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SUSITNA-WATANA HYDRO

SYNOPSIS OF ADF&G'S UPPER SUSITNA DRAINAGE FISH INVENTORY, AUGUST 2011

Principal investigator: Joseph D. Buckwalter
Address: ADF&G Division of Sport Fish; 333 Raspberry Rd; Anchorage, AK 99518
Telephone number: 907-267-2345
E-mail address: joseph.buckwalter@alaska.gov
Date prepared: November 22, 2011

This synopsis provides preliminary results of our August, 2011 fish inventory in the Upper Susitna River Subbasin (Hydrologic Unit Code 19020501), which comprises the portion of the Susitna River basin upstream of Talkeetna–See Figure 1. An ADF&G Fishery Data Series (FDS) report describing this project in detail will be prepared early in 2012.

Background

Goal 6 of the Alaska Department of Fish and Game (ADF&G) Division of Sport Fish's (DSF) Strategic Plan is to "Conserve habitat to sustain recreational fisheries resources". In the ADF&G-DSF's Alaska Freshwater Fish Inventory (AFFI) program, one way we contribute to this goal is by conducting inventories to expand the coverage of the Anadromous Waters Catalog (AWC) and AFFI database (AFFID, which also includes nonanadromous species). Since 2002, we have conducted annual regional-scale, watershed-based fish inventory projects in selected areas of Southcentral, Southwestern, Interior, Western, and Northwestern Alaska.

In August 2003, we conducted a reconnaissance inventory in the Upper Susitna River Subbasin, visiting 19 reaches, all upstream of Devils Canyon. Sampling with a backpack electrofisher with access by helicopter, we found juvenile Chinook salmon at 4 reaches in Susitna River tributaries, including 1 reach at Fog Creek (AFFI Station ID FSS0305A01—AWC nom # 04-024), 2 reaches at Kosina Creek (Station IDs FSS0306A01 and FSS0307A06—AWC nom # 04-066), and 1 reach at the Oshetna River (Station ID FSS0306A05—AWC nom # 04-067). During a 1-day aerial (helicopter) survey of selected upper Susitna River tributaries between Devils Canyon and Jay Creek on August 1, 2003, we also saw adult Chinook salmon in 2 streams, Fog Creek (Station ID FSS03USU01—AWC nom # 04-024) and Tsusena Creek (Station ID FSS03USU02—AWC nom # 04-025).

In 2011, as part of a larger AFFI project comprising the Susitna, Matanuska, and Knik river basins (excluding conservation units), we returned to the Upper Susitna River Subbasin to complete a standard AFFI fish inventory. We also conducted a helicopter survey to locate Chinook salmon spawning aggregations upstream of Devils Canyon.

Objectives

Objective 1: To complete a baseline inventory, using standard AFFI protocols, of fish (with emphasis on anadromous fish) distribution in the Upper Susitna River Subbasin.

Objective 2: To record characteristics, using standard AFFI protocols, of aquatic and riparian habitats at each fish-collection reach.

Objective 3: To identify locations of spawning Chinook salmon aggregations in Upper Susitna River Subbasin tributaries upstream of Devils Canyon.

Methods

From August 3–16, 2011, according to standard AFFI protocols (Buckwalter et al. 2010), three 2-person teams inventoried fish communities by single-pass electrofishing in 60 stream reaches throughout the entire Upper Susitna River Subbasin (Figure 1). At a single habitat transect in each reach, all teams measured a standard suite of aquatic and riparian habitat characteristics. Table 1 lists the variables recorded for each reach.

Three sets of target streams were selected in advance based on watershed area. Streams upstream of obvious barrier falls (Figure 1) were excluded:

- **Mainstem rivers**–rivers draining at least 1500 km^2 (575 mi^2). All 3 Mainstem rivers in the subbasin were sampled by boat electrofisher (Smith-Root GPP 2.5 generator-powered electrofisher mounted on a 13-ft inflatable cataraft), including the upper Susitna River mainstem (2 reaches sampled), Maclaren River (1 reach sampled), and Tyone River (1 reach sampled).
- **Intermediate streams**–streams draining at least 200 km^2 (77 mi^2). 19 of the 22 Intermediate streams in the subbasin were sampled (1 reach each) by boat electrofisher (same electrofishing system as Mainstem rivers). The 3 remaining Intermediate streams (Tsisi Creek, Goose Creek, and an unnamed Maclaren River tributary) were not raftable, but all 3 had at least 1 Headwater reach that was sampled by backpack electrofisher in 2003 or 2011.
- **Headwater streams**–streams draining at least 50 km^2 (19 mi^2). 37 of the 74 Headwater streams in the subbasin were sampled (1 reach each) by backpack electrofisher (Smith-Root LR-24). Since we could not sample all 74 of them, we left out some Headwater streams where: 1) relatively little stream length (e.g., < 5 km) would be added to the AWC; 2) we thought anadromous fish (especially Chinook salmon) were least likely to occur (e.g., high elevation, high gradient, or still or slow-flowing with muddy bottom); 3) a nearby Headwater stream was sampled and no anadromous fish found, or; 4) the helicopter pilot could not find a suitable place to land.

On July 27 and 28, 2011, we conducted a 2-day helicopter survey looking for adult salmon in the upper Susitna River mainstem and lower reaches of selected tributaries upstream of Devils Canyon, including Fog Creek, Tsusena Creek, Watana Creek, Kosina Creek, Jay Creek, Windy Creek, Valdez Creek, Boulder Creek (north of Valdez Creek), Oshetna River, Little Oshetna River, Tyone Creek, Tyone River, Clearwater Creek, Little Clearwater Creek, West Fork Maclaren River, Maclaren River, and Boulder Creek (upper Maclaren river tributary). The helicopter survey was scheduled during the time when ADF&G typically conducts Chinook salmon aerial surveys in upper Susitna River tributaries downstream of Devils Canyon (S. S. Ivey, Sport Fish Area Management Biologist, ADF&G, personal communication June 16, 2011).

Results

Table 2 provides a list of all the fish species we found at electrofished reaches in the Upper Susitna River Subbasin in 2003 and 2011, along with the number of reaches where we found each species. Figure 1 is an overview map of the Upper Susitna River Subbasin showing reaches we electrofished in 2003 and 2011. Figures 2–15 are detail maps of the Upper Susitna River Subbasin showing reaches we electrofished in 2003 and 2011, with reach ID, species found, and AWC streams labeled. Station reports summarize the data we collected at each reach. Reach

locations, station reports, and photos will soon be posted on the AFFI online mapping application at http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main. Results from the August 2003 inventory are already posted.

We found anadromous fish (juvenile Chinook salmon) in 4 of the 60 electrofished reaches in the Upper Susitna River Subbasin, including: 1 reach in Fog Creek (Station ID FSS1104C01—AWC nom # 110582); 2 reaches in Portage Creek (Station IDs FSS1109C01—AWC nom # 110585 and FSS1111C04–AWC nom # 110587); and 1 reach in the mainstem Susitna River at Lane Creek, 16 miles upstream of Talkeetna (Station ID FSS1106D01—AWC nom # 110493). Only 1 (Fog Creek) of these 4 reaches was located upstream of Devils Canyon.

During the helicopter survey on July 27, 2011, we also saw 1 adult Chinook salmon in Kosina Creek (Station ID FSS1101G04—AWC nom # 110485). We submitted AWC nominations for all 5 sites where we found Chinook salmon.

We collected specimens of optionally-anadromous fishes[a], including humpback whitefish and Dolly Varden, from several reaches upstream of Devils Canyon. During the winter of 2011/2012, we will have otoliths from these specimens tested to detect periods of saltwater residency. If the otolith-chemistry tests provide evidence of saltwater migration, we will also nominate for inclusion in the AWC the streams where these specimens were found along with the downstream route to saltwater.

Recommendations

Due to its proximity to the proposed Watana Dam site and impoundment, and due to the documented presence of Chinook salmon in other nearby tributaries, one of the Headwater target streams we missed should be considered a priority for future fish inventory work. This is the unnamed right-bank Susitna River tributary located between Watana Creek and Deadman Creek (mouth located at N 62.834, W 148.322; Seward Meridian, T32N, R06E, Section 27). The lower reaches of this stream should be sampled to check for the presence of Chinook salmon (particularly rearing juveniles).

In this investigation, we did not select any target streams draining less than 50 km^2 or lakes. Small streams and lakes, especially those draining directly to an AWC-listed stream, should be considered for future fish-inventory studies.

Our investigations in 2003 and 2011 suggest a small Chinook salmon stock persists in the Upper Susitna River Subbasin upstream of Devils Canyon. While sampling a relatively small number of isolated reaches scattered throughout the Upper Susitna River Subbasin, we documented the occurrence of both juvenile and adult Chinook salmon upstream of Devils Canyon during both 2003 and 2011. A common assumption is that a few Chinook salmon may pass through Devils Canyon only in low-water years; however, in 2003, we found adult Chinook salmon in Fog and Tsusena creeks when Susitna River daily mean discharge at Gold Creek during July 2003

[a] All salmonids (salmon, trout, char, grayling, and whitefish) spawn in freshwater, and some spend their entire lives there. However, many migrate to sea to feed and mature and then return to freshwater to spawn. This life-history pattern is known as anadromy. Salmonid species and populations exhibit differing degrees of anadromy. Some species, such as pink, chum, and Chinook salmon, are generally considered to be obligatory-anadromous species. Others, such as trout, char, and whitefish species, are considered to be optionally-anadromous, meaning they may have nonanadromous populations or individuals. Therefore, before nominating optionally-anadromous species for listing in the AWC, evidence of anadromy is needed.

averaged 29,200 cfs, the highest July value reported during the past 10 years (2002–2011; USGS 2011).

Very little is known about Upper Susitna Chinook salmon in terms of run size and interannual variability, locations of spawning, rearing, and over-wintering areas, and timing and duration of key life-history events (e.g., upriver migration and spawning, period of freshwater residency, smolt out-migration). Further investigation would be needed to obtain information on the status of this stock, beginning with an investigation of spawning run size and the distribution of spawning aggregations, preferably spanning several years.

Funding statement

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References cited

Buckwalter, J. D., J. J. M. Kirsch, and D. J. Reed. 2010. Fish inventory and anadromous cataloging in the lower Yukon River drainage, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-76, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FDS10-76.pdf.

USGS (U.S. Department of the Interior, U.S. Geological Survey). 2011. Annual Water Data Reports. http://wdr.water.usgs.gov/ (Accessed November 2011).

TABLES

Table 1.–List of variables recorded at each reach.

Variable name	Equipment	Units/Domain	Precision	Comment
Geographic information				
Project Code & Station ID	-	text	-	5-digit alphanumeric—see Buckwalter et al. 2010, *Stations* heading.
Station location Upper end of reach Lower end of reach	consumer-grade GPS unit (e.g. Garmin GPSmap 60CSx or 76S)	decimal degrees: latitude (DD.DDDDD); longitude (-DDD.DDDDD)	0.00001 degrees	Location of habitat transect.
Geodetic datum		text	-	Default is WGS84.
Water-body name	Water-body name from USGS topo map	text	-	
Geographic comments	-	text	-	Describes location of study site in relation to adjacent long-term or permanent geographic features
Observers	-	list of field staff	-	
Date/time	field notebook computer	mm/dd/yyyy hh:mm:ss	1 s	Value input automatically from computer's clock when data entry is begun
Camera counter	-	sequential integers	-	List of photo filenames (last 3 digits only) associated with each station
Visit comments	-	text	-	Physical and biological conditions at the station during the visit—focus on ephemeral conditions, such as weather or stream conditions, or the dynamics of riparian conditions, that may help explain other recorded observations
Wildlife comments	-	text	-	Anecdotal wildlife observations, particularly those that relate to fish.
Water quality				
Water temperature	YSI 556 meter	°C	0.01 °C	Measured in thalweg
pH		pH units	0.01 pH units	
Dissolved oxygen		mg/L, % saturation	0.01 mg/L, 0.1%	
Conductivity		µS/cm	1 µS/cm	Ambient conductivity (not temperature corrected).
Turbidity	LaMotte 2020e turbidimeter	NTU	0.1 NTU	
Water color	-	see Appendix B4[b].	-	

-continued-

[b] All appendices referred to are from Buckwalter et al. 2010.

Table 1.–Page 2 of 4.

Variable name	Equipment	Units/Domain	Precision	Comment
Channel morphology				
Channel widths (wetted and bankfull [BF])	30-m fiberglass tape	m	0.1 m	In wadeable channels < 30 m wide
	laser range finder (Bushnell Yardage Pro)	m	1 m	In nonwadeable channels, or where width > 30 m
Thalweg depth (wetted and BF)	graduated rod	m	0.01 m	All teams–wadeable channels
	handheld sonar (wetted depth); rod and clinometer (to measure BF height)	m	0.1 m	For nonwadeable channels
Stream gradient	clinometer (Sokkia 5x magnifying abney level with clinometer, or Suunto PM-5)	%	0.1%	Water surface angle between consistent channel features near habitat transect.
Substrate composition	visual estimate	see Appendix B4	-	3 most dominant substrate classes within scoured portion of streambed in a 5-CW (<100 m) section centered on habitat transect.
Embeddedness category	visual estimate	negligible (<5%), low (5–25%), moderate (25–25%), high (50–75%), very high (>75%)	-	Estimated embeddedness of gravel, cobble, and boulder particles in, or as near to as possible, the thalweg in a 5-CW (<100 m) section centered on the habitat transect.
Entrenchment ratio category	visual estimate or laser range finder (flood-prone width), and see channel width (BF)	1.0–1.4=entrenched; 1.41–2.2=moderately-entrenched; >2.2=slightly-entrenched	-	Entrenchment ratio (Rosgen 1994) = flood-prone width ÷ BF width. Flood-prone width is the width of the floodplain measured at a water level of twice the thalweg BF depth.
Channel type	see Channel width, Thalweg depth and Stream gradient	Rosgen (1994) level-II channel types, plus the following: Lake/Pond; Slough; Beaver pond complex; Wetland; or No defined channel	-	To be determined in the office following fieldwork based on BF width and BF depth (width-to-depth ratio), gradient, entrenchment ratio, dominant substrate, and estimated sinuosity values.
Stream flow				
Stream stage	-	dry, low, medium, high	-	Water level relative to BF stage.
48-hour precipitation	-	none/trace, moderate, heavy	-	

-continued-

Table 1.–Page 3 of 4.

Variable name	Equipment	Units/Domain	Precision	Comment
Stream flow (continued)				
Thalweg velocity	Transparent velocity-head rod (TVHR)	Head depth (mm)→mean water column velocity (m/s)	1 mm (0.1 m/s)	Wadeable streams, depth <0.9 m
	Whole orange, fiberglass tape, stopwatch	m/s	0.1 m/s	Wadeable streams (alternate method). Timed orange float through a 6-m length.
	consumer-grade GPS unit (Garmin GPSmap 60CSx or 76S)	m/s	0.1 m/s	Nonwadeable streams—maximum sustained GPS velocity of boat drifting in thalweg.
Meter type	-	TVHR, orange, or GPS	-	
Riparian vegetation communities				
Riparian vegetation composition	-	Viereck et al. (1992) vegetation communities	-	Dominant vegetation community recorded in 8 zones (4 zones on each bank): 0-5 m (from BF level); 5-10 m; 10-20 m; 20-30 m
Canopy height	graduated rod (< 1.5 m); clinometer & range finder (> 1.5 m)	m	0.1 m (< 1.5 m); 0.5 m (>1.5 m)	Recorded for each of the 8 zones described above
Fish-collection events				
Channel	-	main-, side-, or off-channel	-	Channel type of fish-collection event
Fish-collection method	-	backpack electrofisher, boat electrofisher, visual observations (ground, boat, or helicopter), dipnet, angling, none	-	
Waveform	electrofisher setting	DC-pulsed; DC-unpulsed	-	
Voltage		V	1 V	(LR-24 only)
Range		Low or High	-	(GPP 2.5 only)
Percent of range		0–100 %	Continuous	(GPP 2.5 only)
Frequency		pulses per second (pps)	1 pps	
Duty cycle		%	1%	(LR-24 only)
Current	electrofisher output meter	A	0.01 A (LR-24); 0.1 A (GPP 2.5)	Peak current (LR-24); average current (GPP 2.5)
Power	electrofisher output meter	W	1 W	Peak power (LR-24 only)
Electrofisher on-time	electrofisher timer	s	1 s	
Efficiency	-	excellent, good, fair, poor	-	Perceived electrofishing efficiency, relative to optimal conditions.

-continued-

Table 1.–Page 4 of 4.

Variable name	Equipment	Units/Domain	Precision	Comment
Catch				
Reach length	GPS (trip computer mode, or track)	m	1 m	Indicate actual length of fish-collection reach, measured by GPS.
Species	-	see Appendix B5	-	
Life stage	-	see Appendix B1	-	
Life history	-	anadromous, freshwater-resident, marine, unknown, N/A	-	
Suspect spawning	-	yes, no	-	
Barrier	-	see Appendix B3	-	
Fork length	fish measuring board	mm	1 mm	
Sex	-	male, female, blank (if sex was not determined)	-	
Anomalies	-	see Appendix B2	-	
Retained	-	Checkbox (Y/N)	-	Indicate each individual fish retained.
Tag No.	-	10-digit alphanumeric text	-	For retained specimens, indicate the tag number affixed to each fish.
Vial No.	-	10-digit alphanumeric text	-	If a tissue sample was taken, indicate the vial number.
Photo No.	Digital camera	3-digit positive integer	1	For each fish photographed, indicate the photo number (last 3 digits of the photo filename) for each photo taken.
Individual fish comments	-	text	-	Comments pertaining to an individual fish (e.g., sampling injuries or mortalities, unusual features or behavior)
Additional counts	-	integer, no. of fish	1 fish	Count of additional fish collected or observed (not including any fish measured individually)
Estimated	-	yes, no	-	Indicates whether the no. of additional fish recorded above was an estimate or a direct count
Species-life-stage comments	-	text	-	Comments pertaining to an entire group of fish of the same species and life stage

Table 2.–List of species found at electrofished reaches in the Upper Susitna River Subbasin during August 2003 and August 2011 fish inventories, along with species codes, and the number of reaches where each species was found.

Family	Scientific name	Common name	Species Code	Number of reaches	
				2003	2011
Catostomidae	*Catostomus catostomus*	longnose sucker	NOS	1	13
Salmonidae	*Coregonus pidschian*	humpback whitefish	WHB	0	4
	Prosopium cylindraceum	round whitefish	WRN	0	20
	-	whitefish-unspecified	WHF	1	0
	Thymallus arcticus	Arctic grayling	GRA	12	46
	Oncorhynchus mykiss	rainbow trout	TRB	0	1
	Oncorhynchus tshawytscha	Chinook salmon	SCK	4	4
	Salvelinus malma	Dolly Varden	CDV	1	13
Gadidae	*Lota lota*	burbot	GBR	1	13
Cottidae	*Cottus cognatus*	slimy sculpin	USL	16	52
-	-	no fish found	XXX	1	1
Total number of reaches sampled.				**19**	**60**

FIGURES

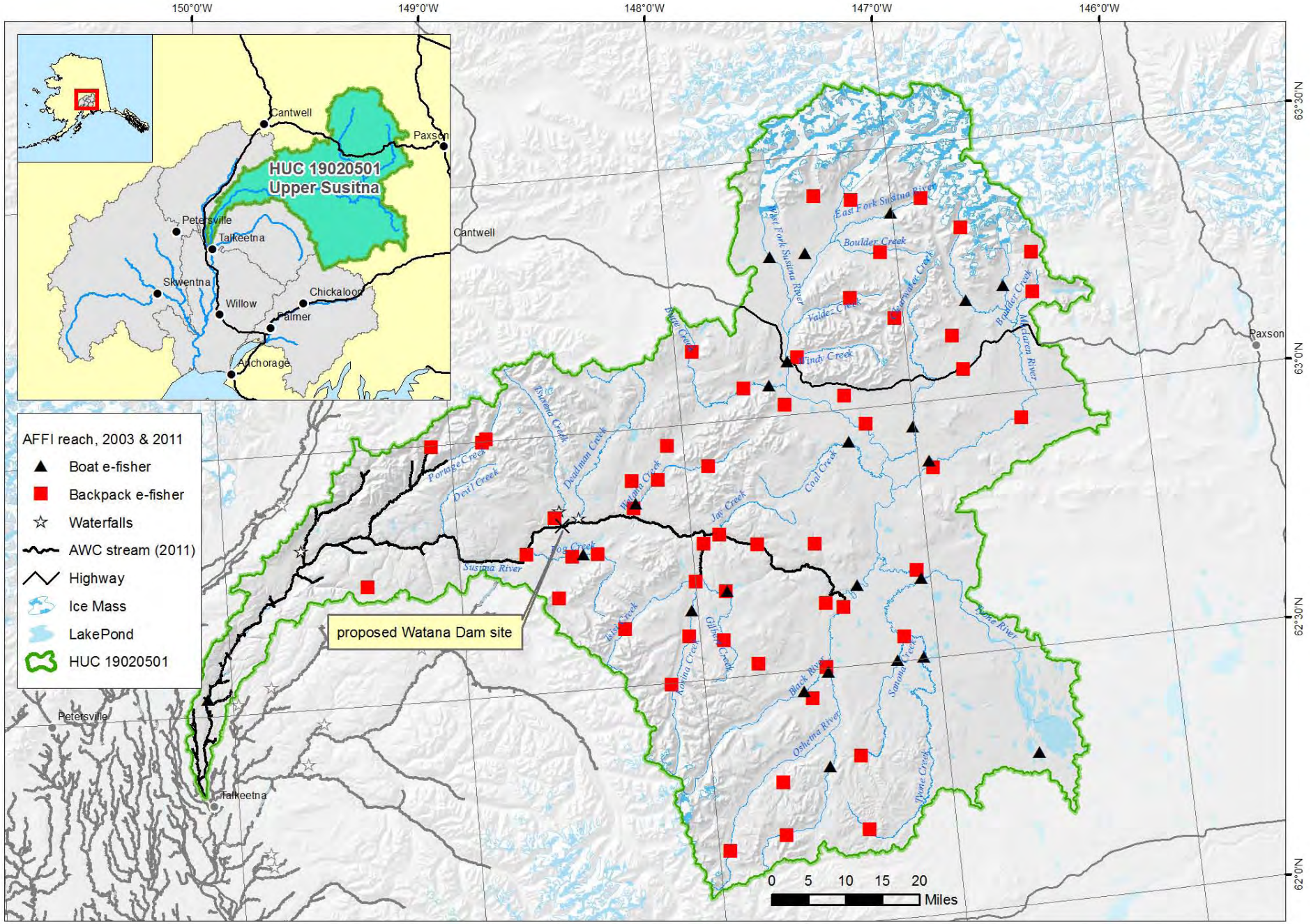

Figure 1.–Map of the Upper Susitna River Subbasin.

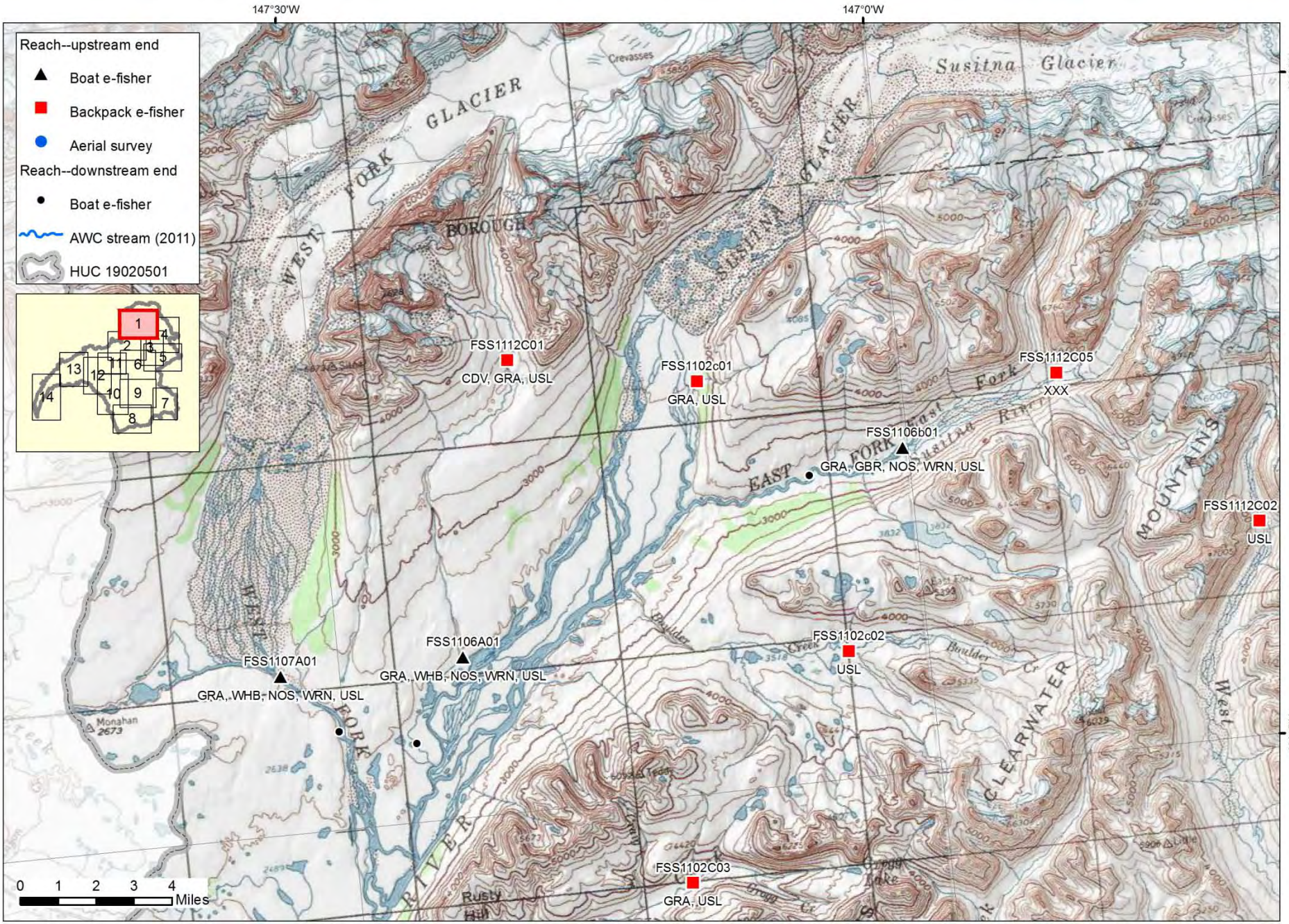

Figure 2.–Susitna Glacier vicinity map.

Note: See Table 2 to lookup species names.

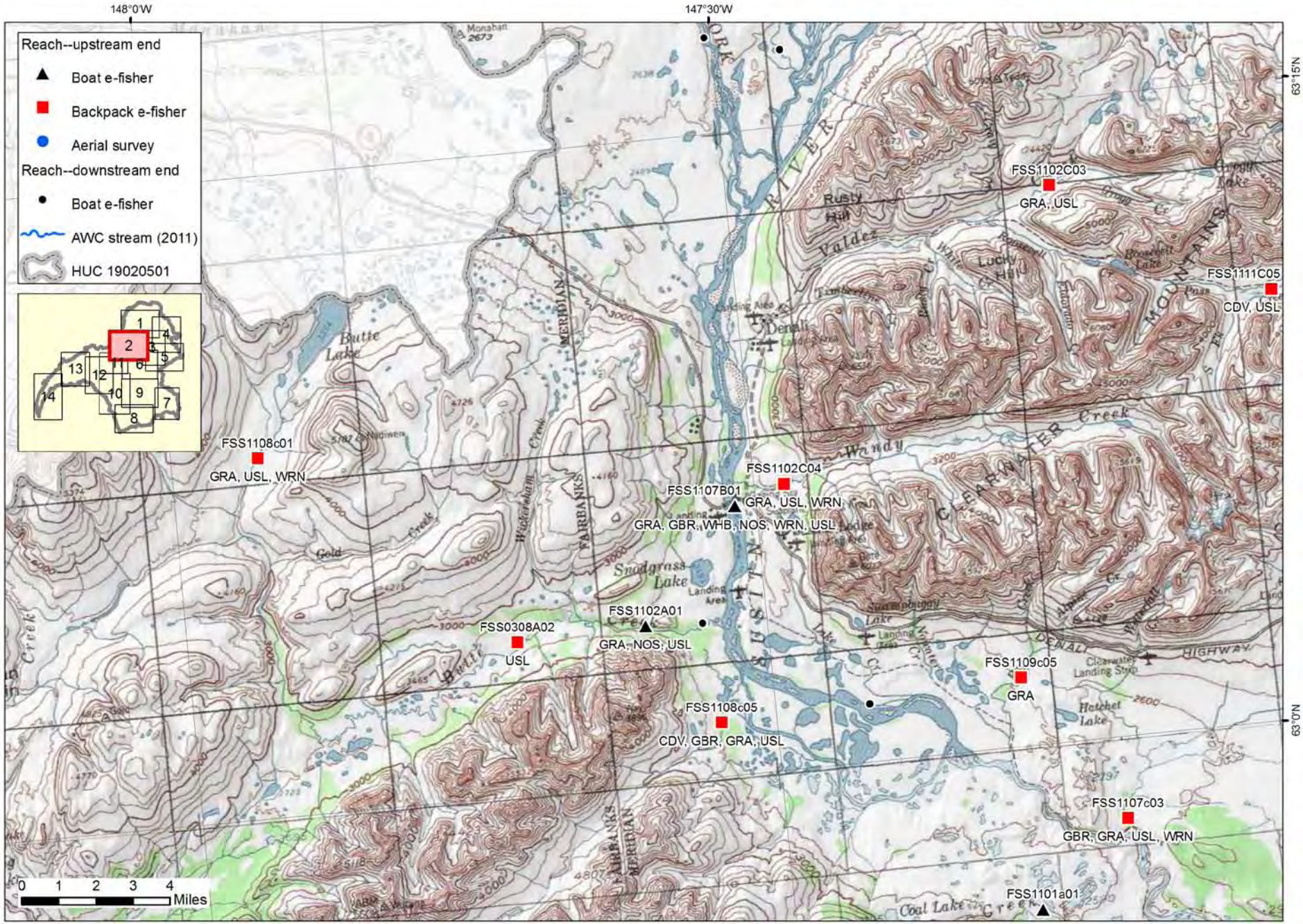

Figure 3.–Denali Highway crossing vicinity map.

Note: See Table 2 to lookup species names.

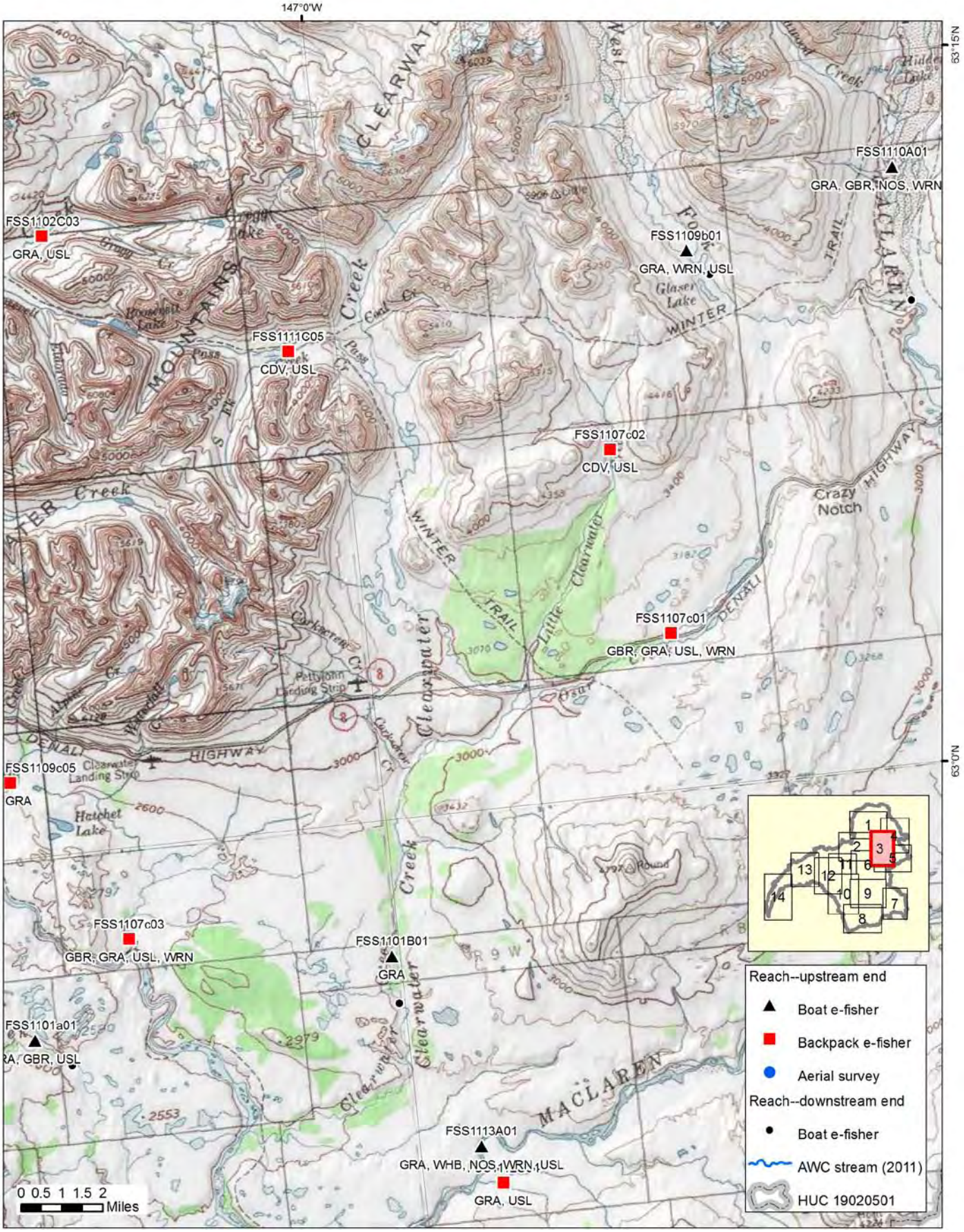

Figure 4.–Clearwater Creek vicinity map. *Note: See Table 2 to lookup species names.*

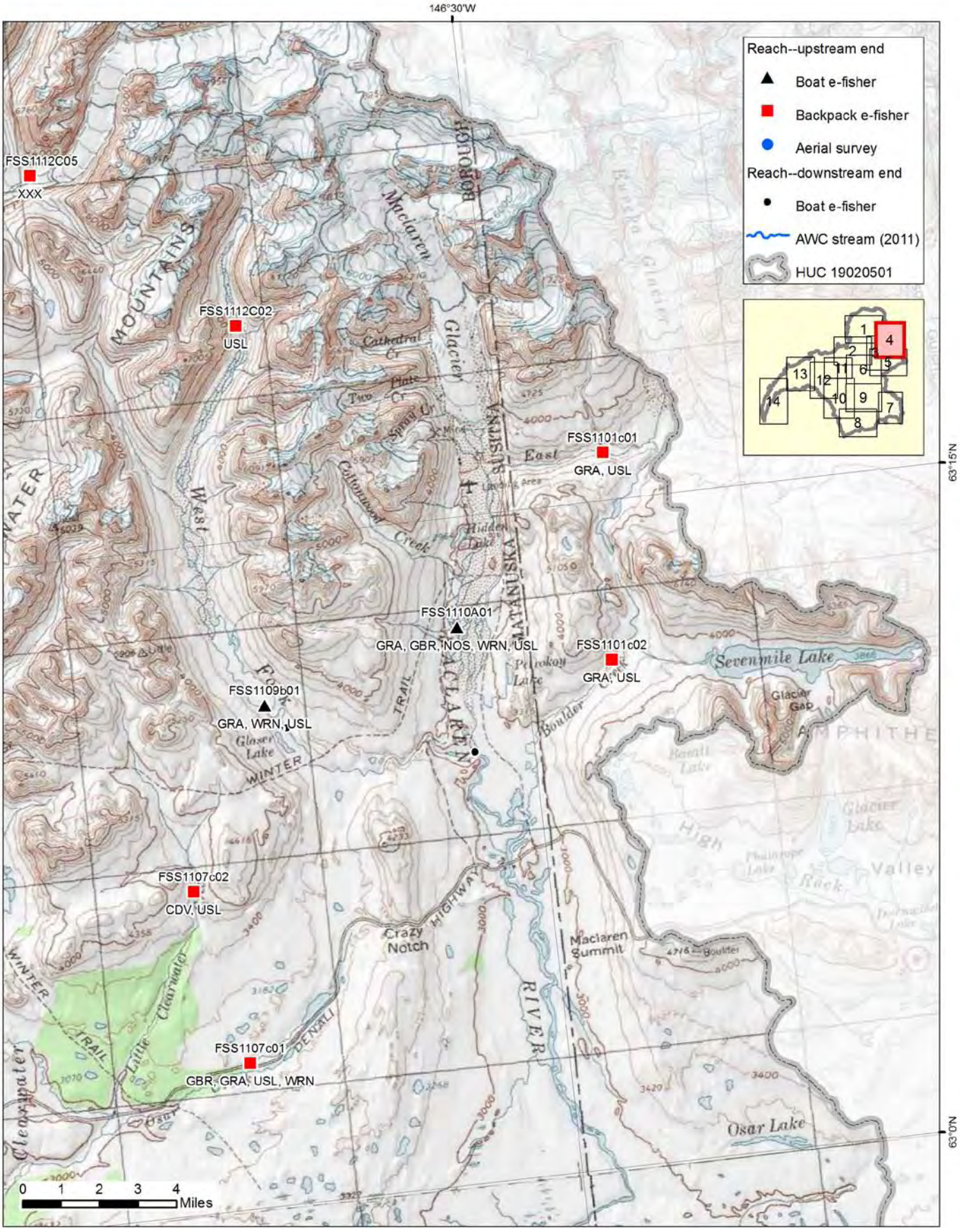

Figure 5.–Maclaren Glacier vicinity map. *Note: See Table 2 to lookup species names.*

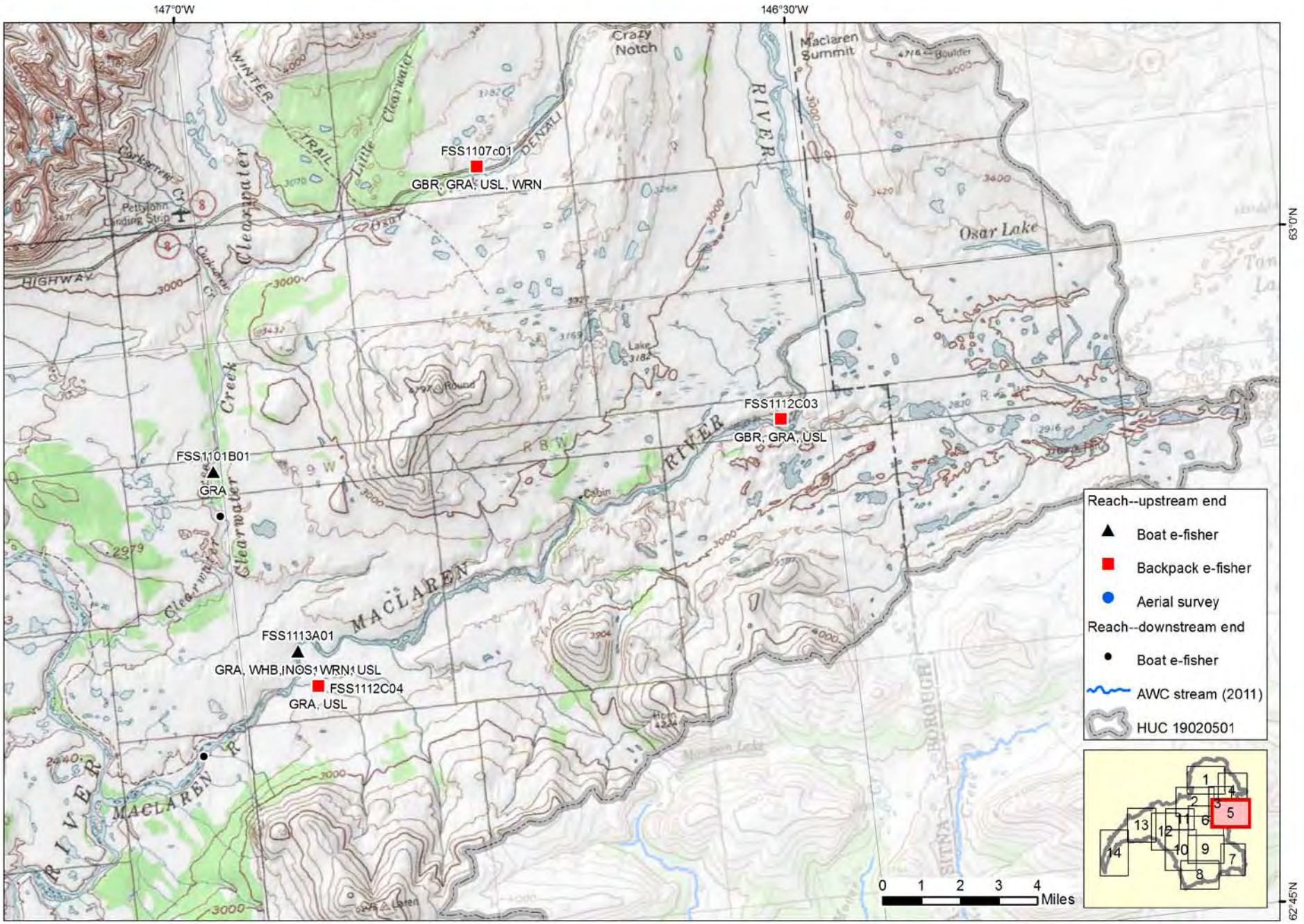

Figure 6.–Lower Maclaren River vicinity map.

Note: See Table 2 to lookup species names.

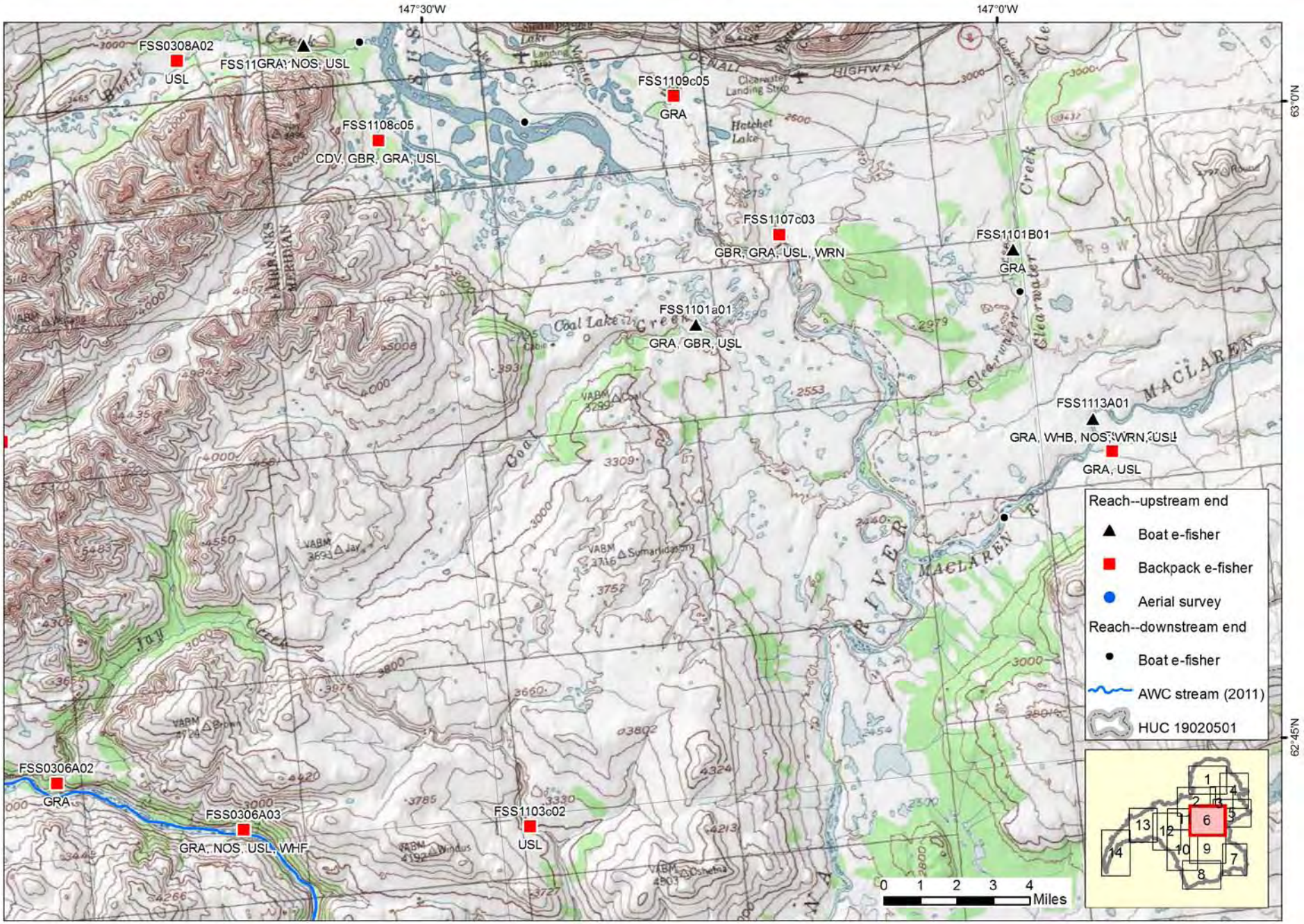

Figure 7.–Coal Creek vicinity map.

Note: See Table 2 to lookup species names.

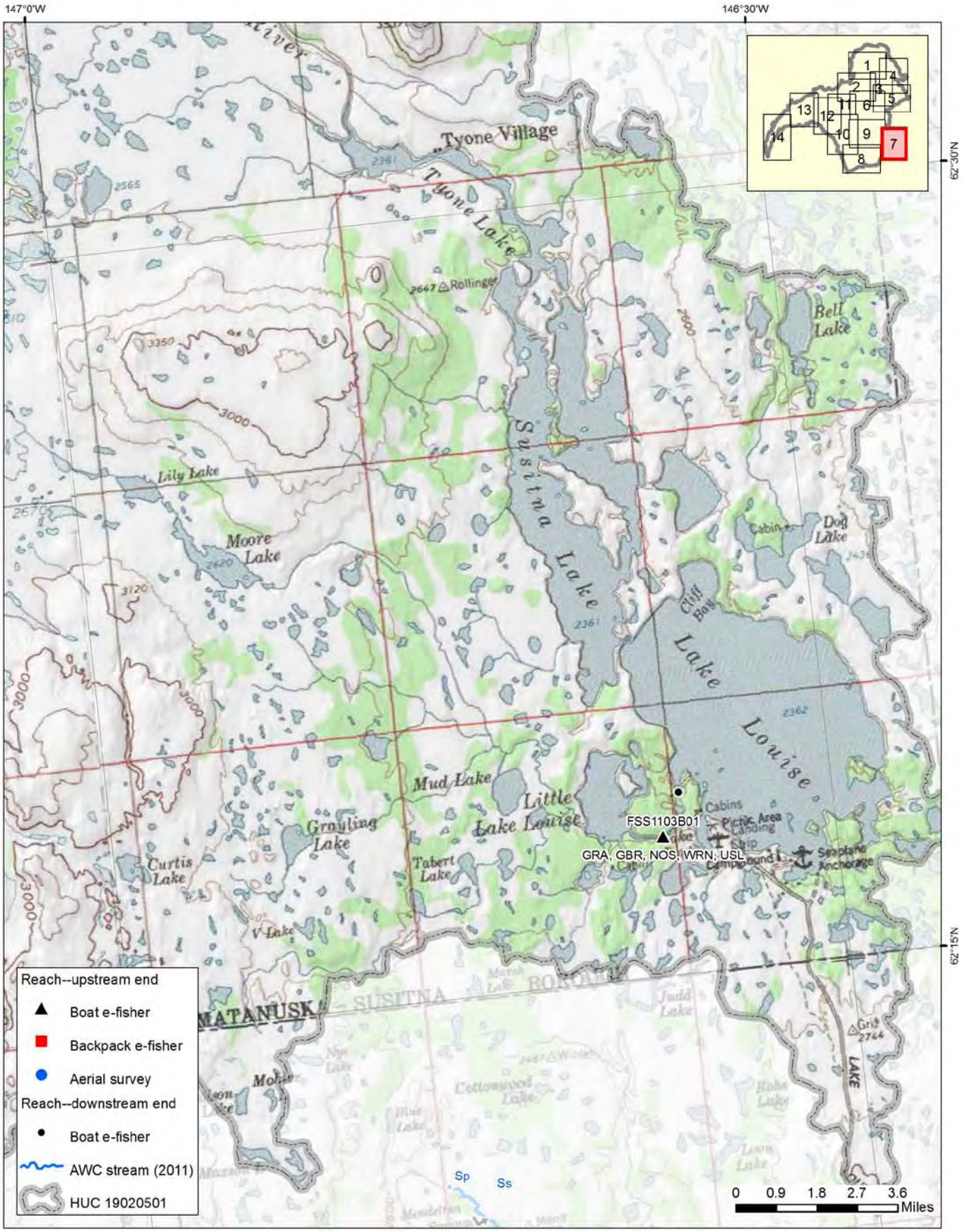

Figure 8.–Lake Louise vicinity map. *Note: See Table 2 to lookup species names.*

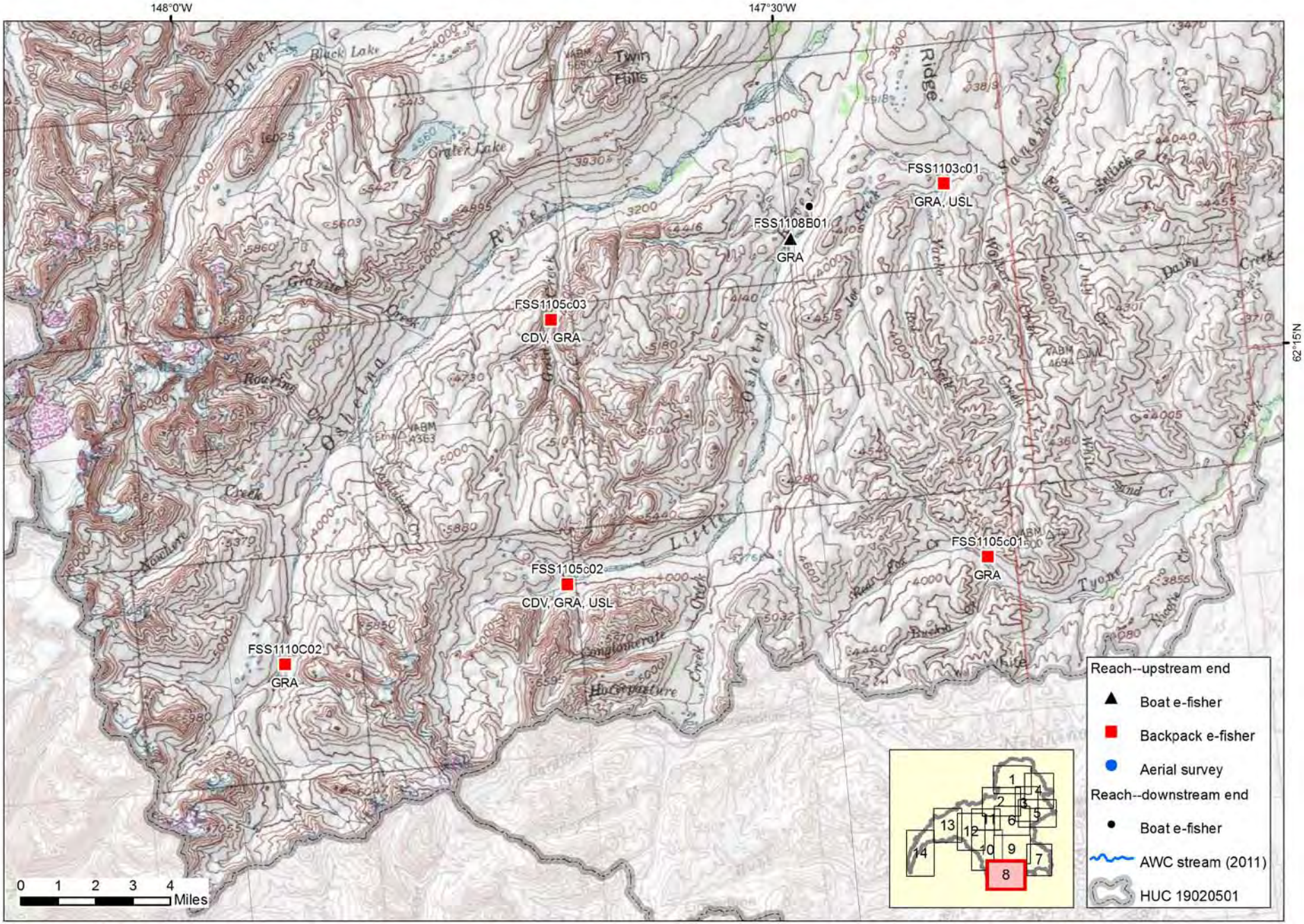

Figure 9.–Upper Oshetna River vicinity map.

Note: See Table 2 to lookup species names.

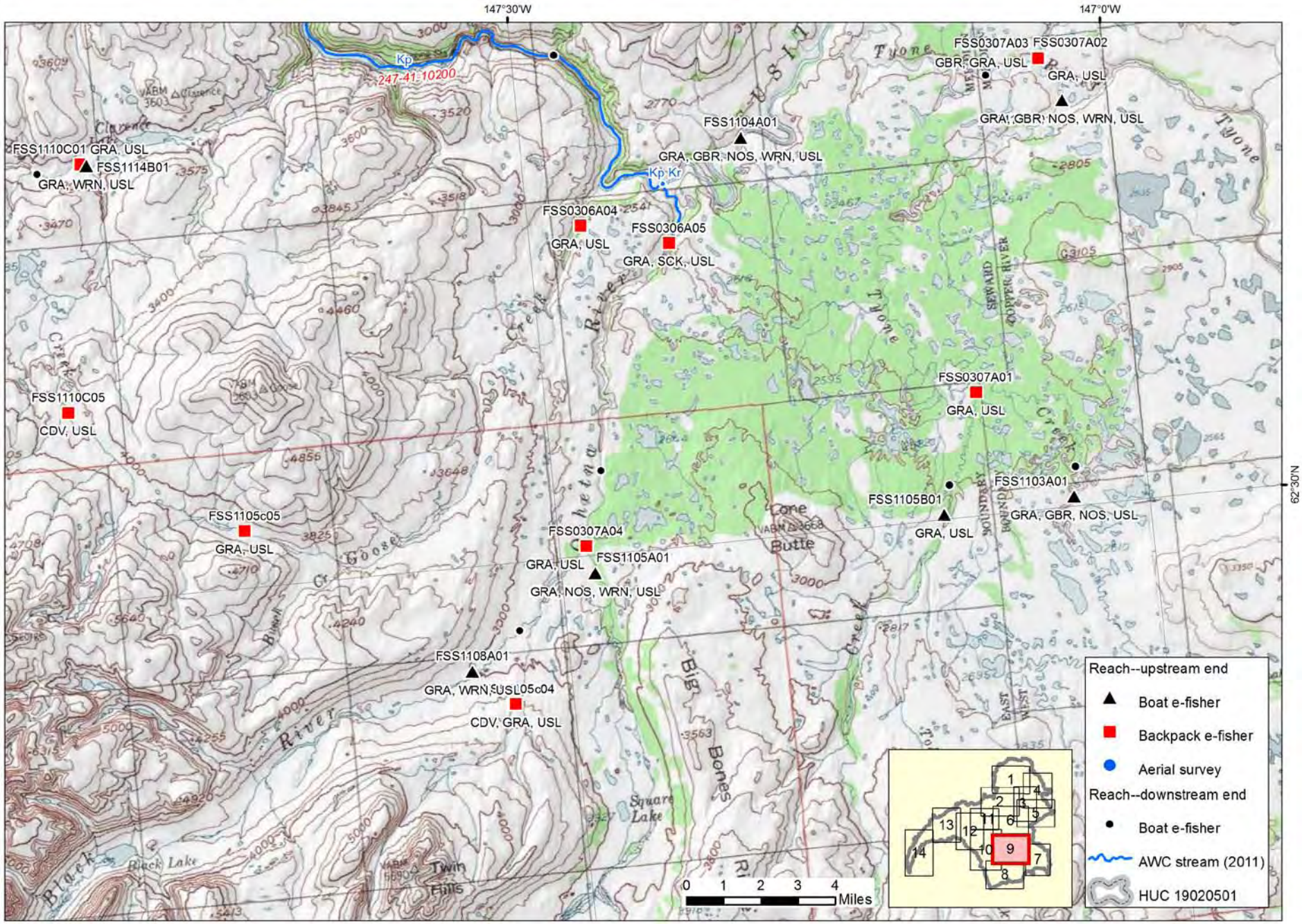

Figure 10.–Lower Oshetna River vicinity map.

Note: See Table 2 to lookup species names.

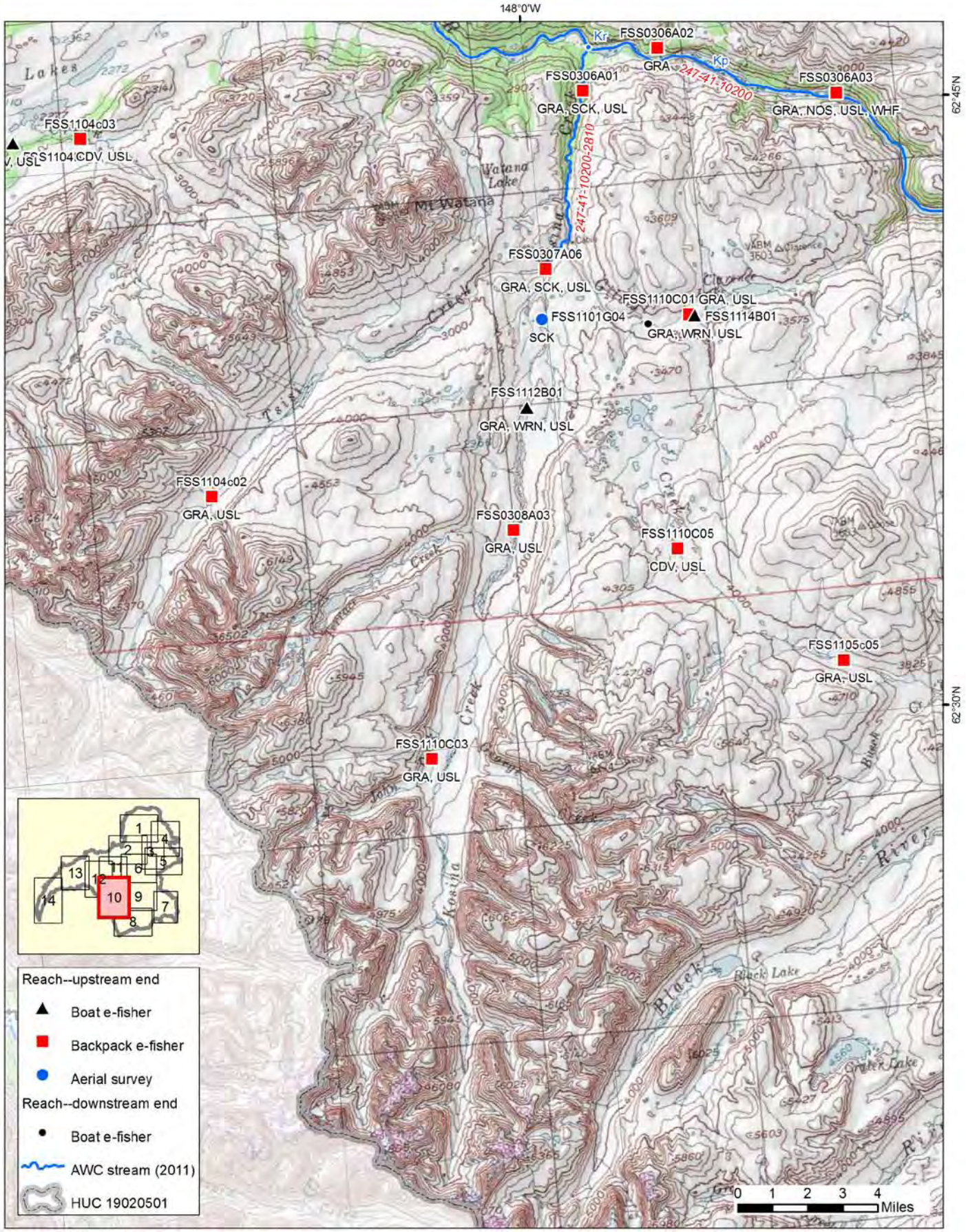

Figure 11.–Kosina Creek vicinity map. *Note: See Table 2 to lookup species names.*

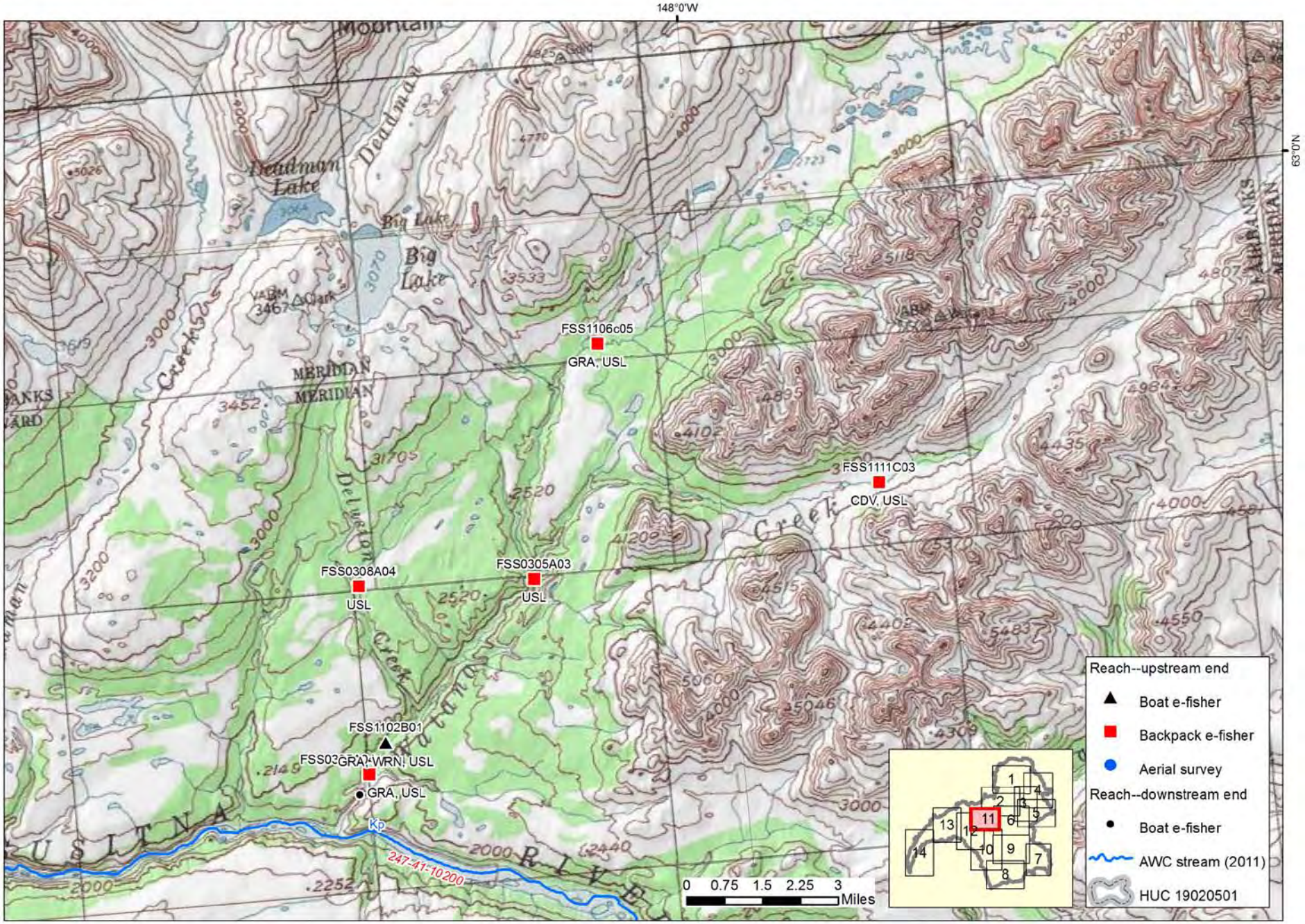

Figure 12.–Watana Creek vicinity map.

Note: See Table 2 to lookup species names.

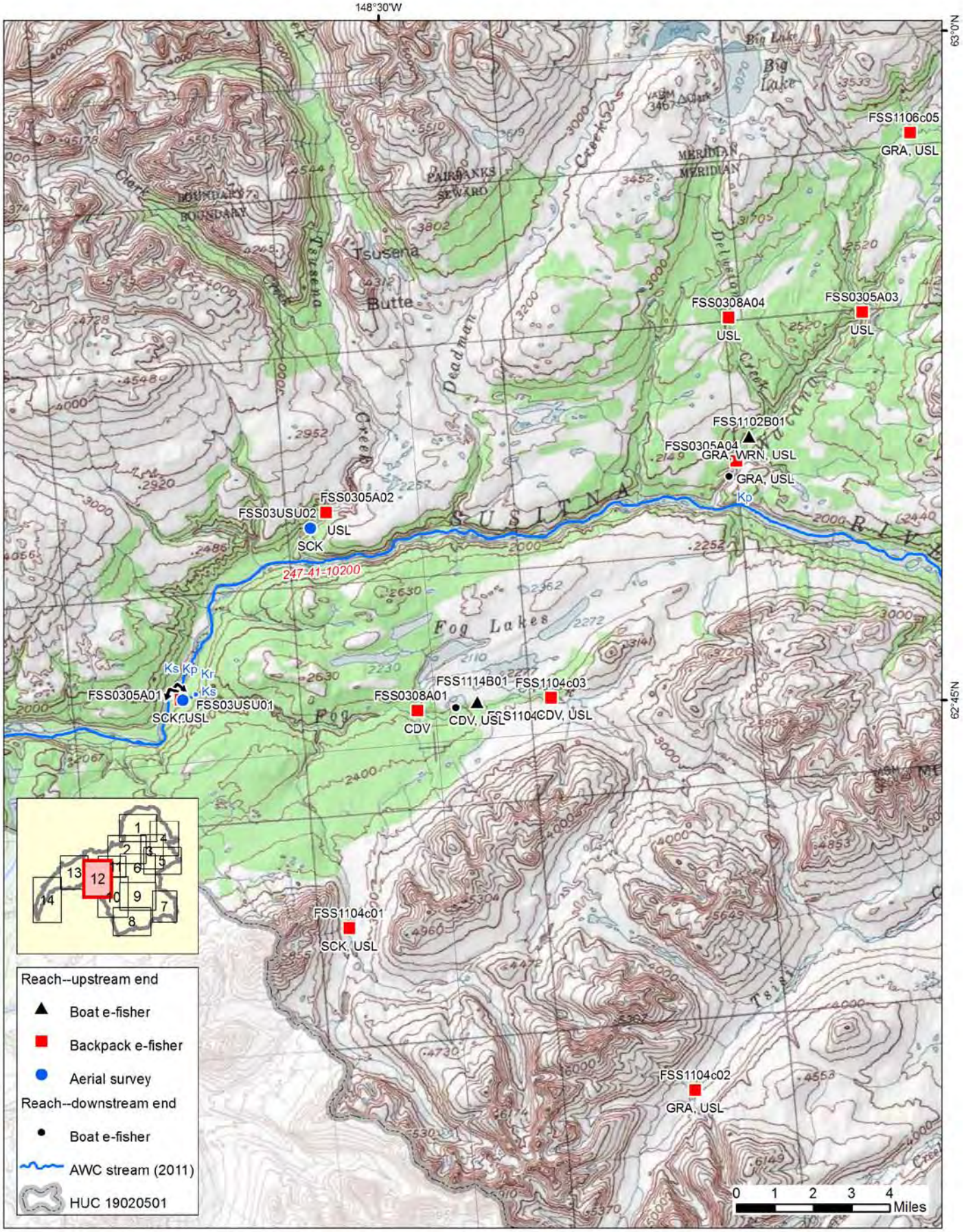

Figure 13.–Fog Creek vicinity map.

Note: See Table 2 to lookup species names.

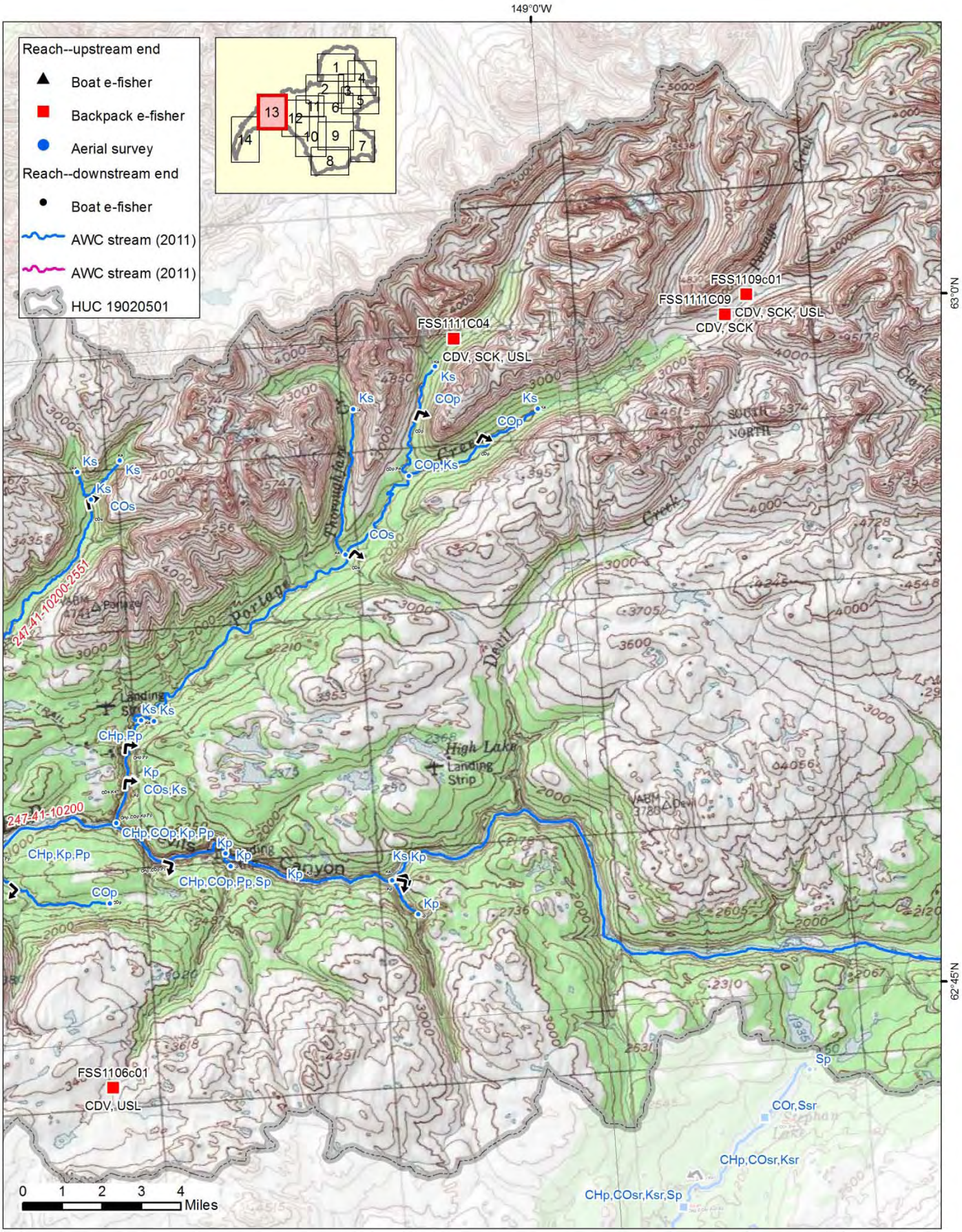

Figure 14.–Devils Canyon vicinity map. *Note: See Table 2 to lookup species names.*

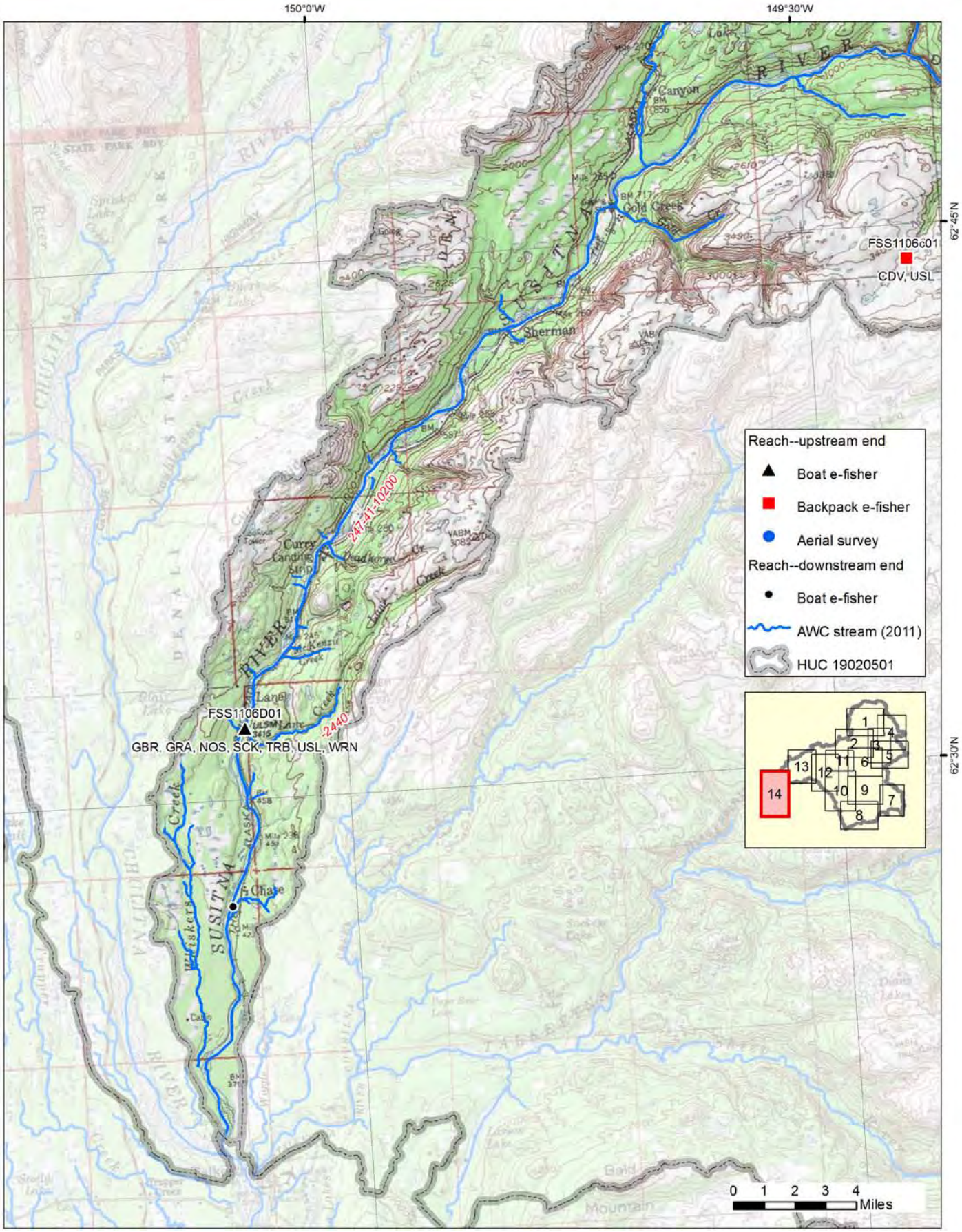

Figure 15.–Susitna River downstream of Gold Creek vicinity map. *Note: See Table 2 to lookup species names.*

STATION REPORTS

Station FSS0305A01

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/13/2003 1:06 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft):
	62.77432	-148.70844	426 1398

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** S031N004E16
Waterbody Name: Fog Creek
Anadromous Waters Catalog Number: 247-41-10200-2696
Geographic Comments:
Visit Comments: Width estimated. Velocity measured in thalweg (depth 2.0 ft) at 60% of depth with AA meter. 71 revolutions in 40.1 seconds.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.40 **DO (mg/L):** 12.03 **Conductivity (µS/cm):** 118 **Turbidity (NTU):** **pH:** 7.12
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):** 1.20 3.9
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted	
Width		18.0	**Dominant Substrate:** Cobble
Thalweg Depth			**Subdominant Substrate 1:** Gravel
			Subdominant Substrate 2: Boulder

Rosgen Class: B3 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder-Willow Shrub	3	Closed Tall Alder-Willow Shrub	4
5 - 10	Closed Tall Alder-Willow Shrub	3	Closed White Spruce Forest	25
10 - 20	Closed Balsam Poplar-White Spruce Forest	20	Closed White Spruce Forest	25
20 - 30	Closed Balsam Poplar-White Spruce Forest	20	Closed White Spruce Forest	25

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 5 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 56 **Max:** 91 **Mean:** 71 **Median:** 73
Sampling Method (No. of fish): PEF (4) VOG (1)
Comments: Fork length of additional fish was about 60 mm.

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 87 **Max:** 87 **Mean:** 87 **Median:** 87
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 53 **Max:** 53 **Mean:** 53 **Median:** 53
Sampling Method (No. of fish): PEF (1)
Comments:

Species: whitefish-unspecified **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments: Did not capture; may have been a sucker. F.L. was about 300 mm.

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity:

Water Quality: Horiba U-10

Channel Depths:

Channel Widths: Visual estimate

Electrofisher: Smith-Root LR-24

Station FSS0305A02

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/13/2003 3:21 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.84005	-148.57626

Elevation NED (m)(ft): 496 1627

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** S032N005E29

Waterbody Name: Tsusena Creek

Anadromous Waters Catalog Number:

Geographic Comments: Waterfall about 2 km upstream at station 05A05 is a barrier to upstream migration of all species and life stages.

Visit Comments: Stream not wadeable. Width, depth estimated.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.20 **DO (mg/L):** 12.31 **Conductivity (µS/cm):** 64 **Turbidity (NTU):** **pH:** 7.16

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width		43.0
Thalweg Depth		1.50

Dominant Substrate: Boulder

Subdominant Substrate 1: Gravel

Subdominant Substrate 2: Cobble

Rosgen Class: B2 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder Shrub	4	Closed Tall Alder-Willow Shrub	2
5 - 10	Closed Balsam Poplar-White Spruce Forest	24	Closed Spruce-Paper Birch Forest	20
10 - 20	Closed Balsam Poplar-White Spruce Forest	24	Closed Spruce-Paper Birch Forest	20
20 - 30	Closed Balsam Poplar-White Spruce Forest	24	Closed Spruce-Paper Birch Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher

Fish Observations

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident

Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 84 **Max:** 84 **Mean:** 84 **Median:** 84

Sampling Method (No. of fish): PEF (1)

Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident

Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 52 **Max:** 52 **Mean:** 52 **Median:** 52

Sampling Method (No. of fish): PEF (1)

Comments:

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** Visual estimate

Stream Velocity: Price pygmy meter **Channel Widths:** Visual estimate

Turbidity: **Electrofisher:** Smith-Root LR-24

Water Quality: Horiba U-10

Station FSS0305A03

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/13/2003 4:21 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.89774	-148.12112

Elevation NED (m)(ft): 640 2100

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S032N007E03

Waterbody Name: Watana Creek

Anadromous Waters Catalog Number:

Geographic Comments:

Visit Comments: Main channel not wadeable. Depth, width estimated. Landslides about 5 km downstream depositing sediment into channel. Water clear above, but highly turbid below landslides. Landslides appear to be recent, probably triggered by earthquake in 2003.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.20 **DO (mg/L):** 11.38 **Conductivity (µS/cm):** 186 **Turbidity (NTU):** 1.00 **pH:** 7.49

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width		19.5
Thalweg Depth		0.70

Dominant Substrate: Gravel

Subdominant Substrate 1: Boulder

Subdominant Substrate 2: Sand/Silt/Clay

Rosgen Class: C4 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Alder-Willow Shrub	3
5 - 10	Closed Tall Willow Shrub	2	Closed White Spruce Forest	25
10 - 20	Closed Tall Willow Shrub	2	Closed White Spruce Forest	25
20 - 30	Closed White Spruce Forest	15	Closed White Spruce Forest	25

Key To Fish Sampling Methods

(PEF) Portable Electrofisher

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident

Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 44 **Max:** 45 **Mean:** 44 **Median:** 44

Sampling Method (No. of fish): PEF (2)

Comments:

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity: Horiba U-10

Water Quality: Horiba U-10

Channel Depths: Visual estimate

Channel Widths: Visual estimate

Electrofisher: Smith-Root LR-24

Station FSS0305A04

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/13/2003 5:38 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft): 508 1667
	62.84628	-148.23525	

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S032N006E24
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: Left-bank tributary to Watana Creek
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.50 **DO (mg/L):** 11.54 **Conductivity (µS/cm):** 370 **Turbidity (NTU):** 1.00 **pH:** 7.64
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted	Dominant Substrate: Boulder
Width	3.0	3.0	Subdominant Substrate 1: Gravel
Thalweg Depth		0.30	Subdominant Substrate 2: Cobble

Rosgen Class: B2 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	3	Closed Tall Willow Shrub	3
5 - 10	Closed White Spruce Forest	4	Closed White Spruce Forest	20
10 - 20	Closed White Spruce Forest	4	Closed White Spruce Forest	20
20 - 30	Closed White Spruce Forest	20	Closed White Spruce Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 126 **Max:** 145 **Mean:** 135 **Median:** 135
Sampling Method (No. of fish): PEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 63 **Max:** 63 **Mean:** 63 **Median:** 63
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld optical clinometer
Stream Velocity: Price pygmy meter
Turbidity: Horiba U-10
Water Quality: Horiba U-10
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24

Station FSS0306A01

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/14/2003 10:00 AM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.76548	-147.94932

Elevation NED (m)(ft): 577 1893

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts D-2 **Legal Description (MTRS):** S031N008E22
Waterbody Name: Kosina Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Stream not wadeable. Width, depth estimated.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.40 **DO (mg/L):** 10.85 **Conductivity (µS/cm):** 103 **Turbidity (NTU):** 0.00 **pH:** 7.38
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	20.0	
Thalweg Depth	0.70	

Dominant Substrate: Boulder
Subdominant Substrate 1: Sand/Silt/Clay
Subdominant Substrate 2: Cobble

Rosgen Class: B2 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Closed Tall Alder Shrub	3	Closed Tall Alder Shrub	3
10 - 20	Open Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	10
20 - 30	Open Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	10

Key To Fish Sampling Methods

(PEF) Portable Electrofisher

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 61 **Max:** 84 **Mean:** 72 **Median:** 72
Sampling Method (No. of fish): PEF (2)
Comments:

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 73 **Max:** 73 **Mean:** 73 **Median:** 73
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 71 **Max:** 71 **Mean:** 71 **Median:** 71
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 20 **Max:** 27 **Mean:** 22 **Median:** 23
Sampling Method (No. of fish): PEF (3)
Comments:

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity: Horiba U-10

Water Quality: Horiba U-10

Channel Depths: Visual estimate

Channel Widths: Visual estimate

Electrofisher: Smith-Root LR-24

Station FSS0306A02

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/14/2003 11:30 AM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft):
	62.78032	-147.87877	548 1798

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts D-2 **Legal Description (MTRS):** S031N008E13
Waterbody Name: Jay Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.40 **DO (mg/L):** 12.10 **Conductivity (µS/cm):** 206 **Turbidity (NTU):** **pH:** 7.59
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):** 0.91 2.9
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	10.3	9.6
Thalweg Depth		0.40

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder

Rosgen Class: B3 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	3	Closed Tall Willow Shrub	3
5 - 10	Closed Balsam Poplar-White Spruce Forest	25	Closed Tall Willow Shrub	3
10 - 20	Closed Balsam Poplar-White Spruce Forest	25	Open White Spruce Forest	4
20 - 30	Closed Balsam Poplar-White Spruce Forest	25	Open White Spruce Forest	4

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 83 **Max:** 83 **Mean:** 83 **Median:** 83
Sampling Method (No. of fish): PEF (1) VOG (2)
Comments: Average F.L. of additional fish was about 70 mm.

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** graduated wading rod
Stream Velocity: Price pygmy meter **Channel Widths:** measuring tape
Turbidity: **Electrofisher:** Smith-Root LR-24
Water Quality: Horiba U-10

Station FSS0306A03

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/14/2003 2:12 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.75510	-147.72154

Elevation NED (m)(ft): 539 1768

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-2 **Legal Description (MTRS):** S031N009E23

Waterbody Name: Susitna River

Anadromous Waters Catalog Number:

Geographic Comments: Susitna River and right bank side channel.

Visit Comments: River not wadeable. Width estimated - main channel only. Water quality parameters entered above were measured in side channel. Main channel: temperature (C) 8.5, pH 7.66, conductivity 155, turbidity 999 (exceeds maximum value), D.O. 11.69, color - high glacial turbidity. Stage - medium. Substrate: cobble, silt, boulder

Wildlife Comments: Major caribou migration trails.

Water Quality \ Stream Flow

Water Temp (C): 11.70 **DO (mg/L):** 11.10 **Conductivity (µS/cm):** 300 **Turbidity (NTU):** **pH:** 7.56

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 0.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W. Width	Wetted Width	Dominant Substrate: Sand/Silt/Clay
		100.0	Subdominant Substrate 1: Gravel
	Thalweg Depth		Subdominant Substrate 2: Cobble

Rosgen Class: C5 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	2	Closed Low Willow Shrub	2
5 - 10	Closed Low Willow Shrub	2	Closed Low Willow Shrub	2
10 - 20	Closed Tall Alder Shrub	4	Closed Tall Alder Shrub	3
20 - 30	Closed Spruce-Paper Birch Forest	15	Closed Spruce-Paper Birch Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 20 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 62 **Max:** 133 **Mean:** 74 **Median:** 97
Sampling Method (No. of fish): PEF (10) VOG (10)
Comments: Average F.L. of additional fish was about 70 mm.

Species: longnose sucker **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 23 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 32 **Max:** 115 **Mean:** 64 **Median:** 73
Sampling Method (No. of fish): PEF (3) VOG (20)
Comments: F.L. of additional fish ranged from about 50 to 120 mm.

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 71 **Max:** 101 **Mean:** 86 **Median:** 86
Sampling Method (No. of fish): PEF (2)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (3)
Comments: Average F.L. was about 50 mm.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 35 **Max:** 35 **Mean:** 35 **Median:** 35
Sampling Method (No. of fish): PEF (1)
Comments:

Species: whitefish-unspecified **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 51 **Max:** 54 **Mean:** 52 **Median:** 52
Sampling Method (No. of fish): PEF (4)
Comments:

Species: no fish collected or observed **Life Stage:** not applicable **Life History:** Not Applicable
Total Fish Count: 0 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): PEF (0)
Comments: No fish collected from mainstem Susitna River.

Instruments

Stream Gradient: handheld optical clinometer
Stream Velocity: Price pygmy meter
Turbidity:
Water Quality: Horiba U-10
Channel Depths:
Channel Widths: Visual estimate
Electrofisher: Smith-Root LR-24

Station FSS0306A04

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/14/2003 3:30 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.62784	-147.45495

Elevation NED (m)(ft): 690 2264

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S029N011E06
Waterbody Name: Goose Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Algae covers substrate.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.10 **DO (mg/L):** 10.99 **Conductivity (µS/cm):** 104 **Turbidity (NTU):** 0.00 **pH:** 7.55
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	15.0	14.7
Thalweg Depth		0.60

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class: B2 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Closed Tall Willow Shrub	2	Closed White Spruce Forest	20
10 - 20	Closed Tall Willow Shrub	2	Closed White Spruce Forest	20
20 - 30	Open White Spruce Forest	15	Closed White Spruce Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 72 **Max:** 72 **Mean:** 72 **Median:** 72
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 74 **Max:** 74 **Mean:** 74 **Median:** 74
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (15)
Comments: Average F.L. was about 50 mm.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 21 **Max:** 33 **Mean:** 24 **Median:** 27
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity: Horiba U-10

Water Quality: Horiba U-10

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Station FSS0306A05

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/14/2003 4:54 PM

Reach Coordinates (Upstream / Downstream) **Latitude** 62.61765 **Longitude** -147.38179 **Elevation NED (m)(ft):** 681 2234

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S029N011E10

Waterbody Name: Oshetna River

Anadromous Waters Catalog Number:

Geographic Comments: Station located at left bank side channel of Oshetna River.

Visit Comments: Above data pertain to side channel. Main channel: Conductivity 146; turbidity 35; D.O. 10.97; temperature (C) 10.4; pH 7.57; substrate boulder, gravel, cobble; Rosgen type C2. Stream stage high; Water color - high glacial turbidity; velocity - fast.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.80 **DO (mg/L):** 11.28 **Conductivity (µS/cm):** 1170 **Turbidity (NTU):** **pH:** 6.97

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted	
	Width	3.5	**Subdominant Substrate 1:** Gravel
	Thalweg Depth	0.10	**Subdominant Substrate 2:** Cobble

Dominant Substrate: Boulder

Rosgen Class: C2 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Alder-Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Closed White Spruce Forest	20	Closed White Spruce Forest	10
10 - 20	Closed White Spruce Forest	20	Closed White Spruce Forest	10
20 - 30	Closed White Spruce Forest	20	Closed White Spruce Forest	10

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 48 **Max:** 72 **Mean:** 59 **Median:** 60
Sampling Method (No. of fish): PEF (7)
Comments:

Species: salmonid-unspecified **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments: Average F.L. was about 70 mm.

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 52 **Max:** 67 **Mean:** 61 **Median:** 59
Sampling Method (No. of fish): PEF (3)
Comments: All collected from clear side channel.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 52 **Max:** 52 **Mean:** 52 **Median:** 52
Sampling Method (No. of fish): PEF (1)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 16 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 21 **Max:** 25 **Mean:** 23 **Median:** 23
Sampling Method (No. of fish): PEF (4) VOG (12)
Comments: Average F.L. of additional fish was about 40 mm.

Instruments

Stream Gradient: handheld optical clinometer
Stream Velocity: Price pygmy meter
Turbidity:
Water Quality: Horiba U-10

Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24

Station FSS0307A01

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 10:39 AM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.54810	-147.13653

Elevation NED (m)(ft): 767 2516

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S028N012E01

Waterbody Name:

Anadromous Waters Catalog Number:

Geographic Comments:

Visit Comments:

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.50 **DO (mg/L):** 10.62 **Conductivity (µS/cm):** 366 **Turbidity (NTU):** 1.00 **pH:** 7.16

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	14.6	10.4
Thalweg Depth		0.50

Dominant Substrate: Gravel

Subdominant Substrate 1:

Subdominant Substrate 2: Sand/Silt/Clay

Rosgen Class: C4 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open White Spruce Forest	25	Unvegetated	
5 - 10	Open White Spruce Forest	25	Closed Tall Willow Shrub	2
10 - 20	Open White Spruce Forest	25	Closed Tall Willow Shrub	2
20 - 30	Open White Spruce Forest	25	Closed Tall Willow Shrub	2

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident

Total Fish Count: 20 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 62 **Max:** 62 **Mean:** 62 **Median:** 62

Sampling Method (No. of fish): PEF (1) VOG (19)

Comments: F.L. of additional fish ranged from about 75 to 140 mm.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident

Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**

Sampling Method (No. of fish): VOG (2)

Comments: Average F.L. was about 50 mm.

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** graduated wading rod

Stream Velocity: Price pygmy meter **Channel Widths:** measuring tape

Turbidity: Horiba U-10 **Electrofisher:** Smith-Root LR-24

Water Quality: Horiba U-10

Station FSS0307A02

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 12:20 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.67477	-147.05419

Elevation NED (m)(ft): 716 2349

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** C010N010W02
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments: 1 curious caribou. Kingfisher, bald eagle.

Water Quality \ Stream Flow

Water Temp (C): 12.60 **DO (mg/L):** 10.40 **Conductivity (µS/cm):** 106 **Turbidity (NTU):** **pH:** 7.27
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	6.0	5.3
Thalweg Depth		0.30

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class: F4 Entrenched meandering riffle/pool channel on low gradients with high width/depth ratio.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Willow Shrub	2	Open Tall Willow Shrub	2
5 - 10	Open White Spruce Forest	15	Open White Spruce Forest	20
10 - 20	Open White Spruce Forest	15	Open White Spruce Forest	20
20 - 30	Open White Spruce Forest	15	Open White Spruce Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments: F.L. was about 250 mm.

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (5)
Comments: Average F.L. was about 45 mm.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments: Average F.L. was about 30 mm.

Species: no fish collected or observed **Life Stage:** not applicable **Life History:** Not Applicable
Total Fish Count: 0 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): PEF (0)
Comments:

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity:

Water Quality: Horiba U-10

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Station FSS0307A03

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 1:02 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.67445	-147.05508

Elevation NED (m)(ft): 716 2349

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** C010N010W02
Waterbody Name: Tyone River
Anadromous Waters Catalog Number:
Geographic Comments: At confluence with 07A02 stream.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 13.00 **DO (mg/L):** 10.70 **Conductivity (µS/cm):** 271 **Turbidity (NTU):** **pH:** 7.43
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 0.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	26.5	
Thalweg Depth	0.31	

Dominant Substrate: Gravel
Subdominant Substrate 1: Sand/Silt/Clay
Subdominant Substrate 2: Cobble

Rosgen Class: C4 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Open White Spruce Forest	20	Open White Spruce Forest	20
10 - 20	Open White Spruce Forest	20	Open White Spruce Forest	20
20 - 30	Open White Spruce Forest	20	Open White Spruce Forest	20

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 73 **Max:** 73 **Mean:** 73 **Median:** 73
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments: F.L. was about 90 mm.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments: F.L. was about 70 mm.

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** graduated wading rod
Stream Velocity: Price pygmy meter **Channel Widths:** measuring tape
Turbidity: **Electrofisher:** Smith-Root LR-24

-continued-

Water Quality: Horiba U-10

Station FSS0307A04

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 2:30 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.50392	-147.47704

Elevation NED (m)(ft): 823 2700

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S028N011E19

Waterbody Name: Oshetna River

Anadromous Waters Catalog Number:

Geographic Comments: Reach located immediately upstream of confluence with Black River (glacial origin).

Visit Comments: Unwadeable - width, depth estimated.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.80 **DO (mg/L):** 11.31 **Conductivity (µS/cm):** 219 **Turbidity (NTU):** 1.00 **pH:** 7.42

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 0.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width		20.0
Thalweg Depth		0.70

Dominant Substrate: Gravel

Subdominant Substrate 1:

Subdominant Substrate 2: Cobble

Rosgen Class: C4 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
10 - 20	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
20 - 30	Open White Spruce Forest	15	Closed Tall Willow Shrub	2

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 54 **Max:** 72 **Mean:** 59 **Median:** 63
Sampling Method (No. of fish): PEF (6) VOG (5)
Comments: Average F.L. of additional fish was about 80 mm.

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 72 **Max:** 72 **Mean:** 72 **Median:** 72
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 53 **Max:** 65 **Mean:** 59 **Median:** 59
Sampling Method (No. of fish): PEF (2) VOG (15)
Comments: Average F.L. of additional fish was about 50 mm.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 34 **Max:** 43 **Mean:** 38 **Median:** 38
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity: Horiba U-10

Water Quality: Horiba U-10

Channel Depths: Visual estimate

Channel Widths: Visual estimate

Electrofisher: Smith-Root LR-24

Station FSS0307A05

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 4:30 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft): 778 2552
	62.69465	-147.99674	

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S030N008E17
Waterbody Name: Tsisi Creek
Anadromous Waters Catalog Number:
Geographic Comments: Left bank tributary of Kosina Creek. Station located at downstream end of reach.
Visit Comments: Not wadeable - width, depth estimated.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 12.10 **DO (mg/L):** 10.72 **Conductivity (µS/cm):** 125 **Turbidity (NTU):** **pH:** 7.44
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 4 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted	
Width		8.0	**Subdominant Substrate 1:** Gravel
Thalweg Depth		0.50	**Subdominant Substrate 2:** Cobble

Dominant Substrate: Boulder
Rosgen Class: A2 Steep, entrenched, cascading, step/pool streams. Very stable.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1
5 - 10	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1
10 - 20	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1
20 - 30	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1

Key To Fish Sampling Methods

(PEF) Portable Electrofisher

Fish Observations

Species: no fish collected or observed **Life Stage:** not applicable **Life History:** Not Applicable

Total Fish Count: 0	Fish Measured:	Fork Lengths (mm)	Min:	Max:	Mean:	Median:

Sampling Method (No. of fish): PEF (0)
Comments:

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** Visual estimate
Stream Velocity: Price pygmy meter **Channel Widths:** Visual estimate
Turbidity: **Electrofisher:** Smith-Root LR-24
Water Quality: Horiba U-10

Station FSS0307A06

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/15/2003 5:01 PM

Reach Coordinates (Upstream / Downstream) **Latitude** 62.69379 **Longitude** -147.99668 **Elevation NED (m)(ft):** 781 2562

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S030N008E17

Waterbody Name: Kosina Creek

Anadromous Waters Catalog Number:

Geographic Comments: Mainstem reach immediately upstream of 07A05.

Visit Comments: Unwadeable - width, depth estimated

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 12.70 **DO (mg/L):** 9.89 **Conductivity (µS/cm):** 73 **Turbidity (NTU):** **pH:** 7.30

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 2 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width		30.0
Thalweg Depth		0.50

Dominant Substrate: Boulder

Subdominant Substrate 1: Gravel

Subdominant Substrate 2: Cobble

Rosgen Class: B2 Moderately entrenched, moderate gradient, riffle dominated channel, with infrequently spaced pools. Very stable plan and profile. Stable banks.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1
5 - 10	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1
10 - 20	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1
20 - 30	Closed Low Shrub Birch	1	Closed Low Shrub Birch	1

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 56 **Max:** 56 **Mean:** 56 **Median:** 56
Sampling Method (No. of fish): PEF (1)
Comments:

Species: salmonid-unspecified **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (3)
Comments: Average F.L. was about 70 mm.

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 70 **Max:** 75 **Mean:** 72 **Median:** 72
Sampling Method (No. of fish): PEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 55 **Max:** 55 **Mean:** 55 **Median:** 55
Sampling Method (No. of fish): PEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity:

Water Quality: Horiba U-10

Channel Depths: Visual estimate

Channel Widths: Visual estimate

Electrofisher: Smith-Root LR-24

Station FSS0308A01

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/16/2003 10:01 AM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude
	62.76313	-148.51478

Elevation NED (m)(ft): 636 2087

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** S031N005E22

Waterbody Name: Fog Creek

Anadromous Waters Catalog Number: 247-41-10200-2696

Geographic Comments:

Visit Comments: Thalweg velocity measured at 60% of depth with Pygmy meter; 136 revolutions in 40.0 seconds.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.20 **DO (mg/L):** 12.30 **Conductivity (µS/cm):** 143 **Turbidity (NTU):** **pH:** 7.30

Water Color: Clear **Thalweg Velocity (m/s)(ft/s):** 1.00 3.2

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	8.9	7.6
Thalweg Depth		0.40

Dominant Substrate: Cobble

Subdominant Substrate 1:

Subdominant Substrate 2: Gravel

Rosgen Class: C3 Low gradient, meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Closed White Spruce Forest	20	Closed Tall Willow Shrub	2
10 - 20	Closed White Spruce Forest	20	Closed Tall Willow Shrub	2
20 - 30	Closed White Spruce Forest	20	Closed White Spruce Forest	8

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** adult **Life History:** Resident

Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**

Sampling Method (No. of fish): VOG (2) **Suspected Spawning:** Yes

Comments: 1 was in spawning colors. Average F.L. was about 300 mm.

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown

Total Fish Count: 15 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 41 **Max:** 57 **Mean:** 48 **Median:** 49

Sampling Method (No. of fish): PEF (10) VOG (5) **Suspected Spawning:** Yes

Comments: Average F.L. of additional fish was about 50 mm.

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** graduated wading rod

Stream Velocity: Price pygmy meter **Channel Widths:** measuring tape

Turbidity: **Electrofisher:** Smith-Root LR-24

Water Quality: Horiba U-10

Station FSS0308A02

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/16/2003 12:10 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft):
	63.06009	-147.71604	829 2720

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Healy A-2 **Legal Description (MTRS):** F021S001W27
Waterbody Name: Butte Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Stream unwadeable - width, depth estimated.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.20 **DO (mg/L):** 12.34 **Conductivity (µS/cm):** 201 **Turbidity (NTU):** **pH:** 7.50
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted	
	Width	40.0	**Dominant Substrate:** Cobble
	Thalweg Depth	0.60	**Subdominant Substrate 1:** Boulder
			Subdominant Substrate 2: Gravel

Rosgen Class: F3 Entrenched meandering riffle/pool channel on low gradients with high width/depth ratio.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Open Low Shrub Birch-Ericaceous Shrub Bog	0	Closed Tall Willow Shrub	2
10 - 20	Open Low Shrub Birch-Ericaceous Shrub Bog	0	Closed Tall Willow Shrub	2
20 - 30	Open Low Shrub Birch-Ericaceous Shrub Bog	0	Open Low Shrub Birch-Ericaceous Shrub Bog	0

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 77 **Max:** 77 **Mean:** 77 **Median:** 77
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 63 **Max:** 67 **Mean:** 65 **Median:** 65
Sampling Method (No. of fish): PEF (2) VOG (2)
Comments: Average F.L. of additional fish was about 60 mm.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 13 **Max:** 37 **Mean:** 25 **Median:** 25
Sampling Method (No. of fish): PEF (2)
Comments:

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** Visual estimate
Stream Velocity: Price pygmy meter **Channel Widths:** Visual estimate
Turbidity: **Electrofisher:** Smith-Root LR-24

-continued-

Water Quality: Horiba U-10

Station FSS0308A03

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/16/2003 1:54 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft):
	62.58810	-148.04649	874 2867

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts C-3 **Legal Description (MTRS):** S029N007E24
Waterbody Name: Kosina Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.40 **DO (mg/L):** 10.82 **Conductivity (µS/cm):** 64 **Turbidity (NTU):** 0.00 **pH:** 7.32
Water Color: Clear **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 1 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	160.0	160.0
Thalweg Depth		0.70

Dominant Substrate: Boulder
Subdominant Substrate 1: Sand/Silt/Clay
Subdominant Substrate 2: Gravel

Rosgen Class: F2 Entrenched, relatively low to moderate sinuosity, riffle/pool channel on low gradients with high width/depth ratio.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Mixed Shrub-Sedge Tussock Tundra	1	Open Low Mixed Shrub-Sedge Tussock Tundra	1
5 - 10	Open Low Mixed Shrub-Sedge Tussock Tundra	1	Open Low Mixed Shrub-Sedge Tussock Tundra	1
10 - 20	Open Low Mixed Shrub-Sedge Tussock Tundra	1	Open Low Mixed Shrub-Sedge Tussock Tundra	1
20 - 30	Open Low Mixed Shrub-Sedge Tussock Tundra	1	Open Low Mixed Shrub-Sedge Tussock Tundra	1

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments: F.L. was about 200 mm.

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 18 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 51 **Max:** 57 **Mean:** 53 **Median:** 54
Sampling Method (No. of fish): PEF (6) VOG (12)
Comments: Average F.L. of additional fish was about 55 mm.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 53 **Max:** 62 **Mean:** 58 **Median:** 57
Sampling Method (No. of fish): PEF (4) VOG (6)
Comments: Average F.L. of additional fish was about 50 mm.

-continued-

Instruments

Stream Gradient: handheld optical clinometer

Stream Velocity: Price pygmy meter

Turbidity: Horiba U-10

Water Quality: Horiba U-10

Channel Depths: Visual estimate

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Station FSS0308A04

Station Info

Observers: Joe Buckwalter, John Wells, Jim Lazar **Date/Time:** 08/16/2003 3:35 PM

Reach Coordinates (Upstream / Downstream)	Latitude	Longitude	Elevation NED (m)(ft): 730 2395
	62.90009	-148.23165	

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S033N006E36
Waterbody Name: Delusion Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Sample reach located upstream of a beaver pond.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.30 **DO (mg/L):** 10.68 **Conductivity (µS/cm):** 202 **Turbidity (NTU):** **pH:** 7.30
Water Color: Muddy **Thalweg Velocity (m/s)(ft/s):**
Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): 0.5 **Catchment Area(sq. km):**

Channel Dimensions (m):	O.H.W.	Wetted
Width	4.8	5.2
Thalweg Depth	0.40	0.40

Dominant Substrate: Cobble
Subdominant Substrate 1: Sand/Silt/Clay
Subdominant Substrate 2: Gravel

Rosgen Class: E3 Low gradient, meandering riffle/pool stream with low width/depth ratio and little deposition. Very efficient and stable. High meander width ratio.

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Bluejoint-Herb	1	Bluejoint-Herb	1
5 - 10	Bluejoint-Herb	1	Bluejoint-Herb	1
10 - 20	Bluejoint-Herb	1	Bluejoint-Herb	1
20 - 30	Closed Tall Willow Shrub	2	Closed Tall Willow Shrub	2

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 51 **Max:** 59 **Mean:** 55 **Median:** 55
Sampling Method (No. of fish): PEF (4) VOG (3)
Comments: Average F.L. of additional fish was about 55 mm.

Instruments

Stream Gradient: handheld optical clinometer **Channel Depths:** graduated wading rod
Stream Velocity: Price pygmy meter **Channel Widths:** measuring tape
Turbidity: **Electrofisher:** Smith-Root LR-24
Water Quality: Horiba U-10

Station FSS03USU01

Station Info

Observers: Joe Buckwalter, J Johnson **Date/Time:** 08/01/2003 9:11 AM

Reach Coordinates (Upstream / Downstream) **Latitude** 62.77405 **Longitude** -148.70653 **Elevation NED (m)(ft):** 426 1398

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** S031N004E16

Waterbody Name: Fog Creek

Anadromous Waters Catalog Number: 247-41-10200-2696

Geographic Comments: Station waypoint marked while flying.

Visit Comments:

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): **DO (mg/L):** **Conductivity (µS/cm):** **Turbidity (NTU):** **pH:**

Water Color: **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): **Catchment Area(sq. km):**

Channel Dimensions (m): **O.H.W. Width** **Wetted Thalweg Depth** **Dominant Substrate:** **Subdominant Substrate 1:** **Subdominant Substrate 2:**

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5				
5 - 10				
10 - 20				
20 - 30				

Key To Fish Sampling Methods

(VOH) Visual Observation, Helicopter

Fish Observations

Species: Chinook salmon **Life Stage:** adult **Life History:** Anadromous

Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**

Sampling Method (No. of fish): VOH (2) **Suspected Spawning:** Yes

Comments: No chinook observed upstream at 08A01.

Instruments

Stream Gradient:

Stream Velocity: Price pygmy meter

Turbidity:

Water Quality:

Channel Depths:

Channel Widths:

Electrofisher:

Station FSS03USU02

Station Info

Observers: Joe Buckwalter, J Johnson **Date/Time:** 08/01/2003 9:31 AM

Reach Coordinates (Upstream / Downstream) **Latitude** 62.83455 **Longitude** -148.59018 **Elevation NED (m)(ft):** 472 1549

Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** NAD83

USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** S032N005E30

Waterbody Name: Tsusena Creek

Anadromous Waters Catalog Number:

Geographic Comments: Impassable falls upstream at station 05A05. Station waypoint marked while flying.

Visit Comments:

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): **DO (mg/L):** **Conductivity (µS/cm):** **Turbidity (NTU):** **pH:**

Water Color: **Thalweg Velocity (m/s)(ft/s):**

Stream Discharge(cu m/s)(cu ft/s):

Stream Channel

Stream Gradient (%): **Catchment Area(sq. km):**

Channel Dimensions (m): **O.H.W. Width** **Wetted Thalweg Depth** **Dominant Substrate:** **Subdominant Substrate 1:** **Subdominant Substrate 2:**

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5				
5 - 10				
10 - 20				
20 - 30				

Key To Fish Sampling Methods

(VOH) Visual Observation, Helicopter

Fish Observations

Species: Chinook salmon **Life Stage:** adult **Life History:** Anadromous

Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**

Sampling Method (No. of fish): VOH (1)

Comments: No chinook observed upstream at 05A02. Waterfall about 2.5 miles upstream at 05A05 is a population barrier to

Instruments

Stream Gradient: **Channel Depths:**

Stream Velocity: Price pygmy meter **Channel Widths:**

Turbidity: **Electrofisher:**

Water Quality:

Station FSS1101A01

Station Info

Observers: Daniel Reed, Tim Sundlov **Date/Time:** 08/03/2011 12:00 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.93620	-147.28810	**Sample Coordinates**	62.93620	-147.28810	/	62.92624	-147.26120

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-1 **Legal Description (MTRS):** S033N011E24
Waterbody Name: Coal Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.17 **DO (mg/L):** 10.81 **DO (%):** 91.70 **Conductivity (µS/cm):** 23 **pH:**
Water Color: Clear **Turbidity (NTU):** 1.24 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	21.5	19.8
Thalweg Depth	0.46	0.33

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Open Low Willow Shrub	0.5
5 - 10	Open White Spruce Forest	5	Closed Tall Alder-Willow Shrub	1
10 - 20	Closed Black Spruce Forest	4	Closed Tall Willow Shrub	1.5
20 - 30	Closed Black Spruce Forest	5	Open Black Spruce Forest	5

Key To Fish Sampling Methods

Total Electrofishing Time (s): 2909

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 32 **Fish Measured:** 19 **Fork Lengths (mm)** **Min:** 332 **Max:** 407 **Mean:** 356 **Median:** 369
Sampling Method (No. of fish): BEF (19) VOB (13)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 29 **Fish Measured:** 27 **Fork Lengths (mm)** **Min:** 29 **Max:** 50 **Mean:** 42 **Median:** 39
Sampling Method (No. of fish): BEF (27) VOB (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 52 **Max:** 58 **Mean:** 55 **Median:** 55
Sampling Method (No. of fish): BEF (8) VOB (7)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 296 **Max:** 325 **Mean:** 310 **Median:** 310
Sampling Method (No. of fish): BEF (6) VOB (1)
Comments:

-continued-

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 280 **Max:** 372 **Mean:** 322 **Median:** 326
Sampling Method (No. of fish): BEF (5) VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 51 **Max:** 51 **Mean:** 51 **Median:** 51
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Orange Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1101B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/03/2011 11:34 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.95278	-147.00649	**Sample Coordinates**	62.95278	-147.00649	/	62.93615	-147.00451

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts D-1 **Legal Description (MTRS):** C014N009W31
Waterbody Name: Clearwater Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU6

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.45 **DO (mg/L):** 11.49 **DO (%):** 95.70 **Conductivity (µS/cm):** 103 **pH:** 5.75
Water Color: Clear **Turbidity (NTU):** 1.24 **Thalweg Velocity (m/s)(ft/s):** 0.50 1.64

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	Bank Full	Wetted
Width	38.0	18.0
Thalweg Depth	1.50	0.75

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2.7	Closed Tall Willow Shrub	3.3
5 - 10	Closed White Spruce Forest	9	Closed Tall Willow Shrub	3.3
10 - 20	Closed White Spruce Forest	9	Closed Tall Willow Shrub	3.3
20 - 30	Closed White Spruce Forest	9	Closed Black Spruce-White Spruce Forest	13

Key To Fish Sampling Methods

Total Electrofishing Time (s): 889

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 20 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 360 **Max:** 380 **Mean:** 370 **Median:** 370
Sampling Method (No. of fish): BEF (2) VOB (18)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments: Event O arctic grayling approximately 95mm.

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 297 **Max:** 307 **Mean:** 303 **Median:** 302
Sampling Method (No. of fish): BEF (3)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: GPS Float

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: handheld laser rangefinder

Electrofisher: Smith-Root GPP 2.5

Transparency:

Station FSS1101c01

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/03/2011 9:44 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.26993	-146.42260	**Sample Coordinates**	63.26862	-146.41500	/	63.26993	-146.42260

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes B-5 **Legal Description (MTRS):** F019S007E16
Waterbody Name: East Fork Maclaren River
Anadromous Waters Catalog Number:
Geographic Comments: HU101 Habitat transect down Stream of the mouth of unnamed tributary.
Visit Comments: Right bank has a vegetated gravel bar below bankful level.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 5.40 **DO (mg/L):** 11.50 **DO (%):** 88.60 **Conductivity (µS/cm):** 68 **pH:** 6.10
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 185.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 2 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	41.0	20.4
Thalweg Depth	1.80	0.36

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Willow Shrub	2	Closed Tall Willow Shrub	2
5 - 10	Open Tall Willow Shrub	2	Closed Tall Willow Shrub	2
10 - 20	Open Tall Willow Shrub	2	Closed Tall Willow Shrub	2
20 - 30	Open Tall Willow Shrub	2	Closed Tall Willow Shrub	2

Key To Fish Sampling Methods

() (PEF) Portable Electrofisher
(VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 127 **Max:** 185 **Mean:** 162 **Median:** 156
Sampling Method (No. of fish): PEF (4) VOG (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 59 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 56 **Max:** 66 **Mean:** 61 **Median:** 61
Sampling Method (No. of fish): PEF (2) VOG (45)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 71 **Max:** 110 **Mean:** 88 **Median:** 90
Sampling Method (No. of fish): PEF (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 35 **Max:** 48 **Mean:** 42 **Median:** 41
Sampling Method (No. of fish): PEF (5)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1101c02

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/03/2011 3:15 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.19090	-146.42755	**Sample Coordinates**	63.19090	-146.42755	/	63.19168	-146.43001

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes A-5 **Legal Description (MTRS):** F020S007E09
Waterbody Name: Boulder Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU46

Visit Comments:
Wildlife Comments: 4 Caribou.

Water Quality \ Stream Flow

Water Temp (C): 10.88 **DO (mg/L):** 9.56 **DO (%):** 86.60 **Conductivity (µS/cm):** 16 **pH:** 5.56
Water Color: Clear **Turbidity (NTU):** 1.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Very High

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	13.1	12.7
Thalweg Depth	1.25	1.10

Dominant Substrate: Sands
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Willow Shrub	0.7	Open Low Willow Shrub	0.7
5 - 10	Open Low Willow Shrub	0.7	Open Low Willow Shrub	0.7
10 - 20	Subarctic Lowland Sedge-Moss Bog Meadow	0.3	Bryoid herbaceous	0.3
20 - 30	Subarctic Lowland Sedge-Moss Bog Meadow	0.3	Unvegetated	

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 35 **Max:** 35 **Mean:** 35 **Median:** 35
Sampling Method (No. of fish): PEF (2) VOG (8)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 36 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 51 **Max:** 65 **Mean:** 54 **Median:** 58
Sampling Method (No. of fish): PEF (6) VOG (30)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 69 **Max:** 89 **Mean:** 79 **Median:** 79
Sampling Method (No. of fish): PEF (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** 12 **Fork Lengths (mm)** **Min:** 30 **Max:** 40 **Mean:** 36 **Median:** 35
Sampling Method (No. of fish): PEF (12)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality:

Channel Depths:

Channel Widths:

Electrofisher:

Transparency:

Station FSS1101G04

Station Info

Observers: Joe Buckwalter, Raye Ann Neustel **Date/Time:** 07/27/2011 1:39 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.60033	-148.03957	**Sample Coordinates**	62.60033	-148.03957	/	62.78439	-147.94441

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-3 **Legal Description (MTRS):** S029N008E18
Waterbody Name: Kosina Creek
Anadromous Waters Catalog Number: 247-41-10200-2810
Geographic Comments: Aerial survey from mouth to about 15 miles upstream.

Visit Comments: An adult Chinook salmon was observed at N62.67335 W148.00421 (WGS84). Water was clear, but visibility was poor due to turbulence.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): **DO (mg/L):** **DO (%):** **Conductivity (µS/cm):** **pH:**
Water Color: Clear **Turbidity (NTU):** **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): **Entrenchment:**
Catchment Area(sq. km): **Embeddedness:**

Channel Dimensions (m): **Bank Full Width** **Wetted Thalweg Depth**
Dominant Substrate:
Subdominant Substrate 1:
Subdominant Substrate 2:

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5				
5 - 10				
10 - 20				
20 - 30				

Key To Fish Sampling Methods

(VOH) Visual Observation, Helicopter

Fish Observations

Species: Chinook salmon **Life Stage:** adult **Life History:** Anadromous
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOH (1) **Suspected Spawning:** Yes
Comments:

Species: salmonid-unspecified **Life Stage:** adult **Life History:** Resident
Total Fish Count: 500 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOH (500)
Comments: Schools of other large fish (probably grayling and round whitefish) were observed.

Instruments

Stream Gradient: **Channel Depths:**
Stream Velocity: **Channel Widths:**
Turbidity: **Electrofisher:**
Water Quality: **Transparency:**

Station FSS1102A01

Station Info

Observers: Daniel Reed, David Pluth **Date/Time:** 08/04/2011 9:53 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.06144	-147.60517	**Sample Coordinates**	63.06142	-147.60439	/	63.06053	-147.55556

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Healy A-2 **Legal Description (MTRS):** F021S001E29
Waterbody Name: Butte Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU8.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.28 **DO (mg/L):** 11.07 **DO (%):** 94.60 **Conductivity (µS/cm):** 35 **pH:**
Water Color: Clear **Turbidity (NTU):** 0.32 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	29.0	18.9
Thalweg Depth	1.12	0.66

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Willow Shrub	1	Unvegetated	
5 - 10	Open Low Willow Shrub	1.5	Unvegetated	
10 - 20	Open Low Willow Shrub	3	Open Low Willow Shrub	1.5
20 - 30	Open Black Spruce Forest	5	Open Low Willow Shrub	1.5

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1986

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat
(VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 210 **Max:** 315 **Mean:** 273 **Median:** 262
Sampling Method (No. of fish): BEF (10)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 385 **Max:** 429 **Mean:** 407 **Median:** 407
Sampling Method (No. of fish): BEF (2) VOG (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 33 **Max:** 47 **Mean:** 40 **Median:** 40
Sampling Method (No. of fish): BEF (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 83 **Max:** 83 **Mean:** 83 **Median:** 83
Sampling Method (No. of fish): BEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Orange Float

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root GPP 2.5

Transparency:

Station FSS1102B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/04/2011 10:25 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.85475	-148.22310	**Sample Coordinates**	62.85475	-148.22310	/	62.84066	-148.24245

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S032N007E19
Waterbody Name: Watana Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU21

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.75 **DO (mg/L):** 10.70 **DO (%):** 98.70 **Conductivity (µS/cm):** 44 **pH:**
Water Color: Clear **Turbidity (NTU):** 6.33 **Thalweg Velocity (m/s)(ft/s):** 5.40 17.71

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	22.0	14.0
Thalweg Depth	1.00	0.60

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	15
5 - 10	Closed Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	15
10 - 20	Closed Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	15
20 - 30	Closed Spruce-Paper Birch Forest	20	Closed Spruce-Paper Birch Forest	15

Key To Fish Sampling Methods

Total Electrofishing Time (s): 659

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 91 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 235 **Max:** 252 **Mean:** 243 **Median:** 243
Sampling Method (No. of fish): BEF (2) VOB (89)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 103 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 190 **Max:** 315 **Mean:** 249 **Median:** 252
Sampling Method (No. of fish): BEF (5) VOB (98)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 110 **Max:** 145 **Mean:** 128 **Median:** 127
Sampling Method (No. of fish): BEF (5)
Comments:

-continued-

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 195 **Max:** 195 **Mean:** 195 **Median:** 195
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1102c01

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/04/2011 9:21 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.40550	-147.17411	**Sample Coordinates**	63.40664	-147.17268	/	63.40526	-147.17453

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy B-1 **Legal Description (MTRS):** F017S003E28
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU88 Within sight of Susitna Glacier Moraine. East Fork Susitna.

Visit Comments:
Wildlife Comments: Beaver dam complex (upstream & downstream).

Water Quality \ Stream Flow

Water Temp (C): 8.20 **DO (mg/L):** 9.93 **DO (%):** 84.30 **Conductivity (µS/cm):** 84 **pH:** 6.24
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	22.6	7.6
Thalweg Depth	1.00	0.70

Dominant Substrate: Cobble
Subdominant Substrate 1: Sands
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	0.7	Closed Tall Willow Shrub	0.9
5 - 10	Halophytic Grass Wet Meadow	0.3	Closed Tall Willow Shrub	0.9
10 - 20	Halophytic Grass Wet Meadow	0.3	Closed Tall Willow Shrub	0.9
20 - 30	Halophytic Grass Wet Meadow	0.3	Closed Tall Willow Shrub	0.9

Key To Fish Sampling Methods

Estimated reach length (m): 276

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (12)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): PEF (1) VOG (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 40 **Max:** 40 **Mean:** 40 **Median:** 40
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 90 **Max:** 90 **Mean:** 90 **Median:** 90
Sampling Method (No. of fish): PEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1102c02

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/04/2011 11:28 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.30010	-147.06947	**Sample Coordinates**	63.29864	-147.06781	/	63.30010	-147.06947

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy B-1 **Legal Description (MTRS):** F019S004E06
Waterbody Name: Boulder Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU48. Habitat transect located downstream of one clear tributary & one glacial tributary.
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.37 **DO (mg/L):** 10.25 **DO (%):** 85.30 **Conductivity (µS/cm):** 85 **pH:** 6.67
Water Color: Glacial, Low Turbidit **Turbidity (NTU):** 8.80 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	27.2	17.3
Thalweg Depth	1.10	0.45

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Silt/Sand
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1.3	Closed Low Willow Shrub	1.9
5 - 10	Closed Low Willow Shrub	1.3	Closed Tall Willow Shrub	1.9
10 - 20	Closed Low Willow Shrub	1.3	Closed Tall Willow Shrub	1.9
20 - 30	Closed Low Willow Shrub	1.3	Closed Tall Willow Shrub	1.9

Key To Fish Sampling Methods

Estimated reach length (m): 337

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 35 **Max:** 35 **Mean:** 35 **Median:** 35
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 53 **Max:** 53 **Mean:** 53 **Median:** 53
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level **Channel Depths:** graduated wading rod
Stream Velocity: Velocity Head **Channel Widths:** measuring tape
Turbidity: LaMotte 2020e turbidimeter **Electrofisher:** Smith-Root LR-24
Water Quality: YSI 556 **Transparency:**

Station FSS1102C03

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/04/2011 1:41 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.21684	-147.22313	**Sample Coordinates**	63.21714	-147.21956	/	63.21684	-147.22313

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-1 **Legal Description (MTRS):** F020S003E05
Waterbody Name: Valdez Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU34

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.27 **DO (mg/L):** 9.89 **DO (%):** 86.10 **Conductivity (µS/cm):** 112 **pH:** 6.70
Water Color: Clear **Turbidity (NTU):** 0.10 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.75 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** High

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	42.0	9.0
Thalweg Depth	0.70	0.30

Dominant Substrate: Cobble
Subdominant Substrate 1: Sands
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Willow Shrub	0.7	Open Low Willow Shrub	1.35
5 - 10	Open Low Willow Shrub	0.7	Open Low Willow Shrub	1.35
10 - 20	Open Low Willow Shrub	0.7	Open Low Willow Shrub	1.35
20 - 30	Open Low Willow Shrub	0.7	Open Low Willow Shrub	1.35

Key To Fish Sampling Methods

Estimated reach length (m): 279

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 29 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 24 **Max:** 36 **Mean:** 29 **Median:** 30
Sampling Method (No. of fish): PEF (7) VOG (22)
Comments: 20 fry & 2 parr @ approximately 150mm

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 30 **Max:** 41 **Mean:** 35 **Median:** 35
Sampling Method (No. of fish): PEF (5) VOG (3)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1102C04

Station Info

Observers: Raye Ann Neustel, Joe Buckwalter **Date/Time:** 08/04/2011 3:52 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.11140	-147.47812	**Sample Coordinates**	63.11157	-147.47378	/	63.11140	-147.47812

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-1 **Legal Description (MTRS):** F021S001E12
Waterbody Name: Windy Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.64 **DO (mg/L):** 9.54 **DO (%):** 85.80 **Conductivity (µS/cm):** 92 **pH:** 6.56
Water Color: Clear **Turbidity (NTU):** 0.60 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 3 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	23.0	15.1
Thalweg Depth	0.75	0.50

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Alder-Willow Shrub	1.3	Closed Tall Alder-Willow Shrub	2.5
5 - 10	Open White Spruce Forest		Closed White Spruce Forest	
10 - 20	Open White Spruce Forest		Closed White Spruce Forest	
20 - 30	Closed Low Willow Shrub	30	Closed White Spruce Forest	

Key To Fish Sampling Methods

Estimated reach length (m): 300

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 275 **Max:** 275 **Mean:** 275 **Median:** 275
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 35 **Max:** 161 **Mean:** 103 **Median:** 98
Sampling Method (No. of fish): PEF (5) VOG (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 97 **Max:** 103 **Mean:** 100 **Median:** 100
Sampling Method (No. of fish): PEF (3) VOG (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 35 **Max:** 44 **Mean:** 39 **Median:** 39
Sampling Method (No. of fish): PEF (5)
Comments:

-continued-

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 205 **Max:** 205 **Mean:** 205 **Median:** 205
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1103A01

Station Info

Observers: Joe Buckwalter, David Pluth **Date/Time:** 08/05/2011 1:00 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.50381	-147.06345	**Sample Coordinates**	62.50381	-147.06345	/	62.51550	-147.05959

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** C008N010W03
Waterbody Name: Tyone Creek
Anadromous Waters Catalog Number:
Geographic Comments: Floodprone width is 30 m.

Visit Comments: Dissolved oxygen probe not working on YSI 556 water quality meter.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.03 **DO (mg/L):** **DO (%):** **Conductivity (µS/cm):** 283 **pH:** 7.15
Water Color: Clear **Turbidity (NTU):** 2.19 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	Bank Full	Wetted
Width	23.5	22.6
Thalweg Depth	1.02	0.65

Dominant Substrate: Gravel
Subdominant Substrate 1: Cobble
Subdominant Substrate 2: Silt/Sand

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	0.4	Closed Low Willow Shrub	0.4
5 - 10	Closed Low Willow Shrub	0.4	Closed Low Willow Shrub	0.4
10 - 20	Open Black Spruce Forest	5	Closed Black Spruce-White Spruce Forest	7
20 - 30	Open Black Spruce Forest	5	Closed Black Spruce-White Spruce Forest	7

Key To Fish Sampling Methods

Total Electrofishing Time (s): 4157

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 249 **Max:** 330 **Mean:** 290 **Median:** 289
Sampling Method (No. of fish): BEF (5) VOB (5)
Comments: Longnose sucker in Event A was approximately 300 mm.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 105 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 53 **Max:** 67 **Mean:** 61 **Median:** 60
Sampling Method (No. of fish): BEF (29) VOB (76)
Comments: Slimy Sculpin in Event AA was approximately 50 mm.

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 370 **Max:** 430 **Mean:** 410 **Median:** 400
Sampling Method (No. of fish): BEF (6) VOB (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 25 **Fish Measured:** 24 **Fork Lengths (mm)** **Min:** 19 **Max:** 50 **Mean:** 39 **Median:** 34
Sampling Method (No. of fish): BEF (24) VOB (1)
Comments:

-continued-

Species: Pacific salmon-unspecified **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments: Salmon referred to in event a approximately 150 mm and probobly round whitefish.

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 297 **Max:** 297 **Mean:** 297 **Median:** 297
Sampling Method (No. of fish): BEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 63 **Max:** 73 **Mean:** 67 **Median:** 68
Sampling Method (No. of fish): BEF (4)
Comments: Arctic grayling in event L approximately 60 mm.

Species: longnose sucker **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 40 **Max:** 40 **Mean:** 40 **Median:** 40
Sampling Method (No. of fish): BEF (1) VOB (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 70 **Max:** 76 **Mean:** 72 **Median:** 73
Sampling Method (No. of fish): BEF (3)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 202 **Max:** 256 **Mean:** 229 **Median:** 229
Sampling Method (No. of fish): BEF (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Orange Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1103B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/05/2011 9:22 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.30016	-146.60692	**Sample Coordinates**	62.29481	-146.61988	/	62.30854	-146.60589

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Gulkana B-6 **Legal Description (MTRS):** C006N008W13
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: IU4

Visit Comments: Habitat transect downstream from upper reach point (pictures 312-313) and upper reach pictures are 309-311.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.52 **DO (mg/L):** 10.51 **DO (%):** 92.00 **Conductivity (µS/cm):** 88 **pH:** 7.45
Water Color: Clear **Turbidity (NTU):** 1.71 **Thalweg Velocity (m/s)(ft/s):** 0.50 1.64

Stream Channel

Stream Gradient (%): 0.2 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	13.0	10.0
Thalweg Depth	0.80	0.40

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed White Spruce Forest	12	Closed White Spruce Forest	14
5 - 10	Closed White Spruce Forest	12	Closed White Spruce Forest	14
10 - 20	Closed Black Spruce-White Spruce Forest	8	Closed Black Spruce-White Spruce Forest	9
20 - 30	Closed Black Spruce-White Spruce Forest	8	Closed Black Spruce-White Spruce Forest	9

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1102

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6507 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 285 **Max:** 345 **Mean:** 315 **Median:** 315
Sampling Method (No. of fish): BEF (2) VOB (6505)
Comments:

Species: longnose sucker **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 200 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (200)
Comments: Event B made up of tiny longnose sucker fry.

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 39 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (39)
Comments:

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 385 **Max:** 440 **Mean:** 412 **Median:** 412
Sampling Method (No. of fish): BEF (2) VOB (6)
Comments:

-continued-

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 859 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 210 **Max:** 245 **Mean:** 220 **Median:** 227
Sampling Method (No. of fish): BEF (4) VOB (855)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 175 **Max:** 225 **Mean:** 195 **Median:** 200
Sampling Method (No. of fish): BEF (5)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 127 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 253 **Max:** 255 **Mean:** 254 **Median:** 254
Sampling Method (No. of fish): BEF (2) VOB (125)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 385 **Max:** 385 **Mean:** 385 **Median:** 385
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 45 **Max:** 45 **Mean:** 45 **Median:** 45
Sampling Method (No. of fish): BEF (1)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 145 **Max:** 193 **Mean:** 163 **Median:** 169
Sampling Method (No. of fish): BEF (5)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 88 **Max:** 186 **Mean:** 137 **Median:** 137
Sampling Method (No. of fish): BEF (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1103c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/05/2011 9:53 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.32573	-147.36840	**Sample Coordinates**	62.32449	-147.37042	/	62.32573	-147.36840

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts B-1 **Legal Description (MTRS):** S026N011E23
Waterbody Name: Tyone Creek
Anadromous Waters Catalog Number:
Geographic Comments: Mining marker 300 meters off of right bank & near transect site.
Visit Comments: Thalweg on river left.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.52 **DO (mg/L):** 12.23 **DO (%):** 99.70 **Conductivity (µS/cm):** 257 **pH:** 7.02
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.75 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	10.4	9.9
Thalweg Depth	0.58	0.83

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder-Willow Shrub	2.1	Closed Low Willow Shrub	1.3
5 - 10	Closed Tall Alder-Willow Shrub	2.1	Low Scrub	
10 - 20	Closed Tall Alder-Willow Shrub	1.5	Low Scrub	
20 - 30	Closed Tall Alder-Willow Shrub	1.5	Closed Tall Alder-Willow Shrub	2.3

Key To Fish Sampling Methods

Estimated reach length (m): 300

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 200 **Max:** 324 **Mean:** 263 **Median:** 262
Sampling Method (No. of fish): PEF (6) VOG (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 21 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 54 **Max:** 66 **Mean:** 60 **Median:** 60
Sampling Method (No. of fish): PEF (11) VOG (10)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 124 **Max:** 173 **Mean:** 149 **Median:** 148
Sampling Method (No. of fish): PEF (3)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 69 **Max:** 91 **Mean:** 80 **Median:** 80
Sampling Method (No. of fish): PEF (9)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 41 **Max:** 41 **Mean:** 41 **Median:** 41
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1103c02

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/05/2011 1:52 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.74560	-147.47480	**Sample Coordinates**	62.74560	-147.47480	/	62.74544	-147.47428

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S031N011E30
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: Mining camp approximately I mile downstream.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.96 **DO (mg/L):** 10.35 **DO (%):** 89.60 **Conductivity (µS/cm):** 127 **pH:** 7.41
Water Color: Humic **Turbidity (NTU):** 0.60 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	4.8	4.5
Thalweg Depth	0.70	0.35

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub		Closed Low Willow Shrub	
5 - 10	Closed Low Willow Shrub		Closed Low Willow Shrub	
10 - 20	Closed Low Willow Shrub		Closed Low Willow Shrub	
20 - 30	Closed Low Willow Shrub	0.7	Closed Low Willow Shrub	0.6

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident

Total Fish Count:	Fish Measured:	Fork Lengths (mm)	Min:	Max:	Mean:	Median:
2						

Sampling Method (No. of fish): PEF (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1104A01

Station Info

Observers: Joe Buckwalter, David Pluth **Date/Time:** 08/06/2011 9:30 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.65552	-147.31278	**Sample Coordinates**	62.65552	-147.31278	/	62.69473	-147.46353

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S030N011E25
Waterbody Name: Susitna River
Anadromous Waters Catalog Number:
Geographic Comments: MU9.

Visit Comments: pH sensor not working. Generator low on gas, so sampling crew skipped approximately 1 subreach after subreach 5 in order to reach Oshetna River mouth (subreach 6). Then skipped to mouth of Goose Creek and then to mouth of Jay creek to sample.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.75 **DO (mg/L):** 10.95 **DO (%):** 89.60 **Conductivity (µS/cm):** 86 **pH:**
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 254.00 **Thalweg Velocity (m/s)(ft/s):** 2.50 8.20

Stream Channel

Stream Gradient (%): **Entrenchment:** Entrenched
Catchment Area(sq. km): **Embeddedness:**

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	153.0	139.0
Thalweg Depth	3.80	2.30

Dominant Substrate: Boulder
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Black Spruce-White Spruce Forest	7	Open White Spruce Forest	7
5 - 10	Open Black Spruce-White Spruce Forest	7	Open White Spruce Forest	7
10 - 20	Open Black Spruce-White Spruce Forest	7	Open White Spruce Forest	7
20 - 30	Open Black Spruce-White Spruce Forest	7	Open White Spruce Forest	7

Key To Fish Sampling Methods

Total Electrofishing Time (s): 5827

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 224 **Max:** 231 **Mean:** 228 **Median:** 227
Sampling Method (No. of fish): BEF (3) VOB (4)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 163 **Max:** 181 **Mean:** 170 **Median:** 172
Sampling Method (No. of fish): BEF (3) VOB (1)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (2)
Comments:

-continued-

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 362 **Max:** 405 **Mean:** 379 **Median:** 383
Sampling Method (No. of fish): BEF (8) VOB (9)
Comments:

Species: whitefish-unspecified **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 87 **Max:** 87 **Mean:** 87 **Median:** 87
Sampling Method (No. of fish): BEF (1)
Comments:

Species: sculpin-unspecified **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 223 **Max:** 333 **Mean:** 262 **Median:** 278
Sampling Method (No. of fish): BEF (4) VOB (3)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 196 **Max:** 324 **Mean:** 233 **Median:** 260
Sampling Method (No. of fish): BEF (6)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): BEF (2)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 135 **Max:** 273 **Mean:** 223 **Median:** 204
Sampling Method (No. of fish): BEF (3)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 335 **Max:** 360 **Mean:** 347 **Median:** 347
Sampling Method (No. of fish): BEF (10) VOB (2)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 320 **Max:** 325 **Mean:** 322 **Median:** 322
Sampling Method (No. of fish): BEF (2)
Comments:

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 497 **Max:** 497 **Mean:** 497 **Median:** 497
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 70 **Max:** 70 **Mean:** 70 **Median:** 70
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: handheld sonar depth finder
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1104B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/06/2011 10:35 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.76426	-148.46492	**Sample Coordinates**	62.76426	-148.46492	/	62.76308	-148.48293

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S031N005E23
Waterbody Name: Fog Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU25

Visit Comments: Large salmon redds (almost certainly Chinook) were observed at waypoint "SCKred". Photos 321-327 were taken in an effort to document these redds, but none came out particularly good.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.33 **DO (mg/L):** 12.50 **DO (%):** 101.30 **Conductivity (µS/cm):** 78 **pH:** 5.58
Water Color: Clear **Turbidity (NTU):** 16.80 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	18.0	14.0
Thalweg Depth	0.80	0.50

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder-Willow Shrub	3	Closed Spruce-Paper Birch Forest	14
5 - 10	Closed Tall Alder-Willow Shrub	3	Closed Spruce-Paper Birch Forest	14
10 - 20	Closed Spruce-Paper Birch Forest	18	Closed Spruce-Paper Birch Forest	14
20 - 30	Closed Spruce-Paper Birch Forest	18	Closed Spruce-Paper Birch Forest	14

Key To Fish Sampling Methods

Total Electrofishing Time (s): 947

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 28 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 100 **Max:** 278 **Mean:** 202 **Median:** 189
Sampling Method (No. of fish): BEF (8) VOB (20)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 14 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (14)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 50 **Max:** 50 **Mean:** 50 **Median:** 50
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 125 **Max:** 125 **Mean:** 125 **Median:** 125
Sampling Method (No. of fish): BEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: GPS Float

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: handheld laser rangefinder

Electrofisher: Smith-Root GPP 2.5

Transparency:

Station FSS1104c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/06/2011 7:56 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.68477	-148.58492	**Sample Coordinates**	62.68394	-148.58511	/	62.68501	-148.58498

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-4 **Legal Description (MTRS):** S030N005E18
Waterbody Name: Fog Creek tributary
Anadromous Waters Catalog Number:
Geographic Comments: Fog Creek has a series of 4 ledges less than 15 ft each, last 2 km before confluence with Susitna River. HU56

Visit Comments: Very fast moving water in main channel with rearing habitat parallel to river continually until canyon section approximately 2 km above confluence with Susitna River.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.38 **DO (mg/L):** 10.86 **DO (%):** 88.10 **Conductivity (µS/cm):** 43 **pH:** 7.68
Water Color: Clear **Turbidity (NTU):** 1.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	18.6	11.1
Thalweg Depth	0.65	1.05

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	5	Closed Tall Willow Shrub	5
5 - 10	Closed Tall Willow Shrub	5	Tall Scrub	6
10 - 20	Closed Tall Willow Shrub	5	Fireweed	3
20 - 30	Closed Tall Willow Shrub	5	Closed Tall Willow Shrub	5

Key To Fish Sampling Methods

Estimated reach length (m): 300

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 8 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 49 **Max:** 61 **Mean:** 55 **Median:** 55
Sampling Method (No. of fish): PEF (5) VOG (3)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 94 **Max:** 94 **Mean:** 94 **Median:** 94
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 51 **Max:** 52 **Mean:** 51 **Median:** 51
Sampling Method (No. of fish): PEF (2) VOG (2)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 43 **Max:** 50 **Mean:** 46 **Median:** 46
Sampling Method (No. of fish): PEF (3)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1104c02

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/06/2011 10:12 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.61421	-148.31099	**Sample Coordinates**	62.61258	-148.31368	/	62.61421	-148.31099

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-3 **Legal Description (MTRS):** S029N006E10
Waterbody Name: Tsisi Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.29 **DO (mg/L):** 10.90 **DO (%):** 88.30 **Conductivity (µS/cm):** 69 **pH:** 7.91
Water Color: Clear **Turbidity (NTU):** 0.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	21.6	20.1
Thalweg Depth	0.94	0.53

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed Tall Willow Shrub	4
5 - 10	Closed Tall Willow Shrub		Closed Tall Willow Shrub	
10 - 20	Closed Tall Willow Shrub		Closed Tall Willow Shrub	
20 - 30	Closed Tall Willow Shrub	3.5	Closed Tall Willow Shrub	2.5

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 78 **Max:** 92 **Mean:** 87 **Median:** 85
Sampling Method (No. of fish): PEF (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 52 **Max:** 59 **Mean:** 54 **Median:** 55
Sampling Method (No. of fish): PEF (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 30 **Max:** 50 **Mean:** 43 **Median:** 40
Sampling Method (No. of fish): PEF (6) VOG (5)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1104c03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/06/2011 7:41 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.76374	-148.40418	**Sample Coordinates**	62.76374	-148.40418	/	62.76370	-148.40413

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** S031N006E19
Waterbody Name: Fog Creek
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.26 **DO (mg/L):** 10.95 **DO (%):** 93.10 **Conductivity (µS/cm):** 87 **pH:** 8.09
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.75 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	9.9	9.4
Thalweg Depth	1.07	0.50

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder-Willow Shrub			
5 - 10	Closed Tall Alder-Willow Shrub			
10 - 20	Closed Tall Alder-Willow Shrub			
20 - 30	Closed Tall Alder-Willow Shrub	3.5	Open White Spruce Forest	25

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 15 **Fork Lengths (mm)** **Min:** 30 **Max:** 50 **Mean:** 42 **Median:** 40
Sampling Method (No. of fish): PEF (15)
Comments:

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 21 **Fish Measured:** 15 **Fork Lengths (mm)** **Min:** 84 **Max:** 265 **Mean:** 123 **Median:** 174
Sampling Method (No. of fish): PEF (15) VOG (6)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 15 **Fork Lengths (mm)** **Min:** 70 **Max:** 111 **Mean:** 88 **Median:** 90
Sampling Method (No. of fish): PEF (15)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 35 **Fish Measured:** 17 **Fork Lengths (mm)** **Min:** 54 **Max:** 64 **Mean:** 58 **Median:** 59
Sampling Method (No. of fish): PEF (17) VOG (18)
Comments:

-continued-

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 18 **Fish Measured:** 18 **Fork Lengths (mm)** **Min:** 39 **Max:** 79 **Mean:** 46 **Median:** 59
Sampling Method (No. of fish): PEF (18)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1105A01

Station Info

Observers: Joe Buckwalter, David Pluth **Date/Time:** 08/07/2011 9:24 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.49302	-147.47168	**Sample Coordinates**	62.49302	-147.47168	/	62.53251	-147.45820

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts B-1 **Legal Description (MTRS):** S028N011E29
Waterbody Name: Oshetna River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Put-in above, take out below, Black River confluence. Oshetna River is clear, Black River, turbid (glacial). pH sensor not working. Habitat transect at large, light-colored granite boulder (1 M long) at wetted edge of right bank. At end of sample reach, continued to raft down the Oshetna River to within a mile of IU58, electrofishing intermittently (2311 seconds total). Observed all the same species that were caught/observed during sample reach. Took out at N 62 36.72', W 147 23.46'.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.02 **DO (mg/L):** 11.21 **DO (%):** 92.50 **Conductivity (µS/cm):** 124 **pH:**
Water Color: Clear **Turbidity (NTU):** **Thalweg Velocity (m/s)(ft/s):** 1.94 6.36

Stream Channel

Stream Gradient (%): 1.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	48.0	30.0
Thalweg Depth	1.62	0.80

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Black Spruce-White Spruce Forest	13	Closed Low Willow Shrub	1.4
5 - 10	Open Black Spruce-White Spruce Forest	13	Closed White Spruce Forest	14
10 - 20	Open Black Spruce-White Spruce Forest	13	Closed White Spruce Forest	14
20 - 30	Open Black Spruce-White Spruce Forest	13	Closed White Spruce Forest	14

Key To Fish Sampling Methods

Total Electrofishing Time (s): 3188

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 31 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 54 **Max:** 61 **Mean:** 56 **Median:** 57
Sampling Method (No. of fish): BEF (7) VOB (24)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 336 **Max:** 415 **Mean:** 360 **Median:** 375
Sampling Method (No. of fish): BEF (6) VOB (5)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 13 **Fish Measured:** 12 **Fork Lengths (mm)** **Min:** 200 **Max:** 326 **Mean:** 251 **Median:** 263
Sampling Method (No. of fish): BEF (12) VOB (1)
Comments:

-continued-

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 341 **Max:** 408 **Mean:** 387 **Median:** 374
Sampling Method (No. of fish): BEF (6) VOB (1)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 16 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 380 **Max:** 411 **Mean:** 389 **Median:** 395
Sampling Method (No. of fish): BEF (8) VOB (8)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments: Event N is probobly a round whitefish at approximately 200mm.

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 332 **Max:** 341 **Mean:** 336 **Median:** 336
Sampling Method (No. of fish): BEF (2)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 261 **Max:** 318 **Mean:** 296 **Median:** 289
Sampling Method (No. of fish): BEF (3)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 70 **Max:** 188 **Mean:** 146 **Median:** 129
Sampling Method (No. of fish): BEF (7) VOB (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 82 **Max:** 82 **Mean:** 82 **Median:** 82
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 24 **Max:** 49 **Mean:** 35 **Median:** 36
Sampling Method (No. of fish): BEF (6)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1105B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/07/2011 10:48 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.50195	-147.17393	**Sample Coordinates**	62.50195	-147.17393	/	62.51330	-147.16673

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** S028N012E23
Waterbody Name: Sonona Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU12

Visit Comments: pH sensor may have been malfunctioning.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.92 **DO (mg/L):** 10.71 **DO (%):** 90.00 **Conductivity (µS/cm):** 184 **pH:** 4.45
Water Color: Clear **Turbidity (NTU):** 15.00 **Thalweg Velocity (m/s)(ft/s):** 1.10 3.61

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	25.5	11.2
Thalweg Depth	1.20	0.65

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Willow Shrub	2.2	Open Tall Willow Shrub	0.8
5 - 10	Open Tall Willow Shrub	2.2		22
10 - 20	Open Tall Willow Shrub	2.2		22
20 - 30	Open White Spruce Forest	20	Closed White Spruce Forest	22

Key To Fish Sampling Methods

Total Electrofishing Time (s): 921

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 100 **Max:** 100 **Mean:** 100 **Median:** 100
Sampling Method (No. of fish): BEF (1)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 21 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 52 **Max:** 52 **Mean:** 52 **Median:** 52
Sampling Method (No. of fish): BEF (1) VOB (20)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 290 **Max:** 290 **Mean:** 290 **Median:** 290
Sampling Method (No. of fish): BEF (1) VOB (5)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 75 **Max:** 75 **Mean:** 75 **Median:** 75
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1105c02

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/07/2011 10:28 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.18553	-147.71104	**Sample Coordinates**	62.18462	-147.71460	/	62.18588	-147.71058

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts A-2 **Legal Description (MTRS):** S024N009E12
Waterbody Name: Little Oshetna River
Anadromous Waters Catalog Number:
Geographic Comments: HU15. Barrier to fish passage 300 m upriver, waterfalls (3) photos 101-103.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 5.46 **DO (mg/L):** 12.21 **DO (%):** 96.80 **Conductivity (µS/cm):** 161 **pH:** 7.96
Water Color: Clear **Turbidity (NTU):** 1.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.75 **Entrenchment:** Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	43.0	10.6
Thalweg Depth	0.78	0.38

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Willow Dwarf Shrub Tundra	0.1	Open Low Willow Shrub	0.6
5 - 10	Willow Dwarf Shrub Tundra	0.1	Open Low Willow Shrub	0.6
10 - 20	Open Tall Willow Shrub	1.7	Open Low Willow Shrub	0.6
20 - 30	Open Tall Willow Shrub	1.7	Open Low Willow Shrub	0.6

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 200 **Max:** 214 **Mean:** 208 **Median:** 207
Sampling Method (No. of fish): PEF (3) VOG (5)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** 17 **Fork Lengths (mm)** **Min:** 71 **Max:** 115 **Mean:** 88 **Median:** 93
Sampling Method (No. of fish): PEF (17)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 28 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 57 **Max:** 57 **Mean:** 57 **Median:** 57
Sampling Method (No. of fish): PEF (1) VOG (27)
Comments:

-continued-

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 81 **Max:** 81 **Mean:** 81 **Median:** 81
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1105c03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/07/2011 12:38 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.28793	-147.70688	**Sample Coordinates**	62.28690	-147.70756	/	62.28813	-147.70661

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts B-2 **Legal Description (MTRS):** S025N009E01
Waterbody Name: Gold Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU95

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.20 **DO (mg/L):** 11.26 **DO (%):** 91.10 **Conductivity (µS/cm):** 105 **pH:** 7.20
Water Color: Clear **Turbidity (NTU):** 0.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	29.5	9.1
Thalweg Depth	0.87	0.38

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Seral Herbs	0.7	Seral Herbs	0.3
5 - 10	Seral Herbs	0.7	Closed Low Willow Shrub	1
10 - 20	Seral Herbs	0.7	Closed Low Willow Shrub	1
20 - 30	Open Tall Willow Shrub	1.5	Closed Low Willow Shrub	1

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 5 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (5)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 2 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 79 **Max:** 79 **Mean:** 79 **Median:** 79
Sampling Method (No. of fish): PEF (1) VOG (1)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 364 **Max:** 364 **Mean:** 364 **Median:** 364
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (3)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1105c04

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/07/2011 2:18 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.44684	-147.54768	**Sample Coordinates**	62.44560	-147.54899	/	62.44684	-147.54768

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts B-2 **Legal Description (MTRS):** S027N010E11
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU113

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.15 **DO (mg/L):** 10.33 **DO (%):** 91.90 **Conductivity (µS/cm):** 36 **pH:** 7.38
Water Color: Clear **Turbidity (NTU):** 0.70 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.75 **Entrenchment:** Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	7.4	6.7
Thalweg Depth	0.75	0.30

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Shrub Birch	1	Closed Tall Willow Shrub	1.8
5 - 10	Closed Low Shrub Birch	1	Closed Tall Willow Shrub	1.8
10 - 20	Closed Low Shrub Birch	1	Closed Tall Willow Shrub	1.8
20 - 30	Closed Low Shrub Birch	1	Closed Tall Willow Shrub	1.8

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** adult **Life History:** Unknown
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 93 **Max:** 93 **Mean:** 93 **Median:** 93
Sampling Method (No. of fish): PEF (1) VOG (9)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 87 **Max:** 118 **Mean:** 100 **Median:** 102
Sampling Method (No. of fish): PEF (5)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (5)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1105c05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/07/2011 4:25 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.52160	-147.76030	**Sample Coordinates**	62.52246	-147.76267	/	62.52160	-147.76030

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S028N009E15
Waterbody Name: Goose Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU16

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.80 **DO (mg/L):** 10.57 **DO (%):** 91.00 **Conductivity (µS/cm):** 25 **pH:** 6.80
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.2 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	Bank Full	Wetted
Width	19.9	19.3
Thalweg Depth	0.60	0.39

Dominant Substrate: Sands
Subdominant Substrate 1: Cobble
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Mixed Shrub-Sedge Tussock Bog	0.3	Crustose Lichen	0.4
5 - 10	Open Low Mixed Shrub-Sedge Tussock Bog	0.3	Wet Graminoid Herbaceous (emergent)	0.4
10 - 20	Open Low Mixed Shrub-Sedge Tussock Bog	0.3	Wet Graminoid Herbaceous (emergent)	0.4
20 - 30	Unvegetated		Wet Graminoid Herbaceous (emergent)	0.4

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (12)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 20 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 36 **Max:** 189 **Mean:** 74 **Median:** 112
Sampling Method (No. of fish): PEF (8) VOG (12)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 73 **Max:** 116 **Mean:** 94 **Median:** 94
Sampling Method (No. of fish): PEF (4) VOG (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 73 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 53 **Max:** 64 **Mean:** 58 **Median:** 58
Sampling Method (No. of fish): PEF (10) VOG (63)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 16 **Fish Measured:** 16 **Fork Lengths (mm)** **Min:** 31 **Max:** 50 **Mean:** 38 **Median:** 40
Sampling Method (No. of fish): PEF (16)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1106A01

Station Info

Observers: Joe Buckwalter, David Pluth **Date/Time:** 08/08/2011 10:00 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.30504	-147.38915	**Sample Coordinates**	63.31106	-147.39440	/	63.28021	-147.44041

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Healy B-1 **Legal Description (MTRS):** F018S002E32
Waterbody Name: Susitna River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Upper point of reach in a clear, right bank Susitna River tributary. We floated/electrofished down to the Susitna River mainstem and established a habitat transect pH meter not working.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 4.96 **DO (mg/L):** 12.34 **DO (%):** 96.60 **Conductivity (µS/cm):** 89 **pH:**
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 41.50 **Thalweg Velocity (m/s)(ft/s):** 1.31 4.30

Stream Channel

Stream Gradient (%): 0 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** High

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	83.0	78.0
Thalweg Depth	1.88	1.10

Dominant Substrate: Gravel
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Silt/Sand

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Willow Shrub	1.4	Open Low Willow Shrub	1.4
5 - 10	Open Low Willow Shrub	1.4	Open Low Willow Shrub	1.4
10 - 20	Open Low Willow Shrub	1.4	Open Low Willow Shrub	1.4
20 - 30	Open Low Willow Shrub	1.4	Closed Low Willow Shrub	1.4

Key To Fish Sampling Methods

Total Electrofishing Time (s): 4087

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 22 **Fish Measured:** 14 **Fork Lengths (mm)** **Min:** 349 **Max:** 415 **Mean:** 381 **Median:** 382
Sampling Method (No. of fish): BEF (14) VOB (8)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 56 **Max:** 56 **Mean:** 56 **Median:** 56
Sampling Method (No. of fish): BEF (1) VOB (7)
Comments:

Species: whitefish-unspecified **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (2)
Comments:

-continued-

Species: humpback whitefish **Life Stage:** adult **Life History:** Unknown
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 378 **Max:** 443 **Mean:** 413 **Median:** 410
Sampling Method (No. of fish): BEF (5)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 410 **Max:** 410 **Mean:** 410 **Median:** 410
Sampling Method (No. of fish): BEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 215 **Max:** 310 **Mean:** 262 **Median:** 262
Sampling Method (No. of fish): BEF (3) VOB (1)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 63 **Max:** 167 **Mean:** 115 **Median:** 115
Sampling Method (No. of fish): BEF (2) VOB (2)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 205 **Max:** 296 **Mean:** 255 **Median:** 250
Sampling Method (No. of fish): BEF (6) VOB (3)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 104 **Max:** 154 **Mean:** 129 **Median:** 129
Sampling Method (No. of fish): BEF (2)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 336 **Max:** 345 **Mean:** 340 **Median:** 340
Sampling Method (No. of fish): BEF (2) VOB (4)
Comments:

Species: humpback whitefish **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 82 **Max:** 272 **Mean:** 182 **Median:** 177
Sampling Method (No. of fish): BEF (4)
Comments:

Species: humpback whitefish **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 5 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 295 **Max:** 325 **Mean:** 307 **Median:** 310
Sampling Method (No. of fish): BEF (3) VOB (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 80 **Max:** 112 **Mean:** 90 **Median:** 96
Sampling Method (No. of fish): BEF (5)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 47 **Max:** 47 **Mean:** 47 **Median:** 47
Sampling Method (No. of fish): BEF (1)
Comments:

Species: longnose sucker **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 178 **Max:** 178 **Mean:** 178 **Median:** 178
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient:

Stream Velocity: GPS Float

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: handheld sonar depth finder

Channel Widths: handheld laser rangefinder

Electrofisher: Smith-Root GPP 2.5

Transparency:

Station FSS1106B01

Station Info

Observers: Jonathan Kirsch, Ashley Reed **Date/Time:** 08/08/2011 10:35 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.37322	-147.00434	**Sample Coordinates**	63.37322	-147.00434	/	63.36795	-147.08594

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Healy B-1 **Legal Description (MTRS):** F018S004E09
Waterbody Name: East Fork Susitna River
Anadromous Waters Catalog Number:
Geographic Comments: IU10

Visit Comments: Most fish caught during subreaches at the mouth of clearwater tributaries. Large number of caddis fly larvae present.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 3.85 **DO (mg/L):** 10.72 **DO (%):** 81.50 **Conductivity (µS/cm):** 39 **pH:** 7.85
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 150.00 **Thalweg Velocity (m/s)(ft/s):** 1.30 4.26

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	40.0	15.0
Thalweg Depth	2.00	1.10

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Silt/Sand

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Closed Low Willow Shrub	1.5
5 - 10	Closed Tall Willow Shrub	2	Closed Low Willow Shrub	1.5
10 - 20	Closed Tall Willow Shrub	2	Closed Low Willow Shrub	1.5
20 - 30	Closed Tall Willow Shrub	2	Closed Low Willow Shrub	1.5

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1539

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 347 **Max:** 404 **Mean:** 375 **Median:** 375
Sampling Method (No. of fish): BEF (2) VOB (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 45 **Max:** 45 **Mean:** 45 **Median:** 45
Sampling Method (No. of fish): BEF (1)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 235 **Max:** 316 **Mean:** 280 **Median:** 275
Sampling Method (No. of fish): BEF (3) VOB (7)
Comments:

-continued-

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 210 **Max:** 295 **Mean:** 239 **Median:** 252
Sampling Method (No. of fish): BEF (5) VOB (12)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 122 **Max:** 122 **Mean:** 122 **Median:** 122
Sampling Method (No. of fish): BEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 115 **Max:** 170 **Mean:** 142 **Median:** 142
Sampling Method (No. of fish): BEF (2)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 348 **Max:** 348 **Mean:** 348 **Median:** 348
Sampling Method (No. of fish): BEF (1)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 250 **Max:** 255 **Mean:** 252 **Median:** 252
Sampling Method (No. of fish): BEF (2)
Comments:

Species: sculpin-unspecified **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 70 **Max:** 70 **Mean:** 70 **Median:** 70
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1106c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/08/2011 9:34 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.73537	-149.39327	**Sample Coordinates**	62.73396	-149.39626	/	62.73537	-149.39327

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-5 **Legal Description (MTRS):** S031N001W35
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU85 Small dirt road parallel to creek approximately 50 M upriver of transect site and ending at that point. Unnamed tributary of Susitna River.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.38 **DO (mg/L):** 11.03 **DO (%):** 91.80 **Conductivity (µS/cm):** 16 **pH:** 7.23
Water Color: Clear **Turbidity (NTU):** 0.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	24.5	11.2
Thalweg Depth	1.06	0.85

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Sands

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Mixed Shrub-Sedge Tussock Tundra	0.4	Open Low Willow Shrub	0.2
5 - 10	Open Low Willow Shrub	0.3	Unvegetated	
10 - 20	Crustose Lichen	0.1	Fireweed	0.2
20 - 30	Crustose Lichen	0.1	Mixed Herbs	0.2

Key To Fish Sampling Methods

Estimated reach length (m): 300

() (PEF) Portable Electrofisher
(VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 32 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 91 **Max:** 154 **Mean:** 122 **Median:** 122
Sampling Method (No. of fish): PEF (7) VOG (25)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 11 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 36 **Max:** 79 **Mean:** 47 **Median:** 57
Sampling Method (No. of fish): PEF (11)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 69 **Max:** 78 **Mean:** 72 **Median:** 73
Sampling Method (No. of fish): PEF (3)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 56 **Max:** 56 **Mean:** 56 **Median:** 56
Sampling Method (No. of fish): PEF (1) VOG (7)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 36 **Max:** 37 **Mean:** 36 **Median:** 36
Sampling Method (No. of fish): PEF (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1106c05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/08/2011 4:07 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.96210	-148.07029	**Sample Coordinates**	62.96324	-148.06820	/	62.96210	-148.07029

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-3 **Legal Description (MTRS):** F022S003W35
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU54

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.90 **DO (mg/L):** 10.58 **DO (%):** 89.20 **Conductivity (µS/cm):** 131 **pH:** 7.62
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.75 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	14.8	9.6
Thalweg Depth	0.49	0.32

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Sands

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	1.2	Wet Sedge-Grass Meadow Tundra	0.4
5 - 10	Closed Tall Willow Shrub	1.2	Wet Sedge-Grass Meadow Tundra	0.4
10 - 20	Closed Tall Willow Shrub	1.2	Closed Tall Willow Shrub	1.5
20 - 30	Closed Tall Willow Shrub	1.2	Closed Tall Willow Shrub	1.5

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 330 **Max:** 349 **Mean:** 339 **Median:** 339
Sampling Method (No. of fish): PEF (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 32 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 199 **Max:** 315 **Mean:** 264 **Median:** 257
Sampling Method (No. of fish): PEF (11) VOG (21)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 24 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 3 **Max:** 94 **Mean:** 39 **Median:** 48
Sampling Method (No. of fish): PEF (10) VOG (14)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 69 **Max:** 103 **Mean:** 78 **Median:** 86
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 52 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 52 **Max:** 65 **Mean:** 58 **Median:** 58
Sampling Method (No. of fish): PEF (7) VOG (45)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 38 **Max:** 40 **Mean:** 39 **Median:** 39
Sampling Method (No. of fish): PEF (4)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1106D01

Station Info

Observers: Joe Buckwalter, Jonathan Kirsch, Raye Ann Neustel **Date/Time:** 07/19/2011 2:30 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.52663	-150.11449	**Sample Coordinates**	62.53343	-150.10374	/	62.45053	-150.12639

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna C-1 **Legal Description (MTRS):** S028N005W12
Waterbody Name: Susitna River
Anadromous Waters Catalog Number: 247-41-10200
Geographic Comments: 16 miles upstream of Talkeetna. Railroad runs along left bank. Upstream end of fish-collection reach located at mouth of Lane Creek (left bank Susitna River tributary).
Visit Comments: Most of the fish (except suckers) from this reach were collected from clear water (Lane Creek) at the upstream end of the reach.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 12.73 **DO (mg/L):** 10.95 **DO (%):** 103.40 **Conductivity (µS/cm):** 80 **pH:** 7.81
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 103.10 **Thalweg Velocity (m/s)(ft/s):** 2.22 7.28

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	167.0	157.0
Thalweg Depth	5.14	2.90

Dominant Substrate: Cobble
Subdominant Substrate 1: Sands
Subdominant Substrate 2: Gravel
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Balsam Poplar (Black Cottonwood) Forest	32	Closed Tall Alder-Willow Shrub	3
5 - 10	Open Balsam Poplar (Black Cottonwood) Forest	32	Closed Tall Alder-Willow Shrub	3
10 - 20	Open Balsam Poplar (Black Cottonwood) Forest	32	Closed Tall Alder-Willow Shrub	3
20 - 30	Low Scrub		Open Balsam Poplar (Black Cottonwood) Forest	32

Key To Fish Sampling Methods

Total Electrofishing Time (s): 4310

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 219 **Max:** 310 **Mean:** 274 **Median:** 264
Sampling Method (No. of fish): BEF (8) VOB (3)
Comments:

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 27 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 56 **Max:** 73 **Mean:** 65 **Median:** 64
Sampling Method (No. of fish): BEF (11) VOB (16)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 47 **Fish Measured:** 21 **Fork Lengths (mm)** **Min:** 190 **Max:** 345 **Mean:** 275 **Median:** 267
Sampling Method (No. of fish): BEF (21) VOB (26)
Comments:

-continued-

Species: rainbow trout **Life Stage:** adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (11)
Comments:

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (10)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 108 **Fish Measured:** 17 **Fork Lengths (mm)** **Min:** 51 **Max:** 66 **Mean:** 60 **Median:** 58
Sampling Method (No. of fish): BEF (17) VOB (91)
Comments:

Species: Chinook salmon **Life Stage:** adult **Life History:** Anadromous
Total Fish Count: 6 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (6)
Comments:

Species: burbot **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 179 **Max:** 179 **Mean:** 179 **Median:** 179
Sampling Method (No. of fish): BEF (1)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 109 **Max:** 168 **Mean:** 147 **Median:** 138
Sampling Method (No. of fish): BEF (3)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 372 **Max:** 410 **Mean:** 391 **Median:** 391
Sampling Method (No. of fish): BEF (2)
Comments:

Species: rainbow trout **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 153 **Max:** 385 **Mean:** 269 **Median:** 269
Sampling Method (No. of fish): BEF (2)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 148 **Max:** 275 **Mean:** 211 **Median:** 211
Sampling Method (No. of fish): BEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 33 **Max:** 50 **Mean:** 45 **Median:** 41
Sampling Method (No. of fish): BEF (11)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** 12 **Fork Lengths (mm)** **Min:** 70 **Max:** 110 **Mean:** 79 **Median:** 90
Sampling Method (No. of fish): BEF (12)
Comments:

Species: longnose sucker **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 185 **Max:** 185 **Mean:** 185 **Median:** 185
Sampling Method (No. of fish): BEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: GPS Float

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: handheld sonar depth finder

Channel Widths: handheld laser rangefinder

Electrofisher: Smith-Root GPP 2.5

Transparency:

Station FSS1107A01

Station Info

Observers: Joe Buckwalter, Joe Giefer **Date/Time:** 08/09/2011 2:28 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.29768	-147.51377	**Sample Coordinates**	63.31049	-147.55004	/	63.28756	-147.50504

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Healy B-2 **Legal Description (MTRS):** F018S001E33
Waterbody Name: West Fork Susitna River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Started reach in a clear, right bank tributary for sampling events A and B. Waypoint 009 is mouth of clear tributary.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 2.43 **DO (mg/L):** 12.46 **DO (%):** 91.30 **Conductivity (µS/cm):** 81 **pH:** 7.89
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 210.00 **Thalweg Velocity (m/s)(ft/s):** 1.94 6.36

Stream Channel

Stream Gradient (%): 0.2 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	76.0	54.0
Thalweg Depth	1.70	0.80

Dominant Substrate: Silt/Sand
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Willow Shrub	1.6	Closed Tall Willow Shrub	1.6
5 - 10	Open Tall Willow Shrub	1.6	Closed Tall Willow Shrub	1.6
10 - 20	Open Tall Willow Shrub	1.6	Closed Tall Willow Shrub	1.6
20 - 30	Open Tall Willow Shrub	1.6	Closed Tall Willow Shrub	1.6

Key To Fish Sampling Methods

Total Electrofishing Time (s): 2148

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 40 **Max:** 46 **Mean:** 43 **Median:** 43
Sampling Method (No. of fish): BEF (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 43 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 202 **Max:** 316 **Mean:** 256 **Median:** 259
Sampling Method (No. of fish): BEF (21) VOB (22)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (3)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (17)
Comments:

-continued-

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 372 **Max:** 458 **Mean:** 419 **Median:** 415
Sampling Method (No. of fish): BEF (6)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 314 **Max:** 314 **Mean:** 314 **Median:** 314
Sampling Method (No. of fish): BEF (1)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 338 **Max:** 339 **Mean:** 338 **Median:** 338
Sampling Method (No. of fish): BEF (6)
Comments:

Species: humpback whitefish **Life Stage:** adult **Life History:** Unknown
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 400 **Max:** 435 **Mean:** 420 **Median:** 417
Sampling Method (No. of fish): BEF (5)
Comments:

Species: humpback whitefish **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 345 **Max:** 390 **Mean:** 366 **Median:** 367
Sampling Method (No. of fish): BEF (3)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1107B01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/09/2011 12:53 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.07611	-147.52875	**Sample Coordinates**	63.10460	-147.51791	/	63.02283	-147.41879

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Healy A-2 **Legal Description (MTRS):** F021S001E10
Waterbody Name: Susitna River
Anadromous Waters Catalog Number:
Geographic Comments: MU10

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 5.42 **DO (mg/L):** 11.08 **DO (%):** 87.80 **Conductivity (µS/cm):** 89 **pH:** 7.06
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 108.00 **Thalweg Velocity (m/s)(ft/s):** 1.00 3.28

Stream Channel

Stream Gradient (%): 0.1 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Very High

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	210.0	200.0
Thalweg Depth	3.20	2.20

Dominant Substrate: Silt/Sand
Subdominant Substrate 1:
Subdominant Substrate 2:

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Alder-Willow Shrub	3.3	Open Black Spruce Forest	5
5 - 10	Closed Tall Alder-Willow Shrub	3.3	Open Black Spruce Forest	5
10 - 20	Closed Tall Alder-Willow Shrub	3.3	Open Black Spruce Forest	5
20 - 30	Closed Tall Alder-Willow Shrub	3.3	Closed Tall Willow Shrub	1

Key To Fish Sampling Methods

Total Electrofishing Time (s): 8098

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 300 **Max:** 340 **Mean:** 320 **Median:** 320
Sampling Method (No. of fish): BEF (2) VOB (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 210 **Max:** 210 **Mean:** 210 **Median:** 210
Sampling Method (No. of fish): BEF (1) VOB (6)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 235 **Max:** 280 **Mean:** 250 **Median:** 257
Sampling Method (No. of fish): BEF (3) VOB (5)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 130 **Max:** 130 **Mean:** 130 **Median:** 130
Sampling Method (No. of fish): BEF (1)
Comments:

-continued-

Species: humpback whitefish **Life Stage:** adult **Life History:** Unknown
Total Fish Count: 13 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 365 **Max:** 415 **Mean:** 391 **Median:** 390
Sampling Method (No. of fish): BEF (3) VOB (10)
Comments:

Species: humpback whitefish **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 6 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 320 **Max:** 325 **Mean:** 322 **Median:** 322
Sampling Method (No. of fish): BEF (2) VOB (4)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 340 **Max:** 365 **Mean:** 352 **Median:** 352
Sampling Method (No. of fish): BEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 355 **Max:** 415 **Mean:** 391 **Median:** 385
Sampling Method (No. of fish): BEF (3)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 165 **Max:** 165 **Mean:** 165 **Median:** 165
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: handheld sonar depth finder
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1107c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/09/2011 10:08 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.05451	-146.76549	**Sample Coordinates**	63.05533	-146.76440	/	63.05436	-146.76554

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes A-6 **Legal Description (MTRS):** F021S005E34
Waterbody Name: Osar Creek
Anadromous Waters Catalog Number:
Geographic Comments: Approximately 20M from Denali Highway and Osar creek crossing.
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.70 **DO (mg/L):** 9.14 **DO (%):** 80.40 **Conductivity (µS/cm):** 52 **pH:** 8.60
Water Color: Humic **Turbidity (NTU):** 2.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** High

Channel Dimensions (m):	Bank Full	Wetted
Width	4.4	3.4
Thalweg Depth	0.51	0.44

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	12	Closed Tall Willow Shrub	8
5 - 10	Closed Tall Willow Shrub	12	Closed Tall Willow Shrub	8
10 - 20	Closed Tall Willow Shrub	12	Closed Tall Willow Shrub	8
20 - 30	Closed Tall Willow Shrub	12	Closed Tall Willow Shrub	8

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 141 **Max:** 147 **Mean:** 144 **Median:** 144
Sampling Method (No. of fish): PEF (2)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 337 **Max:** 337 **Mean:** 337 **Median:** 337
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 32 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 214 **Max:** 244 **Mean:** 227 **Median:** 229
Sampling Method (No. of fish): PEF (3) VOG (29)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 135 **Max:** 135 **Mean:** 135 **Median:** 135
Sampling Method (No. of fish): PEF (1)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 79 **Max:** 115 **Mean:** 97 **Median:** 97
Sampling Method (No. of fish): PEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 67 **Max:** 67 **Mean:** 67 **Median:** 67
Sampling Method (No. of fish): PEF (1) VOG (11)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 19 **Max:** 25 **Mean:** 21 **Median:** 22
Sampling Method (No. of fish): PEF (3)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 265 **Max:** 289 **Mean:** 277 **Median:** 277
Sampling Method (No. of fish): PEF (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1107c02

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/09/2011 1:36 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.11925	-146.79703	**Sample Coordinates**	63.12165	-146.79579	/	63.11925	-146.79703

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes A-6 **Legal Description (MTRS):** F021S005E04
Waterbody Name: Little Clearwater Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU52

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.55 **DO (mg/L):** 10.35 **DO (%):** 84.30 **Conductivity (µS/cm):** 23 **pH:** 7.25
Water Color: Muddy **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.25 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	30.6	11.3
Thalweg Depth	1.01	0.70

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	1.8	Unvegetated	
5 - 10	Closed Tall Willow Shrub	1.8	Unvegetated	
10 - 20	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	1.5
20 - 30	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	1.5

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 5 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 70 **Max:** 80 **Mean:** 75 **Median:** 75
Sampling Method (No. of fish): PEF (2) VOG (3)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 69 **Max:** 69 **Mean:** 69 **Median:** 69
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 13 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 52 **Max:** 63 **Mean:** 59 **Median:** 57
Sampling Method (No. of fish): PEF (4) VOG (9)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 24 **Max:** 43 **Mean:** 34 **Median:** 33
Sampling Method (No. of fish): PEF (6)
Comments:

-continued-

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 87 **Max:** 87 **Mean:** 87 **Median:** 87
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1107c03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/09/2011 3:33 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.97010	-147.20495	**Sample Coordinates**	62.96847	-147.20762	/	62.97010	-147.20495

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-1 **Legal Description (MTRS):** F022S003E32
Waterbody Name: Waterfall Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU106

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.77 **DO (mg/L):** 10.85 **DO (%):** 91.10 **Conductivity (µS/cm):** 52 **pH:** 7.47
Water Color: Feric **Turbidity (NTU):** 7.30 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	9.5	6.5
Thalweg Depth	1.32	0.90

Dominant Substrate: Gravel
Subdominant Substrate 1: Sands
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed Low Willow Shrub	0.7
5 - 10	Closed Low Willow Shrub	1	Closed Low Willow Shrub	0.7
10 - 20	Closed Low Willow Shrub	1	Closed Low Willow Shrub	0.7
20 - 30	Open White Spruce Forest	28	Closed Low Willow Shrub	0.7

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 71 **Max:** 122 **Mean:** 96 **Median:** 96
Sampling Method (No. of fish): PEF (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 246 **Max:** 265 **Mean:** 255 **Median:** 255
Sampling Method (No. of fish): PEF (2) VOG (9)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 42 **Max:** 111 **Mean:** 62 **Median:** 76
Sampling Method (No. of fish): PEF (6)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 69 **Max:** 86 **Mean:** 74 **Median:** 77
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 20 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 53 **Max:** 67 **Mean:** 60 **Median:** 60
Sampling Method (No. of fish): PEF (3) VOG (17)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 18 **Fish Measured:** 18 **Fork Lengths (mm)** **Min:** 30 **Max:** 50 **Mean:** 41 **Median:** 40
Sampling Method (No. of fish): PEF (18) VOG ()
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 134 **Max:** 134 **Mean:** 134 **Median:** 134
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1108A01

Station Info

Observers: Joe Buckwalter, Joe Giefer **Date/Time:** 08/10/2011 11:51 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.45961	-147.58261	**Sample Coordinates**	62.45961	-147.58261	/	62.47370	-147.53950

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts B-2 **Legal Description (MTRS):** S027N010E03
Waterbody Name: Black River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Wetted width measured to edge of flowing water--some standing water between boulders on right bank was not included.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.85 **DO (mg/L):** 10.68 **DO (%):** 87.70 **Conductivity (µS/cm):** 46 **pH:** 7.55
Water Color: Glacial, Low Turbidit **Turbidity (NTU):** 7.63 **Thalweg Velocity (m/s)(ft/s):** 1.39 4.56

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	37.0	21.0
Thalweg Depth	1.50	1.00

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1
5 - 10	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1
10 - 20	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1
20 - 30	Closed Low Willow Shrub	1	Closed Low Willow Shrub	1

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1700

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 215 **Max:** 305 **Mean:** 278 **Median:** 260
Sampling Method (No. of fish): BEF (5) VOB (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (6)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (5)
Comments: Event B probobly round whitefish.

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 70 **Max:** 87 **Mean:** 79 **Median:** 78
Sampling Method (No. of fish): BEF (5) VOB (3)
Comments:

-continued-

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 160 **Max:** 185 **Mean:** 173 **Median:** 172
Sampling Method (No. of fish): BEF (3) VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 12 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 210 **Max:** 305 **Mean:** 251 **Median:** 257
Sampling Method (No. of fish): BEF (5) VOB (7)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 345 **Max:** 345 **Mean:** 345 **Median:** 345
Sampling Method (No. of fish): BEF (1) VOB (3)
Comments:

Species: salmonid-unspecified **Life Stage:** not recorded **Life History:** Unknown
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 50 **Max:** 50 **Mean:** 50 **Median:** 50
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1108B01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/10/2011 9:09 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.30904	-147.50218	**Sample Coordinates**	62.30904	-147.50218	/	62.32078	-147.48383

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts B-1 **Legal Description (MTRS):** S026N011E30
Waterbody Name: Little Oshetna River
Anadromous Waters Catalog Number:
Geographic Comments: IU23

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 4.68 **DO (mg/L):** 11.70 **DO (%):** 91.00 **Conductivity (µS/cm):** 186 **pH:** 7.86
Water Color: Clear **Turbidity (NTU):** 1.42 **Thalweg Velocity (m/s)(ft/s):** 1.61 5.28

Stream Channel

Stream Gradient (%): 0.8 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	25.5	12.0
Thalweg Depth	1.50	0.52

Dominant Substrate: Cobble
Subdominant Substrate 1: Bedrock/Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Tall Willow Shrub	2.5	Closed Tall Willow Shrub	2.5
5 - 10	Open Tall Willow Shrub	2.5	Closed Tall Willow Shrub	2.5
10 - 20	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.5
20 - 30	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.5

Key To Fish Sampling Methods

Total Electrofishing Time (s): 932

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 10 **Fork Lengths (mm)** **Min:** 330 **Max:** 365 **Mean:** 341 **Median:** 347
Sampling Method (No. of fish): BEF (10)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 36 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 280 **Max:** 300 **Mean:** 290 **Median:** 290
Sampling Method (No. of fish): BEF (2) VOB (34)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1108c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/10/2011 9:20 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.13928	-147.92662	**Sample Coordinates**	63.14078	-147.92446	/	63.13915	-147.92661

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-2 **Legal Description (MTRS):** F020S002W34
Waterbody Name: Butte Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU11

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.13 **DO (mg/L):** 11.33 **DO (%):** 91.30 **Conductivity (µS/cm):** 85 **pH:** 7.72
Water Color: Clear **Turbidity (NTU):** 0.50 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	20.9	20.6
Thalweg Depth	0.50	0.31

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Midgrass-Shrub	1.5	Open Tall Willow Shrub	1.8
5 - 10	Midgrass-Shrub	1.5	Open Tall Willow Shrub	1.8
10 - 20	Midgrass-Shrub	1.5	Open Tall Willow Shrub	1.8
20 - 30	Midgrass-Shrub	1.5	Open Tall Willow Shrub	1.8

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 30 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 207 **Max:** 305 **Mean:** 250 **Median:** 256
Sampling Method (No. of fish): PEF (5) VOG (25)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 37 **Max:** 182 **Mean:** 63 **Median:** 109
Sampling Method (No. of fish): PEF (6)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 70 **Max:** 97 **Mean:** 81 **Median:** 83
Sampling Method (No. of fish): PEF (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 57 **Max:** 65 **Mean:** 61 **Median:** 61
Sampling Method (No. of fish): PEF (2) VOG (8)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 42 **Max:** 42 **Mean:** 42 **Median:** 42
Sampling Method (No. of fish): PEF (1)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 293 **Max:** 293 **Mean:** 293 **Median:** 293
Sampling Method (No. of fish): VOG (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1108c05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/10/2011 5:08 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.02336	-147.54752	**Sample Coordinates**	63.02121	-147.54747	/	63.02336	-147.54752

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-2 **Legal Description (MTRS):** F022S001E09
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU142

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.83 **DO (mg/L):** 10.46 **DO (%):** 85.80 **Conductivity (µS/cm):** 44 **pH:** 6.07
Water Color: Clear **Turbidity (NTU):** 0.10 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	18.0	3.5
Thalweg Depth	1.22	0.31

Dominant Substrate: Cobble
Subdominant Substrate 1:
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open White Spruce Forest	28	Closed Tall Willow Shrub	6
5 - 10	Open White Spruce Forest	28	Open White Spruce Forest	29
10 - 20	Open White Spruce Forest	28	Open White Spruce Forest	29
20 - 30	Open White Spruce Forest	28	Closed Tall Willow Shrub	3

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 109 **Max:** 151 **Mean:** 121 **Median:** 130
Sampling Method (No. of fish): PEF (4)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 39 **Max:** 45 **Mean:** 42 **Median:** 42
Sampling Method (No. of fish): PEF (3)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 138 **Max:** 138 **Mean:** 138 **Median:** 138
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 244 **Max:** 300 **Mean:** 274 **Median:** 272
Sampling Method (No. of fish): PEF (3) VOG (5)
Comments:

-continued-

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 117 **Max:** 117 **Mean:** 117 **Median:** 117
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1109b01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/11/2011 9:09 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.18811	-146.71994	**Sample Coordinates**	63.18811	-146.71994	/	63.17903	-146.70401

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Mt Hayes A-6 **Legal Description (MTRS):** F020S005E14
Waterbody Name: West Fork Maclaren River
Anadromous Waters Catalog Number:
Geographic Comments: IU3

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.75 **DO (mg/L):** 12.65 **DO (%):** 103.70 **Conductivity (µS/cm):** 147 **pH:** 7.19
Water Color: Glacial, Low Turbidit **Turbidity (NTU):** 13.80 **Thalweg Velocity (m/s)(ft/s):** 3.50 11.48

Stream Channel

Stream Gradient (%): 0.2 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	43.0	19.2
Thalweg Depth	2.00	1.10

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Silt/Sand

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.2
5 - 10	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.2
10 - 20	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.2
20 - 30	Closed Tall Willow Shrub	1.8	Closed Tall Willow Shrub	2.2

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1140

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 48 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 230 **Max:** 310 **Mean:** 260 **Median:** 270
Sampling Method (No. of fish): BEF (4) VOB (44)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (3)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 60 **Max:** 155 **Mean:** 107 **Median:** 107
Sampling Method (No. of fish): BEF (2)
Comments:

-continued-

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 320 **Max:** 320 **Mean:** 320 **Median:** 320
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1109c01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/11/2011 9:14 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.00426	-148.84548	**Sample Coordinates**	63.00527	-148.84350	/	63.00402	-148.84622

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-4 **Legal Description (MTRS):** F022S007W14
Waterbody Name: Portage Creek
Anadromous Waters Catalog Number: 247-41-10200-2585
Geographic Comments: HU59

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 4.57 **DO (mg/L):** 12.77 **DO (%):** 98.90 **Conductivity (µS/cm):** 43 **pH:** 5.71
Water Color: Clear **Turbidity (NTU):** 0.75 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.75 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	15.9	13.6
Thalweg Depth	1.32	0.62

Dominant Substrate: Cobble
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Shrub Birch-Willow Shrub		Closed Tall Alder-Willow Shrub	
5 - 10	Closed Tall Shrub Birch-Willow Shrub		Closed Tall Alder-Willow Shrub	
10 - 20	Closed Tall Shrub Birch-Willow Shrub		Closed Tall Alder-Willow Shrub	
20 - 30	Closed Tall Shrub Birch-Willow Shrub	12	Closed Tall Alder-Willow Shrub	24

Key To Fish Sampling Methods

Estimated reach length (m): 360

(PEF) Portable Electrofisher
(VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 18 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 115 **Max:** 115 **Mean:** 115 **Median:** 115
Sampling Method (No. of fish): PEF (1) VOG (17)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 12 **Fish Measured:** 12 **Fork Lengths (mm)** **Min:** 57 **Max:** 81 **Mean:** 71 **Median:** 69
Sampling Method (No. of fish): PEF (12)
Comments:

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 3 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 37 **Max:** 37 **Mean:** 37 **Median:** 37
Sampling Method (No. of fish): PEF (1) VOG (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 75 **Max:** 81 **Mean:** 79 **Median:** 78
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 65 **Max:** 65 **Mean:** 65 **Median:** 65
Sampling Method (No. of fish): PEF (2) VOG (5)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1109c05

Station Info

Observers: Raye Ann Neustel, Jonathan Kirsch **Date/Time:** 08/11/2011 7:40 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.02710	-147.28957	**Sample Coordinates**	63.02718	-147.28695	/	63.02710	-147.28957

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-1 **Legal Description (MTRS):** F022S002E12
Waterbody Name: Alpine Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU157

Visit Comments: Drove to sampling site from Alpine Creek Lodge via ATV.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.98 **DO (mg/L):** 11.55 **DO (%):** 90.40 **Conductivity (µS/cm):** 65 **pH:** 7.65
Water Color: Clear **Turbidity (NTU):** 3.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	7.8	6.2
Thalweg Depth	1.60	0.80

Dominant Substrate: Cobble
Subdominant Substrate 1:
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Spruce-Paper Birch Forest	28	Closed Spruce-Paper Birch Forest	25
5 - 10	Closed Spruce-Paper Birch Forest	28	Closed Spruce-Paper Birch Forest	25
10 - 20	Closed Spruce-Paper Birch Forest	28	Closed Spruce-Paper Birch Forest	25
20 - 30	Closed Spruce-Paper Birch Forest	28	Closed Spruce-Paper Birch Forest	25

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 16 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 334 **Max:** 334 **Mean:** 334 **Median:** 334
Sampling Method (No. of fish): PEF (2) VOG (14)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 265 **Max:** 320 **Mean:** 286 **Median:** 292
Sampling Method (No. of fish): PEF (11)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 15 **Fork Lengths (mm)** **Min:** 65 **Max:** 116 **Mean:** 104 **Median:** 90
Sampling Method (No. of fish): PEF (15)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1110A01

Station Info

Observers: Joe Buckwalter, Joe Giefer **Date/Time:** 08/12/2011 12:40 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.20435	-146.55463	**Sample Coordinates**	63.20932	-146.55297	/	63.16215	-146.54977

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Mt Hayes A-6 **Legal Description (MTRS):** F020S006E02
Waterbody Name: Maclaren River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments: Put in at the mouth of a clear right bank tributary (photos 484-485) with water quality readings of 9.6 C, 74 uS/cm conductivity, 59.5% saturation for dissolved oxygen, 6.78 mg/L dissolved oxygen, pH 7.59} and electrofished down into Maclaren River, almost to confluence with West Fork of Maclaren River.
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.47 **DO (mg/L):** 7.32 **DO (%):** 61.10 **Conductivity (µS/cm):** 85 **pH:** 7.78
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 25.70 **Thalweg Velocity (m/s)(ft/s):** 1.30 4.26

Stream Channel

Stream Gradient (%): 0 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	70.0	3.1
Thalweg Depth	1.52	1.10

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Silt/Sand
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open Low Willow Shrub	1	Open Low Willow Shrub	1
5 - 10	Open Low Willow Shrub	1	Open Low Willow Shrub	1
10 - 20	Open Low Willow Shrub	1	Open Low Willow Shrub	1
20 - 30	Open Low Willow Shrub	1	Open Low Willow Shrub	1

Key To Fish Sampling Methods

Total Electrofishing Time (s): 3839

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 13 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 199 **Max:** 293 **Mean:** 251 **Median:** 246
Sampling Method (No. of fish): BEF (6) VOB (7)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 24 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 340 **Max:** 350 **Mean:** 345 **Median:** 345
Sampling Method (No. of fish): BEF (3) VOB (21)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 28 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 51 **Max:** 68 **Mean:** 57 **Median:** 59
Sampling Method (No. of fish): BEF (9) VOB (19)
Comments:

-continued-

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 10 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 195 **Max:** 306 **Mean:** 260 **Median:** 250
Sampling Method (No. of fish): BEF (9) VOB (1)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 52 **Max:** 52 **Mean:** 52 **Median:** 52
Sampling Method (No. of fish): BEF (1) VOB (4)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 72 **Max:** 160 **Mean:** 115 **Median:** 116
Sampling Method (No. of fish): BEF (7) VOB (2)
Comments:

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 246 **Max:** 314 **Mean:** 287 **Median:** 280
Sampling Method (No. of fish): BEF (3)
Comments:

Species: general fish observation, no s **Life Stage:** not recorded **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 98 **Max:** 98 **Mean:** 98 **Median:** 98
Sampling Method (No. of fish): BEF (1)
Comments:

Species: salmonid-unspecified **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (9)
Comments: Event X either round whitefish or arctic grayling.

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 38 **Max:** 50 **Mean:** 44 **Median:** 44
Sampling Method (No. of fish): BEF (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 69 **Max:** 87 **Mean:** 75 **Median:** 78
Sampling Method (No. of fish): BEF (4)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 325 **Max:** 325 **Mean:** 325 **Median:** 325
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1110C01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/12/2011 9:19 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.67037	-147.87374	**Sample Coordinates**	62.66996	-147.87193	/	62.67037	-147.87374

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S030N008E24
Waterbody Name: Clarence Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU133 Down river of lake. There is a smaller creek flowing out of the opposite end of the lake as well.
Visit Comments:
Wildlife Comments: River otter 10m below transect site.

Water Quality \ Stream Flow

Water Temp (C): 6.99 **DO (mg/L):** 12.07 **DO (%):** 99.20 **Conductivity (µS/cm):** 67 **pH:** 5.81
Water Color: Clear **Turbidity (NTU):** 0.50 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	17.2	16.5
Thalweg Depth	1.15	0.74

Dominant Substrate: Sands
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble
Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Mesic Sedge-Grass Meadow Tundra	0.5	Bluejoint Meadow	0.5
5 - 10	Mesic Sedge-Grass Meadow Tundra	0.5	Bluejoint Meadow	0.5
10 - 20	Mesic Sedge-Grass Meadow Tundra	0.5	Bluejoint Meadow	0.5
20 - 30	Bluejoint Meadow	0.5	Fresh Grass Marsh	0.5

Key To Fish Sampling Methods

Estimated reach length (m): 340

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 25 **Fish Measured:** 25 **Fork Lengths (mm)** **Min:** 35 **Max:** 157 **Mean:** 57 **Median:** 96
Sampling Method (No. of fish): PEF (25)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 69 **Max:** 77 **Mean:** 73 **Median:** 73
Sampling Method (No. of fish): PEF (5)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 52 **Max:** 63 **Mean:** 55 **Median:** 57
Sampling Method (No. of fish): PEF (6)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 15 **Fork Lengths (mm)** **Min:** 23 **Max:** 49 **Mean:** 38 **Median:** 36
Sampling Method (No. of fish): PEF (15)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1110C02

Station Info

Observers: Raye Ann Neustel, Raye Ann Neustel **Date/Time:** 08/12/2011 11:10 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.16684	-147.96385	**Sample Coordinates**	62.16392	-147.95414	/	62.16684	-147.96385

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts A-2 **Legal Description (MTRS):** S024N008E15
Waterbody Name: Oshetna River
Anadromous Waters Catalog Number:
Geographic Comments: HU5

Visit Comments: Upstream electrofishing pass only, electrofisher malfunction.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 5.14 **DO (mg/L):** 12.58 **DO (%):** 99.30 **Conductivity (µS/cm):** 68 **pH:** 6.57
Water Color: Clear **Turbidity (NTU):** 0.85 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	84.9	20.9
Thalweg Depth	1.18	0.38

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Unvegetated		Crustose Lichen	0.1
5 - 10	Unvegetated		Crustose Lichen	0.1
10 - 20	Unvegetated		Crustose Lichen	0.1
20 - 30	Unvegetated		Crustose Lichen	0.1

Key To Fish Sampling Methods

Estimated reach length (m): 522

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 155 **Max:** 155 **Mean:** 155 **Median:** 155
Sampling Method (No. of fish): PEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level **Channel Depths:** graduated wading rod
Stream Velocity: Velocity Head **Channel Widths:** measuring tape
Turbidity: LaMotte 2020e turbidimeter **Electrofisher:** Smith-Root LR-24
Water Quality: YSI 556 **Transparency:**

Station FSS1110C03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/12/2011 1:21 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.49775	-148.13780	**Sample Coordinates**	62.49724	-148.13784	/	62.49775	-148.13780

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts B-3 **Legal Description (MTRS):** S028N007E22
Waterbody Name: John Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU97

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 11.62 **DO (mg/L):** 8.74 **DO (%):** 82.20 **Conductivity (µS/cm):** 56 **pH:** 6.86
Water Color: Clear **Turbidity (NTU):** 0.52 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	21.0	19.9
Thalweg Depth	1.17	1.02

Dominant Substrate: Boulder
Subdominant Substrate 1: Cobble
Subdominant Substrate 2: Sands

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Wet Sedge Meadow Tundra	0.2	Closed Low Ericaceous Shrub	0.5
5 - 10	Closed Low Ericaceous Shrub	0.5	Closed Low Ericaceous Shrub	0.5
10 - 20	Closed Low Ericaceous Shrub	0.5	Closed Low Ericaceous Shrub	0.5
20 - 30	Closed Low Ericaceous Shrub	0.5	Wet Sedge Meadow Tundra	0.2

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 36 **Fish Measured:** 13 **Fork Lengths (mm)** **Min:** 80 **Max:** 150 **Mean:** 101 **Median:** 115
Sampling Method (No. of fish): PEF (13) VOG (23)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 70 **Max:** 84 **Mean:** 75 **Median:** 77
Sampling Method (No. of fish): PEF (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 29 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 51 **Max:** 58 **Mean:** 54 **Median:** 54
Sampling Method (No. of fish): PEF (2) VOG (27)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1110C05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/12/2011 4:00 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.57510	-147.90150	**Sample Coordinates**	62.57441	-147.90155	/	62.57510	-147.90150

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S029N008E26
Waterbody Name: Gilbert Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU23

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 10.01 **DO (mg/L):** 11.31 **DO (%):** 100.10 **Conductivity (µS/cm):** 20 **pH:** 6.62
Water Color: Feric **Turbidity (NTU):** 0.76 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	11.1	9.7
Thalweg Depth	1.22	0.91

Dominant Substrate: Cobble
Subdominant Substrate 1:
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Tussock Tundra	0.2	Tussock Tundra	0.3
5 - 10	Tussock Tundra	0.2	Tussock Tundra	0.3
10 - 20	Tussock Tundra	0.2	Tussock Tundra	0.3
20 - 30	Tussock Tundra	0.2	Tussock Tundra	0.3

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 71 **Max:** 71 **Mean:** 71 **Median:** 71
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 31 **Max:** 50 **Mean:** 36 **Median:** 40
Sampling Method (No. of fish): PEF (5)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1111C03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/12/2011 9:12 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.91655	-147.90203	**Sample Coordinates**	62.91655	-147.89921	/	62.91660	-147.90254

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-2 **Legal Description (MTRS):** S033N008E26
Waterbody Name: Watana Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU18 Beaver dam complex approximately 200m upstream.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.24 **DO (mg/L):** 8.99 **DO (%):** 74.40 **Conductivity (µS/cm):** 118 **pH:** 5.89
Water Color: Clear **Turbidity (NTU):** 0.20 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	15.1	13.1
Thalweg Depth	0.55	0.38

Dominant Substrate: Gravel
Subdominant Substrate 1: Sands
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	2	Unvegetated	
5 - 10	Crustose Lichen	0.2	Unvegetated	
10 - 20	Crustose Lichen	0.2	Closed Low Willow Shrub	0.3
20 - 30	Crustose Lichen	0.2	Closed Tall Alder-Willow Shrub	1.1

Key To Fish Sampling Methods

Estimated reach length (m): 421

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 34 **Fish Measured:** 34 **Fork Lengths (mm)** **Min:** 83 **Max:** 270 **Mean:** 133 **Median:** 176
Sampling Method (No. of fish): PEF (34)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 13 **Fish Measured:** 13 **Fork Lengths (mm)** **Min:** 35 **Max:** 78 **Mean:** 47 **Median:** 56
Sampling Method (No. of fish): PEF (13)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 6 **Fish Measured:** 6 **Fork Lengths (mm)** **Min:** 73 **Max:** 108 **Mean:** 88 **Median:** 90
Sampling Method (No. of fish): PEF (6)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 54 **Max:** 68 **Mean:** 59 **Median:** 61
Sampling Method (No. of fish): PEF (5)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1111C04

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/13/2011 12:04 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.99728	-149.08085	**Sample Coordinates**	62.99728	-149.08085	/	62.99614	-149.08337

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-5 **Legal Description (MTRS):** F022S008W21
Waterbody Name:
Anadromous Waters Catalog Number: 247-41-10200-2585-3223
Geographic Comments: HU111

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 5.78 **DO (mg/L):** 11.98 **DO (%):** 95.60 **Conductivity (µS/cm):** 82 **pH:** 6.43
Water Color: Clear **Turbidity (NTU):** 0.10 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 1.5 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	22.8	15.7
Thalweg Depth	1.81	0.76

Dominant Substrate: Boulder
Subdominant Substrate 1: Gravel
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Shrub Birch-Willow Shrub	35	Fireweed	2
5 - 10	Closed Tall Shrub Birch-Willow Shrub	35	Open Tall Willow Shrub	5
10 - 20	Closed Tall Shrub Birch-Willow Shrub	35	Open Low Mixed Shrub-Sedge Tussock Tundra	0.5
20 - 30	Closed Tall Shrub Birch-Willow Shrub	35	Closed Tall Alder Shrub	4

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 28 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 85 **Max:** 167 **Mean:** 119 **Median:** 126
Sampling Method (No. of fish): PEF (9) VOG (19)
Comments:

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 76 **Fish Measured:** 37 **Fork Lengths (mm)** **Min:** 38 **Max:** 66 **Mean:** 44 **Median:** 52
Sampling Method (No. of fish): PEF (37) VOG (39)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 27 **Fish Measured:** 27 **Fork Lengths (mm)** **Min:** 33 **Max:** 81 **Mean:** 63 **Median:** 57
Sampling Method (No. of fish): PEF (27)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 0 **Fish Measured:** 0 **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): PEF (0)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1111C05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/13/2011 3:03 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.16846	-147.03502	**Sample Coordinates**	63.16788	-147.03713	/	63.16846	-147.03502

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy A-1 **Legal Description (MTRS):** F020S004E19
Waterbody Name: Pass Creek
Anadromous Waters Catalog Number:
Geographic Comments: HU6

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.51 **DO (mg/L):** 10.21 **DO (%):** 87.30 **Conductivity (µS/cm):** 118 **pH:** 6.99
Water Color: Clear **Turbidity (NTU):** 0.03 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	13.8	12.4
Thalweg Depth	0.85	0.45

Dominant Substrate: Cobble
Subdominant Substrate 1:
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Tall Willow Shrub	13	Dry Forb Herbaceous	0.3
5 - 10	Closed Tall Willow Shrub	13	Closed Tall Willow Shrub	0.3
10 - 20	Closed Tall Willow Shrub	13	Dry Forb Herbaceous	0.3
20 - 30	Closed Tall Willow Shrub	13	Closed Tall Scrub	5

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (1)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 61 **Max:** 61 **Mean:** 61 **Median:** 61
Sampling Method (No. of fish): PEF (1)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1111C09

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/13/2011 9:56 AM

	Latitude	Longitude
Sample Coordinates	62.99865	-148.86176

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Talkeetna Mts D-4 **Legal Description (MTRS):** F022S007W22
Waterbody Name: Portage Creek
Anadromous Waters Catalog Number: 247-41-10200-2585
Geographic Comments: HU59

Visit Comments: No habitat data recorded. This target stream was first visited on 08/11/2011 (Station ID 09C01)--habitat data was collected during that visit. At 11C09 on 8/13/11, we sampled fish in a short reach (~100 m) approximately 1 km downstream of 09C01 to confirm the occurrence of juvenile Chinook salmon.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): **DO (mg/L):** **DO (%):** **Conductivity (µS/cm):** **pH:**
Water Color: **Turbidity (NTU):** **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): **Entrenchment:**
Catchment Area(sq. km): **Embeddedness:**

Channel Dimensions (m): **Bank Full Width** **Wetted Thalweg Depth**
Dominant Substrate:
Subdominant Substrate 1:
Subdominant Substrate 2:

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5				
5 - 10				
10 - 20				
20 - 30				

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Chinook salmon **Life Stage:** juvenile **Life History:** Anadromous
Total Fish Count: 25 **Fish Measured:** 14 **Fork Lengths (mm)** **Min:** 38 **Max:** 48 **Mean:** 42 **Median:** 43
Sampling Method (No. of fish): PEF (14) VOG (11)
Comments:

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 10 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (10)
Comments:

Instruments

Stream Gradient: **Channel Depths:**
Stream Velocity: **Channel Widths:**
Turbidity: **Electrofisher:**
Water Quality: **Transparency:**

-continued-

Station FSS1112B01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/14/2011 9:11 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.63762	-148.02504	**Sample Coordinates**	62.63762	-148.02504	/	62.67307	-148.00257

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-3 **Legal Description (MTRS):** S029N008E06
Waterbody Name: Kosina Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU15

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 8.22 **DO (mg/L):** 11.23 **DO (%):** 95.30 **Conductivity (µS/cm):** 44 **pH:** 6.46
Water Color: Clear **Turbidity (NTU):** 10.10 **Thalweg Velocity (m/s)(ft/s):** 2.28 7.48

Stream Channel

Stream Gradient (%): 0.3 **Entrenchment:** Moderatley Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	35.0	27.0
Thalweg Depth	2.60	1.80

Dominant Substrate: Cobble
Subdominant Substrate 1: Boulder
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	0.3	Closed Low Willow Shrub	0.8
5 - 10	Closed Low Willow Shrub	0.3	Closed Low Willow Shrub	0.8
10 - 20	Closed Low Willow Shrub	0.3	Closed Low Willow Shrub	0.8
20 - 30	Closed Tall Willow Shrub	1.5	Closed Low Willow Shrub	0.8

Key To Fish Sampling Methods

Total Electrofishing Time (s): 2730

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 16 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 55 **Max:** 65 **Mean:** 60 **Median:** 60
Sampling Method (No. of fish): BEF (3) VOB (13)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (4)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 14 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 295 **Max:** 295 **Mean:** 295 **Median:** 295
Sampling Method (No. of fish): BEF (1) VOB (13)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 385 **Max:** 385 **Mean:** 385 **Median:** 385
Sampling Method (No. of fish): BEF (1)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 85 **Max:** 85 **Mean:** 85 **Median:** 85
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 35 **Max:** 35 **Mean:** 35 **Median:** 35
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1112C01

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/14/2011 8:59 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.42035	-147.33152	**Sample Coordinates**	63.42189	-147.33146	/	63.42035	-147.33152

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Healy B-1 **Legal Description (MTRS):** F017S002E22
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU33 Glacier within site of transect.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 4.55 **DO (mg/L):** 10.25 **DO (%):** 79.30 **Conductivity (µS/cm):** 117 **pH:** 5.06
Water Color: Clear **Turbidity (NTU):** 2.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	35.7	13.9
Thalweg Depth	1.03	

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Unvegetated	
5 - 10	Closed Low Willow Shrub	1	Alpine Herbs	0.1
10 - 20	Closed Low Willow Shrub	1	Alpine Herbs	0.1
20 - 30	Closed Low Willow Shrub	1	Open Low Willow Shrub	1.2

Key To Fish Sampling Methods

Estimated reach length (m): 401

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Dolly Varden **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 3 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 84 **Max:** 156 **Mean:** 120 **Median:** 120
Sampling Method (No. of fish): PEF (2) VOG (1)
Comments:

Species: Dolly Varden **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 49 **Max:** 49 **Mean:** 49 **Median:** 49
Sampling Method (No. of fish): PEF (1)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 330 **Max:** 335 **Mean:** 332 **Median:** 332
Sampling Method (No. of fish): PEF (2)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 275 **Max:** 280 **Mean:** 277 **Median:** 277
Sampling Method (No. of fish): PEF (2) VOG (6)
Comments:

-continued-

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 37 **Max:** 37 **Mean:** 37 **Median:** 37
Sampling Method (No. of fish): PEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 91 **Max:** 101 **Mean:** 96 **Median:** 96
Sampling Method (No. of fish): PEF (2)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOG (2)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1112C02

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/14/2011 9:14 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.32985	-146.70624	**Sample Coordinates**	63.33120	-146.70943	/	63.32985	-146.70624

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes B-6 **Legal Description (MTRS):** F018S005E25
Waterbody Name: West Fork of the McLaren River
Anadromous Waters Catalog Number:
Geographic Comments: HU3

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 4.20 **DO (mg/L):** 11.49 **DO (%):** 88.20 **Conductivity (µS/cm):** 111 **pH:** 5.70
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 48.00 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	14.7	10.0
Thalweg Depth	1.17	0.54

Dominant Substrate: Cobble
Subdominant Substrate 1:
Subdominant Substrate 2: Boulder

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Unvegetated		Unvegetated	
5 - 10	Unvegetated		Unvegetated	
10 - 20	Unvegetated		Closed Tall Willow Shrub	3
20 - 30	Unvegetated		Closed Tall Willow Shrub	4

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 83 **Max:** 83 **Mean:** 83 **Median:** 83
Sampling Method (No. of fish): PEF (1) VOG (1)
Comments:

Instruments

Stream Gradient: handheld abney level **Channel Depths:** graduated wading rod
Stream Velocity: Velocity Head **Channel Widths:** measuring tape
Turbidity: LaMotte 2020e turbidimeter **Electrofisher:** Smith-Root LR-24
Water Quality: YSI 556 **Transparency:**

Station FSS1112C03

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/14/2011 11:06 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.94925	-146.54038	**Sample Coordinates**	62.94959	-146.53900	/	62.94930	-146.54235

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Gulkana D-6 **Legal Description (MTRS):** C014N007W34
Waterbody Name: Maclaren River
Anadromous Waters Catalog Number:
Geographic Comments: IU34b

Visit Comments: Large river, braided. Sampled 1 braid and side-channel habitat.

Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.26 **DO (mg/L):** 10.86 **DO (%):** 90.00 **Conductivity (µS/cm):** 98 **pH:** 7.74
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 51.50 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	93.6	47.2
Thalweg Depth	1.50	0.70

Dominant Substrate: Gravel
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Wet Sedge-Herb Meadow Tundra	0.3	Mesic Sedge-Grass Meadow Tundra	0.3
5 - 10	Wet Sedge-Herb Meadow Tundra	0.3	Mesic Sedge-Grass Meadow Tundra	0.3
10 - 20	Wet Sedge-Herb Meadow Tundra	0.3	Mesic Sedge-Grass Meadow Tundra	0.3
20 - 30	Wet Sedge-Herb Meadow Tundra	0.3	Closed Low Willow Shrub	2

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: burbot **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 174 **Max:** 174 **Mean:** 174 **Median:** 174
Sampling Method (No. of fish): PEF (1) VOG (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 220 **Max:** 220 **Mean:** 220 **Median:** 220
Sampling Method (No. of fish): PEF (1) VOG (14)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 15 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 62 **Max:** 174 **Mean:** 118 **Median:** 118
Sampling Method (No. of fish): PEF (5) VOG (10)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 71 **Fish Measured:** 16 **Fork Lengths (mm)** **Min:** 52 **Max:** 63 **Mean:** 56 **Median:** 57
Sampling Method (No. of fish): PEF (16) VOG (55)
Comments:

-continued-

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 73 **Max:** 75 **Mean:** 74 **Median:** 74
Sampling Method (No. of fish): PEF (5)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 17 **Fish Measured:** 17 **Fork Lengths (mm)** **Min:** 26 **Max:** 50 **Mean:** 41 **Median:** 38
Sampling Method (No. of fish): PEF (17)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths:
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1112C04

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/14/2011 12:57 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.86964	-146.93925	**Sample Coordinates**	62.86964	-146.93925	/	62.86941	-146.94139

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Gulkana D-6 **Legal Description (MTRS):** C013N009W33
Waterbody Name:
Anadromous Waters Catalog Number:
Geographic Comments: HU149

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 6.41 **DO (mg/L):** 10.71 **DO (%):** 86.90 **Conductivity (µS/cm):** 71 **pH:** 7.22
Water Color: Clear **Turbidity (NTU):** 1.77 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.25 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Low

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	5.8	5.5
Thalweg Depth	0.51	0.31

Dominant Substrate: Gravel
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Open White Spruce Forest	16	Open White Spruce Forest	18
5 - 10	Open White Spruce Forest	16	Open White Spruce Forest	18
10 - 20	Open White Spruce Forest	16	Open White Spruce Forest	18
20 - 30	Open White Spruce Forest	16	Open White Spruce Forest	18

Key To Fish Sampling Methods

(PEF) Portable Electrofisher (VOG) Visual Observation, Ground

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 2 **Fish Measured:** 2 **Fork Lengths (mm)** **Min:** 112 **Max:** 118 **Mean:** 115 **Median:** 115
Sampling Method (No. of fish): PEF (2)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 69 **Max:** 74 **Mean:** 71 **Median:** 71
Sampling Method (No. of fish): PEF (4)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 61 **Max:** 68 **Mean:** 63 **Median:** 64
Sampling Method (No. of fish): PEF (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 39 **Max:** 50 **Mean:** 43 **Median:** 44
Sampling Method (No. of fish): PEF (4)
Comments:

-continued-

Instruments

Stream Gradient: handheld abney level

Stream Velocity: Velocity Head

Turbidity: LaMotte 2020e turbidimeter

Water Quality: YSI 556

Channel Depths: graduated wading rod

Channel Widths: measuring tape

Electrofisher: Smith-Root LR-24

Transparency:

Station FSS1112C05

Station Info

Observers: Raye Ann Neustel, Daniel Reed **Date/Time:** 08/14/2011 7:18 PM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	63.39439	-146.87052	**Sample Coordinates**	63.39560	-146.86753	/	63.39439	-146.87052

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Mt Hayes B-6 **Legal Description (MTRS):** F017S005E31
Waterbody Name: East Fork Susitna River
Anadromous Waters Catalog Number:
Geographic Comments: HU1 Within site of Susitna glacier.

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 2.75 **DO (mg/L):** 12.15 **DO (%):** 89.80 **Conductivity (µS/cm):** 43 **pH:** 7.19
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 92.10 **Thalweg Velocity (m/s)(ft/s):**

Stream Channel

Stream Gradient (%): 0.5 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Negligible

Channel Dimensions (m):	Bank Full	Wetted
Width	38.0	35.0
Thalweg Depth	0.70	0.40

Dominant Substrate: Boulder
Subdominant Substrate 1:
Subdominant Substrate 2: Cobble

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Unvegetated		Closed Tall Willow Shrub	3.4
5 - 10	Open Low Willow Shrub	1.3	Closed Tall Willow Shrub	3.4
10 - 20	Open Low Willow Shrub	1.3	Closed Tall Willow Shrub	3.4
20 - 30	Open Low Willow Shrub	1.3	Closed Tall Willow Shrub	3.4

Key To Fish Sampling Methods

Estimated reach length (m): 391

(PEF) Portable Electrofisher
(VOG) Visual Observation, Ground

Fish Observations

No Fish Found

Instruments

Stream Gradient: handheld abney level
Stream Velocity: Velocity Head
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: measuring tape
Electrofisher: Smith-Root LR-24
Transparency:

Station FSS1113A01

Station Info

Observers: Joe Buckwalter, Joe Giefer **Date/Time:** 08/15/2011 9:52 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.88313	-146.95309	**Sample Coordinates**	62.88313	-146.95309	/	62.84805	-147.03869

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:** WGS84
USGS Quadrangle: Gulkana D-6 **Legal Description (MTRS):** C013N009W28
Waterbody Name: Maclaren River
Anadromous Waters Catalog Number:
Geographic Comments:
Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 7.46 **DO (mg/L):** 13.11 **DO (%):** 109.30 **Conductivity (µS/cm):** 101 **pH:** 7.25
Water Color: Glacial, High Turbidit **Turbidity (NTU):** 41.00 **Thalweg Velocity (m/s)(ft/s):** 1.67 5.48

Stream Channel

Stream Gradient (%): 0.6 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	62.0	55.0
Thalweg Depth	2.42	1.32

Dominant Substrate: Cobble
Subdominant Substrate 1: Silt/Sand
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	1	Closed White Spruce Forest	14
5 - 10	Open Spruce-Balsam Poplar	13	Closed White Spruce Forest	14
10 - 20	Open Spruce-Balsam Poplar	13	Closed White Spruce Forest	14
20 - 30	Open Spruce-Balsam Poplar	13	Closed White Spruce Forest	14

Key To Fish Sampling Methods

Total Electrofishing Time (s): 4753

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 157 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 51 **Max:** 68 **Mean:** 58 **Median:** 59
Sampling Method (No. of fish): BEF (16) VOB (141)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (3)
Comments: Event AA possibly longnose sucker.

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 60 **Fish Measured:** 24 **Fork Lengths (mm)** **Min:** 216 **Max:** 312 **Mean:** 255 **Median:** 264
Sampling Method (No. of fish): BEF (35) VOB (25)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 205 **Max:** 314 **Mean:** 274 **Median:** 259
Sampling Method (No. of fish): BEF (8) VOB (1)
Comments:

-continued-

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 22 **Fish Measured:** 16 **Fork Lengths (mm)** **Min:** 257 **Max:** 345 **Mean:** 296 **Median:** 301
Sampling Method (No. of fish): BEF (16) VOB (6)
Comments:

Species: salmonid-unspecified **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 20 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (20)
Comments: Event BB possibly arctic grayling or round whitefish.

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 380 **Max:** 380 **Mean:** 380 **Median:** 380
Sampling Method (No. of fish): BEF (1) VOB (3)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 33 **Fish Measured:** 13 **Fork Lengths (mm)** **Min:** 33 **Max:** 50 **Mean:** 41 **Median:** 41
Sampling Method (No. of fish): BEF (13) VOB (20)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 110 **Max:** 139 **Mean:** 124 **Median:** 124
Sampling Method (No. of fish): BEF (3) VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 3 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): BEF (2) VOB (1)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 8 **Fish Measured:** 8 **Fork Lengths (mm)** **Min:** 92 **Max:** 189 **Mean:** 121 **Median:** 140
Sampling Method (No. of fish): BEF (8)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile/adult **Life History:** Unknown
Total Fish Count: 17 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (17)
Comments:

Species: general fish observation, no s **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (7)
Comments:

Species: humpback whitefish **Life Stage:** juvenile **Life History:** Unknown
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 66 **Max:** 66 **Mean:** 66 **Median:** 66
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 69 **Max:** 86 **Mean:** 76 **Median:** 77
Sampling Method (No. of fish): BEF (9)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: handheld sonar depth finder
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1113B01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/15/2011 9:11 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.65724	-147.03872	**Sample Coordinates**	62.65724	-147.03872	/	62.66999	-147.10063

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-1 **Legal Description (MTRS):** C010N010W11
Waterbody Name: Tyone River
Anadromous Waters Catalog Number:
Geographic Comments: IU12

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.84 **DO (mg/L):** 10.90 **DO (%):** 96.30 **Conductivity (µS/cm):** 25.6 **pH:** 7.68
Water Color: Humic **Turbidity (NTU):** 6.46 **Thalweg Velocity (m/s)(ft/s):** 1.28 4.20

Stream Channel

Stream Gradient (%): 0.3 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** Moderate

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	50.0	26.5
Thalweg Depth	1.80	0.98

Dominant Substrate: Gravel
Subdominant Substrate 1: Cobble
Subdominant Substrate 2: Silt/Sand

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Black Spruce-White Spruce Forest	22	Closed Tall Alder-Willow Shrub	4
5 - 10	Closed Black Spruce-White Spruce Forest	22	Closed Black Spruce-White Spruce Forest	20
10 - 20	Closed Black Spruce-White Spruce Forest	22	Closed Black Spruce-White Spruce Forest	20
20 - 30	Closed Black Spruce-White Spruce Forest	22	Closed Black Spruce-White Spruce Forest	20

Key To Fish Sampling Methods

Total Electrofishing Time (s): 4500

(BEF) Boat-Mounted Electrofisher (VOB) Visual Observation, Boat

Fish Observations

Species: longnose sucker **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 236 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 290 **Max:** 345 **Mean:** 325 **Median:** 317
Sampling Method (No. of fish): BEF (4) VOB (232)
Comments:

Species: slimy sculpin **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 203 **Fish Measured:** 11 **Fork Lengths (mm)** **Min:** 55 **Max:** 68 **Mean:** 60 **Median:** 61
Sampling Method (No. of fish): BEF (11) VOB (192)
Comments:

Species: Arctic grayling **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 44 **Fish Measured:** 7 **Fork Lengths (mm)** **Min:** 64 **Max:** 150 **Mean:** 82 **Median:** 107
Sampling Method (No. of fish): BEF (7) VOB (37)
Comments:

Species: burbot **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (1)
Comments:

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Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 7 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (7)
Comments:

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 11 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 250 **Max:** 295 **Mean:** 273 **Median:** 272
Sampling Method (No. of fish): BEF (3) VOB (8)
Comments:

Species: longnose sucker **Life Stage:** adult **Life History:** Resident
Total Fish Count: 5 **Fish Measured:** 5 **Fork Lengths (mm)** **Min:** 349 **Max:** 410 **Mean:** 385 **Median:** 379
Sampling Method (No. of fish): BEF (5)
Comments:

Species: slimy sculpin **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 45 **Max:** 45 **Mean:** 45 **Median:** 45
Sampling Method (No. of fish): BEF (1)
Comments:

Species: round whitefish **Life Stage:** juvenile **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 177 **Max:** 177 **Mean:** 177 **Median:** 177
Sampling Method (No. of fish): BEF (1)
Comments:

Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 75 **Max:** 75 **Mean:** 75 **Median:** 75
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency:

Station FSS1114B01

Station Info

Observers: Jonathan Kirsch, Stormy Haught **Date/Time:** 08/16/2011 10:28 AM

	Latitude	Longitude		Latitude	Longitude	/	Latitude	Longitude
Station Coordinates	62.66908	-147.86698	**Sample Coordinates**	62.66908	-147.86698	/	62.66764	-147.90938

Elevation NED (m)(ft):
Coordinate Determination Method: Non-Differential GPS Field Measurement **Datum:**
USGS Quadrangle: Talkeetna Mts C-2 **Legal Description (MTRS):** S030N008E24
Waterbody Name: Gilbert Creek
Anadromous Waters Catalog Number:
Geographic Comments: IU28

Visit Comments:
Wildlife Comments:

Water Quality \ Stream Flow

Water Temp (C): 9.86 **DO (mg/L):** 11.50 **DO (%):** 98.00 **Conductivity (µS/cm):** 64 **pH:** 6.94
Water Color: Clear **Turbidity (NTU):** 6.80 **Thalweg Velocity (m/s)(ft/s):** 0.28 0.92

Stream Channel

Stream Gradient (%): 0.1 **Entrenchment:** Slightly Entrenched
Catchment Area(sq. km): **Embeddedness:** High

Channel Dimensions (m):	**Bank Full**	**Wetted**
Width	22.0	20.0
Thalweg Depth	2.50	1.60

Dominant Substrate: Silt/Sand
Subdominant Substrate 1: Cobble
Subdominant Substrate 2: Gravel

Rosgen Class:

Riparian Vegetation Communities (Viereck et al. 1992)

Dist. from Bank (m)	Left Bank Vegetation Type	Canopy Height(m)	Right Bank Vegetation Type	Canopy Height(m)
0 - 5	Closed Low Willow Shrub	0.9	Closed Low Willow Shrub	0.8
5 - 10	Closed White Spruce-Paper Birch-Balsam Poplar (Black Cottonwood Forest)	0.9	Closed Low Willow Shrub	0.8
10 - 20	Closed Low Willow Shrub	0.9	Closed Low Willow Shrub	0.8
20 - 30	Closed Low Willow Shrub	0.9	Closed Low Willow Shrub	0.8

Key To Fish Sampling Methods

Total Electrofishing Time (s): 1465

(BEF) Boat-Mounted Electrofisher
(VOB) Visual Observation, Boat

Fish Observations

Species: Arctic grayling **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 223 **Fish Measured:** 3 **Fork Lengths (mm)** **Min:** 220 **Max:** 325 **Mean:** 265 **Median:** 272
Sampling Method (No. of fish): BEF (3) VOB (220)
Comments:

Species: round whitefish **Life Stage:** juvenile/adult **Life History:** Resident
Total Fish Count: 33 **Fish Measured:** **Fork Lengths (mm)** **Min:** **Max:** **Mean:** **Median:**
Sampling Method (No. of fish): VOB (33)
Comments:

Species: Arctic grayling **Life Stage:** adult **Life History:** Resident
Total Fish Count: 9 **Fish Measured:** 9 **Fork Lengths (mm)** **Min:** 350 **Max:** 425 **Mean:** 388 **Median:** 387
Sampling Method (No. of fish): BEF (9)
Comments:

Species: round whitefish **Life Stage:** adult **Life History:** Resident
Total Fish Count: 4 **Fish Measured:** 4 **Fork Lengths (mm)** **Min:** 335 **Max:** 450 **Mean:** 413 **Median:** 392
Sampling Method (No. of fish): BEF (4)
Comments:

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Species: slimy sculpin **Life Stage:** adult **Life History:** Resident
Total Fish Count: 1 **Fish Measured:** 1 **Fork Lengths (mm)** **Min:** 75 **Max:** 75 **Mean:** 75 **Median:** 75
Sampling Method (No. of fish): BEF (1)
Comments:

Instruments

Stream Gradient: handheld abney level
Stream Velocity: GPS Float
Turbidity: LaMotte 2020e turbidimeter
Water Quality: YSI 556
Channel Depths: graduated wading rod
Channel Widths: handheld laser rangefinder
Electrofisher: Smith-Root GPP 2.5
Transparency: