Susitna-Watana Hydroelectric Project (FERC No. 14241)

Appendix 3 Summary of 1980s Instream Flow Habitat Modeling Sites

Prepared for

Alaska Energy Authority

SUSITNA-WATANA HYDRO

Prepared by

R2 Resource Consultants, Inc.

March 2013

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LIST OF ACRONYMS AND SCIENTIFIC LABELS

Abbreviation	n Definition					
AEA	Alaska Energy Authority					
APA	Alaska Power Authority					
IFIM	Instream Flow Incremental Methodology					
IFG	Instream Flow Group					
DIHAB	Direct Input Habitat model					
RJHAB	Resident Juvenile Habitat model					
RM	River Mile; River mile designations are those used in the 1980s studies and designated within R&M (1981).					

PREFACE TO THIS APPENDIX

This Appendix (Appendix 3) contains summary information from the 54 study sites that were established and used as part of the Alaska Power Authority (APA) instream flow studies conducted during the 1980s licensing of the Susitna Hydroelectric Project (FERC No. 7114)). This appendix provides supplemental information to the Technical Memorandum – Review of Habitat Modeling Methods Applicable for the Susitna River, found in Section 7 of the 2012 Instream Flow Planning Study Compendium. Organizationally, the Appendix is organized into 46 sections that with the exception of Section 1, which lists the instream flow modeling sites, consist of individual site descriptions that include a schematic overlay of the site and summary site information on salmon abundance.

1. INSTREAM FLOW MODELING SITES

1.1. Site List

Table 1.1-1. Instream flow sites and habitat modeling methods used during the 1980s in the Susitna River Middle andLower Segments (Marshall et al. 1984; Sandone et al. 1984; Vincent-Lang et al. 1984; Hilliard et al. 1985; Suchanek et al.1985).

River Mile ¹	Site Name	Susitna Segment	Habitat Type	Site Type ²	No. of Transects	Year(s) Measured
35.2	Hooligan Side Channel	Lower	Side Channel	RJHAB	5	1984
36.2	Eagles Nest Side Channel	Lower	Side Channel	RJHAB	4	1984
36.3	Kroto Slough Head	Lower	Side Slough	RJHAB	5	1984
39.0	Rolly Creek Mouth	Lower	Tributary Mouth	RJHAB	6	1984
42.9	Bear Bait Side Channel	Lower	Side Channel	RJHAB	5	1984
44.4	Last Chance Creek Side Channel	Lower	Side Channel	RJHAB	6	1984
59.5	Rustic Wilderness Side Channel	Lower	Side Channel	RJHAB	5	1984
63.0	Caswell Creek	Lower	Tributary Mouth	RJHAB	8	1984
63.2	Island Side Channel	Lower	Side Channel	IFG-4, RJHAB	9	1984
74.4	Mainstem West Bank	Lower	Side Slough	IFG-4	7	1984
74.8	Goose 2 Side Channel	Lower	Side Channel	RJHAB	6	1984
75.3	Circular Side Channel	Lower	Side Channel	IFG-4	6	1984
79.8	Sauna side channel	Lower	Side Channel	IFG-4	4	1984
84.5	Sucker side channel	Lower	Side Channel	RJHAB	6	1984
86.3	Beaver Dam side channel	Lower	Side Channel	RJHAB	5	1984

¹ River mile designations are those used in the 1980s studies and designated within R&M (1981).

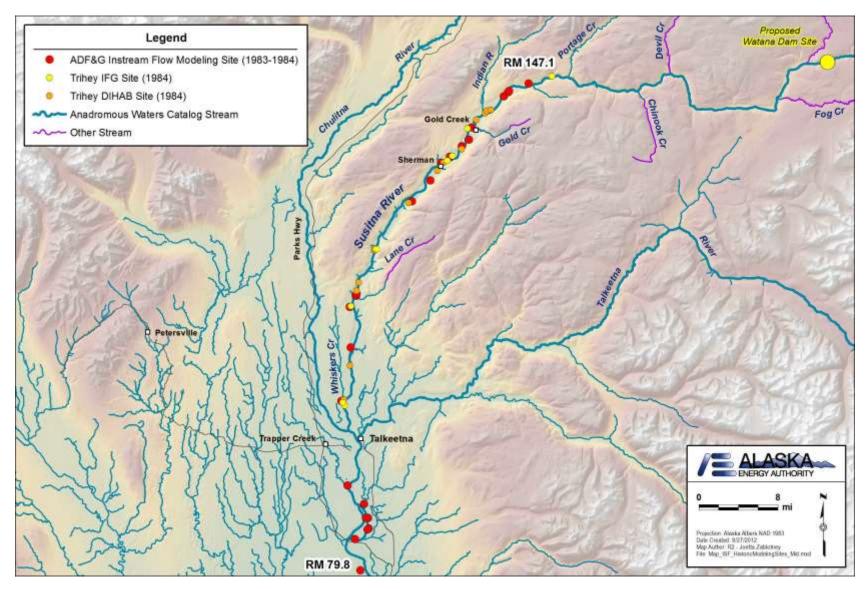
² RJHAB = Resident Juvenile Habitat Model; IFG-4 = Instream Flow Group Model 4; IFG-2 = Instream Flow Goup Model 2; DIHAB = Direct Input Habitat

River Mile ¹	Site Name	Susitna Site Name Segment Habitat Type Site Type ²		Site Type ²	No. of Transects	Year(s) Measured
86.3	Beaver Dam Slough	Lower	Side Slough	RJHAB	5	1984
86.9	Sunset side channel	Lower	Side Channel	IFG-4	7	1984
87.0	Sunrise side channel	Lower	Side Channel	RJHAB	7	1984
88.4	Birch Slough	Lower	Side Slough	RJHAB	8	1984
91.6	Trapper Creek side channel	Lower	Side Channel	IFG-4, RJHAB	5	1984
101.2	101.2 R, Whiskers East	Middle	Side Channel	IFG-4	9	1984
101.4	Whiskers Slough	Middle	Side Slough	RJHAB	8	1983
101.5	101.5 L, Whiskers West	Middle	Side Channel	IFG-2	5	1984
101.7	101.7 L	Middle	Side Channel	DIHAB	4	1984
105.8	105.8 L	Middle	Mainstem	DIHAB	4	1984
107.6	Slough 5	Middle	Upland Slough	RJHAB	9	1983
112.5	Slough 6A	Middle	Upland Slough	RJHAB	8	1983
112.6	112.6 L, Side Channel 6A	Middle	Side Channel	IFG-2	9	1984
113.6	Lane Creek mouth	Middle	Tributary Mouth	Habitat Mapping	7	1983
113.7	Slough 8	Middle	Side Slough	RJHAB	5	1983
114.1	114.1 R	Middle	Side Channel	DIHAB	3	1984
115.0	115.0 R	Middle	Side Channel	DIHAB	4	1984
118.9	118.9 L	Middle	Mainstem	DIHAB	3	1984
119.1	119.1 L	Middle	Mainstem	DIHAB	3	1984
119.2	119.2 R, Little Rock side channel	Middle	Side Channel	IFG-2	5	1984
125.2	125.2 R	Middle	Side Channel	DIHAB	2	1984
125.3	Skull Creek	Middle	Side Slough	IFG-4	11	1983
128.8	Slough 9	Middle	Side Slough	IFG-4	10	1983
130.2	130.2 R	Middle	Side Channel	DIHAB	3	1984
131.1	4th of July Creek mouth	Middle	Tributary Mouth	Habitat Mapping	8	1983
131.3	131.3 L	Middle	Side Channel	DIHAB	4	1984
131.7	131.7 L	Middle	Side Channel	IFG-4	7	1984
132.6	132.6 L, Side channel 10A	Middle	Side Channel	IFG-4, RJHAB	9	1983-84
133.8	133.8 R	Middle	Mainstem	DIHAB	3	1984
133.8	Side channel 10	Middle	Side Channel	IFG-4	4	1983
134.9	Lower Side channel 11	Middle	Side Channel	IFG-2	6	1983
136.0	136.0 L, Slough 14	Middle	Side Channel	IFG-4	6	1984
136.3	Upper Side channel 11	Middle	Side Channel	IFG-4	4	1983
137.5	137.5 R	Middle	Side Channel	DIHAB	3	1984
138.7	138.7 L	Middle	Mainstem	DIHAB	3	1984
139.0	139.0 L	Middle	Mainstem	DIHAB	4	1984
139.4	139.4 L	Middle	Side Channel	DIHAB	3	1984
141.2	Side channel 21	Middle	Side Channel	IFG-4	5	1983

Site Name	Susitna Segment	Habitat Type	Site Type ²	No. of Transects	Year(s) Measured
Slough 21	Middle	Side Slough	IFG-4	5	1983
Slough 22	Middle	Side Slough	RJHAB	8	1983
147.1 L, Fat Canoe SC	Middle	Side Channel	IFG-2	6	1984
	Slough 21 Slough 22	Site NameSegmentSlough 21MiddleSlough 22Middle	Site NameSegmentHabitat TypeSlough 21MiddleSide SloughSlough 22MiddleSide Slough	Site NameSegmentHabitat TypeSite Type2Slough 21MiddleSide SloughIFG-4Slough 22MiddleSide SloughRJHAB	Site NameSegmentHabitat TypeSite Type2TransectsSlough 21MiddleSide SloughIFG-45Slough 22MiddleSide SloughRJHAB8

Notes:

1.2. Site Maps



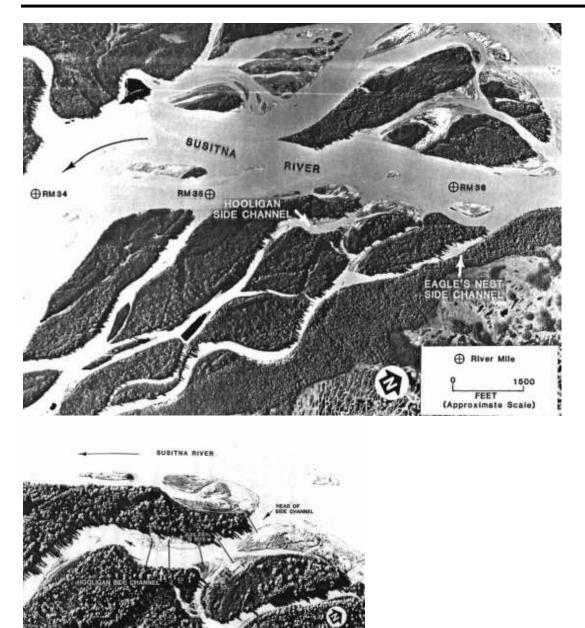
2. HOOLIGAN SIDE CHANNEL RM 35.2

Meso-Habitat Type: Side Channel

Location: Located near the left bank of Susitna River (looking downstream) at approximate River Mile (RM) 35.2.

1980s Studies Completed at Site:

• RJHAB model, 5 transects



Quane et al. 1985 (APA 2736)

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Kroto Slough Head			0			Ø			-
Eagles Neet S.C.	-	-	-	-	-	-		O	
Hooligan S.C.			Ø				Ø	=	

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Site	I	ц	I	п	1	I	I	I	I	
Last Chance S.C.	-	-					-	IC		
Beer Bait S.C.	-							1-	-	
Rolly Creek Mouth										
Kroto Slough Head						D			-	
Eogles Nest S.C.	-		-	-	-	=				
Hooligan S.C.								-	TO	

CHUM SALMON

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Last Chance S.C.	-	-	12				-		-
Bear Bail S.C.	-	Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

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Bear Bait S.C.									-
Rolly Creek Mouth	2	2							
Kroto Slough Head	Ø						Ø	-	-
Eagles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.								-	



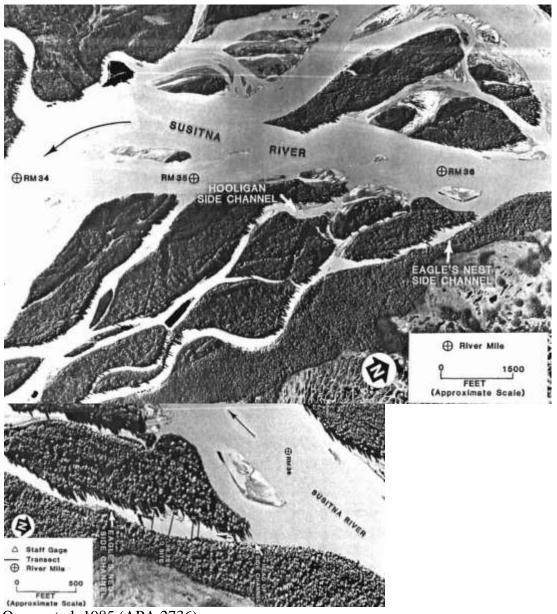
3. EAGLES NEST SIDE CHANNEL RM 36.2

Meso-Habitat Type: Side Channel

Location: Located near the left bank of Susitna River (looking downstream) at approximate RM 36.2.

1980s Studies Completed at Site:

• RJHAB model, 4 transects



Quane et al. 1985 (APA 2736)

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Kroto Slough Head			0			Ø			-
Eagles Neet S.C.	-	-	-	-	-	-		O	
Hooligan S.C.			Ø				Ø	=	

COHO SALMON

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Beer Bait S.C.	-							1-	-
Rolly Creek Mouth									
Krote Slough Head	10					D			-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.							D	-	D

CHUM SALMON

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Bear Bail S.C.	-	Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

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Last Chance S.C.	1-1	-1					-		1-
Bear Bait S.C.									-
Rolly Creek Mouth	2	2							
Kroto Slough Head	Ø						Ø	-	-
Eagles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.								-	



4. KROTO SLOUGH HEAD RM 36.3

Meso-Habitat Type: Side Slough

Location: Located on the right bank of Susitna River (looking downstream) at approximate RM 36.3.

1980s Studies Completed at Site:

• RJHAB model, 5 transects



CHINOOK SALMON

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Rolly Creek Mouth	Ø	Ø							0	
Kroto Slough Head						Ø				
Eagles Neet S.C.	-	-	-	=	-	-		Ō		
Hooligan S.C.			D				Ø	-		

COHO SALMON

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CHUM SALMON

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Bear Bait S.C.	-	Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

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Last Chance S.C.	1-1								1-	
Bear Bait S.C.	-								-	
Rolly Creek Mouth	2									
Kroto Slough Head	Ø						Ø	-	-	
Eagles Nest S.C.	-	-	-	-	-	-				
Hooligan S.C.								-		

MEAN CATCH P RELATIVE ABUN	ER CELL
0.00 0.01 - 0.25 No sample	0.25-2.50

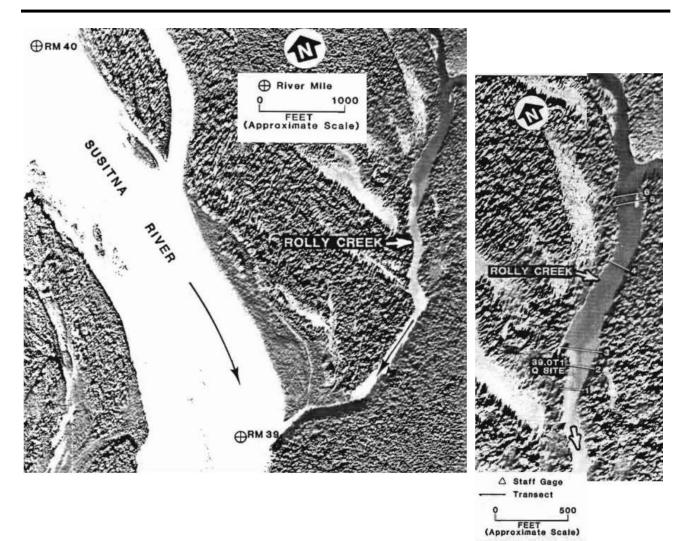
5. ROLLY CREEK MOUTH RM 39.0

Meso-Habitat Type: Tributary Mouth

Location: Located on the left bank of Susitna River (looking downstream) at the confluence of Rolly Creek and the Susitna River at approximate RM 39.0.

1980s Studies Completed at Site:

• RJHAB model, 6 transects



Quane et al. 1985 (APA 2736)

CHINOOK SALMON

	J	JUN		JUL		AUG		SEP	
Site	I	п	I	п	1	Π	I	π	I
Last Chanze S.C.	-	-					-		
Buar Bait S.C.			Ø		0	D		1=	1-
Rolly Creek Mouth	Ø	Ø	0	Ø					0
Kroto Slough Head			12			0			-
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Hooligan S.C.			D	2			Ø	-	

COHO SALMON

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Rolly Creek Mouth				D		Ø	ā		
Krote Slough Head	10				D				
Eagles Nest S.C.	-		-	-	-	=			
Hooligan S.C.							D	-	In

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Site	I	п	I	Π	1	π	I	π	I
Last Chance S.C.	-	-	12				-		-
Bear Bait S.C.	-	Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

	JL	IN		NL		UG	8	EP	OCT
Site	I	п	I	Π	1	Π	1	Π	1
Last Chance S.C.	1-1						-		1-
Bear Bait S.C.	-								-
Rolly Creek Mouth	2	Ø							
Kroto Slough Head	Ø						Ø	-	-
Eagles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.								-	

MEAN CATCH P RELATIVE ABUN	ER CELL
0.00 0.01 - 0.25 No sample	0.25-2.50

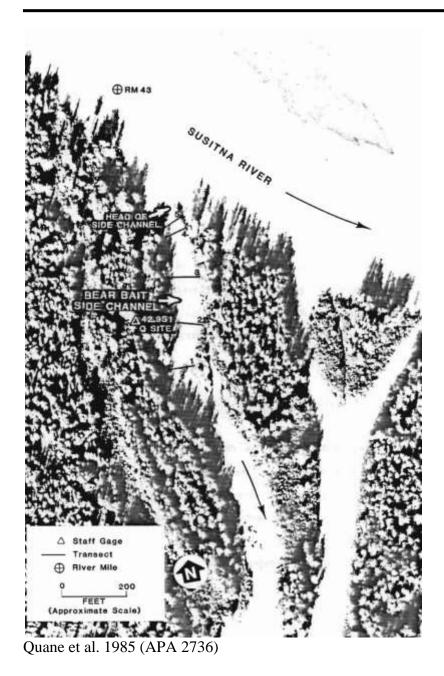
6. BEAR BAIT SIDE CHANNEL RM 42.9

Meso-Habitat Type: Side Channel

Location: Located on the right bank of Susitna River (looking downstream) at approximate RM 43.

1980s Studies Completed at Site:

• RJHAB model, 5 transects



CHINOOK SALMON

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Site	I	п	I	п	1	Π	I	π	I
Last Chanze S.C.	-	-					-		
Buar Bait S.C.			Ø		0	TO		1=	1-
Rolly Creek Mouth	Ø	Ø	0	Ø					0
Kroto Slough Head			12			0			-
Eagles Neet S.C.	-	-	-	=	-	-		Ō	
Hooligan S.C.			D	2			Ø	-	

COHO SALMON

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Last Chance S.C.	-	-					-	IC	
Beer Bait S.C.	-							1-	1-
Rolly Creek Mouth		D		Г		Ø	ā		
Krote Slough Head	10				O				1-
Eogles Nest S.C.	-		-	-	-	=	n		
Hooligan S.C.							D	-	TO

CHUM SALMON

anders services a contraction of the services.	J	UN	J	UL		UG	8	EP	OCT
Site	I	п	I	Π	1	π	I	π	I
Last Chance S.C.	-	-	P				-		-
Bear Bait S.C.	-	Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

	J	UN		NL		NG		EP	001
Site	I	Ц	I	Π	1	Π	1	Π	1
Last Chance S.C.	1-1						1-		1-
Bear Bait S.C.	1							-	-
Rolly Creek Mouth	Ø	12							
Kroto Slough Head	Ø						Ø	-	-
Eagles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.								-	

MEAN CATCH P RELATIVE ABUN	ER CELL
0.00 0.01 - 0.25 No sample	0.25-2.50

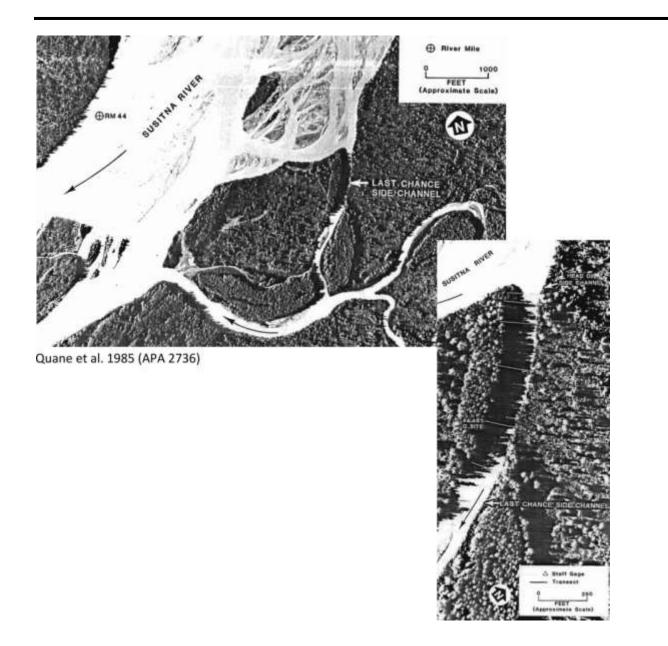
7. LAST CHANCE CREEK SIDE CHANNEL RM 44.4

Meso-Habitat Type: Side Channel

Location: Located on the left bank of Susitna River (looking downstream) at approximate RM 87 (1981 River Mile marker), downstream of the Birch Creek Slough outlet.

1980s Studies Completed at Site:

• RJHAB model, 6 transects



CH	INO	OK	SAL	MON

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Buer Bait S.C.			Ø		0	Ο	D	1=	1-
Rolly Cresk Mouth	Ø	Ø	0	Ø					0
Kroto Slough Head			12			Ø			-
Eagles Neet S.C.	-	-	-	=	-	-		D	
Hooligan S.C.			Ø				Ø	=	

COHO SALMON

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Beer Bait S.C.	-							1=	-
Rolly Creek Mouth		D		Г		Ø	ā		
Krote Slough Head	10					D			-
Eogles Nest S.C.	-	-	-	-	-	=			
Hooligan S.C.							n	-	In

CHUM SALMON

		UN	J	UL		DQ	8	EP	OCT
Site	I	п	I	π	1	π	I	π	I
Last Chance S.C.	-	-	12				-		
Bear Bait S.C.		Ø	Ø					-	-
Relly Creek Mouth									
Kroto Slough Head	Ø							-	-
Eogles Nest S.C.	-	-	-	-	-	-			
Hooligen S.C.				Ø				-	

	J	JN		NL		UG	8	EP	OCT
Site	I	п	I	Π	1	Π	1	Π	1
Last Chance S.C.	1-1	-					-		1-
Bear Bait S.C.	-							-	-
Rolly Creek Mouth	Ø	2							
Kroto Slough Head	Ø						Ø	-	-
Eagles Nest S.C.	-	-	-	-	-	-			
Hooligan S.C.								-	





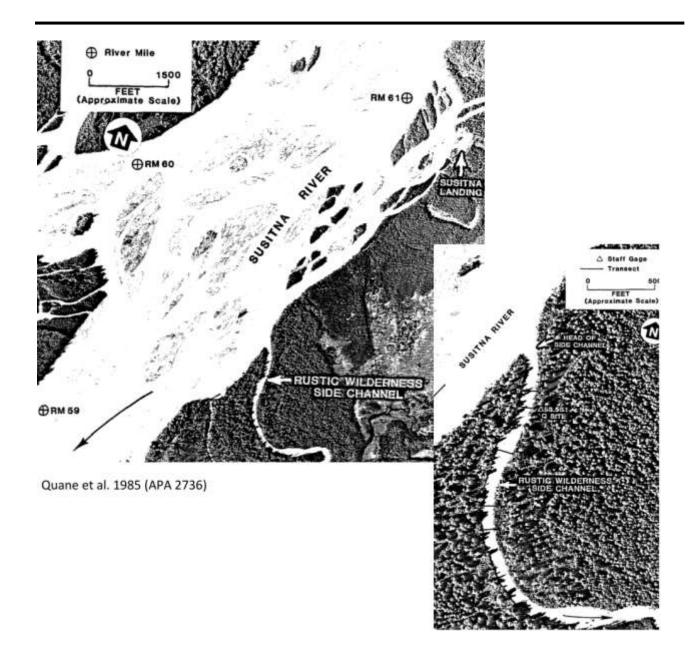
8. RUSTIC WILDERNESS SIDE CHANNEL RM 59.5

Meso-Habitat Type: Side Channel

Location: Located on the left bank of Susitna River (looking downstream) at approximate RM 60, and about 1 RM downstream of the Kashwitn Creek confluence at RM 61.0.

1980s Studies Completed at Site:

• RJHAB model, 5 transects



CHINOOK SALMON

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Mainstein Went Back	-	-			D				1-
Island S.C.	10								-
Caswell Croek Mouth	閬	-					Z		
Rustia Wilderness S.C.						Ø			-

COHO SALMON

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Goose 2 . S.C.		ÍŌ		Ø				=	-
Moinstem West Bank	-	-	-					n	-
island S.C.	Ø								
Caswell Creek Mouth		-							
Rustic Wilderness S.C.						Ø			-

CHUM SALMON

	1	UN	3	UL		JG	86	P	OCT
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Goose 2 S.C.				Ø				-	-
Mainstem West Bank	1-	-	-						-
Island S.C.				Ø	Ø				-
Corwell Creek Mouth		-							
Rustic Wilderness S.C.			Ø						-

Site	ĭ	I	I	JUL	í	UG	I	I	I
Circular S.C.				D		Ø		-	
Goose 2 S.C.									-
Mainetem West Bank	-	-	-						-
futand S.C.	Ø								-
Caswell Creek Mouth		1					Ø		
Rustic Wilderness S.C.									-



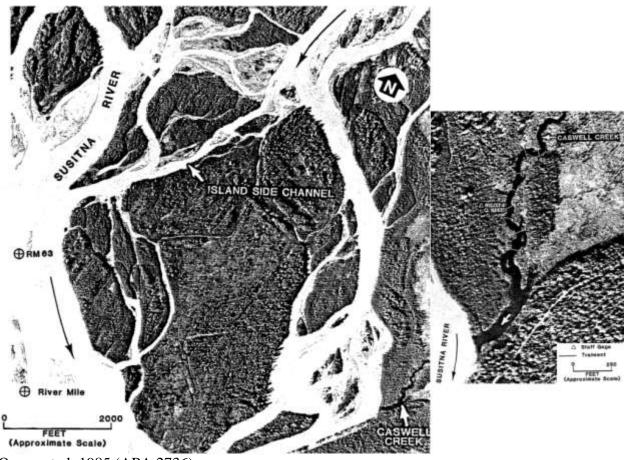
9. CASWELL CREEK MOUTH RM 63.0

Meso-Habitat Type: Tributary Mouth

Location: Located on the left bank of Susitna River (looking downstream) at approximate RM 63 and about 2 RM upstream of the Kashwitna Creek confluence at RM 61.0.

1980s Studies Completed at Site:

• RJHAB 8 transects



Quane et al. 1985 (APA 2736)

CHINOOK SALMON

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Rustia Wilderness S.C.		2			1	0			1=

COHO SALMON

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island S.C.	Ø				D	İΟ			
Coswell Creek Mouth		-							
Rustic Wilderness S.C.						Ø			-

CHUM SALMON

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Circular S.C.			Ø	Ø				-	-
Goose 2 S.C.				Ø				-	-
Mainetem West Bank	1=	-	=						-
Island S.C.					Ø				-
Caewell Creek Mouth		-							
Rustic Wildorness S.C.			0						-

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Goose 2 8.C.								-	-
Mainetem Weet Bank	-	-	-			Ø			
fuland S.C.									-
Coawell Creek Mouth		-					Ø		
Rustic Wilderness S.C.									-

MEAN CATCH P	ER CELL
0.00 0.01 - 0.25 No sample	0.25-2.50

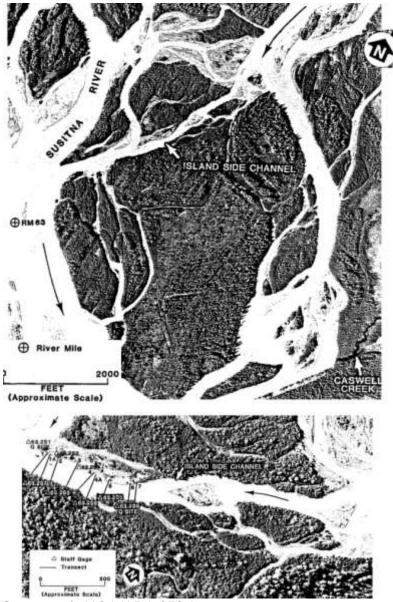
10. ISLAND SIDE CHANNEL RM 63.2

Meso-Habitat Type: Side Channel

Location: Located mid-channel of the Susitna River at approximate RM 63, opposite of the Caswell Creek confluence at RM 63.0.

1980s Studies Completed at Site:

- IFG-4 model, 9 transects
- RJHAB model, 9 transects



Quane et al. 1985 (APA 2736)

CHINOOK SALMON

	JUN		3	JUL		AUG		EP	OCT
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Circular S.C.	12		0					-	-
Goose 2 S.C.				P				-	1-
Mainstein Went Back		-	-			Ø			1-
Island S.C.	12								-
Caswell Croek Mouth	間	-					Z	Ø	
Rustia Wilderness S.C.						0			-

COHO SALMON

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Moinstem West Bank	-	-	-		Inic	
island S.C.	Ø	D			ICIC	1001-1
Caswell Creek Mouth		=				
Rustic Wilderness S.C.						

CHUM SALMON

	JUN		J	JUL		AUG		EP	OCT
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Circular S.C.			0					-	-
Goose 2 5.C.				Ø				-	-
Mainetem Weet Bank	1=	-	=						-
Island S.C.				Ø	Ø				-
Carwell Creek Mouth		-							
Rustic Wilderness S.C.			Ø					D	-

SOCKEYE SALMON

Site	i	UN	I	JUL.	í	NG I	I	I	OCT I
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Goose 2 8.C.	Ø							-	1
Mainstem West Bank	-	-	-						-
futand S.C.	Ø								-
Caswell Creek Mouth		-					Ø		
Rustic Wilderness S.C.									-

MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.01-0.25 No sample

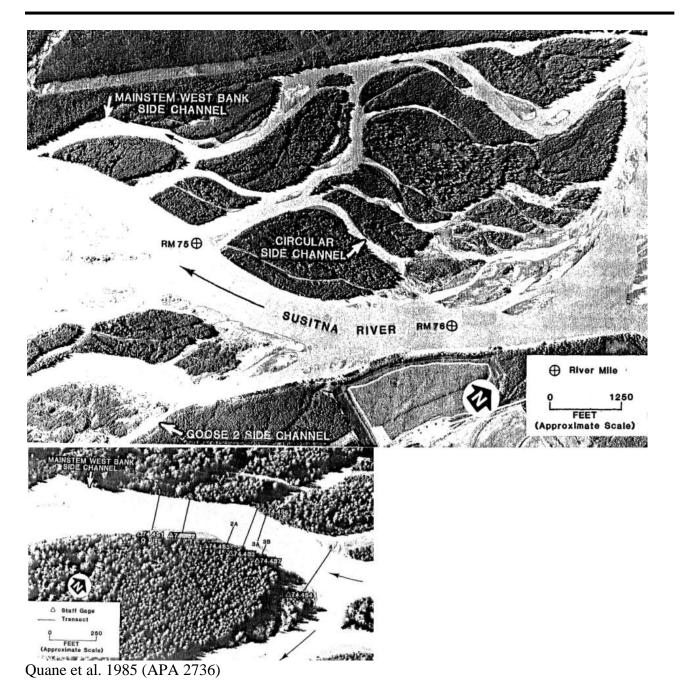
11. MAINSTEM WEST BANK RM 74.4

Meso-Habitat Type: Side Slough

Location: Right bank of the Susitna River (looking downstream) at RM 74.4, on the opposite bank as the Goose 2 Side Channel instream flow site on the right bank at RM 74.8.

1980s Studies Completed at Site:

• IFG-4 model, 7 transects



CHINOOK SALMON

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Goose 2 S.C.				E	2			-	1-
Mainstein Went Bank	-	-	-			Ø			1-
Island S.C.	10					Z			-
Caswell Croek Mouth	閬	-					Z		O
Rustia Wilderness S.C.		3			1	0			-

COHO SALMON

Site	JI I	I	ľ	Ш	I	I	I	ī	I
Circuler S.C.		D				$\overline{\Box}$		-	-
Goose 2 . S.C.		ÍŌ		Ø				=	-
Moinstem West Bank	1-	-	-					n	-
island S.C.	Ø								
Caswell Creek Mouth		-							
Rustic Wilderness S.C.						Ø			-

CHUM SALMON

	1	UN	3	UL		JG	86	P	OCT
Site	I	п	I	п	I	I	I	π	I
Circuler S.C.			0	Ø			0	-	
Goose 2 S.C.				Ø				-	-
Mainstem West Bank	1-	-	-						-
Island S.C.				Ø	Ø				-
Corwell Creek Mouth		-							
Rustic Wilderness S.C.			Ø						-

SOCKEYE SALMON

Site	i	I	I	ᅖ	í	UG I	ı	I	I
Circular S.C.				N		Ø		-	
Goose 2 8.C.	Ø							-	-
Mainstem West Bank	-	-	-						-
futand S.C.	D								-
Caswell Creek Mouth		1		N			Ø		
Rustic Wilderness S.C.									-



No sample

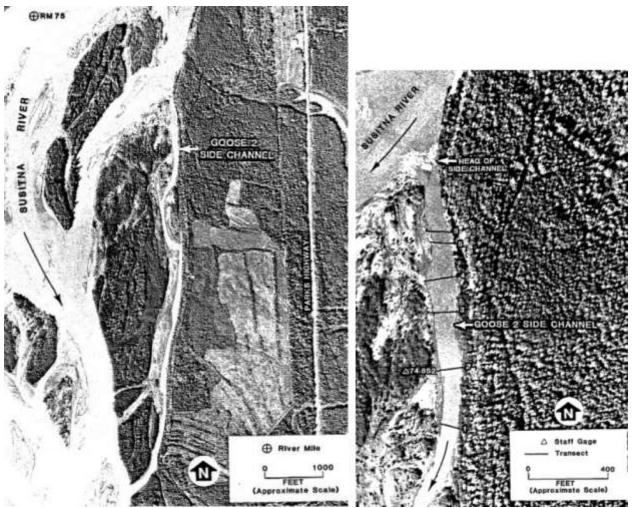
12. GOOSE 2 SIDE CHANNEL RM 74.8

Meso-Habitat Type: Side Channel

Location: Left bank of the Susitna River at RM 74.8, on the opposite bank of the Mainstem West Bank instream flow site on the right bank at RM 74.4.

1980s Studies Completed at Site:

• RJHAB model, 6 transects



Quane et al. 1985 (APA 2736)

CHINOOK SALMON

	J	J	JUL		AUG		EP	OCT	
Site	I	ц	I	Π	1	Ι	I	Π	I
Circular S.C.			Ø				īD	Γ-	-
Goose 2 S.C.				E				-	1-
Mainstein Went Back	-	-			D				1-
Island S.C.	10								-
Caswell Croek Mouth	閬	-					Z		
Rustia Wilderness S.C.						Ø			-

COHO SALMON

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Goosa 2 .S.C.		Ō		Ø				-	-
Moinstem West Bank	-	-	-					n	-
island S.C.	Ø								
Caswell Creek Mouth		-							
Rustic Wilderness S.C.						Ø			-

CHUM SALMON

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Site	I	п	I	Π	I	π	I	I	I
Circular S.C.			0					-	
Goose 2 S.C.				Ø				-	-
Mainstem West Bank	1=	-	=						-
Island S.C.				0	Ø				-
Corwell Creek Mouth		=							
Rustie Wilderness S.C.			Ø			D			-

SOCKEYE SALMON

Site	i	I	I	ᅖ	í	UG I	ı	I	I
Circular S.C.				N		Ø		-	
Goose 2 8.C.	Ø							-	-
Mainstem West Bank	-	-	-						-
futand S.C.	D								-
Caswell Creek Mouth		1		N			Ø		
Rustic Wilderness S.C.									-



No sample

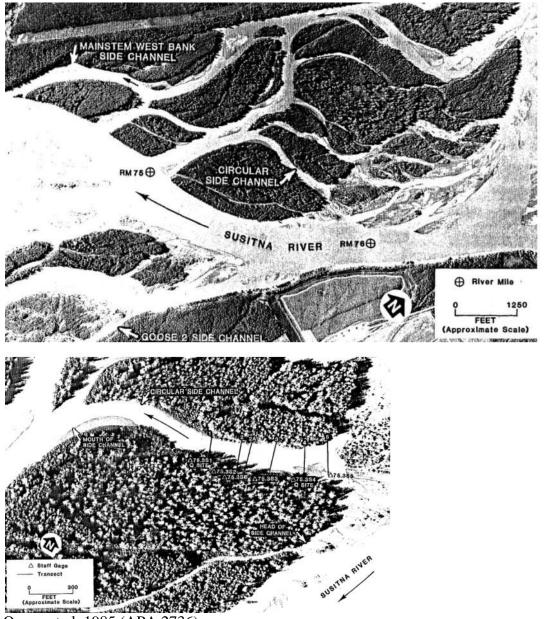
13. CIRCULAR SIDE CHANNEL RM 75.3

Meso-Habitat Type: Side Channel

Location: Located mid-channel in the Susitna River at RM 75.3, approximately 0.5 mile upstream of the Goose 2 Side Channel instream flow site at RM 74.8.

1980s Studies Completed at Site:

• IFG-4 model, 6 transects



Quane et al. 1985 (APA 2736)

CHINOOK SALMON

	JUN		JUL		AUG		SEP		OCT	
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Circular S.C.	12		Ø	Z			ĪŪ	Γ-	-	
Goose 2 S.C.				E				-	1-	
Mainstein Went Back	-	-				Ø			1-	
Island S.C.	10					Z				
Caswell Croek Mouth	閬	-						Ø		
Rustia Wilderness S.C.					17	10			=	

COHO SALMON

	JUN		JUL		AUG	SEP OCT
Site	I	п	I	Π	II	III
Circuler S.C.		D			Talc	10
Goosa 2 .S.C.		ÍŌ		Ø	IDIC	
Moinstem West Bank	-	-	-	D		
island S.C.	Ø					
Caswell Creek Mouth		-				
Rustic Wilderness S.C.					DIE	

CHUM SALMON

	JUN		JUL		AUG		SEP		OCT	
Site	I	п	I	п	I	I	I	I	I	
Circular S.C.			0	Ø				-	-	
Goose 2 5.C.				Ø				-	-	
Mainetem West Bank	-	-	-						-	
Island S.C.				Ø	Ø				-	
Corwell Creek Mouth		-								
Rustic Wildorness S.C.			Ø						-	

SOCKEYE SALMON

Site	i	UN	I	ᅖ	í	UG	1	Ĩ	I
Circular S.C.				N		Ø		-	1-
Goose 2 8.C.								1	1
Mainetem West Bank	-	-	-						-
fuland S.C.									-
Caswell Creek Mouth		-					Ø		
Rustic Wilderness S.C.								Q	-

NEAN CATCH PER CELL RELATIVE ABUNDANCE KEY



14. SAUNA SIDE CHANNEL RM 79.8

Meso-Habitat Type:

Side Channel

Location:

Located on the right bank of Susitna River (looking downstream) at approximate River Mile (RM) 80 (1981 River Mile marker).

1980s Studies Completed at Site:

• IFG 4 model, 4 transects



Quane et al. 1985 (APA 2736)

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<u>COHO</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No sample	

15. SUCKER SIDE CHANNEL RM 84.5

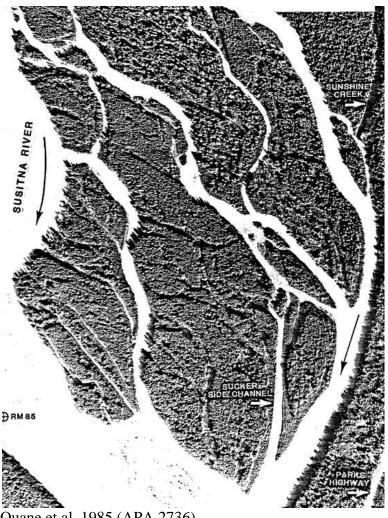
Meso-Habitat Type: Side Channel

Location:

Located near the left bank of Susitna River (looking downstream) in a large island complex at approximate RM 84.5 between the Parks Highway crossing and the Sunshine Creek confluence.

1980s Studies Completed at Site:

• RJHAB model, 6 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN JUN AGG SEP OCT Site I II I II I II I II I II II <th colspa="</th"></th>	
<u>соно</u>	SAMPLING PEPIOD JUN JUL AUG SEP OCT- Site I II I I I I I I I I Trapper Creek S.C. Birah Slough Sunrise S.C. O O O O O O O O O O O O O O O O O O O	
<u>CHUM</u>	SAMPLING PERIOD JUN JUN <th co<="" th=""></th>	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No sample	

16. BEAVER DAM SIDE CHANNEL RM 86.3

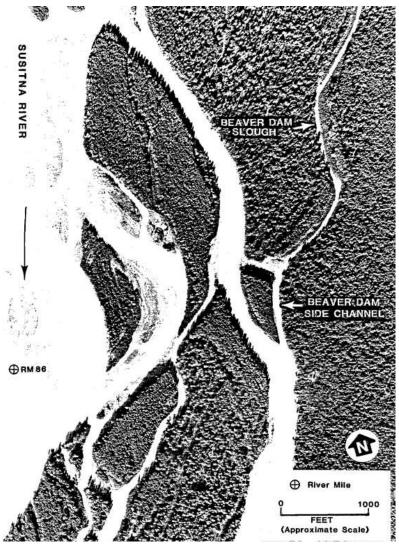
Meso-Habitat Type: Side Channel

Location:

Located on the left bank of Susitna River (looking downstream) at the outlet of Beaver Dam slough.

1980s Studies Completed at Site:

• RJHAB model, 5 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

17. BEAVER DAM SLOUGH RM 86.3

Meso-Habitat Type:

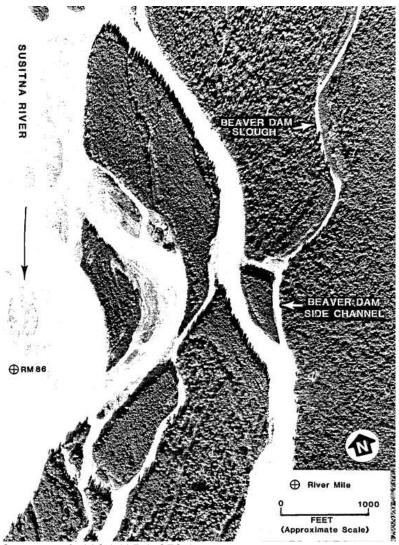
Side Slough

Location:

Located on the left bank of Susitna River (looking downstream) at approximate RM 86.3 (1981 River Mile marker).

1980s Studies Completed at Site:

• RJHAB model, 7 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PEPIDO JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

18. SUNSET SIDE CHANNEL RM 86.9

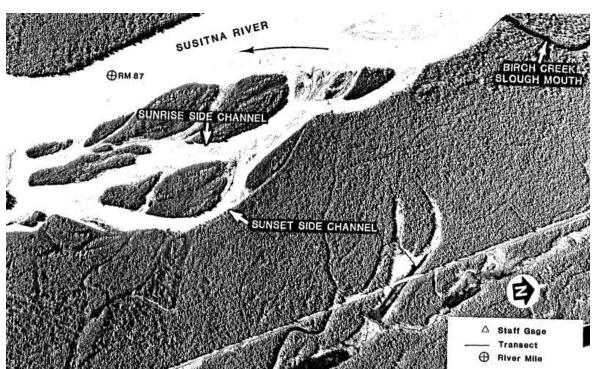
Meso-Habitat Type: Side Channel

Location:

Located on the left bank of Susitna River (looking downstream) at approximate RM 87 (1981 River Mile marker), downstream of the Birch Creek Slough outlet.

1980s Studies Completed at Site:

• IFG 4 model, 7 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

19. SUNRISE SIDE CHANNEL RM 87.0

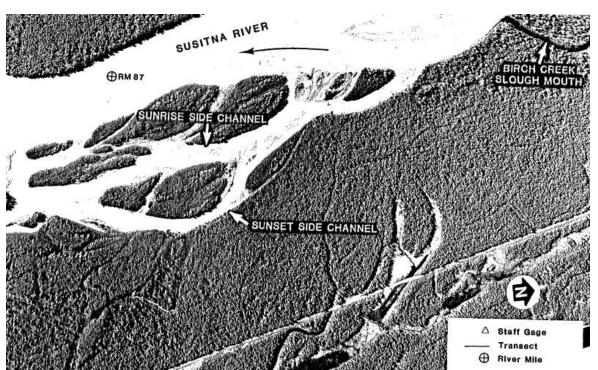
Meso-Habitat Type: Side Channel

Location:

Located on the left bank of Susitna River (looking downstream) at approximate RM 87 (1981 River Mile marker), downstream of the Birch Creek Slough outlet.

1980s Studies Completed at Site:

• RJHAB model, 7 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

20. BIRCH CREEK SLOUGH RM 88.4

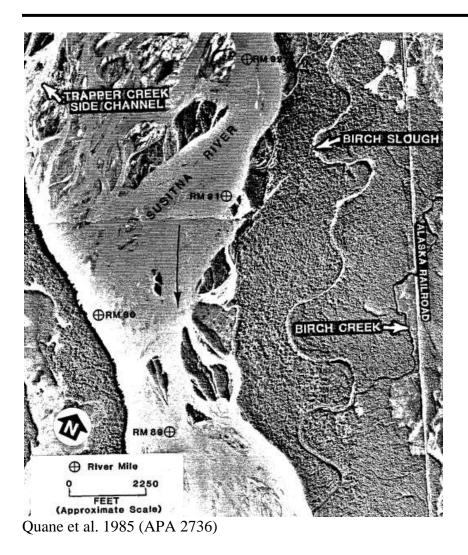
Meso-Habitat Type: Side Channel

Location:

Located on the left bank of Susitna River (looking downstream) at approximate RM 88.4 in the Birch Creek Slough channel. Cross-sections were located about 500 feet downstream of the Birch Creek confluence.

1980s Studies Completed at Site:

• RJHAB model, 8 transects



<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

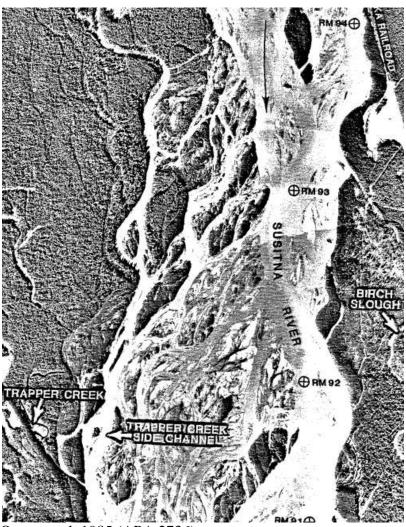
21. TRAPPER CREEK SIDE CHANNEL RM 88.4

Meso-Habitat Type: Side Channel Location:

Located on the left bank of Susitna River (looking downstream) at approximate RM 88.4 in the Birch Creek Slough channel. Cross-sections were located about 1,000 feet upstream of the Trapper Creek confluence.

1980s Studies Completed at Site:

• RJHAB and IFG 4 models, 5 transects



Quane et al. 1985 (APA 2736)

<u>CHINOOK</u>	SAMPLING PERIO? JUN JUN <th co<="" th=""></th>	
<u>соно</u>	SAMPLING PEPIDO JUN JUL AUG SEP OCT- Site I </th	
<u>CHUM</u>	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I	
SOCKEYE	SAMPLING PERIOD JUN JUL AUG SEP OCT Site I <	
	MEAN CATCH PER CELL RELATIVE ABUNDANCE KEY 0.00 0.25-2.50 0.01-0.25 > 2.50 No comple	

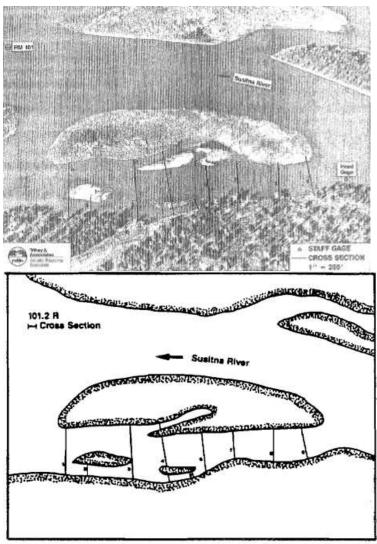
22. 101.2 R, WHISKERS EAST SIDE CHANNEL RM 101.2

Meso-Habitat Type: Side Channel Location:

Left bank of Susitna River (looking downstream) at approximate RM 101 (1981 River Mile marker). The site is on the opposite bank of Whiskers Creek confluence.

1980s Studies Completed at Site:

• IFG-4 model, 9 transects



Hilliard et al. 1985 (APA 2898)

Recon Site 101.2 R

Recon Site 101.2 R is a side channel type hebitat along the right bank of the river also known as Whiskers East Side Channel. This site was only sampled during 1984. Adult salmon surveys indicate that chum salmon utilize this area. Electroshocking produced small numbers of juvenile chinook salmon.

984	JUVENILE	CHINODK	COHO 00 JFMAMJJASOND 00	СНИИ 00 01 +	SOCKEYE 00 JFMAMJJASOND 00	PINK 00 JFMAMJJASOND 00
983	JUVENILE	JFMAMJ JASOND	JFMANJJASOND	JFNAMJ JASOND	JFMAMJ JASOND	JFMAMJJASOND
1982	JUVENILE	JFHAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFHAMJJASOND
1981	JUVENILE	JFMANJJASOND	JFMAMJ JASOND	JFMAMJJASOND	JFMANJ JASOND	JFNAMJJASOND

23. WHISKERS SLOUGH RM 101.4

Meso-Habitat Type:

Side Slough

Location:

Right bank of the Susitna River (looking downstream) at RM 101.4, approximately 3.3 miles above the confluence of the Chulitna and Susitna rivers. *Latitude* 62.376896 *Longitude* - 150.169919 (WGS84)

1980s Studies Completed at Site:

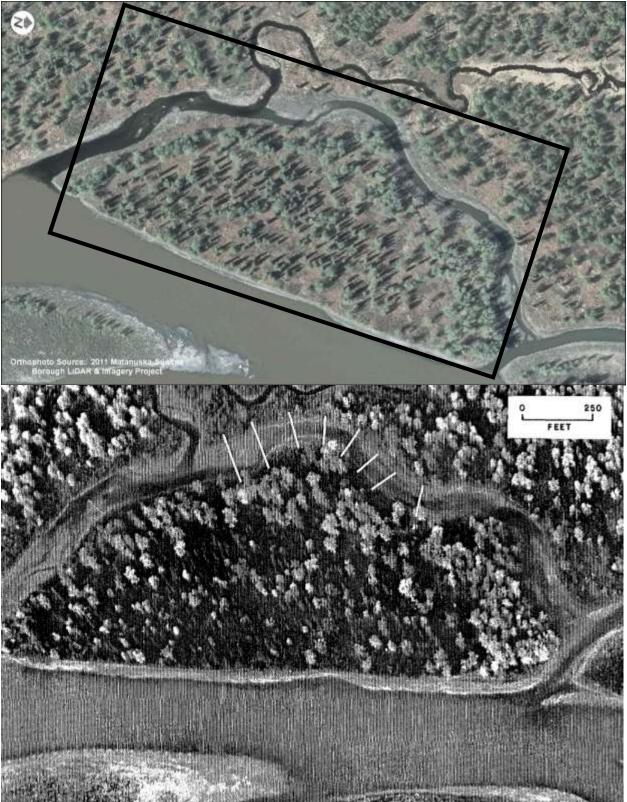
• RJHAB model, 8 transects

Site Description from 1980s:

Whiskers Slough:

- Relatively low gradient transitioning to flat gradient immediately upstream of the confluence with Whiskers Creek, where pools form during low flow conditions.
- Substrates consisted of rubble and cobble. Interstitial space found throughout this substrate provided cover for fry. Extensive areas near the mouth of the slough were also covered with silt
- Both sharp and gentle sloping banks with sparse vegetation available for cover
- Little deadfall or undercut banks
- Vegetation was more abundant in areas influenced by consistent tributary flows.
- Emergent plants included sedges (*Carex* and *Scirpus*), grasses and horsetail (*Equisetum*).

Notes:



Whiskers Slough complex

Recon Site 101.4 L

Recon Site 101.4 L, also known as Whiskers Slough, is a side slough type habitat along the left bank of the river which empties into side channel habitat. This site was sampled regularly for juvenile salmon during the past four years, however no adult sampling occurred until 1984. The data indicate that this area supports moderate to high numbers of rearing chinook and coho salmon. Juvenile chum and sockeye salmon were also captured. Incidental observations during 1984 Indicate the presence of adult chum and pink salmon.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUVENILE	JFNAMJJASOND 	JFMAMJJASOND	JFMAMJJASOND	JFNAMJJASOND	JFMAMJJASONE
983	JUVENILE	++ ++ JFWANJJASOND	JFNAMJJASOND	JFMAMJJASOND	JFIGHUJASOND	JFMAMJJASOND
982	JUVENILE ADULT	JFNAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE	+ + + JFNAMJJASOND	+ JFMAMJJASOND	00000 JFMAMJJASOND	00000 JFMAMJJASOND	00000 JFMAMJJASOND

+ = High numbers

24. 101.5 L, WHISKERS WEST SIDE CHANNEL RM 101.5

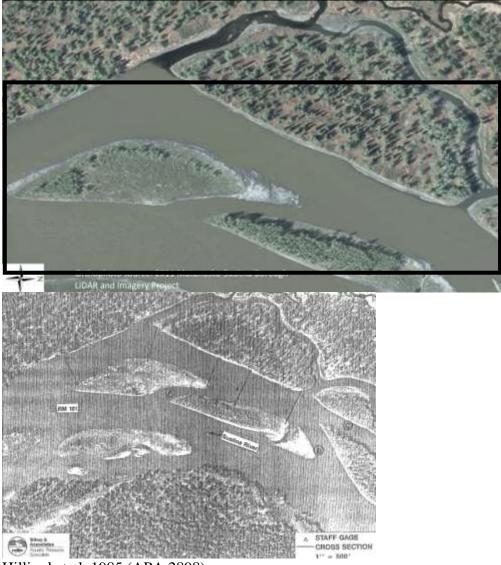
Meso-Habitat Type: Side Channel

Location:

Right bank of the Susitna River (looking downstream) at RM 101.5 and adjacent the Whiskers Creek confluence.

1980s Studies Completed at Site:

• IFG-2 (Instream Flow Group) model, 5 transects



Hilliard et al. 1985 (APA 2898)

Recon Site 101.5 L

Recon site 101.5 L is a side channel type habitat on the left bank of the river near the mouth of Whiskers Slough. This site was named Whiskers West Side Channel in 1984. No adult sampling occurred in this site and incidental observations in 1984 did not indicate the presence of adults. Juvenile sampling in 1983 and 1984 yielded chinook, coho, and sockeye salmon juveniles.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
984	22223453	+0 JFMAMJJASOND 00	+0 JFMAMJJASOND 00	06 JFMAMJJASOND 00	+ 	00 JFMAMJ JASONE 00
983	JUVENILE	+ JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASONC
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASON
1981	JUVENILE	JFMAMJJASQND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASONE

25. 101.7 L RM 101.7

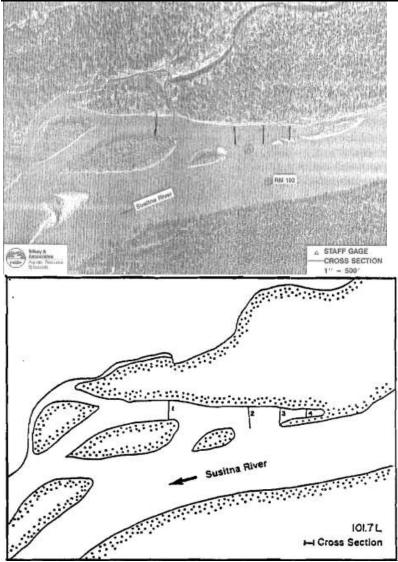
Meso-Habitat Type: Side Channel

Location:

Right bank of the Susitna River (looking downstream) at RM 101.7, approximately 0.5 mile upstream of the Whiskers Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

25.1. Adult salmon species presence during 1984 (Hoffman 1985 [APA 2749])

			CH	INDOX			-					AB11	COH	0			
	TAC				VENILE		+		D	ATE		ADUL	Ī	JU	VENILE	108 1	1
t	Ħ	D	NUMBERS	CPUE	NUMBERS		S		1	Ħ	D	NUMBE	RS	CPUE	NUMBERS		5
84	9	10	Û				1		34	9	10		Ú				1
			CHI	JH				1922				500	KETE				
D					ENILE			1	ATE	5		ADULT		UVEN	ILE	4	
۲	Ħ	0	NUMBERS	CPUE	NUMBERS	S		¥	M	D		NUHBERS	CPU	E N	UMBERS	5	
84	9	10	Р			1		84	9	10		0				1	~
			P	INK		201	5										
-	DAT	Ε	ADULT	3	UVENILE	5.55	4										
Y	M	D	NUMBERS	CPUE	NUMBERS		5										
84	9	10	0				1										

P = Incidental fish observations

26. 105.8 L RM 105.8

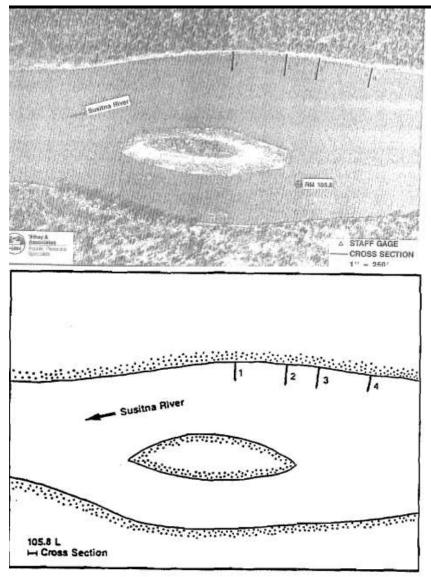
Meso-Habitat Type: Mainstem

Location:

Right bank of the Susitna River mainstem (looking downstream) at RM 105.8, approximately 1.0 mile downstream of the Chase Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

Non-recon site 105.8 LMS

Non-recon site 105.8 LMS is a reach of the mainstem along the left bank. This site was selected for sampling in 1984 due to the presence f open water during the winter of 1983 indicating upwelling and potential as spawning habitat. Sampling was conducted during 1984 for both adult and juvenile salmon. Adult surveys revealed no adult salmon activity at this site. Juvenile sampling using backpack electroshocking during September and October yielded juvenile chinook salmon in small numbers during both trips.

Table 78. Seasonal occurrence of salmon at non-recon site 105.8 LMS.

		CHINOOK	СОНО	СНИМ	SOCKEYE	PINK
1984		JFMAMJJASOND	JFMAMJJASOND	00 JFMAMJJASOND 00	00 JFMAMJJASOND 00	JFMAMJJASOND
1983	JUVENILE	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE ADULT	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASCND	JFMAMJ JASOND	JFMAMJJASOND

27. SLOUGH 5 RM 107.6

Meso-Habitat Type:

Upland Slough

Location:

Right bank of the Susitna River mainstem (looking downstream) at RM 107.6, approximately 0.8 mile upstream of the Chase Creek confluence.

1980s Studies Completed at Site:

• RJHAB model, 9 transects



Marshall et al. 1984 (APA 1784)

Recon site 107.6 L, also known as Slough 5, is an upland slough type habitat on the right bank of the river. The site was visited all four years during the adult salmon surveys. In addition, the site was sampled regularly during 1983 for juvenile salmon. Chum, sockeye and, pink salmon adults utilized this slough in very low numbers. The 1983 juvenile sampling showed that chinook, coho and sockeye juvenile were present in the site.

		CHINOOK	СОНО	CHUM	SOCKEYE	PINK
1984	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND 00	0 JFMAMJJASOND +0	JFMAMJJASOND
1983	JUVENILE ADULT	JFMAMJJASOND	+ JFMAMJJASOND 0000	00000 JFMAMJJASOND 0+00	 JFMAMJJASOND 0000	00000 JFMAMJJASOND 0000
1982	JUVENILE	JFMAMJ JASOND 000	JFMAMJJ*20ND	JFMAMJJASOND +00	JFMAMJ JASOND 000	JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJJASOND 00	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND

28. SLOUGH 6A RM 112.5

Meso-Habitat Type:

Upland Slough

Location:

Approximately RM 112.6, west bank of the Susitna River. *Latitude* 62.454483 *Longitude* - 150.127922 (WGS84)

1980s Studies Completed at Site:

• RJHAB model, 8 transects

Site Description from 1980s:

- With a drainage area of approximately four square miles, the primary water sources originated from a small lake, tributaries and runoff waters. Secondary contributions originated from bogs, springs and ground water sources.
- Overflow from a beaver dam in the upper end provided a constant source of clearwater.
- An upland slough; the head was rarely breached by mainstem flow.
- Channel bed was a relatively deep and uniformly-shaped wide "U".
- The substrate of the slough consisted of silt, interspersed with organic debris and sparse aquatic vegetation.
- Cover was provided along the sloping banks by overhanging trees, shrubs and emergent aquatic vegetation. Abundant cover in the upper end was productive and provided excellent rearing habitat throughout the sampling season.

Notes:



Marshall et al. 1984 (APA 1784)

Recon site 112.5 L, also known as Slough 6A, is an upland slough type habitat on the left bank of the river. Adult salmon surveys were conducted for the past four years and juvenile sampling was conducted from 1981 through 1983. This site had adult coho salmon present for three of the four years. Pink salmon were observed in 1982; two sockeys were observed in 1961; and low numbers of chum salmon were present from 1981 to 1983. Large numbers of coho juveniles were captured here as well as chinook, sockeye, and chum fry.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASONE
1983	ADULT	JFMAMJ JASOND 0000	JFMAMJ JASOND 0+00	JFMAMJJASOND 00+0	++ ++ JFMANJJASOND 0000	00000 JFMAMJJASOND 0000
1982	JUVENILE	JFMAMJJASOND 000	+ JFMAMJJASOND 	+ 	++ JFMAMJ JASOND 000	0000 JFMAMJJASOHL +00 +
1981	JUVENILE ADULT	+ + 	+ + + ++ JFMAMJJASOND	00000 JFMAMJJASOND +0	00000 JFMAMJJASOND +0	00000 JFMAMJJASOND 00

28.2. Other Fish Species Observed during the 1980s

Rainbow trout, round whitefish, humpback whitefish, burbot, longnose suckers.

29. 112.6 L, SIDE CHANNEL 6A RM 112.6

Meso-Habitat Type: Side Channel

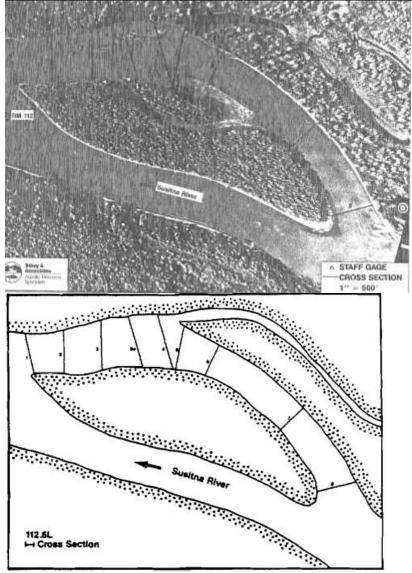
Location:

Location:

Right bank of the Susitna River mainstem (looking downstream) at RM 112.6 and adjacent to Slough 6A.

1980s Studies Completed at Site:

• IFG-2 (Instream Flow Group) model, 9 transects



Hilliard et al. 1985 (APA 2898)

Recon site 112.6 L, also known as Side Channel 6A, is a side channel type habitat adjacent to Slough 6A on the left bank of the river. This site was visited once in 1983 by the juvenile study crew. No juvenile activity was seen during that visit, however sampling in 1984 yielded moderate numbers of chinook salmon juveniles. No other salmon activity is recorded for this site.

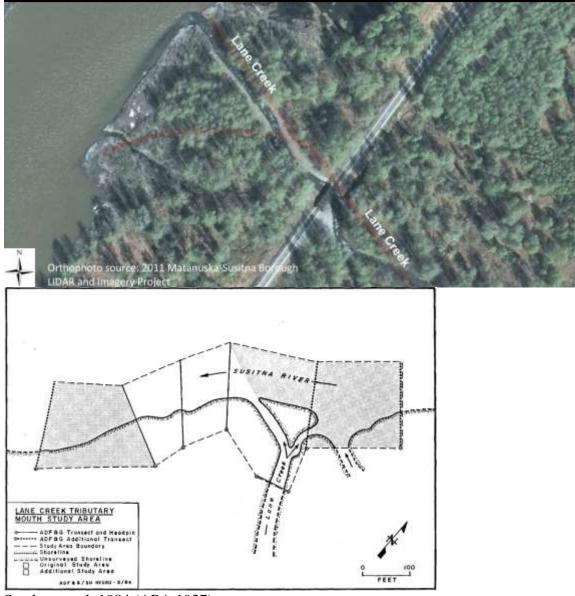
Table 17. Seasonal occurrence of salmon at Recon site 112.6 L. CHINOOK COHO CHUM SOCKEYE PINK ++ JUVENILE ----------------00------00---1984 **JFMAMJJASOND JFMAMJJASOND** JFMAMJJASOND **JFMAMJJASOND JFMAMJJASOND** ADULT -----00---------00--------00--------------00--------0--------0-------------1983 JFMAMJ JASOND **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** ADULT JUVENILE -1982 **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** ADULT JUVENILE ---1981 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND **JFMAMJJASOND** JFMAMJ_ASOND ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

30. LANE CREEK MOUTH RM 113.6

Meso-Habitat Type: Tributary Mouth Location: Left bank of the Susitna River mainstem (looking downstream) at RM 113.6.

1980s Studies Completed at Site:

• Mapping of available habitat for salmon spawning, 7 transects



Sandone et al. 1984 (APA 1937)

30.1. Adult salmon species presence during 1984 (Hoffman 1985 [APA 2749])

	1111		CH	INOOK_		2022	COH0						
					VENILE		D	ATE		ADULT	JU	VENILE	÷
Y	Ħ	D	NUMBERS	CPUE	NUMBERS	S	Y	M	D	NUMBERS	CPUE	NUMBERS	S
84	9	6	0			1	84	9	6	Ú			1
			CH	UH						SOC	KEYE		
DATE ADULT JUVENILE				4					JUVENILE				
Y	M	D	NUMBERS	CPUE	NUMBERS	5	¥	M	D	NUMBERS	CPUE	NUMBERS	5
84	9	à	Р			1	84	9	6	0			1
			PI	NK									
			ADULT			4							
Y	N	D	NUMBERS	CPUE	NUMBERS	S							
94	9	6	p		1996-997 B.	1							

P = Incidental fish observations

31. SLOUGH 8 RM 113.7

Meso-Habitat Type:

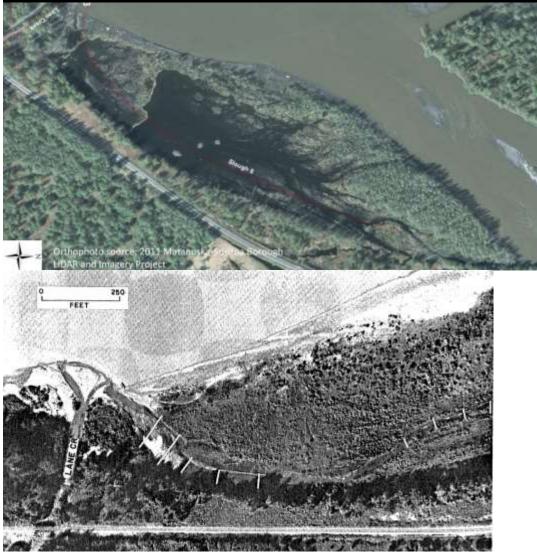
Side Slough

Location:

Left bank of the Susitna River mainstem (looking downstream) at RM 113.7, immediately upstream of the Lane Creek confluence.

1980s Studies Completed at Site:

• RJHAB model, 9 transects



Marshall et al. 1984 (APA 1784)

Recon site 113.7 R, also known as Slough 8, is a side slough type habitat immediately upstream of the mouth of Lane Creek. This site was surveyed for adult salmon for the past four years. Chum salmon were present in moderate numbers during 1981 and 1984, and pink salmon were present in low numbers during those same years. However, no adults were present during 1982 and 1983. Juvenile salmon were sampled in 1982 through 1984 and all species of salmon except pink were present; coho and sockeye being present in moderate to high numbers.

Table 19. Seasonal occurrence of salmon at Recon site 113.7 R. CHINOOK COHO CHUM SOCKEYE PINK JUVENILE ------on one other second ---0--------1984 **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** ADULT -----00--------00-------------+0----++ ++ + +++ ++++ JUVENILE ----+++++-0++++-----++000----+++++ 1983 **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** ADULT ----000--------000-------000-------000---++ + + ++ JUVENILE ---0+++-+000-+0++ +0++--0000---1982 JFMAMJ JASOND **JFMAMJJASOND JFMAMJJASOND** JFMAMJ JASOND **JFMAMJJASOND** ADULT -----0000---------0000--------0000-------0000--------0000---JUVENILE -----1981 JFMAMJJASOND **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** ADULT ----00----++-------00--------++ ++ - = No data collected, G = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

32. 114.1 R RM 114.1

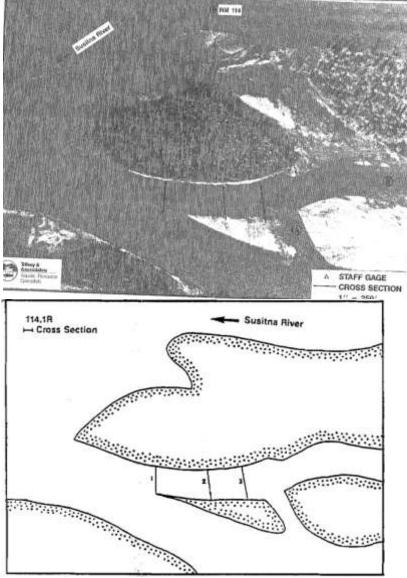
Meso-Habitat Type: Side Channel

Location:

Located mid-channel in a complex of islands at RM 114.1, approximately 0.5 mile upstream of the Lane Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Recon site 114.1 R is a side channel type habitat in mid-channel adjacent to Recon site 114.0 R, just upstream of Lane Creek. This site was sampled in 1984 for adult salmon. Chum salmon were found in moderate numbers. Juvenile sampling in September of 1984 yielded no rearing activity.

```
Table 21. Seasonal occurrence of salmon at Recon site 114.1 R.
CHINOOK
                               COHO
                                             CHUM
                                                          SOCKEYE
                                                                        PINK
      JUVENILE ------
                                 -----
                                                -0-
                                                            ---0----
                                                                         ---0-
 1984
              JFMAMJJASOND
                            JFMAMJJASOND
                                          JFMAMJJASOND
                                                       JFMAMJJASOND
                                                                    JFMAMJJASOND
      ADULT
              -----00-----
                                ----00-----
                                             ----0+----
                                                       ----00----
                                                                    -----00-----
                                                 +
      JUVENILE -----
 1983
              JFMAMJ JASOND
                            JFMAMJJASOND
                                          JFMAMJ JASOND
                                                       JFMAMJJASOND
                                                                    JFMAMJJASOND
      ADULT
      JUVENILE -
 1982
              JFMAMJJASOND
                            JFMAMJJASOND
                                          JFMAMJJASOND
                                                       JFMAMJJASOND
                                                                    JFMAMJJASOND
      ADULT
      JUVENILE ---
                                          JFMAMJJASOND
                                                       JFMAMJ JASOND
                                                                    JFMAMJJASOND
 1981
               JFMAMJ JASOND
                            JFMAMJ JASOND
      ADULT
 - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers,
÷
+ = High numbers
```

33. 115.0 R RM 115.0

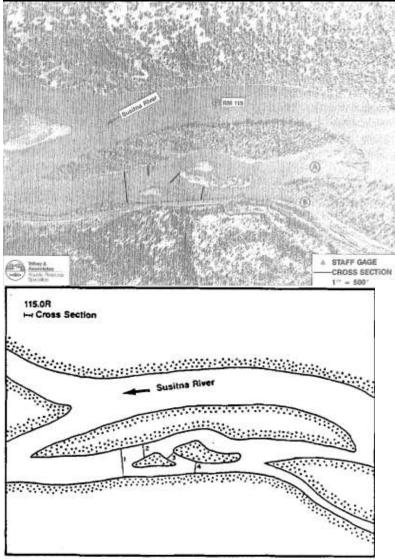
Meso-Habitat Type: Side Channel

Location:

Located on the left bank (looking downstream) at approximate RM 115.0, approximately 1.4 miles upstream of the Lane Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

Recon site 115.0 is the lower part of a side channel referred to as Mainstem II. This site was sampled for adults for the past three years, and for juveniles during 1981 through 1983. Chum salmon adults were present in low numbers for the past three years. One coho adult was seen in 1982. Chinook juveniles were present all three years sampled. Coho juveniles were found in 1981, chum juveniles were found in 1983, and moderate numbers of sockeye juveniles were found in 1983. EWT&A, during 1984 recon site surveys, observed one adult sockeye and one chinook juvenile in the lower portion of this site.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
984	JUVENILE	JFMAMJJASOND	JFMAMJJASOND 00	JFMAMJJASOND	0 JFMAMJJASOND 0+	JFMAMJJASONE
983	JUVENILE	+ JFMAMJJASOND	JFMAMJ.(ASOND	JFMAMJJASOND	+ + ++++0 JFMAMJJASOND	JFMAMJJASOND
982	JUVENILE	0+000 JFMAMJJASOND 0	00000 JFMAMJJASOND 	00000 JFMAMJJASOND 	00000 JFMAMJ JASOND 0	00000 JFMAMJJASONU 0
981	JUVENILE	+ O+++ JFMAMJJASOND	JFMAMJJASOND	0000 JFMAMJJASOND	0000 JFMAMJJASOND	0000 JFMAMJJASOND

34. 118.9 L RM 118.9

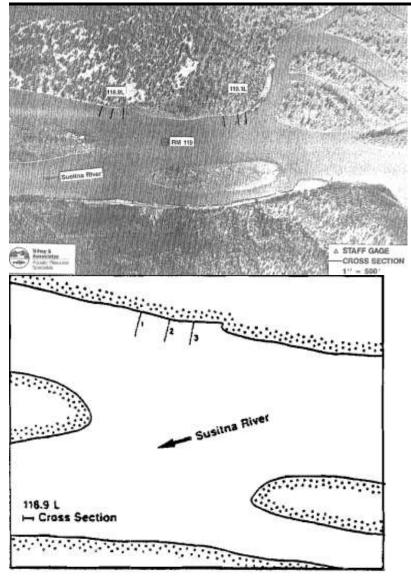
Meso-Habitat Type: Mainstem

Location:

Located on the right bank (looking downstream) of the Susitna River mainstem channel RM 118.9.

1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Non-recon site 118.91 LMS is an area of mainstem habitat along the left bank of the river. This site was surveyed in both 1983 and 1984 as part of the adult salmon surveys. In addition, sampling by backpack electroshocker was conducted during 1984 for juvenile salmon. Chum salmon were found spawning in this area during both years surveyed. Upwelling in this area, evidenced by winter aerial photography, may be the habitat factor influencing spawning at this site. Juvenile chinook salmon were also found to inhabit this area.

Table 81. Seasonal occurrence of salmon at non-recon site 118.91 LMS. CHINOCK COHO CHUM SOCKEYE PINK ++ 1084 JUVENILE -----ADULT 1983 -----0--------------0---------0----JUVENILE -----JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND 1982 ADUL T _____ -----JUVENILE -----JFMAMJJASOND JFMAMJJASOND 1981 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND ADULT - = No data collected, C = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

35. 119.1 L RM 119.1

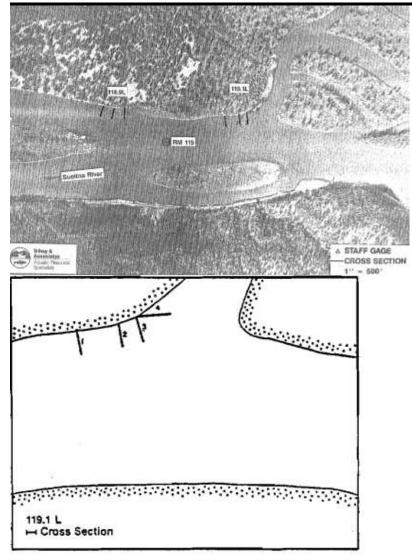
Meso-Habitat Type: Mainstem

Location:

Located on the right bank (looking downstream) of the Susitna River mainstem channel at RM 119.1.

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

Non-recon site 119.11 LMS is a mainstem site just upstream of non-recon site 118.9 LMS on the left bank of the river. This site was visited during 1984 by the adult salmon survey crew. Chum salmon were observed spawning in this area. It is believed that upwelling is influencing the suitability of this area for spawning. Juvenile chinook salmon were also collected in this area during the summer of 1984.

Table 82. Seasonal occurrence of salmon at non-recon site 119.11 LMS.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUYENILE ADULT	JFMAMJJASOND CO	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1983	JUVENILE	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJJASOND
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJJASOND

36. 119.2 R, LITTLE ROCK SIDE CHANNEL RM 119.2

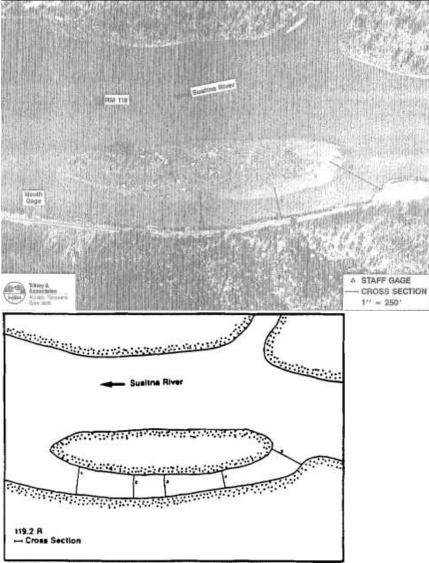
Meso-Habitat Type: Side channel

Location:

Located on the left bank (looking downstream) of the Susitna River at RM 119, approximately 1 mile downstream of Curry Camp at RM 120.

1980s Studies Completed at Site:

• IFG-2 (Instream Flow Group) model, 5 transects



Hilliard et al. 1985 (APA 2898)

Recon site 119.2 R, named Little Rock Side Channel in 1984, is a side channel type habitat on the right bank of the river about a mile downstream of Curry. This site was sampled for juveniles only during 1984. Chinook and sockeye fry were found in low numbers.

		CHINOOK	СОНО	CHUM	SOCKEYE	PINK
984	JUVENILE ADULT	JFMAMJJASOND	JFMAMJ.IASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1983	JUVENILE	JFMAMJ JASOND				
1982	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND

37. 125.2 R RM 124.5

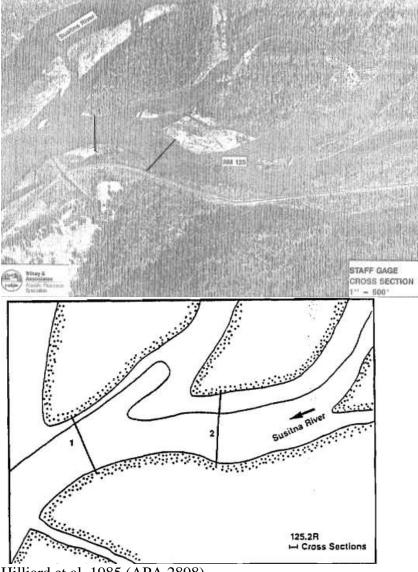
Meso-Habitat Type: Side channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 124.5, immediately upstream of the Skull Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 2 transects



Hilliard et al. 1985 (APA 2898)

Recon site 125.2 R is a one mile long side channel type habitat on the right bank of the river, just down stream of Slough 8A. Skull Creek also drains into this side channel. This site encompasses two adult sampling sites, one on each side of Skull Creek, known as Slough A and Slough A'. Chum salmon adults were found at this site in moderate numbers for the past four years. Pink salmon were found in low numbers in 1981 and 1984. Juvenile salmon sampling was conducted in 1981 and 1984. Chinook fry were the only species of juvenile salmon found utilizing this

fry were the only species of juvenile salmon found utilizing this site.

Table 34. Seasonal occurrence of salmon at Recon site 125.2 R. CHINOOK COHO CHUM SOCKEYE PINK + JUVENILE -----++---1084 ADULT ++ JUVENILE -----JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND -----0000--1983 ADULT ++ JUVENILE -----COMPANY AND A DESCRIPTION OF A DESCRIPTI 1982 JEMAMJJASOND JEMAMJJASOND JEMAMJJASOND JEMAMJJASOND JEMAMJJASOND ADUL T JUVENILE -+-0------ -0-0-------0-0------ -0-0-------0-0-----JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND 1981 JEMAMJJ ASOND **JFMAMJJASOND** -----00-----ADULT -----00---------00-------------0+---++ - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

38. SLOUGH 8A RM 125.3

Meso-Habitat Type:

Side Slough Location: Located on the left bank looking downstream at RM 125.3, approximately 0.5 mile upstream of the Skull Creek confluence. Latitude 62.660665 Longitude -149.919794 (WGS84)

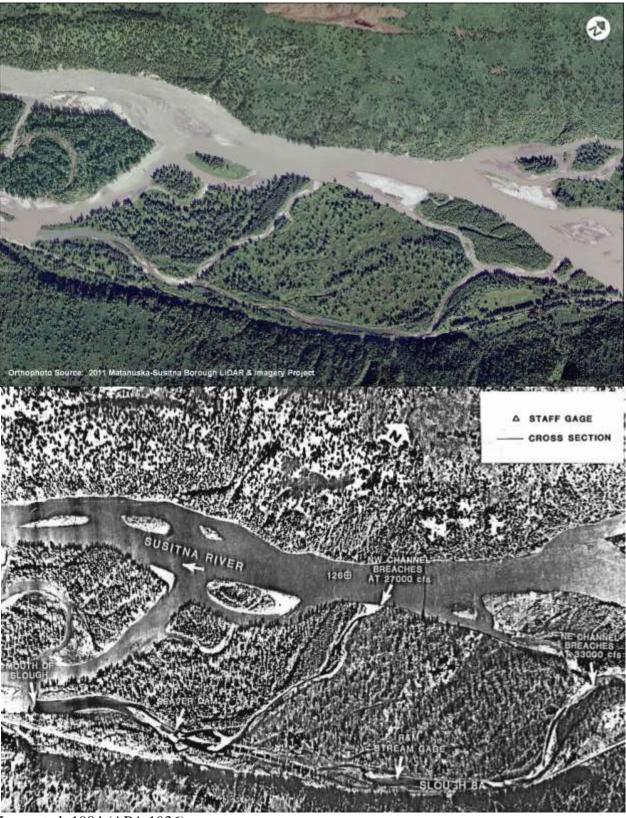
1980s Studies Completed at Site:

• Instream Flow Group (IFG-4) model, 11 transects

Site Description from 1980s:

- Approximately two miles in length and separated from the mainstem by two large vegetated islands.
- Overall gradient of the slough was 10.5 ft/mi.
- Slough had a broad basin above the mouth which extended to a fork. Above the fork, a network of upper braided channels (25-50 ft wide) were impounded by a series of beaver dams.
- Base flow in the slough (i.e., inlet not breached by mainstem flow) ranged from 1-20 cfs and were maintained by surface runoff, groundwater seepage, and upwelling.
 During overtopping events, maximum flow was 70 cfs.
- Substrate was primarily silt with little aquatic vegetation at the outlet and cobble and gravel at the upstream extent.
- Beaver dams and lodge, deadfalls, and sparse vegetation provided cover.

Notes:



Lang et al. 1984 (APA 1936)

Recon site 126.0 R, also known as slough 8A, is a side slough habitat stretching over a mile along the right bank of the river. Extensive sampling occurred all four years for both adult and juvenile salmon, with the exception that no juvenile sampling was conducted in 1984. Four of the five species of saimon spawn in this site. High numbers of chum were recorded regularly. Sockeye salmon spawn in moderate numbers, and pink and coho were also recorded as spawning in this site. This site is a good rearing area for both chinook and coho juvenile, and both chum and sockeye fry were captured here.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUVENILE	JFMAMJJASOND	JFMAMJJASOND 000	JFMAMJJASOND 	JFMAMJJASOND +++ ++	JFMAMJJASONE
983	JUVENILE	0+++ JFMAMJJASOND 0000	00++ JFMAMJ JASOND 0000	+++0 JFMAMJJASOND 0+++ ++	+ JFMAMJJASOND 0+++ +++	0000 JFMAMJJASOND 0+00
982	JUVENILE	JFMAMJJASOND	00++ JFMAMJJASOND 0++	+000 JFMAMJJASOND -+++	+ JFMAMJ JASOND +++	0000 JFMAMJJASOND +00 +
1981	JUVENILE	++ ++ 0+++ JFMAMJJASOND 00	+ ++ 00++-0+++ JFMAMJJASOND 00	0000-0000 JFMAMJJASOND + +	0000-0000 JFMAMJJASOND 0+ +	0000-0+00 JFMAMJJASONE 00

39. SLOUGH 9RM 128.8

Meso-Habitat Type:

Side Slough

Location:

Located at approximate RM 129, on the left bank (looking downstream) adjacent to Camp Creek. Latitude 62.687270 Longitude -149.857388 (WGS84)

1980s Studies Completed at Site:

• Instream Flow Group (IFG-4) model, 10 transects

Site Description from 1980s:

- Approximately 1.2 miles in length and separated from the mainstem by a large vegetated island.
- Two small unnamed tributaries and Slough 9B empty into the slough, and along with groundwater seepage, and upwelling provide a base flow ranging from 1-5 cfs.
- The channel was S-shaped and composed of an alternating series of pools and riffles.
- Overall gradient of the slough was 13.7 ft/mi.; generally, the lower half of the slough had a relatively lower gradient than the upper half.
- The banks generally had a moderate to steep slope and were 3 to 4 feet high.
- Cobble/boulder substrates predominated in the upper half of the slough while gravel/rubble substrates predominated in the lower half. Deposits of silt and sand were found in the backwater and pool areas.
- Areas of deadfall accumulation were present in all zones.
- Turbidity (13-99 NTU) during July and August provided cover for fish in all lanes.
- At lower discharges (less than 20,000 cfs) the amount of riffle area present became greater. At late season conditions, the riffle/pool ratio was about 2:1.

Notes:



Lang et al. 1984 (APA 1936)

Recon site 128.8 R, also known as Slough 9, is a side slough type habitat on the right bank of the river. This site was sampled all four years for adult salmon, and 1981 through 1983 for juvenile salmon. Large numbers of chum salmon were found to spawn in this site. Moderate numbers of sockeye, and low numbers of pink salmon also use this habitat for spawning. Juvenile chinook, coho, sockeye, and chum were captured at this site.

Table 39. Seasonal occurrence of salmon at Recon site 128.8 R. CHINOOK COHO - CHUM SOCKEYE PINK JUVENILE -1984 JFMAMJJASOND **JFMAMJJASOND** JFMAMJJASOND **JFMAMJJASOND** JFMAMJJASOND ADULT -----00---------00--------++--------00---------+ + +++ JUVENILE -----+++++-----+000+--------++000------++++0--------00000----1983 JFMAMJJASOND **JFMAMJJASOND** JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----0000-------0000-------0++0--------00+0-------0000---++ + ----+0+------++00--------0000----1962 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JEMAMJJASOND JFMAMJ JASOND ADULT -----000-------000-------++0-------++0--------+00---++ ++ JUVENILE -------0--------0----1981 JFMAMJ JASOND JFMAMJ JASOND **JFMAMJJASOND JFMAMJJASOND** JFMAMJ JASOND -----00----ADUI T ----00----++-------00----÷ + - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

40. 130.2 R RM 130.2

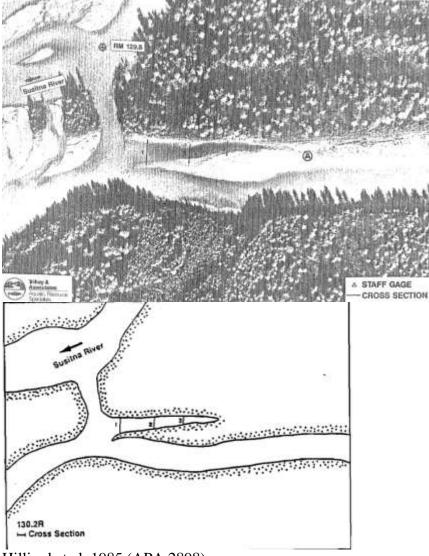
Meso-Habitat Type: Side channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 130 and 1 mile downstream of the Sherman Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Recon site 130.2 R is a large side channel type habitat just downstream of the mouth of Sherman Creek. This site was surveyed for adult and juvenile salmon in 1981 and 1984. Chum salmon spawning activity and chinook salmon rearing activity was found to occur at the downstream end of this site.

		CHINOOK	СОНО	CHUM	SOCKEYE	PINK
984	1	JFMAMJJASOND	JFMAMJJASOND 00	JFMAMJJASOND 0+ +	JFMAMJJASOND	JFMAMJJASONE
983	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASONE
982	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASON
981	JUVENILE	JFMAMJJASOND	0 JFMAMJ JASOND 0	0 JFMAMJJASOND	0 JFMAMJJASOND 0	0 JFMAMJJASONU 0

41. 4^{TH} OF JULY CREEK MOUTH RM 131.1

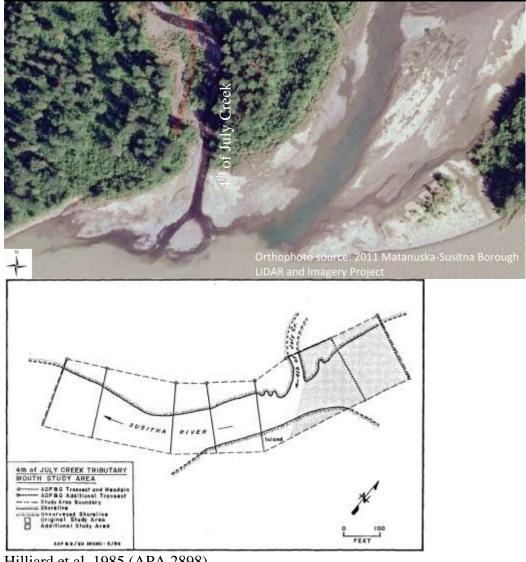
Meso-Habitat Type: Tributary Mouth

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 131 at the 4th of July Creek confluence.

1980s Studies Completed at Site:

• Mapping of available habitat for salmon spawning, 8 transects



Hilliard et al. 1985 (APA 2898)

Recon site 131.7L is a side channel type habitat upstroam of, and including the mouth of Fourth of July Creek on the left bank of the river. This site was surveyed from 1982 through 1984 for adult salmon activity, and in 1981 and 1984 for juvenile activity. Chum salmon were found spawning in this site and two coho adults were seen in October of 1983. Juvenile sampling indicated that chinook fry rear at this site.

Table 45. Seasonal occurrence of salmon at Recon site 131.7 L. CHINOOK COHO CHUM SOCKEYE PINK ++ JUVENILE -----------00---1984 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----00---------++----+ JUVENILE ----1983 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJ JASOND JFMAMJ JASOND ADULT -----0-------------0-------------0---JUVENILE -----1982 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----++--------00----JUVENILE -+0------00------00------00------00-----**JFMAMJJASOND** 1981 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND **JFMAMJJASOND** ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, = High numbers

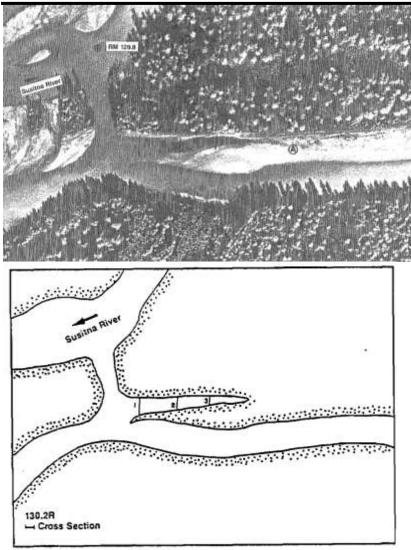
42. 131.3 L RM 131.3

Meso-Habitat Type: Side Channel Location:

Located in a side channel at approximate RM 131.3 in an island complex on the right bank (looking downstream) of the Susitna River immediately upstream of the 4th of July Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

Recon site 151.3 L is a side channel type habitat near the mouth of Fourth of July Creek on the left bank of the river. Adult surveys in 1981 and 1984 found chum salmon using this site for spawning. Juvenile sampling in 1984 yielded moderate numbers of chinook fry.

1984		CHINDOK + JFMAMJJASOND 	COHO GO JFMAMJJASOND OO	JFMAMJJASOND	SOCKEYE JFMAMJJASOND	PINK 00 JFMAMJJASOND 00
1983	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND
1982	0.000	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1581		JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND

43. 131.7 L RM 131.7

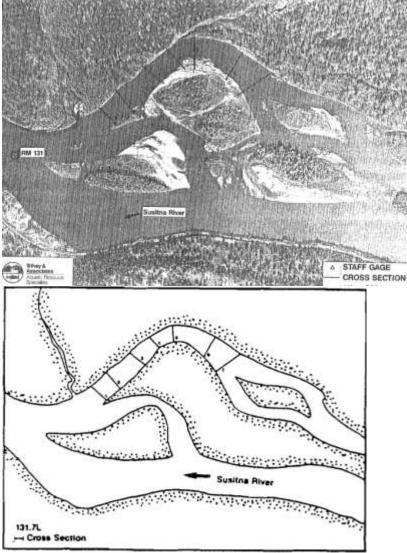
Meso-Habitat Type: Side Channel

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 131.7 immediately upstream of the 4th of July Creek confluence.

1980s Studies Completed at Site:

• IFG-4 (Instream Flow Group) model, 7 transects



Hilliard et al. 1985 (APA 2898)

Recon site 131.7L is a side channel type habitat upstroam of, and including the mouth of Fourth of July Creek on the left bank of the river. This site was surveyed from 1982 through 1984 for adult salmon activity, and in 1981 and 1984 for juvenile activity. Chum salmon were found spawning in this site and two coho adults were seen in October of 1983. Juvenile sampling indicated that chinook fry rear at this site.

Table 45. Seasonal occurrence of salmon at Recon site 131.7 L. CHINOOK COHO CHUM SOCKEYE PINK ++ JUVENILE -----------00---1984 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----00---------++----+ JUVENILE ----1983 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJ JASOND JFMAMJ JASOND ADULT -----0-------------0-------------0---JUVENILE -----1982 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----++--------00----JUVENILE -+0------00------00------00------00-----**JFMAMJJASOND** 1981 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND **JFMAMJJASOND** ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, = High numbers

44. 132.6 L, SIDE CHANNEL 10A RM 132.6

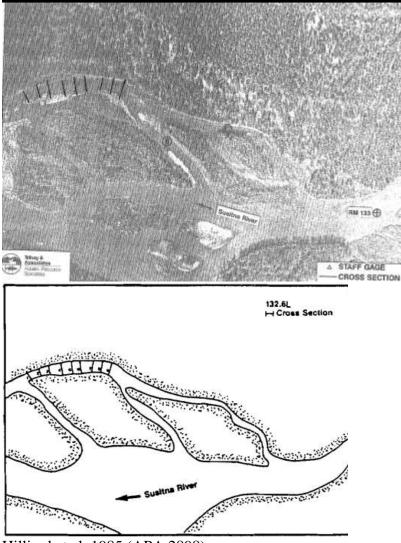
Meso-Habitat Type: Side Channel

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 132.6, 1 mile upstream of the 4th of July Creek confluence.

1980s Studies Completed at Site:

- IFG-4 (Instream Flow Group) model, 9 transects
- RJHAB model, 9 transects



Hilliard et al. 1985 (APA 2898)

Recon site 132.6 L, also known as Side Channel 10A, is a side channel type habitat on the left bank of the river. This site was sampled for juvenile salmon in 1983 and 1984. Chinook salmon were found to rear in this site in moderate numbers. One juvenile sockeye salmon was captured in 1983. No adult surveys were conducted at this site.

Table 46. Seasonal occurrence of salmon at Recon site 132.6 L. CHINOOK COHO CHUM SOCKEYE PINK + JUVENILE ---------------00--------00--------00---1984 **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** JFMAMJJASOND **JFMAMJJASOND** ADULT +++ JUVENILE ----------000--------+00--------000----1983 **JFMAMJJASOND** JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJ JASOND ADULT JUVENILE -1982 JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND ADULT JUVENILE ----1981 **JFMAMJJASOND** JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND **JFMAMJJASOND** ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

45. 133.8 R RM 133.8

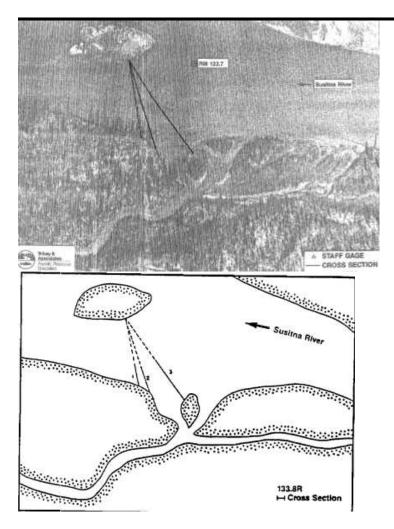
Meso-Habitat Type: Mainstem

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 132.6, 1 mile upstream of the 4th of July Creek confluence.

1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

No fish capture data are available for this site.

46. SIDE CHANNEL 10 RM 133.8

Meso-Habitat Type:

Side Channel

Location:

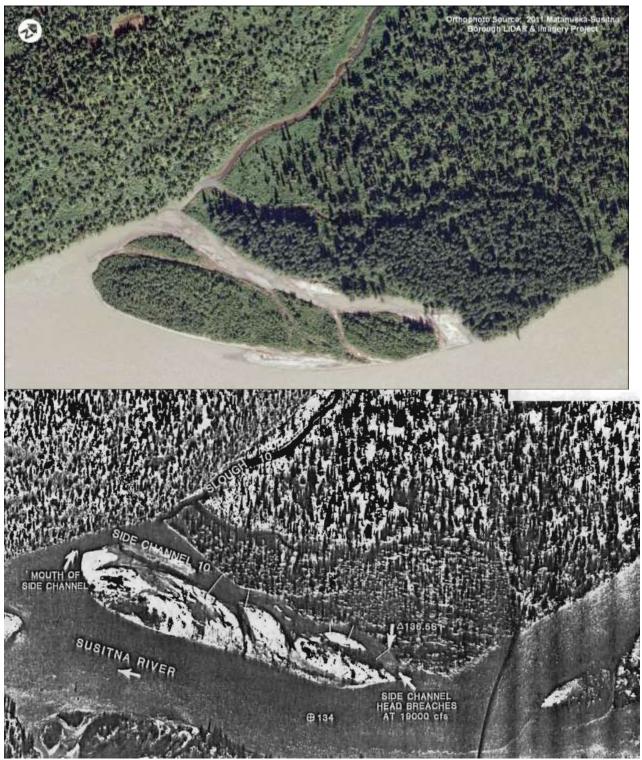
Located on the right bank (looking downstream) of the Susitna River at approximate RM 133.8, adjacent to upland Slough 10.

1980s Studies Completed at Site:

• IFG-4 (Instream Flow Group) model, 4 transects

Site Description from 1980s:

- Approximately 0.4 miles in length and separated from the mainstem by a large gravel bar.
- The overall gradient of the side channel was 20.5 ft/mi.
- Joins with Slough 10 forty feet upstream of the mouth of the slough.
- The east bank along the gravel bar was gently sloping as compared to the west bank which was high, steep, and undercut; channel cross section was relatively flat with a deep running along the west bank.
- Except when overtopped by the mainstem, a base flow up to 10 cfs in the side channel was provided by local runoff and groundwater seepage.
- During overtopping events, flows up to 260 cfs in side channel were observed. Under these conditions, the flow became turbid and controlled by the mainstem.
- Substrate composition in the slough varied depending on location. The upper half of the slough was generally characterized by cobble/boulder substrates while the lower half was characterized by gravel/rubble substrates. Silt/sand deposits were found in pool areas and the backwater zone near the mouth.



Lang et al. 1984 (APA 1936)

Recon site 133.8 L, also known as Side Channel 10, is a side channel type habitat on the left bank of the river. This site was surveyed in 1984 for adult salmon, and no adults were seen during the regular sampling. However, incidental observations indicate that chum salmon adults were present. Juvenile sampling in 1981 through 1984 showed that the area supports small numbers of chinook salmon fry. Two sockeye fry were captured in 1982, and low numbers of chum fry were captured in 1983.

Table 48. Seasonal occurrence of salmon at Recon site 133.8 L. CHINOOK COHO CHUM SOCKEYE PINK JUVENILE ---------0------------1984 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND **JFMAMJJASOND JFMAMJJASOND** ADULT -----00--------00--------+0---------00---------00----÷ + JUVENILE ---+++---------000--------+00--------000--------000----1983 **JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND** JFMAMJJASOND JFMAMJJASOND ADULT JUVENILE -0000+000---- -00000000-------00000000-----0000+000-----00000000-1982 JFMAMJJASOND JFMAMJJASOND JFMAMJ JASOND JFMAMJ JASOND JFMAMJ JASOND ADULT JUVENILE -0-----0-----0---0----0---1981 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND **JFMAMJJASOND** ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

47. LOWER SIDE CHANNEL 11 RM 134.9

Meso-Habitat Type: Side Channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 135, 1.5 miles downstream of the Gold Creek confluence.

1980s Studies Completed at Site:

• IFG-2 (Instream Flow Group) model, 6 transects



Lang et al. 1984 (APA 1936)

Recon site 134.9 R is a side channel type habitat on the right bank of the river, referred to as Lower Side Channel II. This site was sampled for adults in 1984 and juveniles in 1983. Adult surveys indicated no salmon activity, however, incidental observations noted chum salmon activity. Juvenile sampling yielded chinook salmon fry.

		CHINOOK	СОНО	CHUM	SOCKEYE	PINK
984	JUVENILE ADULT	JFMAMJJASOND 	JFMAMJJASOND 00	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
983	JUVENILE	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJJASOND
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJ JASOND	JFMAMJJASOND

48. 136.0 L, SLOUGH 14 RM 136.0

Meso-Habitat Type:

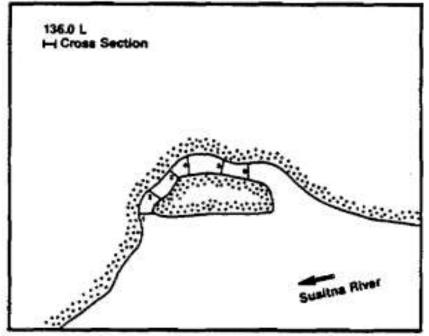
Side Channel

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 136, 0.5 miles downstream of the Gold Creek confluence.

1980s Studies Completed at Site:

• IFG-4 (Instream Flow Group) model, 6 transects



Hilliard et al. 1985 (APA 2898)

Recon site 136.0 L, also known as Slough 14 and Doug's Delight, is a side channel habitat on the left bank of the river just downstream of the railroad bridge at Gold Creek. This site was sampled for the past four years for adult salmon, but no adults were seen until 1984 when two coho and one chum adult were observed. Juvenile sampling in 1984 yielded moderate numbers of chinook fry. 1982 juvenile sampling also yielded chinook fry.

Table 54. Seasonal occurrence of salmon at Recon site 136.0 L. CHINOOK COHO CHUM SOCKEYE - PINK + JUVENILE -------------00--------00---------1984 JFMAMJJASOND JFMAMJJASOND. JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT -----00--------+0--------+0---------00---------00----JUVENILE -----1983 JFMAMJ JASOND **JFMAMJJASOND** JFMAMJJASOND JFMAMJJASOND JFMAMJ JASOND ADULT ----000--------000-------000--------000---JUVENILE -----0+000--------00000----1982 JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND JFMAMJJASOND ADULT ----000-------000--------000-------000---JUVENILE -00------00------00------00----0----1981 JFMAMJ JASOND JFMAMJJASOND JFMAMJ JASOND **JFMAMJJASOND** JFMAMJ JASOND -----000----------000---------000--------000---------000----ADULT - = No data collected, 0 = No fish observed, + = Low numbers, + = Medium numbers, + = High numbers

49. UPPER SIDE CHANNEL 11 RM 136.3

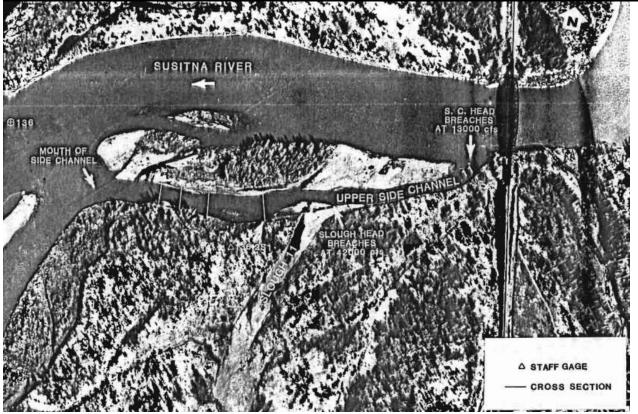
Meso-Habitat Type: Side Channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 135, 1.5 miles downstream of the Gold Creek confluence.

1980s Studies Completed at Site:

• IFG-4 (Instream Flow Group) model, 4 transects



Lang et al. 1984 (APA 1936)

Recon Site 136.3 R, also known as Upper Side Channel 11, is a side channel habitat at the head of Slough 11, just downstream of the Gold Creek railroad bridge. This site was surveyed for the past four years for adult salmon and in 1981 and 1983 for juvenile salmon. Moderate numbers of chum salmon were found spawning in this site. Juvenile chinook salmon also use this site.

Table 55. Seasonal occurrence of salmon at Recon site 136.3 R.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUVENILE	JFMAMJJASOND	0 JFMAMJJASOND 00	0 -:FMAMJJASOND 0+ +	JFMAMJJASOND	JFMAMJJASOND 00
1983	JUVENILE ADULT	+ JFMAMJJASOND 	000 JFMAMJJASOND 0	JFMAMJJASOND +	000 JFMAMJJASOND 0	000 JFMAMJJASOND 0
1982	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	HAMJ JASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE ADULT	+ + JFMAMJJASOND 	00 JFMAMJJASOND	00 JFMAMJJASOND	00 JFMAMJJASOND 0	00 JFMAMJJASOND

50. 137.5 R RM 137.5

Meso-Habitat Type:

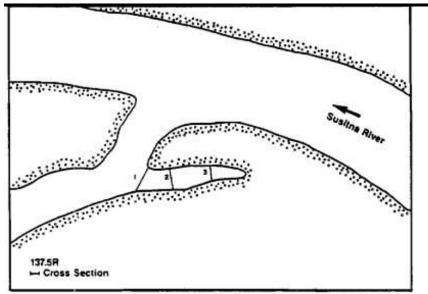
Side Channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 137.5, 105 miles upstream of the Gold Creek confluence.

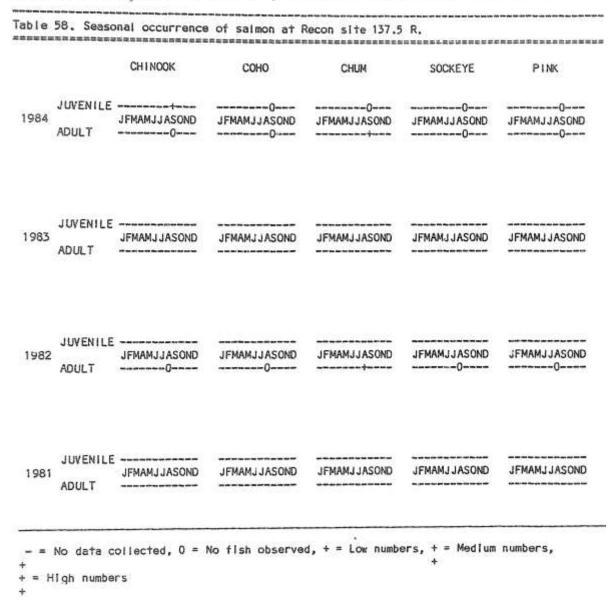
1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Recon site 137.5 R is a side channel type habitat on the right bank of the river and is essentially a branch of the Recon site 137.2 R. This site was sampled in 1982 and 1984 for adults and in 1984 for juveniles. Chum salmon were found spawning in low numbers both years. Chinook juveniles were captured in 1984.



51. 138.7 L RM 138.7

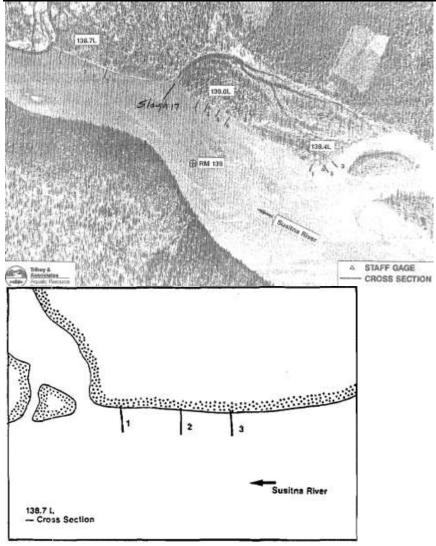
Meso-Habitat Type: Mainstem

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 138.7 immediately upstream of the Indian River confluence (RM 138.6).

1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Non-recon Site 138.71 LMS is a mainstem area along the left bank of the river immediately upstream of Indian River. This site was sampled during 1984 only, for both adult and juvenile salmon. Chum salmon were found spawning in this area and juvenile chinook were captured during electrofishing sampling.

		CHINOOK	COHO .	CHUM	SOCKEYE	PINK
984	8033323 8033323	+ JFMAMJJASOND 0	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1983	JUVENILE	JFMAMJ JASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJJASOND	JFMAMJ JASOND
1982	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJ JASOND

52. 139.0 L RM 139.0

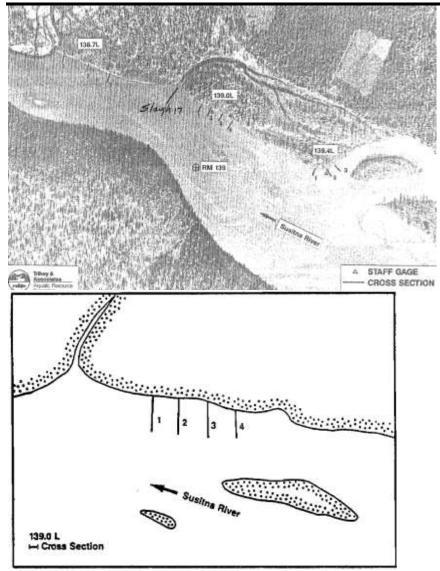
Meso-Habitat Type: Mainstem

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 139.0 less than 0.5 mile upstream of the Indian River confluence (RM 138.6).

1980s Studies Completed at Site:

• DIHAB model, 4 transects



Hilliard et al. 1985 (APA 2898)

Non-recon site 139.01 LMS is a mainstem area on the left bank just upstream of the mouth of Slough 17. This site was visited for the past three years by the adult survey crews. All three years chum salmon were found spawning, and the last two years sockeye salmon were also found spawning in the area. Upwelling known to be present at this site is probably the attracting habitat factor. This site was also sampled for juvenile salmon during 1984 and found to support both chinook and coho juveniles.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
984	JUVENILE	+ JFMAMJJASOND 00	JFMAMJJ ASOND	00 JFMAMJJASOND 	JFMAMJJASOND	00 JFMAMJJASOND 00
1983	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJ JASOND	JFMAMJJASOND	JFMAMJJASOND
1961	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND

+

53. 139.4 L RM 139.4

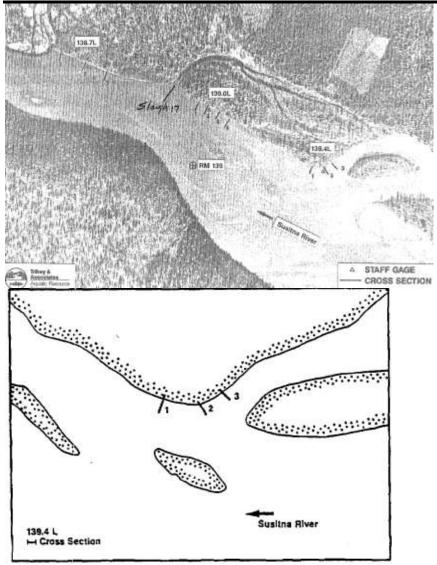
Meso-Habitat Type: Side Channel

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 139.4 0.8 mile upstream of the Indian River confluence (RM 138.6).

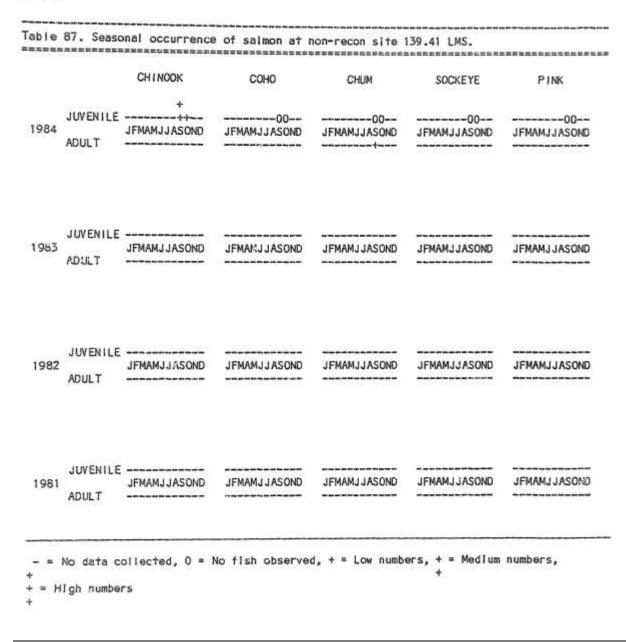
1980s Studies Completed at Site:

• DIHAB model, 3 transects



Hilliard et al. 1985 (APA 2898)

Non-recon site 139.41 LMS is a mainstem habitat on the left bank of the river at the mouth of a small side channel. This area was visited twice during the fall of 1984 for juvenile salmon. Juvenile chinook were found to inhabit this area on both occasions. An adult chum salmon carcass was seen in September of 1984.



54. SIDE CHANNEL 21 RM 141.2

Meso-Habitat Type:

Side Channel

Location:

Located on the left bank (looking downstream) of the Susitna River at approximate RM 141.2 immediately downstream of Slough 21. *Latitude* 62.803726 *Longitude* -149.598002 (WGS84)

1980s Studies Completed at Site:

Instream Flow Group (IFG-4) model, 5 transects

Site Description from 1980s:

- Approximately 0.9 miles in length and separated from the mainstem by a series of well-vegetated islands and gravel bars.
- Approximately 500 feet downstream of the head, Slough 21 entered the side channel (lower right corner in aerial photo).
- Cobble/boulder substrates predominated throughout the side channel with silt/sand deposits occurring in pool and backwater areas.
- Except during overtopping by the mainstem, a base flow up to 70 cfs in the side channel is maintained by Slough 21, local runoff, groundwater seepage, and upwelling.
- Mainstem overtopping occurs via an overflow channel below the mouth of Slough 21. Under these conditions, side channel flows of up to 1,200 cfs controlled by the mainstem were observed.



Lang et al. 1984 (APA 1936)

Recon site 141.4 R, and the adjacent Recon sites 141.6 R and 142.1 R are all part of what Is known as the Slough 21 Complex. They comprise a side slough and side channel type habitat on the right bank of the river. The 1981-1984 adult surveys were conducted in a manner that did not allow specifying which of the Recon sites within the complex the fish occurred, thus, these data are presented here. Juvenile data and some adult data, separate from the survey data, were specific to a particular Recon site and is presented in the appropriate site narrative and table.

This complex was surveyed for adult salmon for all four years, and for juveniles in 1981 and 1983. Very large numbers of chum salmon use this area for spawning, as well as moderate numbers of sockeye salmon. Pink salmon occur in low numbers. Juvenile sampling yielded low numbers of chinook salmon in 1983 and 1984, and moderate numbers for the winter of 1981.

		CHINOOK	COHO	CHUM	SOCKEYE	PINK
1984	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	 JFMAMJJASOND 	JFMANJJASOND +++	0 JFMAMJJASOND +00
1983	JUYENILE	JFMAMJJASOND	0000 JFMAMJJASOND 0000	+000 JFMAMJJASOND 	0000 JFMAMJJASOND 0++0 ++	0000 JFMAMJJASOND 0+00
1982	JUVENILE	JFMAMJJASOND	JFMAMJJASOND 000	JFMAHJJASOND ++0 ++ ++	JFMAMJJASOND ++0 +	JFMAMJJASOND +00 +
1981	JUVENILE ADULT	+ _+00 JFMAMJJASOND 00	-000 JFMAMJJASOND 00	-000 JFMAMJJASOND ++ ++ +	-000 JFMAMJJASOND ++ +	-000 JFMAMJJASOND 00

Table 69. Seasonal occurrence of salmon at Recon site 141.4 R.

55. SLOUGH 21 RM 142.1

Meso-Habitat Type:

Side Slough

Location:

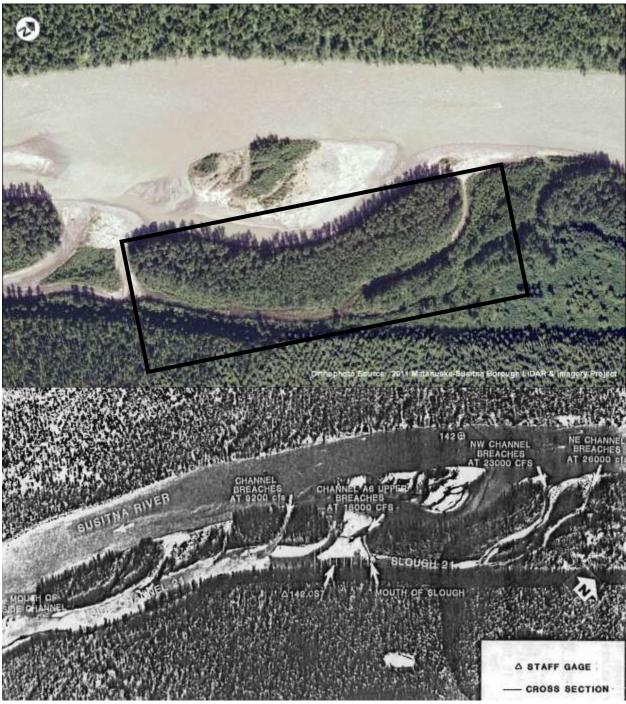
Located on the left bank (looking downstream) of the Susitna River at approximate RM 142, immediately upstream of Side Channel 21. *Latitude* 62.811657 *Longitude* -149.581757 (WGS84)

1980s Studies Completed at Site:

• Instream Flow Group (IFG-4) model, 5 transects

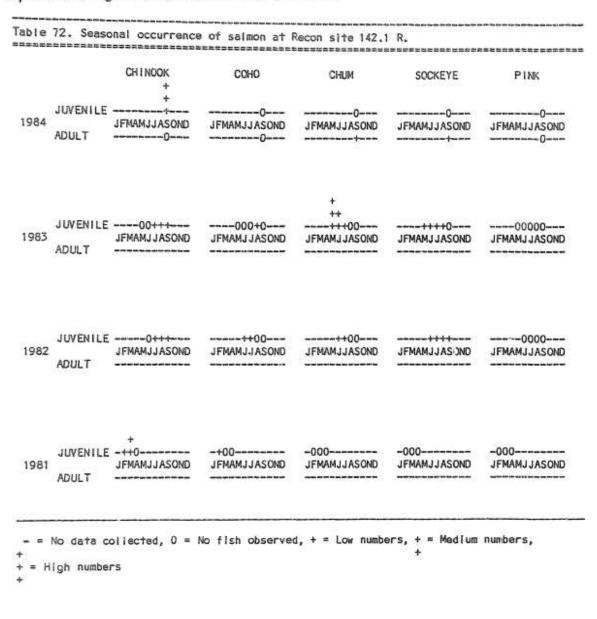
Site Description from 1980s:

- Approximately 0.5 miles in length, separated from the mainstem by a large vegetated island.
- The overall gradient of the slough was 22.9 ft/mi; generally, the channel cross-section was flat with a relatively deep, narrow channel running along the east bank.
- The banks were approximately 5 feet high and generally steep and undercut.
- The predominant substrate in the slough was cobble/boulder. However, silt/sand deposits were found in backwater and pool areas. Only a small area of backwater occurred at the mouth of this side slough during periods of high mainstem discharge.
- Except when overtopped by the mainstem, a base flow up to 5 cfs in the side slough was maintained by a small unnamed tributary, local runoff, groundwater seepage, and upwelling. During these periods, the upper half of the slough is dewatered with isolated pools.
- During overtopping events, the flow in the slough up to 350 cfs and controlled by mainstem discharge was observed.



Lang et al. 1984 (APA 1936)

Recon site 142.1 R is part of the Slough 21 Complex formed by this site and adjacent Recon sites 141.4 R and 141.6 R. Adult salmon surveys were made as part of the Slough 21 Complex, see Recon site 141.4 R for narrative summary. Incidental observations in 1984 indicate that this portion of the complex supports low numbers of chum and sockeye. The site supports all species of juvenile salmon except pink.



56. SLOUGH 22 RM 144.4

Meso-Habitat Type:

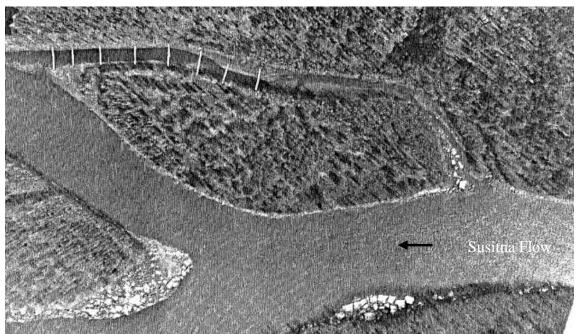
Side Slough

Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 144.4.

1980s Studies Completed at Site:

• RJHAB model, 8 transects



Marshall et al. 1984 (APA 1784)

Recon site 144.4 L, also known as Slough 22, is a side slough type habitat on the left bank of the river. Adult surveys in 1983 and 1984 found that moderate numbers of chum salmon use this site for spawning. Juvenile sampling in 1982 and 1983 found large numbers of chinook salmon juveniles, and low numbers of coho and chum salmon juveniles.

		CHINOOK	COHO ·	CHUM	SOCKEYE	PINK
984		JFMAMJJASOND 00	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
1983	JUVENILE ADULT	++ +++ JFMAMJJASOND 000	0+00 JFMAMJJASOND 000	0+00 JFMAMJJASOND ++0 ++	0000 JFMAMJJASOND 000	0000 JFMAMJJASOND 000
1962	JUVENILE ADULT	JFMAMJJASOND	JFMAMJJASOND	-000 JFMAMJJASOND	-000 JFMAMJ JASOND	-000 JFMAMJJASOND
1981	JUVENILE	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND

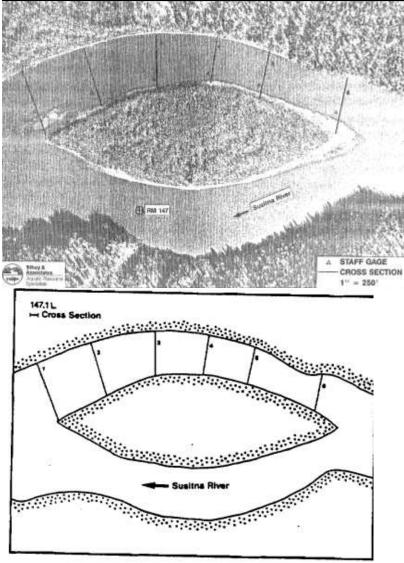
57. 147.1 L, FAT CANOE ISLAND RM 147.1

Meso-Habitat Type: Side Channel Location:

Located on the right bank (looking downstream) of the Susitna River at approximate RM 147.1.

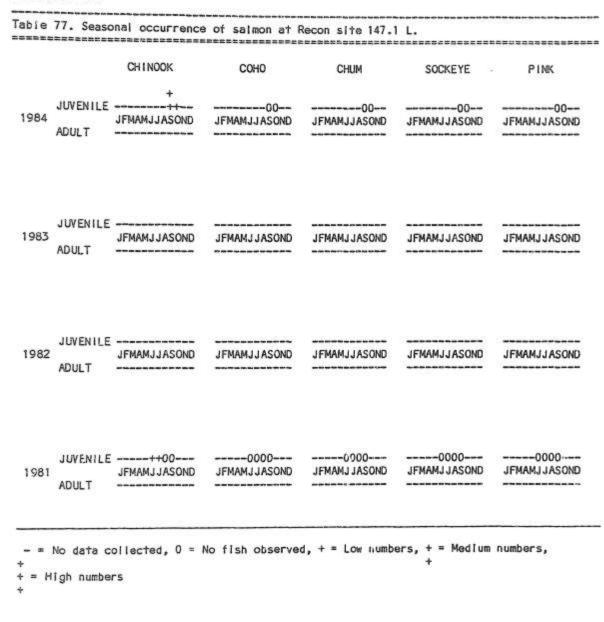
1980s Studies Completed at Site:

• IFG-2 (Instream Flow Group) model, 6 transects



Hilliard et al. 1985 (APA 2898)

Recon site 147.1 L is a side channel type habitat on the left bank of the river, also referred to as Fat Canoe Island. Juvenile sampling in 1981 and 1984 yielded chinook salmon juveniles both years. No other salmon activity is recorded for this site.



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