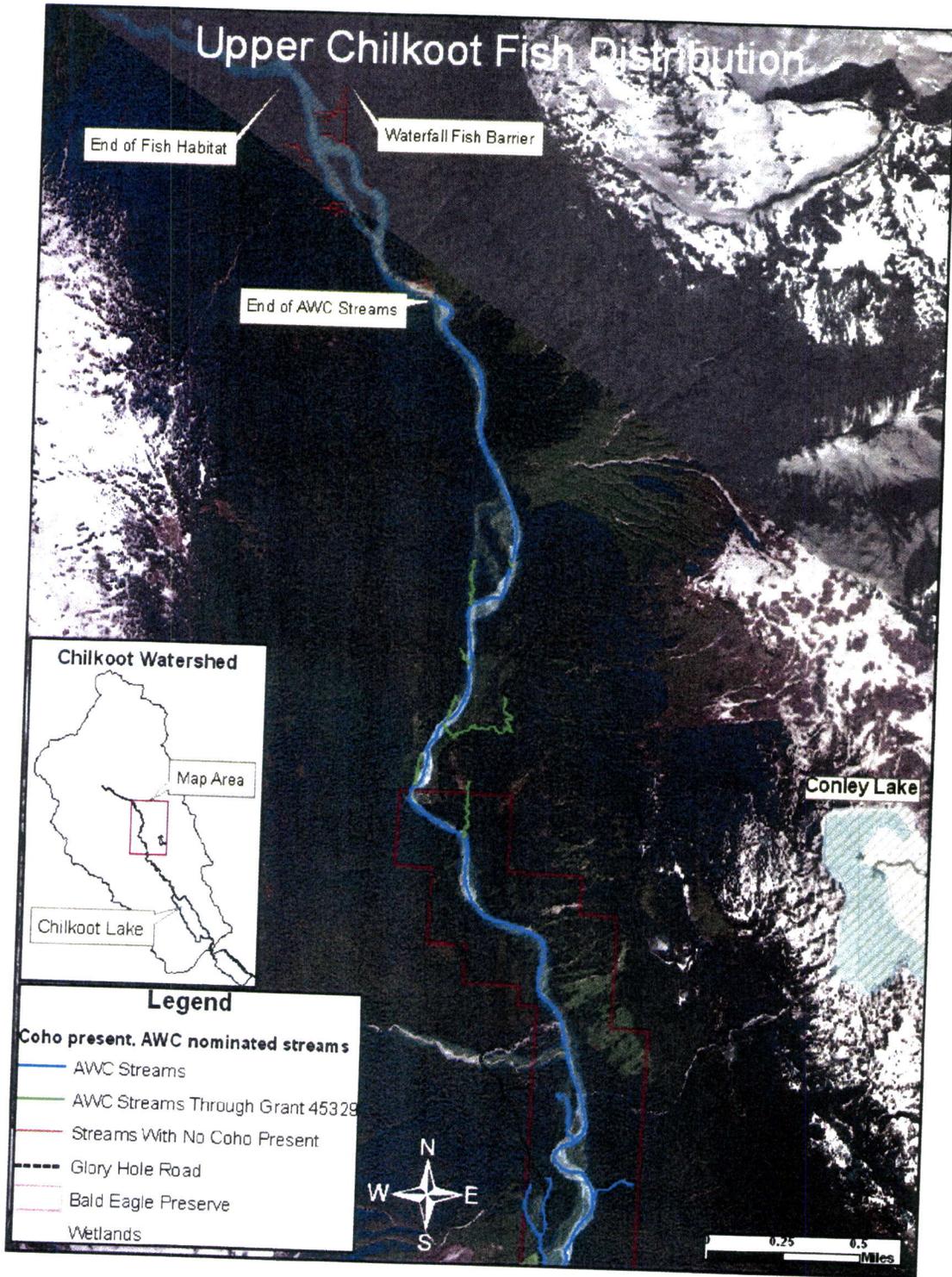
*Objective 3: Characterization of stream reaches to add to the baseline data for a GIS model in predicting anadromous waters.*

Many of the same streams that were mapped and trapped were also characterized in accordance to the Alaska Department of Fish and Game Sport Fish Region I Stream Survey Guide. The GIS model this data was going to be used for has been deemed infeasible at this time. More research and expertise would be needed to pick this side project up again.

### Reports and Other Products:

The primary product of this project is the listing of anadromous streams in the AWC. In addition, TWC has created GIS maps of fish distribution of the Upper Chilkoot River along with significant points of interest.



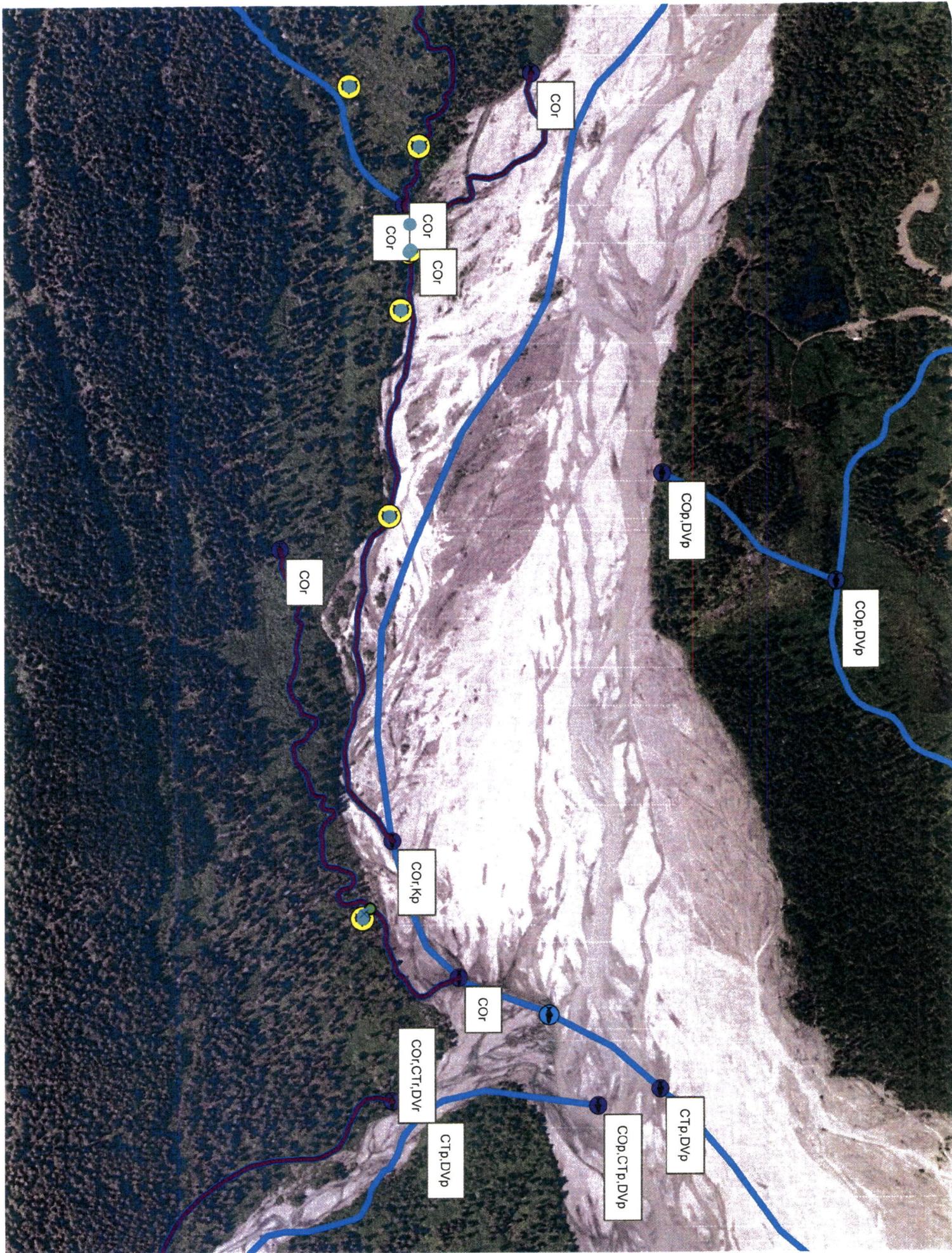


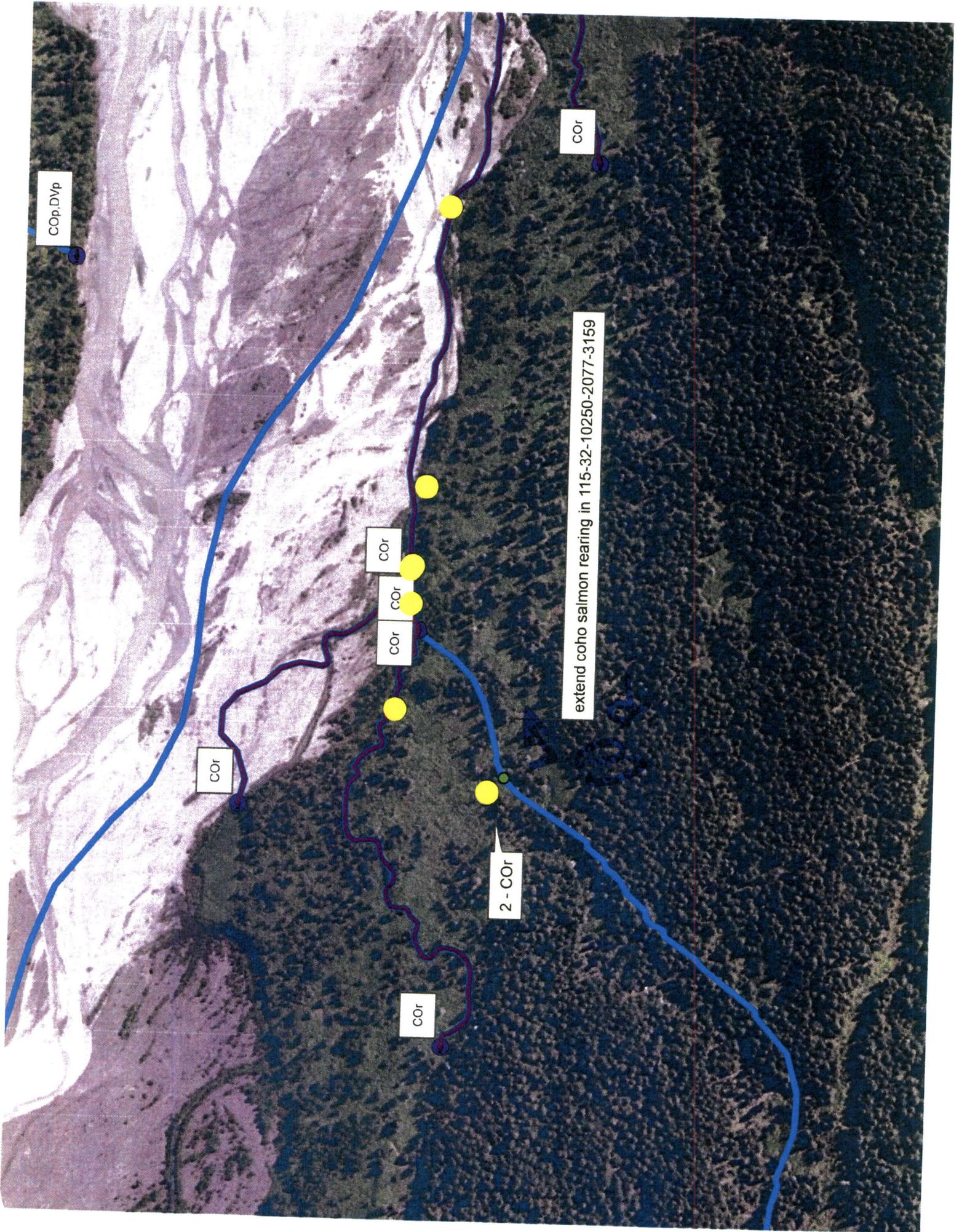






14	59 42 263638	-138 3073300	GPS	Glacier Creek	8/9/2011	Jeremy C Taylor, Daniel J Schultz	Minnow Trap	Dolly Varden	Juvenile	US	Length range 80-120mm
15	59 42 26717	-138 3082192	GPS	Glacier Creek	8/9/2011	Jeremy C Taylor, Daniel J Schultz	Minnow Trap	Dolly Varden	Juvenile	80	
17	59 42 266672	-138 29 48664	GPS	Glacier Creek	8/9/2011	Jeremy C Taylor, Daniel J Schultz	Minnow Trap	Dolly Varden	Juvenile	70	
18	59 41 571512	-138 3040156	GPS	Glacier Creek	8/9/2011	Jeremy C Taylor, Daniel J Schultz	Minnow Trap	Dolly Varden	Juvenile	70	Length range 70-80mm





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extend coho salmon rearing in 115-32-10250-2077-3159

### Field Summary Report

<b>Project:</b>	SF2014 238d
<b>Company:</b>	R2 Resource Consultants
<b>Field Dates:</b>	July 22, 2014 – July 24, 2014 & November 3, 2014 – November 7, 2014
<b>Field Staff</b>	Gerald George, Kai Steimle & Adam Weybright
<b>Prepared By:</b>	Gerald George

#### Summary of Data Collection Effort:

##### July Chinook Salmon Spawner Surveys:

We were able to conduct ground surveys in the following areas for Chinook Salmon Spawners (Figure 1):

- Glacier Creek Mouth
- Glacier Creek (lower 4 km)
- unnamed LB Tributary to Glacier Creek that joins just downstream of old Bridge (ADF&G documented juvenile Coho Salmon in this stream), surveyed approximately 500 meters
- Sara Creek- From confluence with Glacier Creek/Klehini upstream past a long cascade (likely anadromous fish barrier) approximately 5 km.
- Sara Creek LB tributary 1, lower 500 meters
- Sara Creek LB tributary 2, lower 300 meters

We did not observe any Chinook salmon spawners in any of the streams in the Palmer Project Area. Although not a focus of our recent efforts, we did observe and sample using a seine the following: juvenile, sub-adult, and adult Dolly Varden, juvenile Coho salmon, and cutthroat trout fry in Project Area streams (Figure 2). Nearly all observations were made in Sara Creek and unnamed tribs to Sara Creek. Streams in the project area were generally not great habitat for Chinook salmon spawning, Glacier Creek is very dynamic and bed material is too unstable in most places for spawning and areas with stable bed material of the appropriate size are very embedded with glacial silt. Sara Creek proper had a few areas with suitable depth, velocity, and substrate but was generally a little shallow than what Chinook salmon prefer. We were able to make a quick trip across the Klehini to Big Boulder Creek and observed Chinook in that system (Figure 6). Likewise, the unnamed tributaries to Glacier and Sara are also smaller and shallower than what Chinook salmon typically select for spawning.

The unnamed tributary to Glacier Creek, Sara Creek and its' unnamed tributaries are promising Coho salmon spawning streams and have documented Coho rearing. The Chinook spawner surveys will help greatly with what to expect and where to focus efforts during Coho spawner surveys in October/November.

#### November Coho Survey

On November 3<sup>rd</sup>, 2014 staff from R2 Resource Consultants traveled from Portland and Seattle to Haines and did a reconnaissance of the gage installation site at the Porcupine Crossing Bridge before visiting the local hardware store for supplies. Dan Wackerman of Constantine Metals provided logistical and bearguard support during the field efforts. Lodging was provided by the Alaska Guardhouse.

Coho salmon spawner surveys took place along approximately 20 kilometers of Glacier and Sara Creeks on November 4 & 5<sup>th</sup>, 2014 (Figure 1). Several smaller tributaries of interest in these drainages were also surveyed (Figure 1). Spawning coho salmon and coho salmon-sized redds were observed in Sara Creek and the second left bank tributary of Sara Creek (Figure 3). Smaller redds without actively spawning fish were observed in a percolation channel downstream of the mouth of Glacier Creek and at a single location just upstream of the confluence of ADF&G named "Stream T" and Glacier Creek (59.41186/-136.31389; Figure 3). No recent spawning activity was observed in the left bank tributary to Glacier Creek known as the AWC stream 115-32-10250-2077-3151-4010. One older redd, from the spring of 2014 or a previous year, relatively small in size, was observed approximately 20 meters upstream of where tributary 115-32-10250-2077-3151-4010 leaves the Glacier Creek floodplain and enters the forest. A mature Dolly Varden was observed in water being conveyed from this tributary within the Glacier Creek floodplain upstream of the confluence. Seining and dip netting techniques were used at some locations to collect individuals for species identification and gather additional information on size and genetics. Juvenile and adult Dolly Varden and adult Coho salmon were collected. A potential/seasonal salmon barrier is present on Sara Creek at 59.42774/-136.33775 consisting of series of high gradient cascades without resting or holding pools. Spawning activity in Sara Creek was present from just upstream of the confluence of with Glacier Creek to the second righter left tributary (Figure 3). Spawning was concentrated in the 1 km reach downstream of the second river left tributary (Figure 3).

**Type of Data Collected:**

GPS positions, photos and field notes were taken at the beginning and end of each survey reach, each redd, each observation of live adult coho salmon, and areas where seining/dip netting took place. Fork lengths and photos were taken on all fish collected before they were returned to the water at the collection location. Non-lethal genetics samples were also collected from larger Dolly Varden for the ADF&G Gene Conservation Lab.

**Issues Encountered:** Work conditions were challenging and consisted of long hours of walking on slippery and uneven boulders. Highs temperatures were generally in the mid-30s (F) depending on elevation. Snow level was around 1,000 feet in elevation and dropping daily. Precipitation was minimal allowing for good visibility for fish surveys and gage installations. Fish surveys occurred on the tail-end of the coho salmon spawning season, we recommend that future efforts occur the first week of November or the last two weeks of October.

**Health & Safety Incidents to Report:** There were no reportable health or safety incidents.

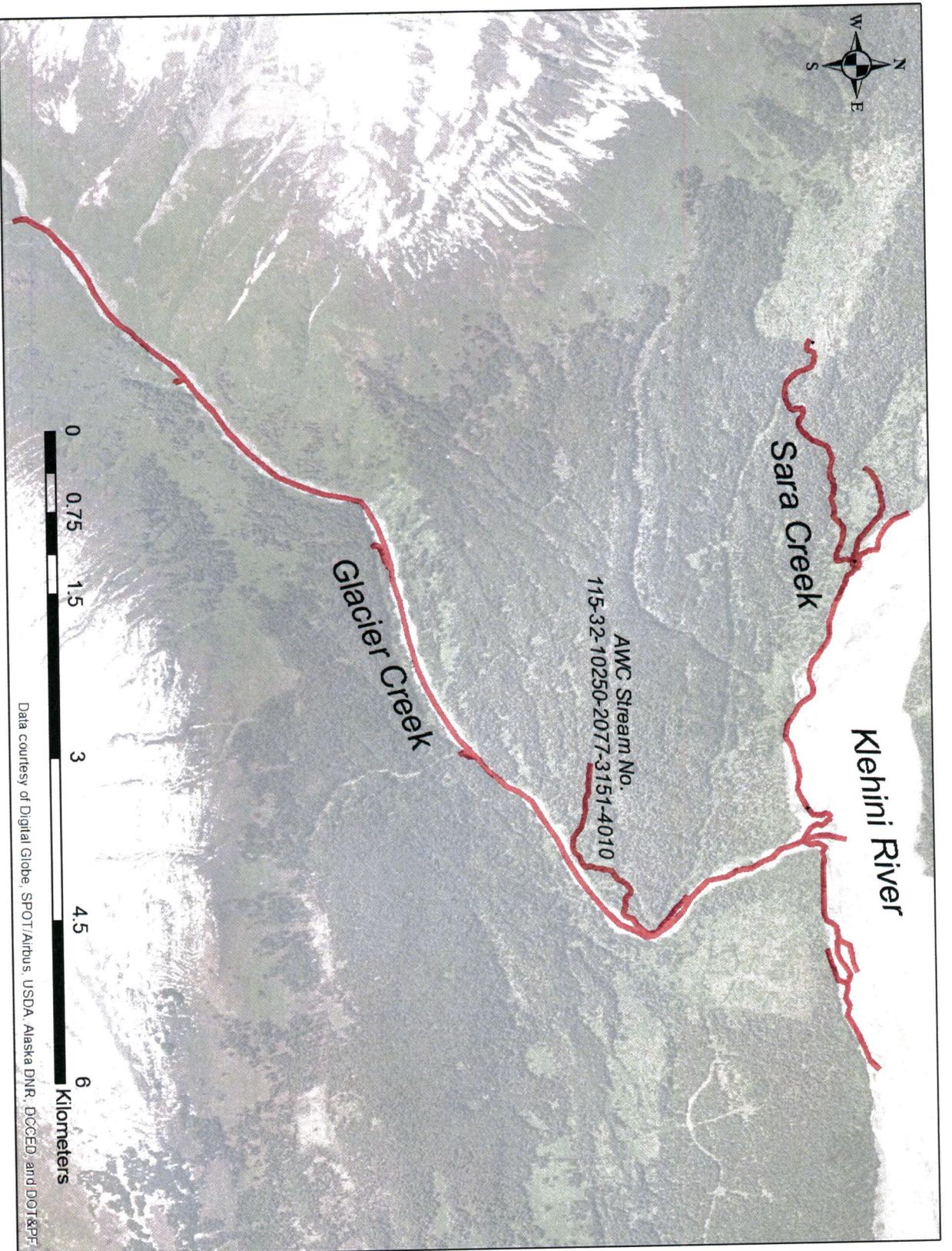


Figure 1. Stream reaches surveys for spawning coho salmon November 4 & 5<sup>th</sup>, 2014 indicated with red highlights.

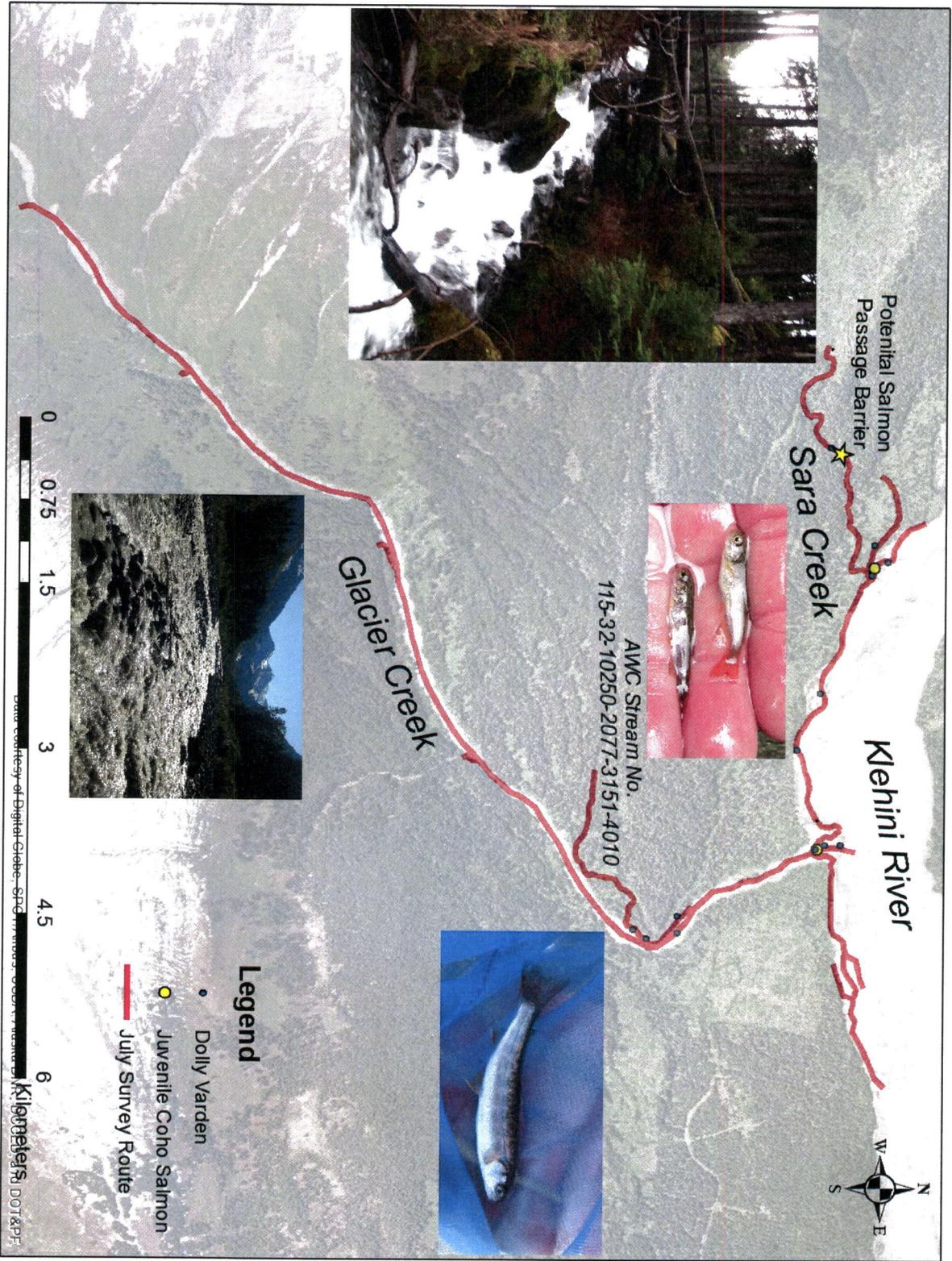


Figure 2. July survey effort summary, pictured center are coho salmon fry captured at the confluence of Sara Creek and Unnamed left bank tributary 1.

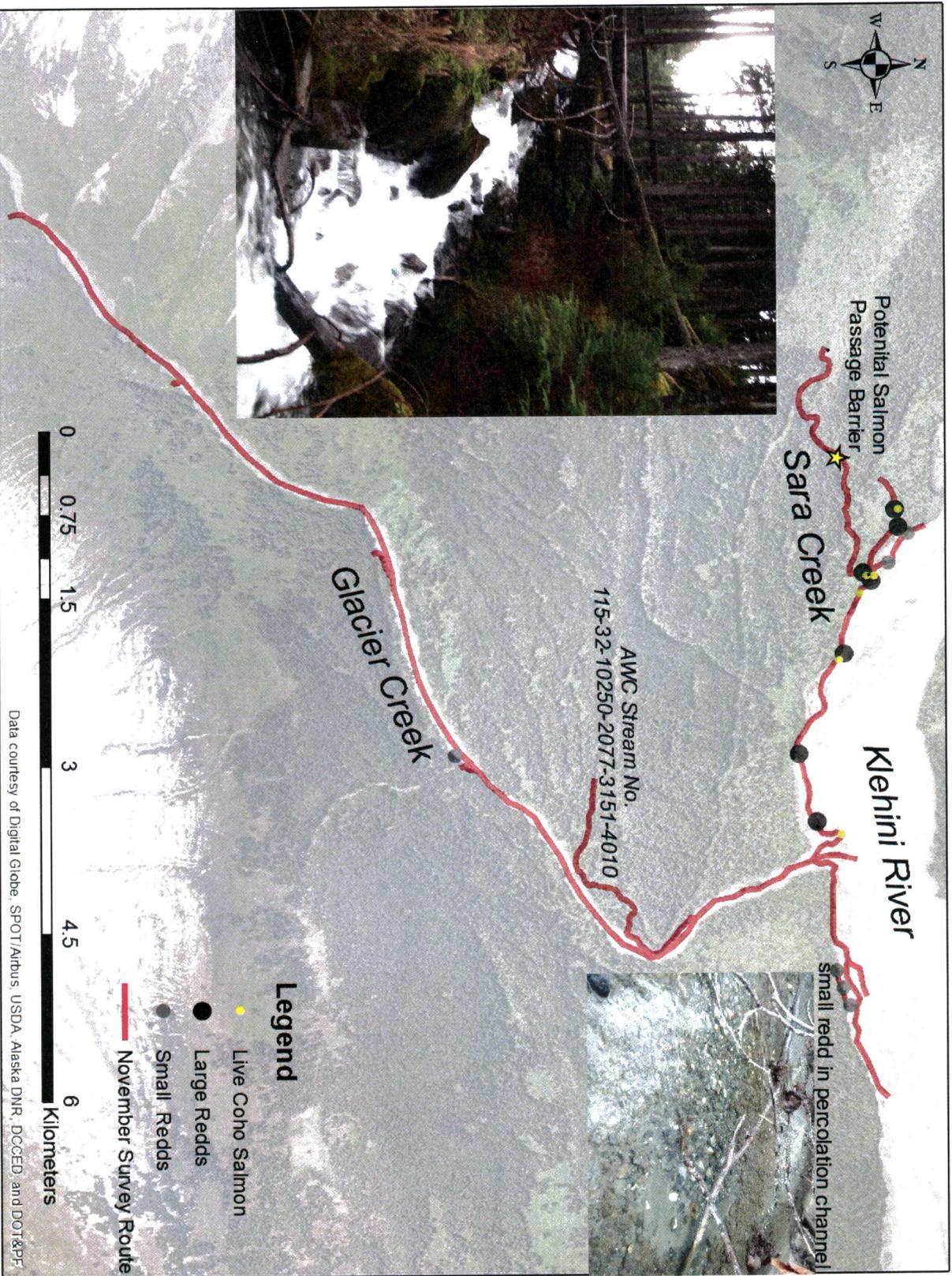


Figure 3. Coho salmon spawner and redd survey findings November 4 & 5<sup>th</sup>, 2014. Note: small redds likely indicate Dolly Varden and large redds coho salmon.



**Figure 4. Pressure Transducer and Staff Gage Location on the Klehini River at Porcupine Crossing.**



**Figure 5. Preparation for discharge measurement on the Klehini River.**



Figure 6. Chinook Salmon spawning in Big Boulder Creek July 24, 2014.

## SARAH CREEK

**Water body name:** Sarah Creek

**Water body number:** 115-32-10250-2077-3159

**Watershed:** Klehini Watershed

**Findings:** Habitat biologist Gordon Willson-Naranjo and I accessed the cataloged upper extent of Sarah Creek via overland snowshoe. The upper reach is cataloged for chinook salmon presence only, however there is no nomination indicating such, nor did we sample any anadromous fish in this reach. Hiking down the creek, electrofishing along the way, we captured only Dolly Varden char. We came upon a barrier which we measured using an inclinometer and rangefinder. The barrier began gradually at a gradient of 15% over 90 feet, followed by subsequently steepening terrain with the majority of the cascade measuring at a 39% gradient over 135 feet with no resting places for fish. A 2014 field report by R2 Resource Consultants, Inc. also confirmed this to be a barrier to anadromous fish.

**Recommendations:** I recommend updating the cataloged length of the stream to reflect the field-verified route. Based on the Alaska Forest Resources and Practices Regulations, the 39% gradient over 135 feet constitutes a steep channel barrier. I recommend removing chinook salmon presence from this reach as there is no documentation they exist in this stream. I've attached nomination #07-840 as it indicates the addition of Kr. However, nothing in the actual document suggests chinook were present at the cataloged upper limit, or anywhere else in the stream. I have also attached the 2014 R2 field summary that reports no chinook salmon were observed in the system.

## CORRECTION

**Survey date:** 4/21/2015

**Species & Lifestage:** COr, Kp

**MTR:** C028S053E **Quad:** Skagway B-4

Table 1.–Sarah Creek Survey Data

Waypoint	Latitude	Longitude	Notes	Sample Effort	Sample Results
202	59.4290	-136.3633	Upper extent of Sarah Creek.		
203	59.4288	-136.3626	2 DV	EF	2 DV
204	59.4288	-136.3625	1 DV	EF	1 DV
205	59.4288	-136.3623	1 DV	EF	1 DV
206	59.4287	-136.3620	Absolutely crazy! 3 ft of snow on banks and LWD. We will find fish when it's safe.		
207	59.4287	-136.3618	1 DV	EF	1 DV
208	59.4286	-136.3592	Pic of crotch-deep snow		
209	59.4286	-136.3592	1 DV	EF	1 DV
210	59.4271	-136.3453	1 DV	EF	1 DV
211	59.4266	-136.3427	2 DV	EF	2 DV
212	59.4264	-136.3406	1 DV; visual, could not capture because it floated under the ice. 15% over 90 yards.		
213	59.4268	-136.3396	Gradient is 22% over 105 feet		
214	59.4270	-136.3390	Gradient increase possible barrier at high flows. 25% at 105 feet.		
215	59.4275	-136.3380	Top of barrier. Gradient is 39% over 135 feet with no resting pools for fish.		

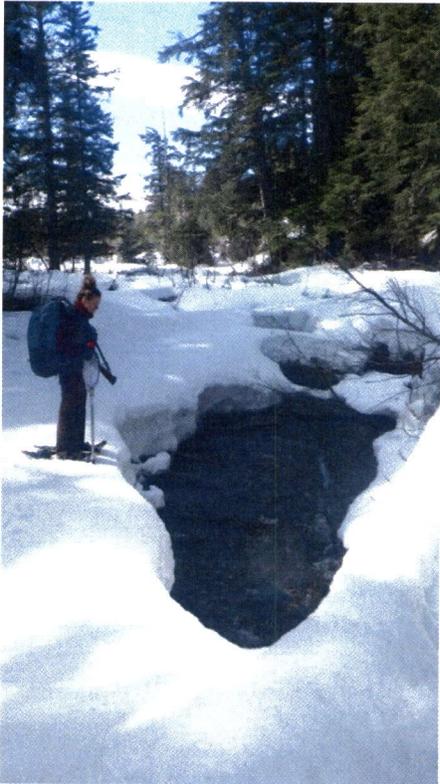


Figure 1.—At the tree fringe on the upper reach of Sarah Creek.



Figure 2.—Looking downstream from the top of the steep channel barrier on Sarah Creek.



Figure 3.—A 5' falls with no jump pool within the steep channel barrier on Sarah Creek.

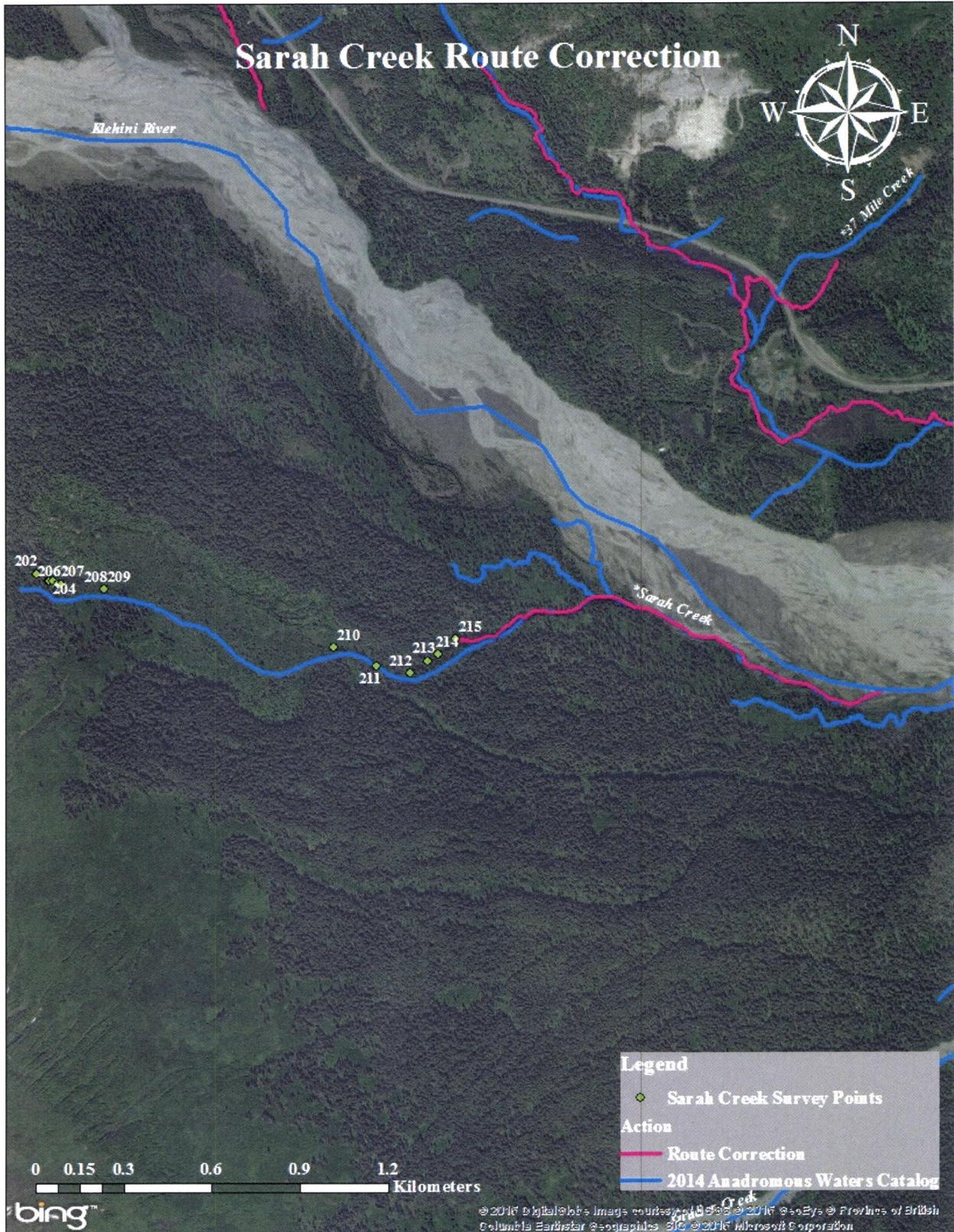


Figure 4: Sarah Creek route correction map.

