# PART A - APPENDIX D: FISH SEASONAL DISTRIBUTION TABLES PART A - APPENDIX E: RELATIVE ABUNDANCE TABLES PART A - APPENDIX F: HABITAT ASSOCIATION TABLES

# Susitna-Watana Hydroelectric Project (FERC No. 14241)

## Study of Fish Distribution and Abundance in the Middle and Lower Susitna River Study (9.6)

# Part A - Appendix D Fish Seasonal Distribution Tables

## **Initial Study Report**

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants Inc. LGL Alaska Research Associates, Inc. Golder Associates Inc. & HDR, Inc.] June 2014

	Chinook salmon						
Life Winter Early Life History Early Summer Late Summer Fall							
Location (PRM)	Stage	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)	
Proposed Watana Dam							
Location (PRM 187.1)	-	-	-	-	-	-	
MR-1	Juvenile						
(PRM_184.6-187.1) <sup>a</sup>	Adult						
MR-2	Juvenile			Х			
(PRM_169.6-184.6) <sup>b</sup>	Adult			Х	X		
Devils Canyon U/S End							
(PRM 169.6)		-	-	-	-	-	
MR-3							
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	-	
MR-4	Juvenile						
(PR <u>M 153.9-166.1</u> ) <sup>d</sup>	Adult						
Devils Canyon D/S End							
(PRM 153.9)	-	-	-	-	-	-	
MR-5	Juvenile			Х	Х	Х	
(PRM 148.4-153.9) <sup>a</sup>	Adult			Х			
MR-6	Juvenile	X	X	Х	X	X	
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х			
MR-7	Juvenile		X	Х	X	X	
(PRM_107.8-122.7) <sup>a</sup>	Adult						
MR-8	Juvenile	X	X	Х	X	X	
(PRM_102.4-107.8) <sup>a</sup>	Adult		X	X			
LR-1	Juvenile		Х	X	Х	X	
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х			
LR-2	Juvenile		X	X	X	X	
(PR <u>M 65.6-87.9</u> ) <sup>a</sup>	Adult				Х		
LR-3	Juvenile		Х	Х	Х	X	
(PR <u>M 44.6-65.6</u> ) <sup>a</sup>	Adult			X			
LR-4	Juvenile		X	X	X	X	
(PRM 32.3-44.6) <sup>a</sup>	Adult						

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Chum salmon						
	Life	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	Stage	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam						
Location (PRM 187.1)	-	-	-	-	-	-
MR-1	Juvenile					
(PRM 184.6-187.1) <sup>a</sup>	Adult					
MR-2	Juvenile					
(PRM 169.6-184.6) <sup>b</sup>	Adult					
Devils Canyon U/S End						
(PRM 169.6)	-	-	-	-	-	-
MR-3						
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	-
MR-4	Juvenile					
(PRM 153.9-166.1) <sup>d</sup>	Adult					
Devils Canyon D/S End						
(PRM 153.9)	-	-	-	-	-	-
MR-5	Juvenile					
(PRM 148.4-153.9) <sup>a</sup>	Adult			Х		
MR-6	Juvenile		Х	Х	Х	
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х	Х	Х
MR-7	Juvenile		Х	Х	Х	
(PRM 107.8-122.7) <sup>a</sup>	Adult			Х	Х	
MR-8	Juvenile	Х	Х	Х	Х	
(PRM 102.4-107.8) <sup>a</sup>	Adult			Х	Х	Х
LR-1	Juvenile		Х	Х	Х	
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х	Х	Х
LR-2	Juvenile		Х	Х	Х	Х
(PRM 65.6-87.9) <sup>a</sup>	Adult			Х	Х	Х
LR-3	Juvenile		Х	Х	Х	
(PRM 44.6-65.6) <sup>a</sup>	Adult					
LR-4	Juvenile				Х	
(PRM 32.3-44.6) <sup>a</sup>	Adult			Х	Х	Х

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

			Coho salmon					
	Life Winter Early Life History Early Summer Late Summer Fall							
Location (PRM)	Stage	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)		
Proposed Watana Dam								
Location (PRM 187.1)	-	-	-	-	-	-		
MR-1	Juvenile							
(PRM 184.6-187.1) <sup>a</sup>	Adult							
MR-2	Juvenile							
(PRM 169.6-184.6) <sup>b</sup>	Adult							
Devils Canyon U/S End								
(PRM 169.6)	-	-	-	-	-	-		
MR-3								
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	-		
MR-4	Juvenile							
(PRM 153.9-166.1) <sup>d</sup>	Adult							
Devils Canyon D/S End								
(PRM 153.9)	-	-	-	-	-	-		
MR-5	Juvenile			Х	Х	Х		
(PRM 148.4-153.9) <sup>a</sup>	Adult				Х	Х		
MR-6	Juvenile	Х	Х	Х	Х	Х		
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х	Х	Х		
MR-7	Juvenile		Х	Х	Х	Х		
(PRM 107.8-122.7) <sup>a</sup>	Adult			Х	Х			
MR-8	Juvenile	Х	Х	Х	Х	Х		
(PRM 102.4-107.8) <sup>a</sup>	Adult			Х	Х	Х		
LR-1	Juvenile		Х	Х	Х	Х		
(PRM 87.9-102.4) <sup>a</sup>	Adult				Х	Х		
LR-2	Juvenile		Х	Х	Х	Х		
(PRM 65.6-87.9) <sup>a</sup>	Adult				Х	Х		
LR-3	Juvenile		Х	Х	Х	Х		
(PRM 44.6-65.6) <sup>a</sup>	Adult				Х			
LR-4	Juvenile		Х	Х	Х	Х		
(PRM 32.3-44.6) <sup>a</sup>	Adult				Х			

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Pink salmon						
	Life	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	Stage	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam						
Location (PRM 187.1)	-	-	-	-	-	-
MR-1	Juvenile					
(PRM 184.6-187.1) <sup>a</sup>	Adult					
MR-2	Juvenile					
(PRM 169.6-184.6) <sup>b</sup>	Adult					
Devils Canyon U/S End						
(PRM 169.6)	-	-	-	-	-	-
MR-3						
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	-
MR-4	Juvenile					
(PRM 153.9-166.1) <sup>d</sup>	Adult					
Devils Canyon D/S End						
(PRM 153.9)	-	-	-	-	-	-
MR-5	Juvenile			Х		
(PRM 148.4-153.9) <sup>a</sup>	Adult			Х	Х	
MR-6	Juvenile		Х	Х		
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х	Х	
MR-7	Juvenile			Х		
(PRM 107.8-122.7) <sup>a</sup>	Adult			Х		
MR-8	Juvenile	Х	Х	Х		
(PRM 102.4-107.8) <sup>a</sup>	Adult			Х	Х	
LR-1	Juvenile					
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х	Х	
LR-2	Juvenile		Х	Х		
(PRM 65.6-87.9) <sup>a</sup>	Adult			Х	X	
LR-3	Juvenile					
(PRM 44.6-65.6) <sup>a</sup>	Adult			Х		X
LR-4	Juvenile					
(PRM 32.3-44.6) <sup>a</sup>	Adult			Х		

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

	Sockeye salmon						
	Life	Winter	Early Life History	Early Summer	Late Summer	Fall	
Location (PRM)	Stage	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)	
Proposed Watana Dam							
Location (PRM 187.1)	-	-	-	-	-	-	
MR-1	Juvenile						
(PRM 184.6-187.1) <sup>a</sup>	Adult						
MR-2	Juvenile						
(PRM 169.6-184.6) <sup>b</sup>	Adult						
Devils Canyon U/S End							
(PRM 169.6)	-	-	-	-	-	-	
MR-3							
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	-	
MR-4	Juvenile						
(PRM 153.9-166.1) <sup>d</sup>	Adult						
Devils Canyon D/S End							
(PRM 153.9)	-	-	-	-	-	-	
MR-5	Juvenile			Х		Х	
(PRM 148.4-153.9) <sup>a</sup>	Adult			Х			
MR-6	Juvenile	Х	Х	Х	Х	Х	
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х	Х	Х	
MR-7	Juvenile		Х	Х	Х	Х	
(PRM 107.8-122.7) <sup>a</sup>	Adult			Х	Х		
MR-8	Juvenile	Х	Х	Х	Х	Х	
(PRM 102.4-107.8) <sup>a</sup>	Adult			Х	Х	Х	
LR-1	Juvenile		Х	Х	Х	Х	
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х	Х	Х	
LR-2	Juvenile		Х	Х	Х		
(PRM 65.6-87.9) <sup>a</sup>	Adult						
LR-3	Juvenile		Х	Х	Х	Х	
(PRM 44.6-65.6) <sup>a</sup>	Adult						
LR-4	Juvenile		Х	Х	Х		
(PRM 32.3-44.6) <sup>a</sup>	Adult				Х		

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Arctic grayling					
	Winter Early Life History Early Summer Late Summer Fall						
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)		
Proposed Watana Dam Location							
(PRM 187.1)	-	-	-	-	-		
MR-1			v	v	V		
(PRM 184.6-187.1) <sup>a</sup>			^	^	^		
MR-2			v	v	v		
(PRM 169.6-184.6) <sup>b</sup>			^	^	^		
Devils Canyon U/S End							
(PRM 169.6)	-	-	-	-	-		
MR-3							
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-		
MR-4							
(PRM 153.9-166.1) <sup>d</sup>							
Devils Canyon D/S End							
(PRM 153.9)	-	-	-	-	-		
MR-5			v	v	v		
(PRM 148.4-153.9) <sup>a</sup>			^	^	^		
MR-6		Y	Y	Y	Y		
(PRM 122.7-148.4) <sup>a</sup>		X	~	Λ	X		
MR-7			x	x	x		
(PRM 107.8-122.7) <sup>a</sup>			~	~	~		
MR-8		х	х	x	х		
(PRM 102.4-107.8) <sup>a</sup>		~	~	~	~		
LR-1			х	х	х		
(PRM 87.9-102.4) <sup>a</sup>							
LR-2			х	х	х		
(PRM 65.6-87.9) <sup>a</sup>							
LR-3			х	х	х		
(PRM 44.6-65.6) <sup>a</sup>							
LR-4				х	х		
(PRM 32.3-44.6) <sup>a</sup>							

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Burbot				
Winter Early Life History Early Summer Late Summer Fall						
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)	
Proposed Watana Dam Location						
(PRM 187.1)	-	-	-	-	-	
MR-1			v	v	v	
(PRM 184.6-187.1) <sup>a</sup>			^	^	^	
MR-2			Y	v	v	
(PRM 169.6-184.6) <sup>b</sup>			~	^	^	
Devils Canyon U/S End						
(PRM 169.6)	-	-	-	-	-	
MR-3						
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	
MR-4						
(PRM 153.9-166.1) <sup>d</sup>						
Devils Canyon D/S End						
(PRM 153.9)	-	-	-	-	-	
MR-5			v	v	v	
(PRM 148.4-153.9) <sup>a</sup>			^	^	^	
MR-6		v	Y	v	v	
(PRM 122.7-148.4) <sup>a</sup>		~	~	~	~	
MR-7		X	x	x	x	
(PRM 107.8-122.7) <sup>a</sup>		X	~	~	~	
MR-8	x	x	x	x	x	
(PRM 102.4-107.8) <sup>a</sup>	~	~	~	~	~	
LR-1			x	x	х	
(PRM 87.9-102.4) <sup>a</sup>			~	~	~	
LR-2			х	х	х	
(PRM 65.6-87.9) <sup>a</sup>						
LR-3			х	х	х	
(PRM 44.6-65.6) <sup>a</sup>						
LR-4			Х	х	х	
(PRM 32.3-44.6) <sup>a</sup>						

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Dolly Varden				
Winter Early Life History Early Summer Late Summer Fall						
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)	
Proposed Watana Dam Location						
(PRM 187.1)	-	-	-	-	-	
MR-1				v		
(PRM 184.6-187.1) <sup>a</sup>				^		
MR-2		v	v	v	v	
(PRM 169.6-184.6) <sup>b</sup>		^	^	^	^	
Devils Canyon U/S End						
(PRM 169.6)	-	-	-	-	-	
MR-3						
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	
MR-4			v	v	v	
(PRM 153.9-166.1) <sup>d</sup>			^	^	^	
Devils Canyon D/S End						
(PRM 153.9)	-	-	-	-	-	
MR-5			X			
(PRM 148.4-153.9) <sup>a</sup>			~			
MR-6		X	X	X	×	
(PRM 122.7-148.4) <sup>a</sup>		~	Λ	~	~	
MR-7		X	X	X	×	
(PRM 107.8-122.7) <sup>a</sup>		~	Λ	~	~	
MR-8		X	X	X	×	
(PRM 102.4-107.8) <sup>a</sup>		~	Λ	~	~	
LR-1				x		
(PRM 87.9-102.4) <sup>a</sup>						
LR-2		×	Х	×	x	
(PRM 65.6-87.9) <sup>a</sup>			~		~	
LR-3			x			
(PRM 44.6-65.6) <sup>a</sup>			~			
LR-4						
(PRM 32.3-44.6) <sup>a</sup>						

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

	Lamprey					
	Winter	Early Life History	Early Summer	Late Summer	Fall	
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)	
Proposed Watana Dam Location						
(PRM 187.1)	-	-	-	-	-	
MR-1						
(PRM 1 <u>8</u> 4.6-187.1) <sup>a</sup>						
MR-2						
(PRM 169.6-184.6) <sup>b</sup>						
Devils Canyon U/S End						
(PRM 169.6)	-	-	-	-	-	
MR-3						
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-	
MR-4						
(PRM 1 <u>5</u> 3.9-166.1) <sup>d</sup>						
Devils Canyon D/S End						
(PRM 153.9)	-	-	-	-	-	
MR-5						
(PRM 148.4-153.9) <sup>a</sup>						
MR-6						
(PRM 122.7-148.4) <sup>a</sup>						
MR-7			X			
(PRM 107.8-122.7) <sup>a</sup>						
MR-8	Х	х	Х	Х	х	
(PRM 102.4-107.8) <sup>a</sup>					~	
LR-1		х		Х	х	
(PRM 87.9-102.4) <sup>a</sup>	i					
LR-2		Х	Х	Х	х	
(PRM 65.6-87.9) <sup>a</sup>						
LR-3		Х	Х	Х	х	
(PRM 44.6-65.6) <sup>a</sup>						
LR-4		х		х	х	
(PRM 32.3-44.6) <sup>a</sup>		~			~	

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

	Longnose sucker						
Winter Early Life History Early Summer Late Summer Fall							
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)		
Proposed Watana Dam Location							
(PRM 187.1)	-	-	-	-	-		
MR-1			V	V	V		
(PRM 184.6-187.1) <sup>a</sup>			*	X	X		
MR-2			v	v	v		
(PRM 169.6-184.6) <sup>b</sup>			^	^	^		
Devils Canyon U/S End							
(PRM 169.6)	-	-	-	-	-		
MR-3							
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-		
MR-4							
(PRM 153.9-166.1) <sup>d</sup>							
Devils Canyon D/S End							
(PRM 153.9)	-	-	-	-	-		
MR-5			V	V	v		
(PRM 148.4-153.9) <sup>a</sup>			^	^	^		
MR-6		v	v	v	v		
(PRM 122.7-148.4) <sup>a</sup>		~	~	^	^		
MR-7		x	x	x	x		
(PRM 107.8-122.7) <sup>a</sup>		X	~	~	~		
MR-8		x	x	x	x		
(PRM 102.4-107.8) <sup>a</sup>		~	~	~	~		
LR-1			x	x	x		
(PRM 87.9-102.4) <sup>a</sup>			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	~		
LR-2		х	х	х	х		
(PRM 65.6-87.9) <sup>a</sup>		~	~		~		
LR-3		х	х	х	х		
(PRM 44.6-65.6) <sup>a</sup>							
LR-4		х	х	х	х		
(PRM 32.3-44.6) <sup>a</sup>		~	~	~	~		

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Northern pike					
	Winter Early Life History Early Summer Late Summer Fall						
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)		
Proposed Watana Dam Location							
(PRM 187.1)	-	-	-	-	-		
MR-1							
(PRM 184.6-187.1) <sup>a</sup>							
MR-2							
(PRM 169.6-184.6) <sup>b</sup>							
Devils Canyon U/S End							
(PRM 169.6)							
MR-3	1						
(PRM 166.1-169.6) <sup>c</sup>							
MR-4							
(PRM 153.9-166.1) <sup>d</sup>							
Devils Canyon D/S End							
(PRM 153.9)							
MR-5	1						
(PRM 148.4-153.9) <sup>a</sup>							
MR-6							
(PRM 122.7-148.4) <sup>a</sup>							
MR-7							
(PRM 107.8-122.7) <sup>a</sup>							
MR-8							
(PRM 102.4-107.8) <sup>a</sup>							
LR-1							
(PRM 87.9-102.4) <sup>a</sup>							
LR-2							
(PRM 65.6-87.9) <sup>a</sup>							
LR-3							
(PRM 44.6-65.6) <sup>a</sup>							
LR-4		х	х	x	х		
(PRM 32.3-44.6) <sup>a</sup>		Λ	Л	~	Х		

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Sculpin	Sculpin						
	Winter Early Life History Early Summer Late Summer Fall								
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)				
Proposed Watana Dam Location									
(PRM 187.1)	-	-	-	-	-				
MR-1			v	v	V				
(PRM 184.6-187.1) <sup>a</sup>			٨	^	^				
MR-2		Y	Y	X	Y				
(PRM 169.6-184.6) <sup>b</sup>		^	^	^	^				
Devils Canyon U/S End									
(PRM 169.6)	-	-	-	-	-				
MR-3									
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-				
MR-4			Y		Y				
(PRM 153.9-166.1) <sup>d</sup>			Λ		^				
Devils Canyon D/S End									
(PRM 153.9)	-	-	-	-	-				
MR-5	1		X	X	X				
(PRM 148.4-153.9) <sup>a</sup>			Λ	~	Λ				
MR-6	×	×	X	×	×				
(PRM 122.7-148.4) <sup>a</sup>	~	~	Λ	~	~				
MR-7		X	X	X	×				
(PRM 107.8-122.7) <sup>a</sup>		~	~	~	~				
MR-8	×	x	Х	X	x				
(PRM 102.4-107.8) <sup>a</sup>	~	~	Λ	~	~				
LR-1		х	Х	x	x				
(PRM 87.9-102.4) <sup>a</sup>		~	A	~	~				
LR-2		х	Х	х	x				
(PRM 65.6-87.9) <sup>a</sup>		~		~	~				
LR-3		х	Х	x	х				
(PRM 44.6-65.6) <sup>a</sup>		~		~	~				
LR-4		x	x	x	x				
(PRM 32.3-44.6) <sup>a</sup>		Λ	~	~	Λ				

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Stickleback, ninespine					
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam Location					
(PRM 187.1)	-	-	-	-	-
MR-1					
(PRM 184.6-187.1) <sup>a</sup>					
MR-2					
(PRM 169.6-184.6) <sup>b</sup>					
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5					
(PRM 148.4-153.9) <sup>a</sup>					
MR-6					
(PRM 122.7-148.4) <sup>a</sup>					
MR-7					
(PRM 107.8-122.7) <sup>a</sup>					
MR-8					
(PRM 102.4-107.8) <sup>a</sup>					
LR-1			x	x	
(PRM 87.9-102.4) <sup>a</sup>			~	~	
LR-2		x	x		
(PRM 65.6-87.9) <sup>a</sup>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
LR-3		х	х	х	х
(PRM 44.6-65.6) <sup>a</sup>					
LR-4			X	x	x
(PRM 32.3-44.6) <sup>a</sup>			Λ	~	~

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Stickleback, threespine					
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam Location					
(PRM 187.1)	-	-	-	-	-
MR-1					
(PRM 184.6-187.1) <sup>a</sup>					
MR-2					
(PRM 169.6-184.6) <sup>b</sup>					
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5					
(PRM 148.4-153.9) <sup>a</sup>					
MR-6			V	v	
(PRM 122.7-148.4) <sup>a</sup>			^	~	
MR-7		v	v	v	v
(PRM 107.8-122.7) <sup>a</sup>		^	^	^	^
MR-8	x	x	x	x	x
(PRM 102.4-107.8) <sup>a</sup>	X	X	X	~	~
LR-1		x	x	x	x
(PRM 87.9-102.4) <sup>a</sup>		~	~	~	~
LR-2		x	x	x	x
(PRM 65.6-87.9) <sup>a</sup>			~	~	~
LR-3		х	х	х	х
(PRM 44.6-65.6) <sup>a</sup>					~
LR-4		x	X	x	x
(PRM 32.3-44.6) <sup>a</sup>		A		~	~

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

		Trout, rainbow	v		
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam					
Location (PRM 187.1)	-	-	-	-	-
MR-1					
(PRM 184.6-187.1) <sup>a</sup>					
MR-2					
(PRM 169.6-184.6) <sup>b</sup>					
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5			v		v
(PRM 148.4-153.9) <sup>a</sup>			^		^
MR-6		Y	Y	Y	Y
(PRM 122.7-148.4) <sup>a</sup>		~	^	^	^
MR-7		x	x	x	x
(PRM 107.8-122.7) <sup>a</sup>		~	~	~	~
MR-8	x	x	x	x	x
(PRM 102.4-107.8) <sup>a</sup>	~	~	~	~	~
LR-1			x	x	
(PRM 87.9-102.4) <sup>a</sup>			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
LR-2		х	x	x	х
(PRM 65.6-87.9) <sup>a</sup>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	~	~
LR-3		х	х		х
(PRM 44.6-65.6) <sup>a</sup>	_				
LR-4			Х		
(PRM 32.3-44.6) <sup>a</sup>			~		

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\circ}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated offchannel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Whitefish, Bering cisco					
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam Location					
(PRM 187.1)	-	-	-	-	-
MR-1					
(PRM_184.6-187.1) <sup>a</sup>					
MR-2					
(PRM 169.6-184.6) <sup>b</sup>					
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)					
MR-5					
(PRM 148.4-153.9) <sup>a</sup>					
MR-6					
(PRM 122.7-148.4) <sup>a</sup>					
MR-7					
(PRM 107.8-122.7) <sup>a</sup>					
MR-8					
(PRM 102.4-107.8) <sup>a</sup>					
LR-1					
(PRM 87.9-102.4) <sup>a</sup>					
LR-2					х
(PRM 65.6-87.9) <sup>a</sup>					
LR-3					
(PRM 44.6-65.6) <sup>a</sup>					
LR-4					х
(PRM 32.3-44.6) <sup>a</sup>					~

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

 $^{\rm c}$  Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Whitefish, humpback					
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam Location					
(PRM 187.1)	-	-	-	-	-
MR-1					
(PRM 184.6-187.1) <sup>a</sup>					
MR-2					
(PRM 169.6-184.6) <sup>b</sup>					
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5			v		
(PRM 148.4-153.9) <sup>a</sup>			^		
MR-6		X	x	X	
(PRM 122.7-148.4) <sup>a</sup>		~			
MR-7		x	х		
(PRM 107.8-122.7) <sup>a</sup>					
MR-8		х	х	Х	
(PRM 102.4-107.8) <sup>a</sup>					
LR-1					
(PRM 87.9-102.4) <sup>a</sup>					
LR-2					
(PRM 65.6-87.9) <sup>a</sup>					
LR-3					
(PRM 44.6-65.6) <sup>a</sup>					
LR-4					х
(PRM 32.3-44.6) <sup>a</sup>					

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

Whitefish, round					
	Winter	Early Life History	Early Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)	(Apr 15-June 30)	(Jul 1-Aug 10)	(Aug 11-Sep 9)	(Sep 10-Oct 12)
Proposed Watana Dam Location					
(PRM 187.1)	-	-	-	-	-
MR-1				v	v
(PRM 184.6-187.1) <sup>a</sup>				^	^
MR-2			Y	Y	Y
(PRM 169.6-184.6) <sup>b</sup>			Λ	^	^
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3	<u> </u>				
(PRM 166.1-169.6) <sup>c</sup>	-	-	-	-	-
MR-4					
(PRM 153.9-166.1) <sup>d</sup>					
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5			Y	Y	Y
(PRM 148.4-153.9) <sup>a</sup>			^	^	^
MR-6		X	X	X	X
(PRM 122.7-148.4) <sup>a</sup>		~		~	~
MR-7			X	X	x
(PRM 107.8-122.7) <sup>a</sup>				~	~
MR-8	x	x	Х	×	x
(PRM 102.4-107.8) <sup>a</sup>		~			~
LR-1		х	Х	x	х
(PRM 87.9-102.4) <sup>a</sup>					
LR-2			Х	x	х
(PRM 65.6-87.9) <sup>a</sup>					
LR-3		х	Х	х	х
(PRM 44.6-65.6) <sup>a</sup>					
LR-4		х		x	х
(PRM 32.3-44.6) <sup>a</sup>		X		~	~

<sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI), as well as directed sampling efforts outside of the ZHI in Fog and Tsusena creeks.

<sup>c</sup> Geomorphic reach MR-3 was not sampled during on-the-ground surveys in 2013.

<sup>d</sup> Geomorphic reach MR-4 only includes directed sampling efforts outside of the ZHI in Chinook Creek. The mainstem Susitna River and its associated off-channel and tributary habitats within the ZHI were not sampled during on-the-ground surveys in 2013.

# Susitna-Watana Hydroelectric Project (FERC No. 14241)

## Study of Fish Distribution and Abundance in the Middle and Lower Susitna River Study (9.6)

# Part A - Appendix E Relative Abundance Tables

## **Initial Study Report**

Prepared for

Alaska Energy Authority



Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants Inc. LGL Alaska Research Associates, Inc. Golder Associates Inc. & HDR, Inc. June 2014

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#### 1. CATCH PER UNIT EFFORT CALCULATIONS

As discussed in ISR Study 9.6, Section 4.4.2.2, catch per unit effort (CPUE) estimates were used to describe the relative abundance of fish species among habitats within the Middle and Lower River study area. Additional details concerning the calculation of CPUE are provided below, along with a summary of sampling effort (Tables E2 through E8 and Tables E105 through E111), gear-specific CPUE by species (Tables E1 and E104), and gear-specific average CPUE by habitat type (Tables E9 through E103 and Tables E112 through E206).

Catch per unit effort estimates were derived for each of the three types of Fish Distribution and Abundance protocols used in the Middle and Lower River: Middle River GRTS sampling, Middle River direct-sampling tributaries, and Lower River mainstem transects. The approach used to estimate CPUE was largely similar among each of these components. In all cases, CPUE was evaluated specific to gear type, species, and sampling event (i.e., early summer, late summer, or fall), and the analysis also distinguished between juvenile and adult life stages for Pacific salmon. Furthermore, the analysis conducted for each sampling component was specific to mesohabitat type. However, as a direct result of differences in the study design and site selection process among the sampling components, different analytical approaches were used to derive average CPUE values at the macrohabitat scale. In the mainstem Susitna River, the mesohabitat-specific CPUE estimates were averaged among macrohabitat units within each geomorphic reach, and in the Middle River, separate averages were derived for habitats within and outside of Focus Areas. For direct-sampling tributaries, average CPUE was calculated as the average among sampling reaches within a given tributary. In the analysis that follows, these differences are discussed when relevant to the calculations being described.

At the mesohabitat unit level, CPUE was calculated as follows for each gear type, species, life stage, and sampling event combination:

#### $CPUE_{Meso} = C_{Meso}/E_{Meso},$

where CPUE<sub>Meso</sub> = catch per unit effort for a given mesohabitat unit,

 $C_{Meso}$  = total fish captured within a given mesohabitat unit, and

 $E_{Meso}$  = total effort within a given mesohabitat unit.

For backpack and boat electrofishing,  $E_{Meso}$  was recorded as the electrofishing pulse duration in seconds, and for reporting purposes was expressed in hours. That is,

 $E_{Meso}$  = pulse duration in seconds × (1 minute/60 seconds) × (1 hour/60 minutes) = pulse duration in hours.

For snorkeling and seining,  $E_{Meso}$  was calculated by determining the total area sampled at a given mesohabitat unit. Specifically,

 $E_{Meso}$  = length of area sampled in meters × width of area sampled in meters = area sampled in square meters.

For snorkeling and seining,  $CPUE_{Meso}$  estimates were then standardized to 1,000 m<sup>2</sup> using a factor of 1,000.

For passive sampling techniques (i.e., fyke nets, hoop traps, and minnow traps),  $E_{Meso}$  was calculated as the total number of traps set within a given mesohabitat unit. Specifically,

 $E_{Meso}$  = number of traps set.

When sampling within a mainstem macrohabitat site or a direct sampling reach included multiple mesohabitat units of the same type (e.g., two distinct pools), the associated  $CPUE_{Meso}$  values were calculated using the total catch and the total effort across mesohabitat units. For example,

 $CPUE_{Meso} = (C_{Meso1} + C_{Meso2} + \dots + C_{Meson}) / (E_{Meso1} + E_{Meso2} + \dots + E_{Meson})$ 

After determining CPUE<sub>Meso</sub> values for a given mesohabitat type, the average CPUE was calculated as:

 $CPUE_{Avg} = (\Sigma \ CPUE_{Meso})/N,$ 

where *N* = sample size.

Specific definitions for *N* vary among locations. For mainstem sampling in the Middle River, average CPUE estimates for each mesohabitat type were calculated specific to mainstem macrohabitat types within and outside of Focus Areas for each geomorphic reach. Thus,

 $N_{M,m,g,e(FA)}$  = number of macrohabitat units of type "M" containing mesohabitat type "m" that was sampled using gear type "g" during sampling event "e", within Focus Areas of a given geomorphic reach; and

 $N_{M,m,g,e(non-FA)}$  = number of macrohabitat units of type "M" containing mesohabitat type "m" that was sampled using gear type "g" during sampling event "e", outside of Focus Areas within a given geomorphic reach.

For Lower River mainstem transect sampling, average CPUE estimates for each mesohabitat type were calculated specific to mainstem macrohabitat types within each geomorphic reach. In this case,

 $N_{M,m,g,e}$  = number of macrohabitat units of type "M" within a given geomorphic reach containing mesohabitat type "m" that was sampled using gear type "g" during sampling event "e".

For direct sampling tributaries,

 $N_{m,g,e}$  = number of sampling reaches within a given tributary containing mesohabitat type "m" that was sampled using gear type "g" during sampling event "e".

Actual sample sizes and the total effort supporting gear-specific average CPUE values are provided in Tables E2 through E8 and Tables E105 through E111 for the Middle and Lower River, respectively.

#### 2. MIDDLE RIVER CATCH PER UNIT EFFORT DATA

Table E1. Summary of relative abund	ance by capture method for main channel, off-channel, and tributary habitats of f	the
Middle River, 2013.		

			Main Channel						Off-Channel								Tributary							
Species	Life Stage		Backpack Electrofishing (N=195, CPUE in fish/hour)	Boat Electrofishing (N=113; CPUE in fish/hour)	Snorkel (N=32; CPUE in fish/1,000 m^2)	<b>Seine</b> (N=93; CPUE in fish/1,000 m^2)	Minnow Trap (N≕45; CPUE in fish/trap)	Fyke Net (N=17; CPUE in fish/trap)	Hoop Trap (N≕49; CPUE in fish/trap)	Backpack Electrofishing (N=115; CPUE in fish/hour)	Boat Electrofishing (N=3; CPUE in fish/hour)	Snorkel (N=98; CPUE in fish/1,000 m^2)	Seine (N=45; CPUE in fish/1,000 m^2)	Minnow Trap (N=82; CPUE in fish⁄trap)	<b>Fyke Net</b> (N=23; CPUE in fish/trap)	Hoop Trap (N=3; CPUE in fish/trap)	Backpack Electrofishing (N=78; CPUE in fish/hour)	Boat Electrofishing (N=3; CPUE in fish/hour)	Snorkel (N≓71; CPUE in fish/1,000 m^2)	<b>Seine</b> (N=10; CPUE in fish/1,000 m^2)	Minnow Trap (N=36; CPUE in fish/trap)	<b>Fyke Net</b> (N=1; CPUE in fish/trap)	Hoop Trap (N≓2; CPUE in fish/trap)	Percent of Sites with CPUE=0 (N=569; all methods)
Salmon,	adult	% CPUE=0			97%	100%	100%	100%	100%			100%	100%	100%	100%	100%			94%	100%	100%	100%	100%	99%
Chinook		Max CPUE			1.7														6.8					
	juvenile	% CPUE=0	97%	100%	94%	91%	84%	71%	98%	96%	100%	93%	78%	57%	39%	100%	95%	100%	93%	80%	67%	0%	50%	84%
		Max CPUE	14.7		2.7	35.5	1.9	31	0.2	18		1053.4	130.5	4.7	33		32.5		37.9	3.1	7.8	14	1	
Salmon, chum	adult	% CPUE=0			91%	91%	100%	88%	92%			94%	100%	100%	100%	100%			85%	100%	100%	100%	100%	94%
		Max CPUE			61.5	58		13	3			19.5							289					
	juvenile	% CPUE=0	98%	100%	100%	96%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	99%	90%	100%	100%	100%	98%
		Max CPUE	8.7			13.3				15.8									104.3	189.8				
Salmon, coho	adult	% CPUE=0			97%	97%	100%	100%	98%			97%	96%	100%	96%	100%			93%	80%	100%	0%	50%	97%
		Max CPUE			5	29			1			1.9	0.9		1.5				52.7	8.4		5	1	
	juvenile	% CPUE=0	94%	100%	78%	89%	73%	82%	98%	77%	67%	80%	58%	37%	43%	67%	78%	100%	73%	70%	33%	0%	50%	73%
		Max CPUE	29.9		1125.5	266	3.3	41	0.3	269.7	13	1555.6	4553.8	9	422	21	112.5		1054.5	5502.8	7	10	1	
Salmon, pink	adult	% CPUE=0			94%	94%	100%	100%	86%			99%	100%	100%	100%	100%			87%	100%	100%	100%	50%	95%
		Max CPUE			6.7	26.7			6			0.5							4334.4				1	
	iuvenile	% CPUE=0	100%	99%	100%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	>99%
	1	Max CPUE		12.5						1.6														
Salmon.	adult	% CPUE=0			97%	99%	100%	100%	100%			95%	100%	100%	96%	100%			97%	100%	100%	100%	100%	98%
sockeve		Max CPUE			1.7	2.5						22.6			8				4.2					
	iuvenile	% CPUE=0	96%	99%	91%	86%	98%	82%	100%	88%	100%	92%	60%	89%	87%	100%	92%	100%	92%	70%	92%	100%	100%	86%
	J= . =	Max CPUE	22.7	50.1	108.1	121.4	<0.1	25		76.6		1410.2	676.6	1	111		16.2		37.6	1897.5	0.1			
Arctic gravling		%CPUE=0	69%	81%	84%	81%	96%	82%	94%	83%	100%	89%	87%	95%	83%	100%	87%	67%	80%	100%	97%	0%	100%	75%
· · · · · · · · · · · · · · · · · · ·		Max CPUE	170	247 1	21.9	378.1	0.5	40	2	112.4		200	45.2	0.9	10		72.9	93	181.8		0.1	77		
Burbot		%CPUF=0	84%	95%	100%	94%	82%	41%	65%	76%	67%	100%	100%	79%	74%	100%	91%	67%	100%	100%	86%	0%	100%	78%
		Max CPUE	89	24	10070	13.8	0.5	15	2	26.4	13	10070	10070	0.8	37	10070	31.6	93	10070	10070	1	1	10070	10/0
Dolly Varden		%CPUF=0	99%	98%	97%	99%	93%	88%	98%	98%	100%	98%	93%	99%	96%	100%	74%	100%	76%	100%	89%	0%	100%	91%
bony varaon		Max CPUE	5.5	94	0.9	1.3	0.5	4	1	3.5	10070	44.4	12.5	0.3	1	10070	91.4	10070	243.5	10070	0.7	5	10070	0170
Lamprey		% CPUF=0	100%	100%	97%	100%	100%	94%	100%	97%	100%	100%	100%	98%	96%	100%	97%	100%	100%	100%	100%	100%	100%	98%
		Max CPUE			0.5			2		66.7				0.5	9		8.7							
Longnose		% CPUE=0	79%	88%	94%	71%	80%	35%	80%	75%	100%	88%	80%	79%	70%	67%	91%	100%	99%	100%	97%	0%	50%	72%
sucker		Max CPUE	171.4	34.3	5.5	73.3	0.6	22	1	979.2	10070	41.4	505.9	24	19	3	84	10070	36.4	10070	0.2	5	2	12/0
Sculpin		% CPUF=0	15%	88%	75%	81%	56%	71%	96%	43%	67%	66%	64%	50%	74%	67%	29%	67%	75%	90%	47%	100%	100%	34%
undifferentiated		Max CPUE	291.2	28.3	12.1	121.4	24	5	1	583.3	13	66.7	276.9	3.4	5	2	398.5	9.3	111 1	1138.5	.3	10070	10070	0170
Stickleback		%CPUF=0	100%	100%	100%	97%	96%	88%	100%	81%	100%	90%	64%	74%	65%	100%	99%	100%	99%	100%	92%	0%	100%	89%
threespine		Max CPUE	10070	10070	10070	33.3	0.1	1	10070	470.2	10070	89	67.1	78.2	1002	100,0	22	10070	0.7	10070	0.3	1	10070	0070
Trout rainbow		% CPLIE=0	97%	92%	100%	96%	100%	94%	96%	98%	100%	98%	98%	99%	65%	67%	95%	100%	89%	90%	89%	0%	50%	91%
riout, ruinoow		Max CPUE	79	27.1	10070	14 5	10070	1	03	14.1	10070	23.4	0.7	0.1	11	0.5	13.3	100 /0	54.5	33	14	38	2	5170
Whitefish		%CPUF=0	100%	98%	100%	95%	100%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
humphack		Max CPUE	10070	50.1	10070	66.5	10070	2	10070	100 /0	10070	10070	10070	10070	10070	10070	10078	10070	10070	10070	.00/3	10070	10070	5575
Whitefish round	1	%CPUE=0	84%	78%	97%	69%	98%	65%	96%	97%	100%	98%	87%	96%	87%	100%	100%	67%	99%	90%	100%	0%	100%	83%
Wintenan, Fourie		Max CPLIE	54 0	41 5	17	498 7	0.1	16	03	10.5	100 /0	22.2	55.6	03	5	100 /0	100 /0	18.7	1	28	100 /0	2	100 /0	0370
Whitefish		%CPUE=0	97%	98%	97%	87%	100%	76%	100%	99%	100%	98%	96%	99%	100%	100%	99%	100%	99%	100%	100%	100%	100%	95%
undifferentiated	-	Max CPLIE	11.2	24.7	17	33.2	100 /0	1 1	100 /0	67.2	100 /0	90.03	12.8	0.1	100 /0	100 /0	84	100 /0	82	10078	100 /0	100 /0	100 /0	3378
Dercent of	Sitae wit	h No Fieh	5%	45%	38%	30%	27%	12%	37%	20%	67%	22%	7%	6%	0%	0%	10%	67%	3/1%	50%	1/1%	0%	0%	
reiceill 01	ones Wit	11110 11511	370	4J /0	JU /0	33/0	21/0	12/0	31/0	20/0	01/0	22/0	1 /0	U /0	U /0	U /0	13/0	01/0	JH /0	JU /0	14 /0	U /0	U /0	

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.
Table E2. Sample sizes and total effort used for calculating average CPUE for backpack electrofishing in the Middle River, 2013.

Geo-					Sam	ple Size ( <i>N</i> )		(pulse du	Fotal Effort gration in sec	conds)
Geo- morphic Reach	Stream	FA or Non- FA	Macro- habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propo	osed Watana Da	m Location (P	RM 187.1)	-			
			Main Channel	Run	3	3	3	2510	2996	2826
		FA		Glide			1			444
MR-1			Side	Riffle	1	1	1	891	756	1079
(PRM 184.6-	Susitna River		Undriner	Run	2	2	1	876	852	847
187.1)	NIVEI	Non-	Main Channel	Run	3	3	3	2336	1840	2180
		FA	Side	Riffle			1			476
			Channel	Run	1	1		723	596	
			Main Channel	Run	3	3		2671	3146	
			Side Channel	Glide	1	1	1	1149	1189	1151
		FA	Side Slough	Backwater Pool	2	1		1016	2214	
				Glide		2	3		913	2188
			Tributary Mouth	Cascade			1			385
			Mouth	Riffle		1			1085	
			Backwater	Backwater Pool	1	1	1	545	825	466
	Susitna		Clearwater Plume	Clearwater Plume	2	3	3	1294	2542	1671
MR-2	River		Main Channel	Run	1	1	1	700	500	462
(PRM 160.6			0:4-	Glide			1			156
184.6)		Non-	Channel	Riffle	1	1		446	870	
,		FA		Run	2	2	1	1352	1920	570
				Pool	2		2	658		844
			Side Slough	Riffle		1			645	
				Run	1	2	1	656	1391	1025
			Split Main Channel	Run	1	1	1	1112	522	430
			Tributary Mouth	Riffle		2	2		780	765
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	1	1	1	472	694	906
	<b>-</b>	New		Pool	2	2	2	500	263	341
	⊢og Creek¹	Non- FA	Tributary	Riffle	2	2	2	470	346	701
(	Fog Creek <sup>1</sup>			Run	1	1	1	257	240	135

		FA or	r Macro-		Sam	ple Size ( <i>N</i> )	) (pulse		Total Effort e duration in seconds)	
Geo- morphic Reach	Stream	FA or Non- FA	Macro- habitat Type	Meso- habitat Type	Early Summer	Late	Fall	Early Summer	Late Summer	Fall
				Boulder Riffle	1		1	255		153
MD 2	Fog Crook	Non		Pool	1	1	1	89	101	126
(cont.)	Tributary <sup>1</sup>	FA	Tributary	Rapid	1			210		
( )				Riffle	2	1	2	893	403	974
				Run			1			243
			De	vils Canyon Upp	er Extent (PR	M 166.1)				
MR-4 (PRM	Chinook	Non-	Tributary	Boulder Riffle	2	1	1	1039	580	315
153.9- 166.1)	Creek <sup>1</sup>	FA	moutary	Riffle			1			410
	1		De	vils Canyon Low	er Extent (PR	M 153.9)			1	
			Clearwater Plume	Clearwater Plume			1			837
		FA		Glide	1			347		
			Main	Riffle	1	1	1	323	755	974
MR-5	Sucitor		Channel	Run			1			267
(PRM 148.1- 153.9)	Susitna River		Main Channel	Run	2	2	2	1893	1470	1357
100.0)		Non-	Sida Slaugh	Glide	3	3	1	5335	1944	1053
		FA	Side Slough	Pool			1			248
			Split Main Channel	Run	1	1	1	1764	460	890
			Backwater	Backwater Pool			1			1924
			Main Channel	Run	1	1		7	771	
			Multiple	Riffle	1	2	1	122	1219	724
			Split Main Channel	Run	2	2	2	1196	2021	2260
				Backwater Pool	1			332		
MR-6	<b>A</b>		Side	Glide	2	1	2	1550	729	3064
(PRM 122.7-	Susitna River	FA	Channel	Riffle	1	1	1	1066	1266	305
148.4)				Run	1		1	299		1235
148.4)				Beaver Pond			1			1199
			Side Slough	Glide	3		2	3128		2326
			Beaver	Pool			1			399
			Jounhier	Riffle	1			94		
				Run	1			914		
			Split Main Channel	Run			1			966

Geo- morphic	EA or	Maara	Maaa	Sam	ple Size ( <i>N</i> )		(pulse di	Total Effort uration in sec	onds)	
morphic Reach	Stream	Non- FA	habitat Type	habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Glide			1			445
			Tributary	Riffle	2		2	1219		928
			wouth	Run			1			510
				Glide	1		1	600		288
			<b>T</b> 11 (	Pool	2			1523		
		<b>F</b> A	Iributary	Riffle	1			1243		
		FA (cont.)		Run	1			1260		
		()	Upland Slough	Glide			1			404
MR-6 (cont.)			Upland Slough Beaver Complex	Beaver Pond	2		3	2184		5026
		Non- FA	Backwater	Backwater Pool	2	2		949	763	
	Susitna River (cont.)		Clearwater Plume	Clearwater Plume	2	1	2	1546	607	1383
			Side	Pool	1	1	3	1010	510	1165
			Channel	Riffle	2	2		2748	1210	
			Side Slough	Glide		1	1		200	590
			Side Slough	Pool	3	2	1	2386	1023	780
			Side Slough Beaver Complex	Beaver Pond	1	1	1	262	245	332
			Tributary Mouth	Run	2	2	3	2398	698	1688
			Tributary	Boulder Riffle	1	1	1	332	110	374
			Upland Slough	Pool	1	1	1	1982	846	720
			Upland Slough Beaver Complex	Beaver Pond	2	2	2	1621	816	1080
			Clearwater Plume	Clearwater Plume		2			261	
MR-7 (PRM 107.8- 122 7)	<b>a</b> "		Main Channel	Run	1	1	1	524	530	1153
	Susitna River	FA	Channel	Backwater Pool			3			2762
122.1)			Side Channel	Glide	1	2		321	1776	
			Shamor	Pool	2	1		1040	641	
				Riffle		2			1894	

0		<b>FA</b> an	Макиа	Masa	Sam	ple Size ( <i>N</i> )		pulse dı)	Total Effort uration in sec	onds)
Geo- morphic Reach	Stream	FA or Non- FA	habitat Type	habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Split Main	Riffle	2	2		211	699	
			Channel	Run	2	1	2	725	405	910
			Tributary	Cascade	1			800		
			Mouth	Riffle	1			247		
				Glide		1			1000	
		FA	<b>T</b> '1 1	Pool		1			590	
		(cont.)	Iributary	Riffle	1			271		
				Run			1			95
			Upland	Pool			1			343
			Slough Beaver Complex	Run			2			1077
			Clearwater Plume	Clearwater Plume			1			497
			Main	Glide			1			1040
MR-7 (cont.)			Channel	Run	1			1070		
	Susitna			Glide			1			570
	River (cont.)	Non- FA	Side Channel	Riffle	1	1	1	1156	423	385
				Run	2	2	1	2306	3292	1140
			Side Slough	Pool	3	3	3	2611	1911	1149
			Side Slough Beaver Complex	Beaver Pond	1	1	1	583	675	424
			Split Main Channel	Run	1	1	1	513	1085	693
			Tributary Mouth	Riffle	1		2	30		159
			Tributary	Run	2	2	1	1727	1000	477
			Upland Slough	Pool	3	3	3	2429	2020	1266
MD 8			Upland Slough Beaver Complex	Beaver Pond	3	3	3	3255	2292	1307
			Main	Glide	1			421		
			Channel	Run	2	2	3	817	638	3488
(PRM	Susitna			Glide			1			989
102.4-	River	FA	Side	Pool	1	1	1	279	30	137
107.8)			Side F Channel F	Riffle	1	2	2	580	1179	1835
101.0)				Run	1	1		855	1133	

0		FA or	Maria	Masa	Sam	ple Size ( <i>N</i> )		Total Effort (pulse duration in seconds)			
Geo- morphic Reach	Stream	FA or Non- FA	Macro- habitat Type	меsо- habitat Туре	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
			Sida Slaugh	Glide	2			6165			
		FA (cont)	Side Slough	Riffle	2	1		1774	279		
		(cont.)	Tributary	Riffle	1			508			
			Main Channel	Run	1	1	1	1350	1235	569	
			Side	Glide	1		1	1364		450	
MR-8	Susitna			Pool	2	1	1	1053	315	240	
(cont.)	River		Undriner	Run		1	1		1159	560	
. ,	(cont.)	Non-	Cide Claush	Glide			1			496	
		FA	Side Slough	Pool	3	3	2	1640	817	344	
			Split Main Channel	Run	1	1	1	1091	906	835	
			Upland	Glide	1	1	1	1904	156	821	
			Slough	Pool	2	2	1	2795	1659	168	

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

Table E3. Sample sizes and total effort used for calculating average CPUE for boat electrofishing in the Middle River,2013.

_				Sar	nple Size ( <i>N</i> )		Total Effort (pulse duration in seconds)			
Geo- morphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
			Proposed Wata	ina Dam Locat	ion (PRM 187.	1)				
MR-1	FA	Main Channel	Run	3	3	3	705	690	956	
(PRM 184.6		Main Channel	Run	2	3	2	705	1924	1544	
187.1)	NON-FA	Side Channel	Riffle			1			1252	
	FA	Main Channel	Run	3	3	3	1020	1350	1187	
MR-2		Clearwater Plume	Clearwater Plume	2	2	3	850	504	2610	
(PRM 169.6-	Non EA	Main Channel	Run	1	1	1	230	303	1001	
184.6)	NOII-FA	Side Channel	Run	1		1	192		825	
		Split Main Channel	Run	1	1	1	192	303	810	
			Devils Ca	inyon (PRM 15	3.9-166.1)		-	-	-	
MR-5 FA (PRM		Clearwater Plume	Clearwater Plume			1			61	
(PRM 148 1-		Main Channel	Run		2	1		193	91	
148.1- 153.9) ♪		Main Channel	Run	2	2	2	464	672	2064	
153.9)	Non-FA	Split Main Channel	Run	1	1	1	278	706	1261	
		Main Channel	Run		1			194		
MR-6	FA	Multiple Split Main Channel	Run		2	2		373	412	
(PRM 122.7-	FA	Split Main Channel	Run			1			375	
148.4)		Backwater	Backwater Pool	2		1	592		275	
	Non-FA	Main Channel	Run	3	3	3	852	1016	2903	
		Tributary Mouth	Run	1	1	1	99	225	386	
		Main Channel	Run		1	1		300	670	
MR-7	FA	Split Main Channel	Run		2	2		327	1050	
(PRIVI 107.8-		Backwater	Backwater Pool	1			1154			
122.7)	Non-FA	Main Channel	Run	1		1	342		178	
		Split Main Channel	Run	2	2	2	390	564	2066	
		Main Channel	Glide	1			221			
	FΔ		Run	2	3	3	110	561	1942	
MR-8		Side Channel	Riffle			1			520	
(PRIVI 102.4-			Run	1	1		72	40		
107.8)		Main Channel	Run	2	2	1	428	1040	123	
	Non-FA	Side Channel	Glide	1		1	184		386	
	Non-FA		Pool	1	1	1	301	212	233	

Geo- FA or				San	nple Size ( <i>N</i> )		Total Effort (pulse duration in seconds)			
Geo- morphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
MR-8 Non- (cont.) (con		Side Channel (cont.)	Run		1			231		
	Non-FA (cont.)	Split Main Channel	Run	1	1	1	347	241	220	
		Upland Slough	Pool	1	1	1	251	200	276	

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

6				Sam	Total Effort (area sampled in squ meters)				
morphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed Watan	a Dam Locatio	on (PRM 187.	1)	•	•	
MR-1		Main Channel	Run	1			142.5		
(PRM 184.6-	FA	Oide Oberrad	Riffle	1			320.0		
187.1)		Side Channel	Run	2	1	1	1120.0	600.0	400.0
		Backwater	Backwater Pool		1			1552.0	
MR-2 (PRM 169.6	FA	Clearwater Plume	Clearwater Plume	1	1		182.5	320.0	
184.6)		Side Channel	Glide	1			25.0		
/		Cide Clough	Glide		1			1415.2	
		Side Slough	Run		1			5260.0	
			Devils Can	yon (PRM 153	3.9-166.1)				
MR-5 (PRM		Clearwater Plume	Clearwater Plume	1	1	1	46.3	1000.0	240.0
148.1- 153.9)			Glide	1			292.5		
153.9)		Main Channei	Run		1			488.0	
		Backwater	Backwater Pool	2	3		1200.8	789.0	
		Clearwater Plume	Clearwater Plume	1	2		1200.0	1775.0	
		Main Channel	Run	1	1		1000.0	1064.0	
		Multiple Split	Riffle		1			780.0	
		Main Channel	Run	1	1	2	200.0	240.0	925.0
			Backwater Pool	1	2		236.0	1415.5	
		Side Channel	Glide	3	2	1	5157.5	2763.6	487.5
MR-6			Riffle	1	1		250.0	240.0	
(PRM			Run		2	1		1408.8	665.0
122.7- 148.4)			Backwater Pool	2			1352.5		
		Side Slough Beaver Complex	Beaver Pond		2	1		2542.0	1020.0
		Complex	Glide	1		1	513.0		585.9
			Pool		2			1800.0	
		Split Main Channel	Run			1			200.0
		Tributor	Glide		1	1		359.0	384.9
		iributary	Pool	2			198.5		
		Tributors Mouth	Pool	1			469.0		
			Riffle		1			121.9	

## Table E4. Sample sizes and total effort used for calculating average CPUE for seining in the Middle River, 2013.

0	Geo- morphic FA or Macrohabitat			Sam	nple Size ( <i>N</i> )		Total Effort	(area sampleo meters)	l in square
Geo- morphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	FA (cont.)	Upland Slough Beaver Complex	Beaver Pond	2	4	1	5780.0	3702.4	1332.8
MR-6		Main Channel	Run	3	3	3	143.0	440.0	142.0
(cont.)	Non EA	Side Channel	Riffle		1			450.0	
	NOI-FA	Tributary Mouth	Run	1			350.0		
		Backwater	Backwater Pool	2			6090.1		
		Clearwater Plume	Clearwater Plume	1	1	1	184.8	81.0	410.0
		Main Channel	Run		1			200.0	
			Backwater Pool			2			270.0
		Side Channel	Glide	1	1		496.0	420.0	
MR-7(PRM FA 107.8- 122.7)			Pool	2	1		800.0	696.0	
	FA	Split Main	Riffle	1	1		280.0	130.0	
	-	Channel	Run	1	2		400.0	662.5	
		Tillesterre	Backwater Pool			1			320.0
		Tributary	Pool	1			305.5		
			Riffle			1			24.0
		Upland Slough	Beaver Pond	1	1	3	3650.0	4000.0	14000.0
		Complex	Glide	1	2		18.0	165.0	
			Run	1			32.5		
	Non-FA	Split Main Channel	Run	1	1	1	37.5	57.2	96.0
		Main Channel	Run			2			574.0
			Backwater Pool	1		1	1111.1		38.7
			Glide			2			443.0
		Side Channel	Pool	1	1		400.0	360.0	
ілік-ð (PRM			Riffle		1	1		150.0	300.0
102.4-	FA		Run	1	1		230.0	280.0	
102.4- 107.8)			Glide	2	2	1	842.0	2598.4	2426.4
		Side Slough	Pool			2			2075.1
			Run		1			2158.2	
		Upland Slough	Glide	2	3	2	4200.0	8677.0	3400.0
		Complex	Run		1	1		122.7	80.0

0				Sam	ple Size ( <i>N</i> )		Total Effort (area sampled in square meters)			
morphic FA or Reach Non-FA		Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
		Main Channel	Run	1	1	1	72.5	225.0	450.0	
MR-8 (cont.)	Non-FA	Split Main Channel	Run	1		1	45.0		260.0	
		Upland Slough	Glide	1			2842.0			

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

<b>C</b> 11		<b>FA</b>			Sam	ple Size ( <i>N</i> )		Total Effort (area sampled in square meters)		
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propos	ed Watana Dam I	_ocation (PRM	A 187.1)				
			Clearwater Plume	Clearwater Plume	1	1	1	183	840	779
			Sido Channol	Glide			1			590
			Side Channel	Pool			1			22
		FA	Side Slough	Backwater Pool	2	1		1110	4096	
			Side Slough	Glide		2	2		1250	3480
	Susitna			Pool	1			3760		
	River		Tributary	Cascade			1			72
			Mouth	Riffle	1	1		36	111	
MR-2 (PRM 169.6			Backwater	Backwater Pool	1			3000		
184.6)		Non- FA	Clearwater Plume	Clearwater Plume		1			2310	
			Side Channel	Run	1			500		
Tsuse Creek			Side Slough	Pool	1			1800		
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	1	1	1	3000	3000	1100
	-	Non- 1 FA	Tributary	Pool	1	1	1	534	396	420
	Fog Creek <sup>1</sup>			Riffle	2	1	2	1727	390	875
	Oreek			Run	1	1	1	660	660	325
	Fog Creek	Non-	Tributon	Pool	1		1	198		450
	Tributary <sup>1</sup>	FA	Thouary	Riffle	1		1	804		1300
			Devi	ls Canyon Upper I	Extent (PRM	166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	2	2	1	1050	1900	500
			Devi	ls Canyon Lower I	Extent (PRM	153.9)				
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	1	1		46	400	
			Backwater	Backwater Pool	1	1		750	390	
MR-6 (PRM 122 7-	Susitna River	FA	Clearwater Plume	Clearwater Plume	1	2	1	600	675	600
148.4)	1.1.701		Side Channel	Backwater Pool	1			236		
				Run			1			1900

## Table E5. Sample sizes and total effort used for calculating average CPUE for snorkeling in the Middle River, 2013.

Geo- morphic					Sam	ple Size ( <i>N</i> )		Total Effor	rt (area samp iare meters)	oled in
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Backwater Pool	2		2	1353		5870
			Side Slough	Beaver Pond	1	2	1	1224	5662	340
			Beaver	Glide	3	2	3	3121	3525	3228
			Complex	Pool	1	3	1	950	4200	535
				Riffle	1	1	1	25	360	1145
				Run	1		1	1580		410
				Glide	1	1	2	449	359	449
		FA	Tributer	Pool	2		1	608		144
		(cont.)	Tributary	Riffle	2		1	2226		237
				Run	1		1	888		28
MR-6	Susitna			Glide	1	1	1	58	101	162
(cont.)	(cont.)		Tributary	Pool	1			469		
	( )		Mouth	Riffle	2	2	2	1091	284	257
				Run		1	1		120	213
	-		Upland Slough Beaver Complex	Beaver Pond	2	4	1	1364	3589	2031
			Side Slough	Pool	1	1	1	494	700	1600
			Tributary	Boulder Riffle		1			750	
		Non-	Upland Slough	Pool	1	1	1	2340	1204	1160
		FA	Upland Slough Beaver Complex	Beaver Pond	1	2		850	5397	
			Backwater	Backwater Pool	1			30		
			Clearwater Plume	Clearwater Plume	1	2	2	12	100	566
				Backwater Pool			1			160
			<b>T</b> 11 (	Glide		1			91	
IVIR-7 (PRM	Susitna		Tributary	Pool	2	1		746	215	
107.8-	River	FA		Riffle	1	1	2	28	21	68
107.8- 122.7)				Run			1			120
			Tributary	Cascade	1			69		
			Mouth	Riffle	1			60		
				Beaver Pond	4	4	1	16,651	14,185	1105
			Upland Slough	Glide	1	2		20	165	
			Complex	Pool			1			38
				Run	1		2	45		89

0		<b>FA</b> an			Sam	ple Size ( <i>N</i> )		Total Effort (area sampled in square meters)		
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
MR-7 (cont.)	Susitna River (cont.)	Non- FA	Upland Slough	Pool	1	1	1	3200	1050	1600
			Cide Channel	Backwater Pool	1		1	2206		39
			Side Channel	Glide		1	2		2228	2075
		5.		Riffle	1	1	1	249	185	330
			Side Slough	Glide	3	3	1	4394	5498	2426
				Pool			2			2075
MR-8				Riffle	2	1	1	1540	41	1480
(PRM	Susitna			Run		1			2158	
102.4-	River	ГA		Glide	1	1		1079	1122	
107.8)			Tributary	Pool	1	1	1	396	474	1345
				Riffle	1	1	1	138	315	216
			Unland Slough	Backwater Pool	1			1179		
			Beaver	Beaver Pond	1		1	2940		3780
			Complex	Glide	3	3	3	6663	8677	8801
				Run		1	1		123	80

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

0	<b>FA</b>		Sample Size (N) (# of				(# of r	Total Effort nets set over	night)
Geo- morphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed Watar	na Dam Locat	ion (PRM 187	7.1)			
MR-2		Backwater	Backwater Pool	1	1		1	1	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			1			1
			Devils Car	iyon (PRM 15	53.9-166.1)				
		Backwater	Backwater Pool		2			2	
		Side Channel	Glide	2	2	1	2	2	1
MR-6 (PRM		Side Channel	Riffle	1	1		1	1	
			Beaver Pond	1			1		
122.7-	FA	Side Slough Beaver Complex	Glide		1			1	
148.4)		Boaron Complex	Pool	1	1		1	1	
		Upland Slough Beaver Complex	Beaver Pond	3		2	3		2
		Backwater	Backwater Pool	1		1	1		1
MR-7 (PRM 107.8	FA	Split Main Channel	Riffle	1			1		
122.7)		Upland Slough Beaver Complex	Beaver Pond	3	2	3	3	2	3
		Side Channel	Glide		1	1		1	1
MR-8	<b>F</b> A	Oide Oleverk	Glide		1	1		1	2
(PRM	FA	Side Slough	Pool			1			1
102.4-		Tributary	Pool			1			1
107.0)	Non- FA	Upland Slough	Pool	1	1	1	1	1	1

## Table E6. Sample sizes and total effort used for calculating average CPUE for fyke netting in the Middle River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

6		Maaa		Sample Size ( <i>N</i> )		Total Effor	rt (# of nets set	overnight)
morphic Reach	Macro- habitat Type	habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed W	/atana Dam Loca	ation (PRM 187.1	)		
MR-1 (PRM	Main Channel	Run	2		3	3		10
184.6- 187.1)	Side Channel	Glide			1			2
187.1)	Side Charmer	Run			1			4
MR-2 (PRM 169.6- 184.6)	Main Channel	Run	3	2	3	6	2	10
			Devils	Canyon (PRM 1	53.9-166.1)			
MR-5 (PRM	Clearwater Plume	Clearwater Plume			1			4
148.1- 153.9)	Main Channel	Run	2	2		4	6	
	Main Channel	Run	1	1		4	4	
MR-6 (PRM	Multiple Split Main Channel	Run	2	2	2	5	6	9
122.7- 148.4)	Side Slough Beaver Complex	Beaver Pond			1			1
	Split Main Channel	Run			1			5
	Main Channel	Run	1	1	1	2	4	5
MR-7 (PRM	Split Main Channel	Run	2	2	2	3	7	8
107.8- 122.7)	Upland Slough Beaver Complex	Beaver Pond		1			1	
	Main	Glide	1			1		
	Channel	Run	2	3	3	4	10	12
MR-8	Side Channel	Pool	1	1		1	3	
(PRM 102.4-	Tributary	Pool	1	1		1	1	
102.4- 107.8)	Upland Slough Beaver Complex	Backwater Pool	1			2		

# Table E7. Sample sizes and total effort used for calculating average CPUE for hoop trapping in the Middle River FocusAreas, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

# Table E8. Sample sizes and total effort used for calculating average CPUE for minnow trapping in the Middle River Focus Areas, 2013.

			s	ample Size ( <i>N</i>	)	(# of 1	Total Effort traps set over	night)
Geo- morphic Reach	Macro-habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Proj	posed Watana D	am Location (F	PRM 187.1)			
MR-1		Glide			1			12
(PRM 184.6-	Side Channel	Riffle			1			3
187.1)		Run	1			8		
	Backwater	Backwater Pool	1	1		12	20	
	Clearwater Plume	Clearwater Plume	1	1	1	5	4	6
MR-2	Side Channel	Glide			1			5
(PRM 169.6- 184.6)		Backwater Pool	2	1		24	16	
	Side Slough	Glide		2	3		19	34
		Pool	1			20		
	Tributary Mouth	Riffle	1	1		2	6	
Devils Canyon (PRM 153.9-166.1)								
	Backwater	Backwater Pool	1	3	1	12	18	8
		Backwater Pool		2			14	
	Side Channel	Glide	1	3	2	8	34	13
		Run		2			9	
		Backwater Pool	2		2	19		30
	Side Slough	Beaver Pond	1	2	1	16	31	16
	Beaver	Glide		2	3		25	18
MR-6	Complex	Pool		3	1		31	9
(PRM 122.7-		Riffle		1	1		2	3
148.4)		Run			1			2
		Glide	1	1	1	6	7	4
	Tributary	Pool	1		1	7		4
	. insectory	Riffle	1		1	3		4
		Run	1		1	8		7
		Glide		1	1		3	4
	Tributary	Rapid			1			5
	Mouth	Riffle	1	2	1	10	12	3
		Run		1	1		10	8
	Upland Slough	Glide			1			4

_			s	Sample Size ( <i>N</i> )			Total Effort raps set over	night)
Geo- morphic Reach	Macro-habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
MR-6 (cont.)	Upland Slough Beaver Complex	Beaver Pond	4	5	4	56	66	50
	Backwater	Backwater Pool	2	1	1	22	20	5
	Clearwater Plume	Clearwater Plume			1			4
		Backwater Pool			1			9
	Side Channel	Glide	1	2		8	36	
		Pool		1			17	
		Riffle		1			2	
MR-7 (PRM 107.8- 122.7)	Tributany	Backwater Pool			1			8
		Glide	1	1		3	9	
	Iributary	Pool	2	1		29	9	
		Riffle	1		1	6		1
		Run			1			12
	Tributary	Cascade	1			5		
	Mouth	Riffle	1			3		
		Beaver Pond	4	4	4	41	44	62
	Upland Slough	Glide	1	2		4	8	
	Beaver	Pool			1			6
	Complex	Run	1		2	4		12
		Backwater Pool			1			2
	Side Channel	Glide		1	3		17	32
		Pool		1	1		21	1
		Riffle		2	1		5	2
		Glide	1	3	1	10	38	16
MR-8 (PRM 102.4-	Side Slough	Pool			2			18
107.8)	-	Run		1			2	
		Glide		1			13	
	Tributary	Pool		1	1		4	17
		Riffle		1	1		3	3
	Upland Slough Beaver Complex	Backwater Pool		1			8	

•			s	ample Size ( <i>N</i>	)	Total Effort (# of traps set overnight)		
Geo- morphic Reach	Macro-habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
MR-8 (cont.)	Upland Slough Beaver Complex (cont.)	Beaver Pond			1			7
		Glide	2	3	3	34	40	38
		Run		1	1		3	3

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

# Table E9. Average CPUE (fish per hour of shocking time) for Chinook salmon using backpack electrofishing in the Middle River, 2013.

					Salmon	, Chinook (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	-		Proposed Watana Dam Location	(PRM 187.1)	-	-	
			Main Channel	Run	0	0	0
		FΔ		Glide			0
MR-1			Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)			Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
				Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	0	0	
		FA		Glide		0	0
			Tributan Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
	Susitna River		Clearwater Plume	Clearwater Plume	0	0	0
			Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
MR-2		Non- FA		Run	0	0	0
(PRM				Pool	0		0
169.6- 184 6)			Side Slough	Riffle		0	
101.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
				Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tributon	Pool	0	0	0
	Tributary <sup>1</sup>	Non- FA	Tributary R	Rapid	0		
	,			Riffle	0	0	0

## Table E9-Continued.

					Salmon	, Chinook (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(00111.)	Thouldry	FA	I Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4	<b>.</b>			Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			4.3
		F۸		Glide	0		
			Main Channel	Riffle	0	9.5	0
(PRM	Susitna			Run			0
148.1-	River		Main Channel	Run	0	0	0
155.5)		Non-	Side Slough	Glide	0	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	1.8
				Backwater Pool	0		
			Side Channel	Glide	0	0	1.9
				Riffle	0	0	0
				Run	0		0
MR-6	<b>a</b> "			Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		3.2
148.4)			Side Slough Beaver Complex	Pool			18
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	2.1		0
				Run			7.1
			Tributany	Glide	0		12.5
				Pool	0		

## Table E9-Continued.

					Salmon	, Chinook (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
			Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cide Channel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(00111.)			Side Slough	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary Boulder Riffle		32.5	0	0
			Upland Slough	Pool	5.4	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
MP.7		FΔ		Run	0	0	0
(PRM	Susitna	17	Tributary Mouth	Cascade	0		
107.8- 122 7)	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			······································	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
			- I	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		Non- FA	Main Channel	Glide			0

#### Table E9-Continued.

					Salmon	, Chinook (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
		Non- FA	Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River		Side Slough Beaver Complex	Beaver Pond	0	0	0
()			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0
		FA	Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	0	7.4
				Run	0	0	
			Side Slough	Glide	0.5		
MP_8				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
		New		Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Unland Slough	Glide	0	0	0
				Pool	0	3.1	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

				Salmo	n, Chinook (juve	enile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•	Proposed Watan	a Dam Location (PRM 187.1)		•	
		Main Channel	Run	0		
MR-1 (DDM 184 6 187 1)	FA	O'de Ohermel	Riffle	0		
(FRW 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		0	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PRM 169 6-184 6)	FA	Side Channel	Glide	0		
(1101103.0-104.0)		Cide Clevek	Glide		0	
		Side Slough	Run		0	
	•	Devils Can	yon (PRM 153.9-166.1)		•	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 149 1 152 0)	FA		Glide	0		
(FRIVI 140.1-155.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	21.7	4.0	
		Clearwater Plume	Clearwater Plume	0	0	
		Main Channel	Run	0	0	
			Riffle		0	
		Multiple Split Main Channel	Run	0	0	0.8
			Backwater Pool	0	0	
		Side Channel	Glide	0	0	0
			Riffle	0	0	
			Run		0	0
	EV		Backwater Pool	0		
	FA	Sido Slough Boover Complex	Beaver Pond		0	0
MR-6 (PRM 122 7-148 4)		Side Slough Deaver Complex	Glide	0		0
(1101122.1110.1)			Pool		0.7	
		Split Main Channel	Run			0
		Tributon	Glide		2.8	0
		Thouldry	Pool	0		
		Tributany Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	15.7	5.7	5.3
		Main Channel	Run	0	0	0
	Non-FA	Side Channel	Riffle		0	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	0		
MR-7 (PRM 107 8-122 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(11/10/.0-122.7)		Main Channel	Run		0	

### Table E10. Average CPUE (fish per 1,000 square meters) for Chinook salmon using seining in the Middle River, 2013.

#### Table E10-Continued.

				Salmo	n, Chinook (juve	nile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			0
		Side Channel	Glide	2.0	0	
			Pool	0	0	
		Calif Main Channel	Riffle	0	0	
		Split Main Channel	Run	0	0	
	FA		Backwater Pool			3.1
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	1.9	0	0
			Glide	55.6	0	
			Run	0		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
			Backwater Pool	3.6		25.8
			Glide			3.9
		Side Channel	Pool	0	0	
			Riffle		0	0
	FA		Run	0	0	
MR-8			Glide	0	0	0.4
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		130.5	25.0
		Main Channel	Run	0	0	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

Gaa		FA			Salmon,	Chinook (ad	ult)	Salmon, C	hinook (juve	enile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propos	ed Watana Dam L	ocation (PRN	/ 187.1)				
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
			Side Channel	Glide			0			0
			Side Channel	Pool			0			0
Susitna River		FA		Backwater Pool	0	0		0	0	
			Side Slough	Glide		0	0		0	0
	Susitna			Pool	0			0		
	River		Tributary	Cascade			0			0
			Mouth	Riffle	0	0		0	0	
MR-2 (PRM 169.6- 184.6) Tsusena Creek <sup>1</sup>			Backwater	Backwater Pool	0			0		
		Non- FA	Clearwater Plume	Clearwater Plume		0			0	
		17	Side Channel	Run	0			0		
			Side Slough	Pool	0			0		
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0.3	0	0	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Pool	0	0	0	0	0	0
				Riffle	0	0	0	0	0	0
				Run	0	0	0	0	0	0
	Fog	Non-	Tributon	Pool	0		0	0		0
	Tributary <sup>1</sup>	FA	Thoulary	Riffle	0		0	0		0
			Devi	ls Canyon Upper E	Extent (PRM 2	166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0
			Devi	ls Canyon Lower E	Extent (PRM 2	153.9)				
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		0	0	
MR-6			Backwater	Backwater Pool	0	0		0	0	
(PRM 122.7-	Susitna River	FA	Clearwater Plume	Clearwater Plume	1.7	0	0	0	0	0
148.4)			Side Channel	Backwater Pool	0			0		

### Table E11. Average CPUE (fish per 1,000 square meters) for Chinook salmon using snorkeling in the Middle River, 2013.

## Table E11-Continued.

Gaa		FA			Salmon,	Chinook (ad	ult)	Salmon, C	hinook (juve	enile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Side Channel	Run			0			0
MR-6 Susitna (cont.) River				Backwater Pool	0		0	0		0
				Beaver Pond	0	0	0	0	0	0
			Side Slough Beaver Complex	Glide	0	0	0	0	0	0
				Pool	0	0	0	0	1.2	0
				Riffle	0	0	0	0	0	0
				Run	0		0	0		0
				Glide	0	0	0	0	0	0
	FA	Tributer	Pool	0		0	0		0	
		Tributary	Riffle	0.3		0	0		0	
			Run	6.8		0	0		0	
	River			Glide	0	0	0	0	0	0
			Tributary	Pool	0			0		
			Mouth	Riffle	1.5	0	0	0	0	0
				Run		0	0		0	4.7
			Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0.3	0
			Side Slough	Pool	0	0	0	0	0	0
			Tributary	Boulder Riffle		0			0	
		Non-	Upland Slough	Pool	0	0	0	0.9	0	0
		FA	Upland Slough Beaver Complex	Beaver Pond	0	0		0	0	
			Backwater	Backwater Pool	0			0		
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
MR-7				Backwater Pool			0			0
(PRM	Susitna	FA		Glide		0			0	
107.8- 122.7)	River		Tributary	Pool	0	0		0	0	
,				Riffle	0	0	0	0	0	0
				Run			0			0
			Tributary	Cascade	0			0		
			Mouth	Riffle	0			0		

## Table E11-Continued.

Cas		FA			Salmon,	Chinook (ad	ult)	Salmon, C	hinook (juve	enile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Beaver Pond	0	0	0	0	0.3	5.4
			Upland Slough	Glide	0	0		0	0	
MR-7	Susitna	FA	Complex	Pool			0			0
(cont.)	River			Run	0		0	0		0
		Non- FA	Upland Slough	Pool	0	0	0	0	0	0
			Side Channel	Backwater Pool	0		0	2.7		0
				Glide		0	0		1.3	0
				Riffle	0	0	0	0	0	0
			Side Slough	Glide	0	0	0	0	0	0
				Pool			0			0
MR-8				Riffle	0	0	0	0	0	0
(PRM	Susitna	FA		Run		0			0	
102.4- 107.8)	River	17.		Glide	0	0		0.9	3.6	
)			Tributary	Pool	0	0	0	37.9	10.5	0
				Riffle	0	0	0	0	0	0
				Backwater Pool	0			0		
			Upland Slough Beaver	Beaver Pond	0		0	3.4		0
			Complex	Glide	0	0	0	351.1	0	0
				Run		0	0		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

				Salmor	ı, Chinook (juv	enile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	1.0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	M 153.9-166.1)			
		Backwater	Backwater Pool		1.5	
		Side Channel	Glide	0	0	0
MR-6	FA	Side Channel	Riffle	0	0	
мк-ө (PRM 122.7- 148.4)			Beaver Pond	3.0		
		Side Slough Beaver Complex	Glide		0	
			Pool	9.0	0	
		Upland Slough Beaver Complex	Beaver Pond	16.3		3.5
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	2.0	1.0	0.7
		Side Channel	Glide		31.0	20.0
	<b>F</b> A	Olda Olavash	Glide		26.0	2.0
MR-8	FA	Side Slough	Pool			2.0
(PRIVI 102.4- 107.8)		Tributary	Pool			14.0
,	Non-FA	Upland Slough	Pool	2.0	0	0

## Table E12. Average CPUE (fish per trap) for Chinook salmon using fyke netting in the Middle River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

## Table E13. Average CPUE (fish per trap) for Chinook salmon using hoop trapping in the Middle River Focus Areas, 2013.

			Salmo	n, Chinook (ju	venile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed Watana Dam	Location (PRM 187.1)	•	•	
	Main Channel	Run	0		0
MR-1 (PRM 184 6-187 1)	Side Channel	Glide			0
	Side Charmer	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
MR-5	Clearwater Plume	Clearwater Plume			0
(PRM 148.1-153.9)	Main Channel	Run	0	0	
	Main Channel	Run	0	0	
MR-6	Multiple Split Main Channel	Run	0	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
	Split Main Channel	Run			0.2
	Main Channel	Run	0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0	0	0
(11(1)107.0-122.1)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channel	Glide	0		
		Run	0	0	0
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0	
(11(1)102.4-107.0)	Tributary	Pool	0	1.0	
	Upland Slough Beaver Complex	Backwater Pool	0		

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

Table E14. Average CPUE (fish per trap) for Chinook salmon using minnow trapping in the Middle River Focus Areas,2013.

			Salm	ion, Chinook (juve	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Natana Dam Location (PRM 18	37.1)		
		Glide			0
MR-1 (PPM 184 6-187 1)	Side Channel	Riffle			0
(FRW 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2 (PPM 160 6 184 6)		Backwater Pool	0	0	
(11(11109.0-104.0)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)			
	Backwater	Backwater Pool	0	0	0
		Backwater Pool		0	
	Side Channel	Glide	0	0	0
		Run		0	
		Backwater Pool	0.06		0.38
		Beaver Pond	0	0.03	0.13
	Sida Slaugh Baayar Complex	Glide		0	0.17
	Side Slough Beaver Complex	Pool		0.06	0.44
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0	0	0
	Tributan	Pool	0		0
	Thoulary	Riffle	0		0.50
		Run	0		0.14
		Glide		0	0.25
	Tributan/ Mouth	Rapid			0.60
		Riffle	0	0	0
		Run		0	0.63
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0.15	0.12	0.21
	Backwater	Backwater Pool	0	0	0.20
	Clearwater Plume	Clearwater Plume			0.50
		Backwater Pool			0
MR-7	Side Channel	Glide	0	0	
MR-7 (PRM 107.8-122.7)		Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			2.50
	inoutury	Glide	0	0.22	

			Salm	on, Chinook (juve	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0.42
	Tributon Mouth	Cascade	0		
MR-7	Thouary Mouth	Riffle	0		
(cont.)		Beaver Pond	0.67	0.45	0
	Unland Clough Deguer Complex	Glide	0	0	
	Opiand Slough Beaver Complex	Pool			0
		Run	0.25		0
		Backwater Pool			0.50
	Cide Channel	Glide		1.94	0.21
	Side Channel	Pool		0	0
		Riffle		0.25	0.50
		Glide	0	0.78	0.25
	Side Slough	Pool			0
MR-8		Run		0.50	
(PRM 102.4-107.8)		Glide		2.23	
	Tributary	Pool		7.75	0.06
		Riffle		1.33	0
		Backwater Pool		2.00	
	Haland Olaush Daavan Oamalau	Beaver Pond			2.43
	Opiano Slough Beaver Complex	Glide	0	1.90	0.06
		Run		4.67	2.00

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

Table E15. Average CPUE (fish per hour of shocking time) for chum salmon using backpack electrofishing in the Middle River, 2013.

					Salmo	n, chum (juve	enile)								
Geo-		FA or													
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohahitat Type	Early Summer	Late Summer	Fall								
Reach	Otream		Proposed Watana Dam Location	(PRM 187 1)	Guinnei	ounner	i an								
			Main Channel	Run	0	0	0								
				Glide			0								
MR-1		FA	Side Channel	Riffle	0	0	0								
(PRM	Susitna			Run	0	0	0								
184.6- 187.1)	River		Main Channel	Run	0	0	0								
		Non- FA		Riffle			0								
		17	Side Channel	Run	0	0									
			Main Channel	Run	0	0									
			Side Channel	Glide	0	0	0								
			Side Slough	Backwater Pool	0	0									
		FA	Side Slough	Glide		0	0								
			Tributor Marith	Cascade			0								
			Tributary Mouth	Riffle		0									
	Susitna		Backwater	Backwater Pool	0	0	0								
			Clearwater Plume	Clearwater Plume	0	0	0								
			Main Channel	Run	0	0	0								
												Glide			0
			Side Channel	Riffle	0	0									
MD 2		Non- FA		Run	0	0	0								
(PRM		17		Pool	0		0								
169.6-			Side Slough	Riffle		0									
104.0)				Run	0	0	0								
			Split Main Channel	Run	0	0	0								
			Tributary Mouth	Riffle		0	0								
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0								
				Pool	0	0	0								
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0								
				Run	0	0	0								
				Boulder Riffle	0		0								
	Fog Creek	Non-		Pool	0	0	0								
	Tributary <sup>1</sup>	FA	Iributary	Rapid	0										
				Riffle	0	0	0								

## Table E15-Continued.

					Salmo	n, chum (juve	enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(cont.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				0
166.1)				Riffle			Ũ
		1	Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		FA		Glide	0		
MR-5			Main Channel	Riffle	0	0	0
(PRM	Susitna			Run			0
148.1- 153.9)	River		Main Channel	Run	0	0	0
100.07		Non-	Side Slough	Glide	0	0	0
		FA		Pool			0
		FA or Non- FA Macrohabitat Type Mesohabitat Type Early Summer   Non- FA Tributary Run    Non- FA Tributary Boulder Riffle 0    Non- FA Tributary Boulder Riffle 0    Non- FA Tributary Boulder Riffle 0    Non- FA Tributary Glide 0    Devils Canyon Lower Extent (PRM 153.9)      FA Main Channel Run 0    Main Channel Run 0     Non- FA Side Slough Glide 0     Main Channel Run 0      Main Channel Run 0       Multiple Split Main Channel Run 0       Side Channel Run 0        Side Slough Beaver Com	0	0			
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multinle Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Sido Channol	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM	Susitna	FA		Glide	0		0
148.4)	RIVEI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	15.8		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
				Glide	0		0
			l ributary	Pool	0		

## Table E15-Continued.

					Salmo	n, chum (juve	enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
Geo- morphic Reach			Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
	0 1		Oide Obernel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(00111.)			Side Sloveb	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
		17	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		1.4	
			Split Main Channel	Riffle	0	0	
		ΓΛ		Run	0	0	0
(PRM	Susitna	ГA	Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moutary	Riffle	0		
				Run			0
			Unland Slough Beaver Complex	Pool			0
			Opiana olougii beavel ooliipiex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
MR-7 (PRM 107.8- 122.7)		Non- FA	Main Channel	Glide			0

#### Table E15-Continued.

					Salmo	n, chum (juve	enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
Geo- morphic ReachMR-7 (cont.)S RMR-7 (cont.)S RMR-8 (PRM 102.4- 107.8)S R				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
Geo- morphic ReachStreamMR-7 (cont.)Susitna RiverMR-8 (PRM 102.4- 107.8)Susitna River			Side Slough	Pool	0	0	0
	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0
		FA		Glide			0
			Side Channel	Pool	0	0	0
				Riffle	6.2	0	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	4.3	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
MR-7 (cont.) Riv MR-8 (PRM 102.4- 107.8) Su Riv				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

	EA or			Salmo	n, chum (adu	lt)	Salmon,	chum (juven	ile)
Geomorphic	Non-	Maarahabitat Tura	Maaababitat Tura	Early	Late	<b>Fell</b>	Early	Late	<b>Fell</b>
Reach	ГА		Proposed Watana Dam I	ocation (PRM	187 1)	Fall	Summer	Summer	Fall
		Main Channel	Run		107.1)		0		
MR-1 (PPM 184.6-	ΕΛ		Riffle	0			0		
187.1)		Side Channel	Run	0	0	0	0	0	0
		Backwater	Rackwater Pool	•	0	Ŭ		0	Ŭ
MR-2		Cleanwater Plume	Cleanwater Plume	0	0		0	0	
MR-2 (PRM 169 6-	FA	Side Channel	Glide	0	Ŭ		0	Ŭ	
(PRM 169.6- 184.6)			Glide	-	0			0	
		Side Slough	Run		0			0	
			Devils Canvon (PR	M 153 9-166 <sup>2</sup>	1)			Ŭ	
		Cleanwater Plume	Clearwater Plume	0	0	0	0	0	0
MR-5 (PRM 148 1-	FΔ		Glide	0	Ŭ	Ŭ	0	Ŭ	Ű
153.9)	ГА	Main Channel	Run	•	0		•	0	
153.9)		Backwater	Backwater Pool	0	33.7		0	0	
		Clearwater Plume	Clearwater Plume	1.7	3.1		0	0	
		Main Channel	Run	0	0		0	0	
		Multinle Split Main	Riffle		0			0	
		Channel	Run	0	0	0	0	0	0
			Backwater Pool	0	0		0	0	
			Glide	0	1.1	0	0.2	0	0
		Side Channel	Riffle	0	0		0	0	
			Run		0	0		0	0
	<b>F</b> A		Backwater Pool	0			0		
MR-6	FA	Side Slough Beaver	Beaver Pond		0	0		0	0
(PRM 122.7-		Complex	Glide	0		0	0		0
148.4)			Pool		0			0	
		Split Main Channel	Run			0			0
		Tributon	Glide		0	0		0	0
		Thoulary	Pool	0			94.9		
		Tributany Mouth	Pool	0			0		
			Riffle		0			0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0	0
		Main Channel	Run	0	0	0	0	0	0
	Non-	Side Channel	Riffle		0			0	
		Tributary Mouth	Run	0			0		

### Table E16. Average CPUE (fish per 1,000 square meters) for chum salmon using seining in the Middle River, 2013.
#### Table E16-Continued.

	EA ar			Salmo	n, chum (adu	lt)	Salmon,	chum (juven	chum (juvenile)		
Geomorphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
		Backwater	Backwater Pool	0			0				
		Clearwater Plume	Clearwater Plume	0	0	0	0	0	0		
		Main Channel	Run		0			0			
			Backwater Pool			0			0		
		Side Channel	Glide	0	0		0	0			
			Pool	0	0		0	0			
	EV	Split Main Channel	Riffle	0	0		0	0			
MR-7	FA		Run	0	0		0	0			
(PRM 107.8- 122.7)			Backwater Pool			0			0		
		Tributary	Pool	0			0				
			Riffle			0			0		
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0	0		
			Glide	0	0		0	0			
		Beaver Complex	Run	0			0				
	Non- FA	Split Main Channel	Run	26.7	0	0	0	0	0		
		Main Channel	Run			0			0		
			Backwater Pool	0		0	9.0		0		
			Glide			0			0		
		Side Channel	Pool	0	2.8		0	2.8			
			Riffle		0	0		13.3	0		
	FA		Run	0	0		0	0			
MR-8			Glide	0	0	0	0	0	0		
(PRM 102.4-		Side Slough	Pool			0			0		
107.0)			Run		0			0			
		Upland Slough	Glide	0	0	0	0	0	0		
		Beaver Complex	Run		0	0		0	0		
		Main Channel	Run	0	0	0	0	0	0		
	Non-	Split Main Channel	Run	0		0	0		0		
	FA	Upland Slough	Glide	0			0				

Geo- FA		FA			Salmor	n, chum (adu	lt)	Salmon,	chum (juver	ile) Fall 0 0 0 0 0 0 0 0 0 0 0 0 0		
Geo- morphic Reach	Stream	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
			Propos	ed Watana Dam L	ocation (PRN	M 187.1)						
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0		
			Oide Obernel	Glide			0			0		
			Side Channel	Pool			0			0		
		FA		Backwater Pool	0	0		0	0			
			Side Slough	Glide		0	0		0	0		
	Susitna			Pool	0			0				
	River		Tributary	Cascade			0			0		
			Mouth	Riffle	0	0		0	0			
(PRM 169.6- 184.6) Tsusena Creek <sup>1</sup>		Non- FA	Backwater	Backwater Pool	0			0				
			Clearwater Plume	Clearwater Plume		0			0			
		17.	Side Channel	Run	0			0				
			Side Slough	Pool	0			0				
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0		
	Fog Creek <sup>1</sup>			Pool	0	0	0	0	0	0		
		FA	Tributary	Riffle	0	0	0	0	0	0		
				Run	0	0	0	0	0	0		
	Fog	Non-	Tributon	Pool 0 C	0	0		0				
	Tributary <sup>1</sup>	FA	Thouldiy	Riffle	0		0	0		0		
			Devi	ls Canyon Upper E	Extent (PRM <sup>-</sup>	166.1)						
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0		
			Devi	ls Canyon Lower E	Extent (PRM <sup>-</sup>	153.9)						
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		0	0			
MDG			Backwater	Backwater Pool	0	61.5		0	0			
(PRM 122.7-	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	7.0	1.7	0	0	0		
148.4)	111001		Side Channel	Backwater Pool	0			0				
			Side Channel	Run			0			0		

## Table E17. Average CPUE (fish per 1,000 square meters) for chum salmon using snorkeling in the Middle River, 2013.

## Table E17-Continued.

Gao		FA			Salmor	n, chum (adu	lt)	Salmon,	chum (juven	ile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Backwater Pool	0		0	0		0
				Beaver Pond	0	0	0	0	0	0
			Side Slough Beaver Complex	Glide	0	6.9	0	0	0	0
				Pool	0	0.3	0	0	0	0
				Riffle	0	0	0.9	0	0	0
				Run	0		19.5	0		0
MR-6 Susitna (cont.) River				Glide	17.8	0	1.3	0	0	0
	FΔ	<b>T</b> 1 (	Pool	144.5		0	0		0	
	17	Tributary	Riffle	3.1		0	0		0	
			Run	42.8		0	0		0	
	Susitna River		Tributary Mouth	Glide	0	29.6	0	104.3	0	0
				Pool	0			0		
				Riffle	15.0	12.3	0	0	0	0
				Run		183.3	0		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0	0
		Non- FA	Side Slough	Pool	0	0	0	0	0	0
			Tributary	Boulder Riffle		0			0	
			Upland Slough	Pool	0	0.8	0	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0.8		0	0	
			Backwater	Backwater Pool	0			0		
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
MR-7				Backwater Pool			0			0
(PRM	Susitna	FA		Glide		0			0	
107.8- 122.7)	River		Tributary	Pool	0	0		0	0	
,				Riffle	0	0	0	0	0	0
				Run			0			0
			Tributary	Cascade	0			0		
			Mouth	Riffle	0			0		

## Table E17-Continued.

Cas		FA			Salmor	ı, chum (adu	lt)	Salmon,	chum (juven	ile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Beaver Pond	0	0	0	0	0	0
			Upland Slough	Glide	0	0		0	0	
MR-7	Susitna		Complex	Pool			0			0
(cont.)	River			Run	0		0	0		0
		Non- FA	Upland Slough	Pool	0	0	0	0	0	0
				Backwater Pool	0		0	0		0
			Side Channel	Glide		0	0		0	0
				Riffle	0	0	0	0	0	0
			Cide Claugh	Glide	0	0	0	0	0	0
				Pool			0			0
MR-8			Side Slough	Riffle	0	0	0	0	0	0
(PRM	Susitna	FΔ		Run		0			0	
102.4- 107 8)	River	17.		Glide	0	1.8		0	0	
101.0)			Tributary	Pool	0	4.2	0	0	0	0
				Riffle	0	0	0	0	0	0
				Backwater Pool	0			0		
			Upland Slough Beaver	Beaver Pond	0		0	0		0
			Complex	Glide	0	0	0	0	0	0
				Run		0	0		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				Salm	non, chum (adı	ult)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	VI 153.9-166.1)			
		Backwater	Backwater Pool		6.5	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7- 148 4)	FA	Side Channel	Riffle	0	0	
			Beaver Pond	0		
148.4)		Side Slough Beaver Complex	Glide		Summer         Summer         Fall           0         0         0           0         0         0           6.5         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		0
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	1.0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	Salmon, chum (adult)           Early Summer         Late Summer         Fa           37.1)         0         0         0           ol         0         0         0           jme         0         0         0           ol         6.5         0         0           ol         0.5         0         0           ol         0.0         0         0           ol         0.0         0         0           ol         0.0         0         0           ol         0         0         0         0           ol         0         0	0	
		Side Channel	Glide		0	0
	<b>F</b> A	Olda Olavada	Glide		0	0
MR-6 (PRM 122.7- 148.4) MR-7 (PRM 107.8- 122.7) FA MR-8 (PRM 102.4- 107.9) FA	FA	Side Slough	Pool			0
(PRIVI 102.4- 107.8)		Tributary	Pool			0
,	Non-FA	Upland Slough	Pool	0	0	0

## Table E18. Average CPUE (fish per trap) for chum salmon using fyke netting in the Middle River, 2013.

# Table E19. Average CPUE (fish per trap) for chum salmon using hoop trapping in the Middle River Focus Areas, 2013.

			Salı	non, chum (ad	lult)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
	Proposed Watana Dam	Location (PRM 187.1)						
	Main Channel	Run	0		0			
MR-1 (PRM 184 6-187 1)		Glide			0			
(11(1)104.0-107.1)	Side Channel	Run			0			
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0			
Devils Canyon (PRM 153.9-166.1)								
MR-5	Clearwater Plume	Clearwater Plume			0			
(PRM 148.1-153.9)	Main Channel	Run	1.5	0				
	Main Channel Run		0.5	0				
MR-6	Multiple Split Main Channel	Run	0	0	0			
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0			
	Split Main Channel	Run			0			
	Main Channel	Run	0	0	0			
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0.3	0	0			
(11(1)107.0-122.1)	Upland Slough Beaver Complex	Beaver Pond		0				
	Main Obernal	Glide	0					
	Main Channel	Run	0.5	0	0			
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0				
(11(1)102.4-107.0)	Tributary	Pool	0	0				
	Upland Slough Beaver Complex	Backwater Pool	0					

Table E20. Average CPUE (fish per hour of shocking time) for coho salmon using backpack electrofishing in the Middle River, 2013.

					Salmo	n, coho (juve	nile)					
Geo-		FA or										
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohahitat Type	Early Summer	Late Summer	Fall					
Reach	Otream	And Non- AMacrohabitat TypeMesohabitat TypeEarly Mesohabitat TypeLate SummerProposed Watana Dam Location (PRN 187.1)Proposed Watana Dam Location (PRN 187.1)AMain ChannelRun000Riffle00000Riffle00000Non- FAMain ChannelRun000Non- FAMain ChannelRun000Non- FAMain ChannelRun000Non- FAMain ChannelRun000Side ChannelRun0000Side ChannelRun0000Side ChannelRun0000Side ChannelRun0000Side ChannelRun0000Side ChannelRun0000Tributary MouthCascade1100Riffle000000Main ChannelRun0000Main ChannelRun0000Riffle000000RiffleCascade1111Riffle000000Riffle000000Riffle <td>i an</td>				i an						
			Main Channel	Run	0	0	0					
				Glide			0					
MR-1		FA	Side Channel	Riffle	0	0	0					
(PRM	Susitna			Run	0	0	0					
184.6- 187.1)	River		Main Channel	Run	0	0	0					
		Non- FA		Riffle			0					
		17	Side Channel	Run	0	0						
			Main Channel	Run	0	0						
			Side Channel	Glide	0	0	0					
		<b>F A</b>	Sido Slough	Backwater Pool	0	0						
		FA		Glide		0	0					
			Tributan Mouth	Cascade			0					
				Riffle		0						
			Backwater	Backwater Pool	0	0	0					
	Susitna River		Clearwater Plume	Clearwater Plume	0	0	0					
			Main Channel Run		0	0	0					
											Glide	
			Side Channel	Riffle	0	0						
MR-2		Non- FA		Run	0	0	0					
(PRM				Pool	0		0					
169.6- 184 6)			Side Slough	Riffle		0						
101.0)				Run	0	0	0					
			Split Main Channel	Run	0	0	0					
			Tributary Mouth	Riffle		0	0					
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0					
				Pool	0	0	0					
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0					
		17		Run	0	0	0					
				Boulder Riffle			0					
	Fog Creek	Non-	Tributon	Pool	0	0	0					
	Tributary <sup>1</sup>	FA	indutary	Rapid	0	0	0					
				Riffle	0	0	0					

# Table E20-Continued.

					Salmo	n, coho (juve	enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(00111.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				
166.1)				Riffle			0
		1	Devils Canyon Lower Extent (F	PRM 153.9)	[		0
			Clearwater Plume	Clearwater Plume	0		0
		FA		Glide	0	0	0
MR-5			Main Channel	Riffle	0	0	0
(PRM	Susitna			Run	_	_	0
148.1- 153.9)	River		Main Channel	Run	0	0	0
,		Non-	Side Slough	Glide	0.5	3.7	27.4
	StreamFAMacFog Creek Tributary1Non- FATributaryChinook Creek1Non- FATributaryChinook Creek1Non- FATributarySusitna RiverFAMain ChannelSusitna RiverNon- FASide SloughSusitna RiverNon- FASide SloughSusitna RiverFAMain ChannelSusitna RiverNon- FASide SloughSide Slough Split Main ChannelSide SloughSusitna RiverFASide ChannelSusitna RiverFASide ChannelSusitna RiverFASide Slough BaSusitna RiverFASide Slough Ba		Pool			29	
			Split Main Channel	acrohabitat TypeMesohabitat TypeEarly SummerLate SummerIRunNNNNevils Canyon Upper Extent (PRM 166.1)00NRiffle00NNevils Canyon Lower Extent (PRM 153.9)NNNPumeClearwater Plume1NelRun00NelRun00NelRun00NelRun00NelRun00NelRun00NannelRun00NMain ChannelRun00NMain ChannelRun00NMain ChannelRun00NMain ChannelRun00NBackwater Pool01NMain ChannelRun00NMain ChannelRun00NBackwater Pool01NAllRun00NMain ChannelRun01NMain ChannelRun01NAllGlide011Main ChannelRun011Main ChannelRun011Main ChannelRun011Main ChannelRun111<	4		
			Backwater	Backwater Pool			29.9
	Susitna       Main Cha         River       Main Cha         Non- FA       Side Slou         Split Main         Backwate         Main Cha         Multiple S         Side Cha	Main Channel	Run	0	0		
			Multiple Split Main Chappel	Run         0           Boulder Riffle         0         0         0           Riffle         0         0         0           Riffle         0         0         0           (PRM 153.9)         Clearwater Plume         0         0           Glide         0         0         0           Run         0         0         0           Backwater Pool         0         0         0           Glide         0         0         0         0           Run         0         0	0		
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0.9
				Channel       Glide       0         Riffle       0       Riffle       0         Run       Run       0       Glide       0.5         Slough       Glide       0.5       Pool       0         Iain Channel       Run       0       0         rater       Backwater Pool       0       0         Channel       Run       0       0         Ie Split Main Channel       Run       0       0         Riffle       0       0       0         Channel       Run       0       0         Ie Split Main Channel       Run       0       0         Riffle       0       0       0         Run       0       0       0         Run       0       0       0         Run       0       0       0         Channel       Run       0       0         Run       0       0       0         Channel       0       0       0         Riffle       0       0       0         Riffle       0       0       0	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM	Susitna River	FA		Glide	0		9.4
148.4)			Side Slough Beaver Complex	Pool			9
				Riffle	0		
				Run	3.9		
			Split Main Channel	Run			0
				Glide			64.7
			Tributary Mouth	Riffle	37.5		4.1
				Run			84.7
				Glide	0		87.5
			Iributary	Pool	4		

# Table E20-Continued.

					Salmo	n, coho (juve	enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributon	Riffle	0		
		EA	mbutary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	3.6		8.4
			Backwater	Backwater Pool	0	4.3	
			Clearwater Plume	Clearwater Plume	0	0	2.2
			Cide Channel	Pool	0	28.2	0
MR-6 (cont.)	Susitna River		Riffle		0	0	
(00111.)			Cide Clough	Glide		0	0
		Non- FA	Side Slough	Pool	0	6.6	110.8
		17	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth Run		0	7.3	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	12.8	0
			Upland Slough Beaver Complex	Beaver Pond	134.8	0	46.9
			Clearwater Plume	Clearwater Plume		0	
			Main Channel Run		0	0	0
				Backwater Pool			2.2
			Side Channel	Glide	0	0	
				Pool	2.5	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		EV		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	18		
107.8-	River			Riffle	43.7		
122.1)				Glide		7.2	
			Tributary	Pool		6.1	
			Thoulary	Riffle	66.4		
				Run			0
			Linland Slough Beaver Complex	Pool			31.5
			opiana oloagni beavel oumplex	Run			33
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E20-Continued.

					Salmo	n, coho (juve	nile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	10.6	0	0
			Side Slough	Pool	0	0	25.9
MR-7 (cont.)	Susitna River	Non-	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
MR-7 (cont.) Susitna River			Tributary	Run	2.2	61.8	7.5
			Upland Slough	Pool	0	0	0
		Stream       FA or Non-FA       Main Char Side Char Side Slop         Susitna River       Non-FA       Side Slop       Side Slop         Susitna River       Non-FA       Side Slop       Side Slop         Susitna River       FA       Side Slop       Side Slop         Susitna River       Non-FA       Side Slop       Side Slop         Susitna River       FA       Main Char         Susitna River       Main Char       Side Slop         Side Slop       Side Slop       Side Slop	Upland Slough Beaver Complex	Beaver Pond	0	0	14.8
			Main Channel	Glide	0		
				Run	0	0	0
				Glide			0
			Side Channel	Pool	12.9	0	0
		FA		Riffle	Early Summer         Late Summer         Fall           0         0         0           0         0         0           0         0         0           0         0         0           10.6         0         0           0         0         25.9           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           12.9         0         0           0         0         0           12.9         0         0           0         0         0           0         0         0           0         0         0           0         0         0           13         0         0           0         0         0           0	2.5	
				Run			
			Side Slough	Mesohabitat Type         Early Summer         Late Summer         Fall           Run         0         0         0           Glide         0         0         0           Run         0         0         0           Run         10.6         0         0           Run         0         0         25.9           Beaver Pond         0         0         0           Run         2.2         61.8         7.5           Pool         0         0         0           Run         0         0         0           Beaver Pond         0         0         0           Run         0         0         0           Run         0         0         0           Glide         0         0         0           Run         0         0         0           Glide         0         0         0           Run			
(PRM	Susitna		Tributary	Riffle	7.1		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	13	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			7.3
				Pool	3.9	9.5	0
			Split Main Channel	Run	0	0	0
			Unland Slough	Glide	0	23.1	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

# Table E21. Average CPUE (fish per hour of shocking time) for coho salmon using boat electrofishing in the Middle River, 2013.

				Salr	non, coho (juve	nile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	Nex 54	Main Channel	Run	0	0	0
187.1)	NON-FA	Side Channel	Riffle			0
	FA	Main Channel	Run	0	0	0
MR-2		Clearwater Plume	Clearwater Plume	0	0	0
(PRM 169.6-	Nex 54	Main Channel	Run	0	0	0
184.6)	NON-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
	F۸	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRW 140.1- 153.9)	Non EA	Main Channel	Run	0	0	0
,	NOII-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run		0	
MR-6 (PRM 122.7- 148.4)	FA	Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRW 122.7- 148.4)		Backwater	Backwater Pool	0		0
- /	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	EV	Main Channel	Run		0	0
MR-7	ГA	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	0		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Main Channel	Glide	0		
	FΔ		Run	0	0	0
		Side Channel	Riffle			0
			Run	0	0	
MR-8 (PRM 102 4-		Main Channel	Run	0	0	0
107.8)			Glide	0		0
	Non-FA	Side Channel	Pool	0	0	0
			Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	13.0

	FA		Salmon, co		n, coho (adu	lt)	Salmon, coho (juvenile)		
Geomorphic Reach	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Pro	posed Watana Dam Lo	cation (PRM	187.1)				
MP_1		Main Channel	Run	0	,		0		
(PRM 184.6-	FA		Riffle	0			0		
187.1)		Side Channel	Run	0	0	0	0	0	0
		Backwater	Backwater Pool		0			0	
MR-2		Clearwater Plume	Clearwater Plume	0	0		0	0	
(PRM 169.6-	FA	Side Channel	Glide	0			0		
184.6)		Cida Claurk	Glide		0			0	
		Side Slough	Run		0			0	
			Devils Canyon (PRN	153.9-166.1)	)	-			
MR-5		Clearwater Plume	Clearwater Plume	0	6.0	0	129.7	0	0
(PRM 148.1-	FA	Main Channel	Glide	0			0		
153.9)		Main Channel	Run		0			0	
153.9)		Backwater	Backwater Pool	0	9.7		4.0	0	
		Clearwater Plume	Clearwater Plume	0	1.3		0	2.9	
		Main Channel	Run	0	0		0	0	
		Multiple Split Main	Riffle		0			0	
		Channel	Run	0	0	0	0	0	0
			Backwater Pool	0	0		0	0	
		Side Channel	Glide	0	0	0	0	0	0
			Riffle	0	0		0	0	
			Run		0	0		0	0
	FA		Backwater Pool	0			0		
MR-6	17	Side Slough Beaver	Beaver Pond		0	0		0	0
(PRM 122.7-		Complex	Glide	0		0	0		0
148.4)			Pool		0			10.0	
		Split Main Channel	Run			0			0
		Tributary	Glide		8.4	2.6		0	0
			Pool	0			2751.4		
		Tributary Mouth	Pool	0			0		
			Riffle		0			0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	10.9	8.3
		Main Channel	Run	0	0	0	10.4	0	0
	Non- FA	Side Channel	Riffle		0			0	
	17	Tributary Mouth	Run	0			0		
		Backwater	Backwater Pool	0			133.1		
MR-7 (DDM 107 9	ΕΛ	Clearwater Plume	Clearwater Plume	0	0	0	5.4	0	0
(FRW 107.0- 122.7)	FA	Main Channel	Run		0			0	
122.7)		Side Channel	Backwater Pool			0			0

## Table E22. Average CPUE (fish per 1,000 square meters) for coho salmon using seining in the Middle River, 2013.

## Table E22-Continued.

	FA			Salmo	n, coho (adu	lt)	Salmon	, coho (juve	nile)
Geomorphic Reach	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Side Channel	Glide	0	0		0	0	
		Side Channel	Pool	0	0		0	0	
		Calit Main Channel	Riffle	0	0		0	0	
			Run	0	on, coho (adult)         Salmon, coho (juvenile)           Late         Fall         Summer         Summer         Summer         Fall           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0.3         3.9           0         0         0         0.3         3.9           0         0         0         0.3         3.9           0         0         0         0         0         0           0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0         0				
	E۸		Backwater Pool			0			46.9
MR-7	ГA	Tributary	Pool	0			52.4		
(cont.)			Riffle			0			0
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0.3	3.9
			Glide	0	0		500.0	23.6	
		Boaver Complex	Run	0			4553.8		
	Non- FA	Split Main Channel	Run	0	0	Fail         Early Summer         Late Summer         Fail           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         52.4         0         0           0         0         0.3         3.9           500.0         23.6         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         9.9         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0.7         0         0           0         0         0         0			
		Main Channel	Run			0			0
			Backwater Pool	0		0	9.9		0
			Glide			0			29.4
		Side Channel	Pool	0	0		10.0	0	
			Riffle		0	0		0	0
	FA		Run	0	0		0	0	
MR-8			Glide	0	0.4	0.4	137.8	5.6	0
(PRW 102.4- 107.8)		Side Slough	Pool			0			0
/			Run		0			0	
		Upland Slough	Glide	0	0	0	0.7	0	0
		Beaver Complex	Run		0	0		244.6	125.0
-		Main Channel	Run	0	0	0	0	0	0
	Non- FA	Split Main Channel	Run	0		0	0		0
MR-8 (PRM 102.4- 107.8)		Upland Slough	Glide	0			0		

Goo		FA			Salmo	n, coho (adul	lt)	Salmon,	coho (juven	ile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propos	ed Watana Dam L	ocation (PRN	/ 187.1)				
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
				Glide			0			0
			Side Channel	Pool			0			0
		FA		Backwater Pool	0	0		0	0	
			Side Slough	Glide		0	0		0	0
	Susitna			Pool	0			0		
	River		Tributary	Cascade			0			0
			Mouth	Riffle	0	0		0	0	
MR-2 (PRM 169.6- 184.6)		Non- FA	Backwater	Backwater Pool	0			0		
			Non- FA	Clearwater Plume	Clearwater Plume		0			0
			Side Channel	Run	0			0		
			Side Slough	Pool	0			0		
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0
F C	_			Pool	0	0	0 0	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0	0	0	0
				Run	0	0	0	0	0	0
	Fog	Non-	Tributon	Pool	0		0	0		0
	Tributary <sup>1</sup>	FA	Thoulary	Riffle	0		0	0		0
			Devi	ls Canyon Upper E	Extent (PRM 2	166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0
			Devi	ls Canyon Lower E	Extent (PRM 2	153.9)				
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		302.7	0	
,			Backwater	Backwater Pool	0	0		6.7	0	
(PRM 122.7-	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	5.0	0	0	0
148.4)		FA _	Side Channel	Backwater Pool	0			0		
				Run			0			0

## Table E23. Average CPUE (fish per 1,000 square meters) for coho salmon using snorkeling in the Middle River, 2013.

## Table E23-Continued.

Gaa		FA			Salmor	n, coho (adul	t)	Salmon	, coho (juver	nile)
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Backwater Pool	0		0	0		0
				Beaver Pond	0	0	0	14.7	0	0
			Side Slough Beaver	Glide	0	0	0	0	0	1.0
			Complex	Pool	0	0	0	0	0	22.4
				Riffle	0	0	0	0	0	0
				Run	0		0	6.3		0
				Glide	0	0	2.6	11.1	0	0
		FA	Tributer	Pool	14.4		0	78.0		0
			Tributary	Riffle	0		0	0		0
	Quality			Run	0		0	5.6		0
(cont.)	River			Glide	0	0	0	208.7	0	0
			Tributary	Pool	0			0		
			Mouth	Riffle	0	0	0	30.9	15.4	0
				Run		0	0		208.3	141.0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	0	0
			Side Slough	Pool	0	0	0	0	0	0
			Tributary	Boulder Riffle		0			0	
		Non- F∆	Upland Slough	Pool	0	0	0	0	0	0.9
MR-6 (cont.) Ri MR-7 (PRM Si 107.8- 122.7) Si			Upland Slough Beaver Complex	Beaver Pond	0	0		0	0	
			Backwater	Backwater Pool	0			33.2		
			Clearwater Plume	Clearwater Plume	0	0	0	1125.5	0	0
MR-7				Backwater Pool			0			312.5
(PRM	Susitna	FA		Glide		0			22.0	
107.8- 122.7)	River		Tributary	Pool	0	0		346.2	14.0	
,				Riffle	0	0	0	1054.5	0	0
				Run			0			0
			Tributary	Cascade	0			174.7		
			Mouth	Riffle	0			132.8		

Cas		FA			Salmo	n, coho (adul	t)	Salmon, coho (juvenile)			
Geo- morphic Reach	Stream	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
				Beaver Pond	0	0	0	31.0	0.2	0	
			Upland Slough	Glide	0	0		0	0		
MR-7	Susitna	ГA	Complex	Pool			0			105.5	
(cont.)	River			Run	0		0	1555.6		33.6	
		Non- FA	Upland Slough	Pool	0	0	0	0	0	0	
				Backwater Pool	0		0	0 11.8		0	
			Side Channel	Glide		0	0		9.0	97.9	
				Riffle	0		0	0	0		
				Glide	0	0.6	0.4	64.6	15.0	0	
			Cide Claush	Pool			0			0	
MP-8			Side Slough	Riffle	0	0	0	0	0	0	
(PRM	Susitna	FΔ		Run		1.9			1.9		
102.4- 107.8)	River			Glide	0	27.6		0	9.8		
107.0)			Tributary	Pool	0	52.7	3.0	0	44.3	0	
				Riffle	0	0	0	0	3.2	0	
				Backwater Pool	0			0			
			Upland Slough Beaver	Beaver Pond	0		0	1.4		0	
			Complex	Glide	0	0	0	0	19.1	0	
			Complex	Run		0	0		831.6	12.5	

#### Table E23-Continued.

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

FA or			Salmo	n, coho (adu	lt)	Salmon, coho (juvenile)			
Geomorphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Pro	posed Watana Dam Lo	cation (PRM <sup>·</sup>	187.1)				
MR-2 (PRM		Backwater	Backwater Pool	0	0		0	0	
169.6-184.6)	FA	Clearwater Plume	Clearwater Plume			0			0
			Devils Canyon (PRM	153.9-166.1)					
		Backwater	Backwater Pool		0			0	
		Cide Chennel	Glide	0	0	0	0	4.0	0
		Side Channel	Riffle	0	0		0	0	
MR-6 (PRM			Beaver Pond	0		0         0         0           0         0         0           0         0         0           0         10.0         5.0			
122.7-148.4)	FA	Side Slough Beaver	Glide		0			n, coho (juven Late Summer 0 0 4.0 0 4.0 0 5.0 0 5.0 261.5 41.0 15.0	
		Complex	Pool	0	0		10.0	5.0	
		Upland Slough Beaver Complex	Beaver Pond	0		0	0.3		12.0
		Backwater	Backwater Pool	0		0	0		0
MR-7 (PRM		Split Main Channel	Riffle	0			0		
107.8-122.7)	FA	Upland Slough Beaver Complex	Beaver Pond	0	0	0	0.3	261.5	48.0
		Side Channel	Glide		0	0		0 0 5.0 261.5 41.0	32.0
		Cide Claush	Glide		0	1.5		15.0	1.0
MR-8 (PRM 102 4-107 8)	FA	Side Slough	Pool			0			0
102.4-107.0)		Tributary	Pool			5.0			10.0
	Non-FA	Upland Slough	Pool	0	0	0	6.0	0	0

## Table E24. Average CPUE (fish per trap) for coho salmon using fyke netting in the Middle River, 2013.

Gaa			on, coho (adu	ult) Salmon, coho (juvenile)				
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Proposed Wat	ana Dam Locati	on (PRM 187.	1)			
MR-1 (PRM 184.6-	Main Channel	Run	0		0	0		0
(PRM 184.6-	Cide Channel	Glide			0			0
187.1)	Side Channel	Run			0			0
MR-2 (PRM 169.6- 184.6)	Main Channel	tat TypeSalmon, coho (du't)Salmon, coho (juvenile)tat TypeLate SummerFallEarly SummerLate SummerFallProposed Watana Dam Location (PRM 187.1) $0$ $0$ $0$ $0$ Run $0$ $0$ $0$ $0$ $0$ Devis Caryon (PRM 153.9-166.1) $0$ $0$ $0$ $0$ Devis Caryon (PRM 153.9-166.1) $0$ $0$ $0$ $0$ Run $0$ $0$ $0$ $0$ $0$ $0$ raverBeaver Pond $1$ $0$ $0$ $0$ $0$ Run $0$ $0$ $0$ $0$ $0$ $0$ BeaverGlide $0$ $0$ $0$ $0$ $0$ Beaver $0$ $0$ $0$ $0$ $0$ $0$ Run $0$ $0$	0					
		Devils C	anyon (PRM 15	3.9-166.1)				
MR-5 (PRM	Clearwater Plume	Clearwater Plume			0			0
148.1- 153.9)	Main Channel	Run	0	0		0	0	
	Main Channel	Run	0	0		0	0	
MR-6	Multiple Split Main Channel	Run	0	0	0	0	0	0
(FRM 122.7- 148.4)	Side Slough Beaver Complex	Beaver Pond			0			0
	Split Main Channel	Run			0			0
MR-7	Main Channel	Run	0	0	0	0	0	0
(PRM	Split Main Channel	Run	0.5	0	0	0	0	0
107.8- 122.7)	Upland Slough Beaver Complex	Beaver Pond		0			21.0	
	Main Channel	Glide	0			0		
MR-8		Run	0	0	0	0	0	0
(PRM	Side Channel	Pool	0	0		0	0.3	
102.4- 107.8)	Tributary	Pool	0	1.0		0	1.0	
,	Upland Slough Beaver Complex	Backwater Pool	0			0		

#### Table E25. Average CPUE (fish per trap) for coho salmon using hoop trapping in the Middle River Focus Areas, 2013.

# Table E26. Average CPUE (fish per trap) for coho salmon using minnow trapping in the Middle River Focus Areas, 2013.

			Sa	lmon, coho (juven	ile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Natana Dam Location (PRM 18	37.1)		
		Glide			0
MR-1 (PRM 184 6-187 1)	Side Channel	Riffle		Late Summer         Fall           0         0.33           0         0.33           0         0.50           0         0           0         0           0         0           0         0           0         0           0         0.67           0         0           0         0.67           0.69         0.67           0.50         0.40           1.38         0.42      0.02         0	
(11(1)104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2 (PPM 160 6-184 6)		Backwater Pool	0	0	
(11(1)109.0-104.0)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)			
	Backwater	Backwater Pool	0.08	0.25	3.13
		Backwater Pool		0	
	Side Channel	Glide	Labitat Type         Early Summer         Late Summer         Fall           Location (PRM 187.1)         0         0           0         0         0           Pool         0         0           Pool         0         0           Pool         0         0           Plume         0         0           Pool         0.08         0.25           Pool         0         0           Itit         0         0           Itit         0         0           Itit         0         0           Itit         0         0 <td>0</td>	0	
		Run			
		Backwater Pool	0		0
		Beaver Pond	0	0.34	0.94
	Cide Clough Dequer Complex	Glide		0.25	1.01
	Side Slough Beaver Complex	Backwater Pool         0           Beaver Pond         0         0.34           Glide         0.25           Pool         0.67           Riffle         0	4.00		
		Riffle		0	0.33
MR-6		Run			0.50
(PRM 122.7-148.4)		Glide	1.17	0	0
	Tributon	Pool	0		0
	Thouary	Riffle	1.00		0
		Run	0.63		0.57
		Glide		0	4.75
	Tributor ( Mouth	Rapid			0
		Riffle	0.90	0.69	0.67
		Run		0.50	6.13
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0.17	1.38	0.42
	Backwater	Backwater Pool	0	0.05	0.40
	Clearwater Plume	Clearwater Plume			3.25
		Backwater Pool			0
MR-7	Side Channel	Glide	0	0.02	
(PRM 107.8-122.7)		Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			2.75
	Thoulary	Glide	0	1.11	

## Table E26. Continued.

			Salmon, coho (juvenile)           Early Summer         Late Summer         Fall           0.47         3.44         1.00           5.67         1.00         0.67           1.00         0.67         1.00           0         0.67         1.00           0         0.67         1.00           0         0.67         1.00           0         0         0           0.48         6.96         5.95           1.50         4.13         0           0.75         1.31         0           0.75         1.31         0           0.75         1.50         0           0.75         1.50         0           0.20         0.31         0.13           0.20         0.31         0.13           0.50         2.15         0           0.67         0.33         0           0.67         0.33         0           0         0.67         0.33           0         0         0		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0.47	3.44	
	Tributary (cont.)	Riffle	5.67		1.00
		Run		Samon, cono (uverne)           arly         Late Summer         Fall $0.47$ $3.44$	
	Tributan/Mouth	Cascade	1.00		
MR-7	Thoulary Moulin	Riffle	0		
(cont.)		Beaver Pond	0.48	6.96	5.95
	Liniand Claush Desure Complex	Glide	Salmon, coho (juvenile)           Early Summer         Late Summer         Fall           0.47         3.44         1.00           5.67         1.00         0.67           1.00         0.67         1.00           0         0         0.67           1.00         0         0.67           1.00         0         0           0.48         6.96         5.95           1.50         4.13         0           0.75         1.31         0           0.75         1.31         0           0.75         1.50         0.013           0.00         0.75         1.50           0.20         0.31         0.13           0.20         0.31         0.13           0.50         0.50         0.67           2.15         0         0.06           0.67         0.33         0           0         0.67         0.33           0         0.14         0.59		
	Opland Slough Beaver Complex	Pool			3.67
		Run	Early Summer         Late Summer         Fall           0.47         3.44         1.00           5.67         1.00         0.67           1.00         0.67         1.00           0         0.67         0.67           1.00         0         0.67           0.48         6.96         5.95           1.50         4.13         0           0.75         1.31         0           0.75         1.31         0           0.75         1.31         0           0.75         1.50         0           0.75         1.50         0           0.75         1.50         0           0.20         0.31         0.13           0         0.50         0           2.15         0         0           0.67         0.33         0           0         0.67         0.33           0         0         0           0.59         0.30         1.67           3.33         4.67         0.50		
		Backwater Pool			0
	Cide Channel	Glide		2.47	0.35
	Side Channel	Pool		0	0
		Riffle		0.75	1.50
		Glide	0.20	0.31	0.13
	Side Slough	Pool			0
MR-8		Run		Early SummerLate SummerFall $0.47$ $3.44$	
(PRM 102.4-107.8)		Glide		2.15	
	Tributary	Pool		7.00	0.06
		Riffle		0.67	0.33
		Backwater Pool		0	
		Beaver Pond			0.14
	Upland Slough Beaver Complex	Glide	0.59	0.30	1.67
		Run		3.33	4.67

Table E27. Average CPUE (fish per hour of shocking time) for pink salmon using backpack electrofishing in the Middle River, 2013.

					Salmo	on, pink (juve	nile)
Geo-		FA or			Farly	l ata	
Reach	Stream	FA	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
			Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	0	0	0
		FΔ		Glide			0
MR-1	<b>a</b> "	17	Side Channel	Riffle	0	0	0
(PRM 184 6-	Susitna River			Run	0	0	0
187.1)			Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
				Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		-	Side Slaugh	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributer Marsh	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
	Susitna		Clearwater Plume	Clearwater Plume	0	0	0
			Main Channel	Run	0	0	0
	Rivei			Glide			0
			Side Channel	Riffle	0	0	
		Non-		Run	0	0	0
(PRM				Pool	0		0
169.6-			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0
		Γ <b>Α</b>		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0		
				Riffle	0	0	0

# Table E27-Continued.

					Salmo	on, pink (juve	nile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				
166.1)				Riffle			0
	1	1	Devils Canyon Lower Extent (F	PRM 153.9)		r	
			Clearwater Plume	Clearwater Plume	-		0
		FA		Glide	0		
MR-5			Main Channel	Riffle	0	0	0
(PRM	Susitna			Run			0
148.1- 153.9)	River		Main Channel	Run	0	0	0
155.5)		Non-	Side Slough	Glide	0.5	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multinle Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM	Susitna	FA		Glide	0		0
122.7-	RIVEI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			<b>_</b>	Glide	0		0
			l ributary	Pool	0		

# Table E27-Continued.

					Salmo	on, pink (juve	nile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributory	Riffle	0		
Geo- morphic ReachMR-6 (cont.)MR-7 (PRM 107.8- 122.7)Ri		EA	mbutary	Run	0		
		ГA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cide Channel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Charliner	Riffle	0	0	
(00111.)			Side Slough	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
		17.	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	ohabitat TypeMesohabitat TypeEarly SummerRiffle0Run0Glide0Beaver ComplexBeaver Pond0Backwater Pool0neClearwater Plume0Pool00Riffle00Riffle00Aver ComplexBeaver Pond0Beaver ComplexBeaver Pond0Aver ComplexBeaver Pond0Beaver Pond00Aver ComplexBeaver Pond0Beaver Pond00Beaver ComplexBeaver Pond0Beaver ComplexBeaver Pond0Beaver Pond00Beaver ComplexBeaver Pond0Beaver ComplexBeaver Pond0Run00Run00Riffle00Riffle00Riffle00Run00Run00Riffle00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run <td< td=""><td>0</td><td>0</td></td<>	0	0	
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		ΓΛ		Run	0	0	0
(PRM	Susitna	ГA	Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributany	Pool		0	
			Thould y	Riffle	0		
				Run			0
			Linland Slough Requer Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E27-Continued.

					Salmo	on, pink (juve	nile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
Geo- morphic Reach				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		17	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
Geo- morphic ReachStiMR-7 (cont.)Susi RiveMR-8 (PRM 102.4- 107.8)Susi Rive			Main Channel	Glide	0		
				Run	0	0	0
			Glide	Glide			0
			Side Channel	Pool	0	0	0
		FA		Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
MR-8 (PRM Susi 102.4- Rive 107.8)				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Table E28. Average CPUE (fish per hour of shocking time) for pink salmon using boat electrofishing in the Middle River, 2013.

				Sal	mon, pink (juver	nile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-		Main Channel	Run	0	0	0
187.1)	NON-FA	Side Channel	Riffle			0
	FA	Main Channel	Run	0	0	0
MR-2		Clearwater Plume	Clearwater Plume	0	0	0
(PRM 169.6-		Main Channel	Run	0	0	0
184.6)	NON-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
	FΔ	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)	Non-FA	Main Channel	Run	0	0	0
100.0)		Split Main Channel	Run	0	0	0
		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRM 122.7- 148.4)		Backwater	Backwater Pool	0		0
	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	ГА	Main Channel	Run		0	0
MR-7	FA	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	12.5		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Main Channel	Glide	0		
	EA		Run	0	0	0
	FA	Sido Channol	Riffle			0
			Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRW 102.4- 107.8)			Glide	0		0
/	Non EA	Side Channel	Pool	0	0	0
	NUIFA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

				Sa	lmon, pink (adul	t)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•	Proposed Watan	a Dam Location (PRM 187.1)		•	•
		Main Channel	Run	0		
MR-1 (DDM 184 6 187 1)	FA	O'de Ohermel	Riffle	0		
(FRM 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		0	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PPM 160 6 184 6)	FA	Side Channel	Glide	0		
(FRW 109.0-104.0)			Glide		0	
		Side Slough	Run		0	
		Devils Can	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 149 1 152 0)	FA	Main Obannal	Glide	0		
(PRIVI 140.1-155.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	0	0	
		Clearwater Plume	Clearwater Plume	16.7	1.3	
		Main Channel	Run	4.0	0	
			Riffle		0	
		Multiple Split Main Channel	Run	0	0	0
			Backwater Pool	0	0	
		Side Channel	Glide	0	0	0
			Riffle	0	0	
			Run		0	0
	E۸		Backwater Pool	0		
	Γ <b>Α</b>	Sido Slough Boover Complex	Beaver Pond		0	0
MR-6 (PRM 122 7-148 4)		Side Slough Deaver Complex	Glide	0		0
(1100.122.7 140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributon	Glide		0	0
		Thoulary	Pool	0		
		Tributany Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Main Channel	Run	0	5.6	0
	Non-FA	Side Channel	Riffle		0	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	0		
MR-7 (PRM 107 9 100 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

## Table E29. Average CPUE (fish per 1,000 square meters) for pink salmon using seining in the Middle River, 2013.

## Table E29-Continued.

				Sal	mon, pink (adul	t)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			0
		Side Channel	Glide	0	0	
			Pool	0	0	
		Calit Main Channel	Riffle	7.1	0	
		Split Main Channel	Run	0	0	
	FA		Backwater Pool			0
MR-/		Tributary	Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver	Beaver Pond	0	0	0
			Glide	0	0	
		Complex	Run	0		
	Non-FA	Split Main Channel	Run	26.7	0	0
		Main Channel	Run			0
			Backwater Pool	0		0
			Glide			0
		Side Channel	Pool	0	0	
			Riffle		0	0
	FA		Run	0	0	
MR-8			Glide	0	0	0
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		0	0
		Main Channel	Run	0	0	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

<b>C</b> ++					Sa	:)	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Da	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
		FA	Side Channel	Pool			0
				Backwater Pool	0	0	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
				Cascade			0
			I ributary Mouth	Riffle	0	0	
MR-2 (PPM 160 6		Non-FA	Backwater	Backwater Pool	0		
(FRM 109.0- 184.6)			Clearwater Plume	Clearwater Plume		0	
			Side Channel	Run	0		
			Side Slough	Pool	0		
Ts Cr	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non-FA	Tributary	Pool	0		0
	Tributary <sup>1</sup>			Riffle	0		0
	•		Devils Canyon Upp	er Extent (PRM 166.1)		•	
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Low	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	6.7	1.0	0
MR-6				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
140.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
				Glide	0	0	0

## Table E30. Average CPUE (fish per 1,000 square meters) for pink salmon using snorkeling in the Middle River, 2013.

## TableE30-Continued

Gao					Salmon, pink (adult		:)
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	1113.3	0	0
			Tellester	Pool	2167.2		0
			Tributary	Riffle	8.7		0
		FA		Run	732.0		0
	Qualita a			Glide	0	227.3	0
(cont.)	River		Tributor Mouth	Pool	0		
			Thoulary Mouth	Riffle	32.4	0	0
				Run		8.3	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		30.7	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0.3	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon Mouth	Cascade	0		
			Thoulary Moulin	Riffle	0		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	0		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E30-Continued

0					Sal	mon, pink (adult	:)
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Backwater Pool	0		0
			Side Channel	Glide		0	0
				Riffle	0	0	0
				Glide	0	0	0
			Side Slough	Pool			0
		FA		Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0.9	
			Tributary	Pool	0	0	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

## Table E31. Average CPUE (fish per trap) for pink salmon using hoop trapping in the Middle River Focus Areas, 2013.

			Sal	mon, pink (ad	ult)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
·	Proposed Watana Dam	Location (PRM 187.1)		•	
	Main Channel	Run	0		0
MR-1 (PPM 184 6-187 1)		Glide			0
(11(1)104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5	Clearwater Plume	Clearwater Plume			0
(PRM 148.1-153.9)	Main Channel	Run	1.0	0	
	Main Channel	Run	1.8	0	
MR-6	Multiple Split Main Channel	Run	0.3	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
	Split Main Channel	Run			0
	Main Channel	Run	3.0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	3.8	0	0
(1101.0122.1)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Obernal	Glide	0		
	Main Channel	Run	0.8	0	0
MR-8 (PRM 102 4-107 8)	Side Channel	Pool	0	0	
(11(1) 102.4-107.0)	Tributary	Pool	0	1.0	
	Upland Slough Beaver Complex	Backwater Pool	0		

Table E32. Average CPUE (fish per hour of shocking time) for sockeye salmon using backpack electrofishing in the Middle River, 2013.

					Salmon	, sockeye (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	0	0	0
		EA		Glide			0
MR-1			Side Channel	Riffle	0	0	0
(PRM 184.6	Susitna River			Run	0	0	0
187.1)			Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
			Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributer Marsh	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
		Non-	Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
				Run	0	0	0
(PRM		17		Pool	0		0
169.6-			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0
				Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	l ributary	Rapid	0		
				Riffle	0	0	0

# Table E32-Continued.

					Salmon	, sockeye (ju	venile)
Geo- morphic	Chan and	FA or Non-	Maanah akitat Tuma	Maaababitat Turaa	Early	Late	<b>5</b> -11
MR-2	Fog Creek	Non-			Summer	Summer	Fall
(cont.)	Tributary <sup>1</sup>	FA	Tributary	Run			0
			Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4 (PRM	Chinook	Non-		Boulder Riffle	0	0	0
153.9-	Creek <sup>1</sup>	FA	Tributary				
166.1)			Davila Canvan Lawar Evtant /F	Riffle			0
			Cleanuator Plume				13
				Clearwater Plume	0		4.5
MR-5		FA	Main Channel	Glide	0	0	0
				Riffle	0	•	0
(PRM 1/8 1-	Susitna River	Non- FA	Main Channel	Run	0	0	0
153.9)				Run	28	0	0
			Side Slough	Glide	2.0	0	0
		17		Pool	0	0	0
			Split Main Channel	Run	0	0	1.0
			Backwater	Backwater Pool	0	0	1.9
				Run	0	0	0
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0	0	0
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6 (PRM	Susitna			Beaver Pond			0
122.7-	River	FA		Glide	1.1		34.5
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	76.6		
				Run	0		
			Split Main Channel	Run			0
				Glide			16.2
			Tributary Mouth	Riffle	0		7.3
				Run			0
			Tributary	Glide	0		0
				Pool	2.9		

# Table E32-Continued.

					Salmon	, sockeye (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
			Iributary	Run	0		
		FA	Upland Slough	Glide			8.9
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	2.6	5.9	0
			Oide Oberrad	Pool	0	14.1	5.3
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(00111.)			Cide Clough	Glide		0	0
		Non- FA	Side Slough	Pool	1	0	0
		17	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	3.9	15.3	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	5
			Upland Slough Beaver Complex	Beaver Pond	1.5	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Solit Main Channel	Riffle	0	0	
MD 7		ΕΛ		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
			opiana olough boarter oomplox	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E32-Continued.

					Salmon	, sockeye (ju	venile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run			0
				Glide	0	0	0
			Side Channel	Riffle	11.4	0	0
				Run	0.9	11.2	0
			Side Slough	Pool	0	0	0
MR-7	Susitna Biver	Non-	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)	TTIVEI		Split Main Channel	Run	0		0
			Tributary Mouth	Riffle	0	0	0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0		
			Main Channol	Glide	0	0	0
				Run			0
			Side Channel	Glide	0	0	0
		FA		Pool	0	0	0
				Riffle	0	0	
				Run	0		
			Side Slough	Glide	0	0	
				Riffle	0		
(PRM	Susitna		Tributary	Riffle	0	0	0
102.4-	River		Main Channel	Run	0		0
107.0)				Glide	0	0	0
			Side Channel	Pool		0	0
				Run			0
		Non- FA	Side Slough	Glide	19.6	0	0
				Pool	0	0	0
			Split Main Channel	Run	1.9	0	0
			Linland Slough	Glide	0	0	0
				Pool			0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Table E33. Average CPUE (fish per hour of shocking time) for sockeye salmon using boat electrofishing in the Middle River, 2013.

				Salmo	on, sockeye (juv	enile)			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
		Proposed Watana	Dam Location (PRM 187.1)	)					
MR-1	FA	Main Channel	Run	0	0	0			
(PRM 184.6-		Main Channel	Run	0	0	0			
187.1)	NON-FA	Side Channel	Riffle			0			
	FA	Main Channel	Run	0	0	0			
MR-2		Clearwater Plume	Clearwater Plume	0	0	0			
(PRM 169.6-		Main Channel	Run	0	0	0			
184.6)	Non-FA	Side Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
		Devils Canyo	on (PRM 153.9-166.1)	•	•	•			
	E۸	Clearwater Plume	Clearwater Plume			0			
MR-5	FA	Main Channel	Run		0	0			
(PRM 148.1- 153.9)		Main Channel	Run	0	0	0			
	NON-FA	Split Main Channel	Run	0	0	0			
		Main Channel	Run		0				
	FA	Multiple Split Main Channel	Run		0	0			
MR-6		Split Main Channel	Run			0			
(PRM 122.7- 148.4)		Backwater	Backwater Pool	25.1		0			
	Non-FA	Main Channel	Run	0	0	0			
		Tributary Mouth	Run	0	0	0			
	<b>F</b> A	Main Channel	Run		0	0			
MR-7	FA	Split Main Channel	Run		0	0			
(PRM 107.8-		Backwater	Backwater Pool	0					
122.7)	Non-FA	Main Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
		Main Channel	Glide	0					
	<b>F</b> A	Main Channel	Run	0	0	0			
	FA	Side Channel	Riffle			0			
		Side Channel	Run	0	0				
MR-8		Main Channel	Run	0	0	0			
(PRW 102.4- 107.8)			Glide	0		0			
/	Non EA	Side Channel	Pool	0	0	0			
	NON-FA		Run		0				
		Split Main Channel	Run	0	0	0			
		Upland Slough	Pool	0	0	0			
Gaa	EA or			Salmon	i, sockeye (ad	lult)	Salmon, se	ockeye (juve	nile)
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morphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		,	NumberSalmon, sockeye (Juver)Salmon, sockeye (Juver)TypeKarly SummerLate SummerEarly SummerLate SummerProposed Watana Dam Location (PRM 187.1)N00Run0000Run0000Run0000Run0000Run0000Backwater Pool0000Glide0000Glide0000Run0000Backwater Pool0000Glide00000Run00000Backwater Pool0000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00000Run00 <t< td=""><td></td></t<>						
MR-1		Main Channel	Run	0	,		0		
(PRM	FA		Riffle	0			0		
187.1)		Side Channel	Run	0	0	0	0	0	0
		Backwater	Backwater Pool		0			0	
MR-2		Clearwater Plume	Clearwater Plume	0	0		0	0	
(PRM 169.6	FA	Side Channel	Glide	0			0		
184.6)		Cide Claush	Glide		0			0	
,		Side Slough	Run		0			0	
			Devils Canyon (F	PRM 153.9-16	6.1)				
MR-5		Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
(PRM 1/18 1	FA	Main Observal	Glide	0			0		
153.9)	1R-5 PRM 48.1- 53.9)	Main Channel	Run		0			0	
<u> </u>		Backwater	Backwater Pool	0	0		17.1	2.0	
		Clearwater Plume	Clearwater Plume	0	0		0	0	
		Main Channel	Run	0	0		0	0	
		Multiple Split Main	Riffle		0			0	
		Channel	Run	0	0	0	0	0	0
		Side Channel	Backwater Pool	0	0		0	26.5	
			Glide	0	0	0	1.6	1.1	0
		Side Channel	Riffle	0	$\begin{array}{c c c c c c c c c c c c c c c c c c c $				
			Run		0	0		0	0
	FΔ		Backwater Pool	0			338.8		
MR-6	17	Side Slough Beaver	Beaver Pond		0	0		0.7	0
(PRM		Complex	Glide	0		0	1.9		0
122.7-			Pool		0			6.3	
140.4)		Split Main Channel	Run			0			0
		Tributary	Glide		0	0		0	0
		Thouary	Pool	0			948.8		
		Tributary Mouth	Pool	0			0		
			Riffle		0			0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	5.9	0.8
		Main Channel	Run	0	0	0	0	0	0
	Non-	Side Channel	Riffle		0			0	
	FA	Tributary Mouth	Run	0			0		
		Side Channel	Backwater Pool			0			0

## Table E34. Average CPUE (fish per 1,000 square meters) for sockeye salmon using seining in the Middle River, 2013.

<b>6</b>	<b>FA</b> an			Salmon	, sockeye (ad	lult)	Salmon, s	sockeye (juve	enile)
Geo- morphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Backwater	Backwater Pool	0			38.0		
	FA	Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
		Main Channel	Run		Salmon, sockeye (adult)         Salmon, sockeye (juve           Early Summer         Late Summer         Early Summer         Late Summer           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0				
			Backwater Pool			eye (adult)         Salmon, sockeye (juvenile summer         Late Summer         Late Summer         F           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0 <tr< td=""><td>0</td></tr<>	0		
		Side Channel	Glide	0	0		0	0	
			Pool	0	0		0	0	
MR-7		Split Main Channel	Riffle	0	0		0	0	
(PRM			Run	2.5	0		0	0	
107.8-	FA	Tributary     Backwater Pool       Pool     0       Riffle     0	0			9.4			
122.7)		Tributary	Pool	0			22.9		
		I ributary     Pool     0       Riffle         Upland Slough Beaver Complex     Beaver Pond     0		0			0		
Upland Sloug Complex		Beaver Pond	0	0	0	0	0.5	0.1	
		Opland Slough Beaver	Glide	0	0		0	0	
		Complex	Run	0			30.8		
	Non- FA	Split Main Channel	Run	0	0	0	Early Summer         Late Summer         Fall           38.0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         22.2         0           0         22.2         0           0         22.2         0           0         26.7         0           0         0         0           0         0         0           0	0	
		Main Channel	Run			0			0
			Backwater Pool	0		0	43.2		0
			Glide			0			60.7
		Side Channel	Pool	Type         Summer         Summer         Fall         Summer         Summer           0         0         0         0         0         0           me         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0					
			Riffle		0	0		26.7	0
	FA		Run	0	0		0	0	
(PRM			Glide	0	0	0	148.0	10.6	0
102.4-		Side Slough	Pool			0			0
107.8)			Run		0			0	
107.8) F Upland Slough Beaver	Glide	0	0	0	0.4	0.7	0.3		
		Complex	Run		0	0		40.8	0
		Main Channel	Run	0	0	0	0	4.4	0
	Non-	Split Main Channel	Run	0		0	0		0
	FA	Upland Slough	Glide	0	1		0.7		

#### Table E34-Continued.

Gaa		FA			Salmon,	sockeye (ad	ult)	Salmon, s	ockeye (juve	enile)	
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
			Propos	ed Watana Dam L	ocation (PRN	/ 187.1)					
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0	
				Glide			0			0	
			Side Channel	Pool			0	Saimon, s           Early           0		0	
		FA		Backwater Pool	0	0		0	0		
			Side Slough	Glide		0	0	Samon, s           Early           0	0	0	
	Susitna			Pool	0		seye (adult)         Salm           Late immer         Fall         Ear           0         0         0      0         0         0	0			
	River		Tributary	Cascade			0			0	
			Mouth	Riffle	0	0		0	0		
MR-2 (PRM 169.6- 184.6)		Non- FA	Backwater	Backwater Pool	0			0			
			Clearwater Plume	Clearwater Plume		0			0		
			Side Channel	Run	0			0			
			Side Slough	Pool	0			0			
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0	
	-			Pool	0         0         0         0           0         0         0         0         0		0	0			
	Fog Creek¹	Non- FA	Tributary	Riffle	0	0	0	Early Summer         Late Summer           0         0	0	0	
				Run	0	0	0	0	0	0	
	Fog	Non-	Tributon	Pool	0		0	0		0	
	Tributary <sup>1</sup>	FA	Thoulary	Riffle	0		0	0		0	
			Devi	ls Canyon Upper E	Extent (PRM 2	166.1)					
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0	0	0	0	
			Devi	ls Canyon Lower E	Extent (PRM 2	153.9)					
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		108.1	0		
				Backwater	Backwater Pool	0	0		4.0	0	
MR-6 (PRM 122.7	Susitna	FA	Clearwater Plume	Clearwater Plume	1.7	0	0	Late     Summer       0     0       108.1     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0    0	0		
148.4)			Side Channel	Backwater Pool	0			0			
				Run			0			0	

## Table E35. Average CPUE (fish per 1,000 square meters) for sockeye salmon using snorkeling in the Middle River, 2013.

### Table E35-Continued.

Gao		FA			Salmon, sockeye (adult)		ult)	Salmon, sockeye (juvenile)			
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
				Backwater Pool	0		0	705.1		0	
				Beaver Pond	0	0	0	0	0	0	
			Side Slough Beaver	Glide	0	6.6	0	Salmon, sockeye           Early Summer         La Sum           705.1         0           0         0           11.9         0           0         0	0	10.4	
			Complex	Pool	0	0.3	0	0	0.4	0	
				Riffle	0	0	0.9	0	0	0	
				Run	0		14.7	0		0	
				Glide	0	0	0	0	0	0	
		FA	Tilling	Pool	0		0         0           0         11.9           0         0           0.9         0           14.7         0           0         0	0		0	
		17.	Iributary	Riffle	0		0	0		0	
MR-6 (cont.)	Qualitat			Run	0	0	0	0		0	
	Susitna River			Glide	0	0	0	0	0	0	
			Tributary	Pool	0	0         0					
			Mouth	Riffle	0	0	0	0	0	0	
				Run		0	0		0	37.6	
			Upland Slough Beaver Complex	Beaver Pond	0	0         0		0			
			Side Slough	Pool	0	0	0	0	0	0	
			Tributary	Boulder Riffle		0			0		
		Non- FA	Upland Slough	Pool	0	0	0	0	0 3 0 0 0 0 0	0	
		FA	Upland Slough Beaver Complex	Beaver Pond	0	11.3		0	0		
			Backwater	Backwater Pool	0			0			
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0	
MR-7				Backwater Pool			0			31.3	
(PRM	Susitna	FA		Glide		0			0		
107.8- 122.7)	RIVE		Tributary	Pool	0	0		11.5	14.0		
,				Riffle	0	0	0	0	0	0	
				Run			0			0	
			Tributary	Cascade	0			0			
			Mouth	Riffle	0			0			

### Table E35-Continued.

0		FA			Salmon,	sockeye (ad	ult)	Salmon, s	sockeye (juvenile)			
Geo- morphic Reach	Stream	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
				Beaver Pond	0	0	0	0	0	0		
			Upland Slough	Glide	0	0		0     0       0     0       0     0       0     0       0     0       0     0       5.4     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0       0     0				
MR-7	Susitna	FA	Beaver Complex	Pool			0			0		
(cont.)	River			bitat         Mesohabitat         Early Summer         Late Summer         Early Fall         Late Summer         Early Summer         Late Summer         Fall           add of the summer         0         0         0         0         0         0           add of the summer         0         0         0         0         0         0         0           add of the summer         0         0         0         0         0         0         0           add of the summer         0         0         0         0         0         0         0         0           add of the summer         0<	0							
Geo- morphic ReachS S S S SMR-7 (cont.)S RMR-8 (PRM 102.4- 107.8)S R		Non- FA	Upland Slough	Pool	0	0	0	0	0	0		
				Backwater Pool	0		0	5.4		0		
			Side Channel	Glide		0	0		0	0		
				Riffle	0	0	0	0	0	0		
				Glide	0	0	0	63.8	1.0	0		
			Oide Olevek	Pool			0			0		
			Side Slough	Riffle	0	0	0	0	0	0		
(PRM	Susitna	ΕΛ		Run	Type         Summer         Summer         Fall         Summer         Summer         Fall           'er Pond         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           water         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           water         0         0         0         0         0         0         0           water         0         0         0         0         0 <td< td=""></td<>							
102.4- 107.8)	River	FA		Glide	0	0.9		5.4 0 63.8 0 0 0.9 0	0.9			
107.0)			Tributary	Pool	0	4.2	0	0	0	0		
				Riffle	0	0	0	0	0	0		
				Backwater Pool	0			0				
			Upland Slough Beaver	Beaver Pond	0		0	0		0		
			Complex	Glide	0	0	0	0	0	0		
				Run		0	0		Summer         Pail           0         0           16.3         0	0		

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

	<b>FA</b> an			Salmon	, sockeye (ad	lult)	Salmon, s	sockeye (juve	enile)
Geomorphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Salmon, sockeye (juver           Early Summer         Late Summer           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           111.0         2.0           0         1.0           1.0         0           1.0         0           0         1.0           0         1.0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	Fall	
		Pro	posed Watana Dam Lo	ocation (PRM	187.1)				
MR-2 (PRM		Backwater	Backwater Pool	0	0		0	0	
169.6-184.6)	FA	Clearwater Plume	Clearwater Plume			0		sockeye (juven Late Summer 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0
			Devils Canyon (PRM	1 153.9-166.1	)				
		Backwater	Backwater Pool		0			0	
MR-6 (PRM 122.7-148.4) F		Cide Channel	Glide	0	0	0	0	0	0
		Side Channel	Riffle	0	0		0	0	
MR-6 (PRM			Beaver Pond	0	Late sr         Early Summer         Late Summer         Fall           0         0         0         0           0         0         0         0           0         0         0         0           6.1)         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         111.0         2.0           0         0         1.0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0				
122.7-148.4)	FA	Side Slough Beaver	Glide		0		Salmon, sockeye (juvenile)           Early Summer         Late Summer         Fall           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           111.0         2.0         0           0         1.0         0           0         1.0         0           0         1.0         0           0         1.0         0           0         0         0           0         0         0           0         0         0           0         0         0		
		Complex	Pool	0	8.0		111.0	2.0	
		Upland Slough Beaver Complex	Beaver Pond	0		0	0		0
		Backwater	Backwater Pool	0		0	1.0		0
MR-7 (PRM		Split Main Channel	Riffle	0			0		
107.8-122.7)	FA	Upland Slough Beaver Complex	Beaver Pond	0	0	0	0	1.0	0
		Side Channel	Glide		0	0		25.0	6.0
		Oide Olever	Glide		0	$\begin{array}{c c c c c c c c c c c c c c c c c c c $			
MR-8 (PRM	FA	Side Slough	Pool			0			0
102.4-107.8)		Tributary	Pool			0			0
	Non- FA	Upland Slough	Pool	0	0	0	0	0	0

#### Table E36. Average CPUE (fish per trap) for sockeye salmon using fyke netting in the Middle River, 2013.

Table E37. Average CPUE (fish per trap) for sockeye salmon using minnow trapping in the Middle River Focus Areas,2013.

			Saln	non, sockeye (juve	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Natana Dam Location (PRM 18			
		Glide			0
MR-1 (DDM 184 6 187 1)	Side Channel	Riffle			0
(FRW 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2 (PPM 160 6 184 6)		Backwater Pool	0	0	
(FRW 109.0-104.0)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)			
	Backwater	Backwater Pool	0	0	0
		Backwater Pool		0	
	Side Channel	Glide	0	y         Late Summer         Fall           0         0	
		Run	Early Summer         Late Summer         Fall           187.1)         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0.027         0           0         0.277         0           0         0.277         0           0         0.07         0.11           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0		
		Backwater Pool	0.05		0.08
		Beaver Pond	0	0.27	0
	Side Claugh Dequar Complex	Glide		0	0.33
	Side Slough Beaver Complex	Pool		0.07	0.11
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0	0	0
	Tributon	Pool	0		0
	Thoulary	Riffle	0		0
		Run	0		0
		Glide		0	0
	Tributan/ Mouth	Rapid			0
		Riffle	0	0	0
		Run		0	0.13
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0	0	0
	Backwater	Backwater Pool	0	0	0
	Clearwater Plume	Clearwater Plume			0
		Backwater Pool			0
(PRM 107.8-122.7)	Side Channel	Glide	0	0.02	
		Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			0

## Table E37. Continued.

			Salmon, sockeye (juvenile)           Early Summer         Late Summer         Fall           0         0         0           0.06         0.11         0           0         0		enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributony (cont.)	Pool	0.06	0.11	
	Thoulary (cont.)	Mesohabitat Type   Glide   Pool   Riffle   Run   Cascade   Riffle   Riffle   Beaver Pond   Glide   Pool   Run   Glide   Pool   Run   Glide   Pool   Run   Backwater Pool   Glide   Pool   Run   Glide   Pool   Riffle   Backwater Pool   Glide   Pool   Run   Dupplex   Backwater Pool   Run   Run   Dupplex   Backwater Pool   Run   Backwater Pool   Run   Backwater Pool	0		0
		Run			0
MR-7	Tributan/Mouth	Cascade	0		
(cont.)		Riffle	0		
		Beaver Pond	0	0	0
	Unland Slough Pagyor Complex	Glide	Early 0         Late Summer         Fall           0         0         0           0.06         0.11         0           0         0 </td		
	Opialiu Slougii Deavel Complex	Pool			0
		Run	Early Summer         Late Summer         Fall           0         0         0           0.06         0.11         0           0         0         0           0 <t< td=""></t<>		
		Backwater Pool			0
	Oide Obererel	Glide		0	0
	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0.13	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0.07
		Mesohabitat TypeEarly SummerLate SummerFaiGlide00Pool0.060.11Riffle00Run00Cascade00Riffle00Riffle00Glide00Pool00Riffle00Beaver Pond00Glide00Pool00Run00Glide00Pool00Run00Glide00Pool00Glide00Pool00Run00Run00Run00Run00Run00Riffle00Run00Run00Run00.13Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run00 <td< td=""><td>0</td></td<>	0		

Table E38. Average CPUE (fish per hour of shocking time) for Arctic grayling using backpack electrofishing in the Middle River, 2013.

					A	rctic grayling	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	0	19.4	13.3
Geo- morphic ReachStrMR-1 (PRM 184.6- 187.1)Susitu RiverMR-2 (PRM 169.6- 184.6)Susitu RiverMR-2 (PRM 169.6- 184.6)Susitu RiverMR-2 (PRM 169.6- Tsussi CreelFog C 		EA		Glide			64.9
MR-1		Γ <b>Α</b>	Side Channel	Riffle	0	9.5	33.4
(PRM 184 6-	Susitna River			Run	0	23	8.5
187.1)			Main Channel	Run	1.8	7.8	18.6
		Non- FA	Sido Channol	Riffle			15.1
				Run	0	18.1	
			Main Channel	Run	2.5	8	
			Side Channel	Glide	21.9	51.5	65.7
			Side Slough	Backwater Pool	er Pool 30.8 1.6 13.5		
		FA		Glide		13.5	15.6
Sus Riv			Tributon Mouth	Cascade			0
				Riffle		13.3	
			Backwater	Backwater Pool	33	13.1	170
			Clearwater Plume	Clearwater Plume	2.3	13.3       33     13.1       170       2.3     3.9       5.1     28.8       0	
	Susitna River		Main Channel	Run	5.1	28.8	15.6
				Glide			0
			Side Channel	Riffle	0	12.4	
MD 2		Non- FA		Run	12.1	11.3	12.6
(PRM		17		Pool	23.8		0
169.6-			Side Slough	Riffle		5.6	
104.0)				Run	27.4	13	112.4
			Split Main Channel	Run	16.2	55.2	8.4
			Tributary Mouth	Riffle		34.6	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	7.6	10.4	23.8
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
		17		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Iributary	Rapid	0		
MR-1 (PRM Susi 184.6- 187.1) MR-2 (PRM 169.6- 184.6) Tsus Cree Fog Tribu				Riffle	0	0	0

# Table E38-Continued.

					A	rctic grayling	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				
166.1)				Riffle			0
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		FA		Glide	0		
MR-5			Main Channel	Riffle	0	52.5	37
(PRM	Susitna			Run			13.5
148.1- 153.9)	River		Main Channel	Run	0	0	4.2
155.5)		Non-	Side Slough	Glide	0	2.5	0
		FA		Pool			0
			Split Main Channel	Run	Habitat Type         Early Summer         Late Summer         Fa           1)         0         0         0           1)         0         0         0           r Riffle         0         0         0           9)         0         52.5         3           10         0         13         13           0         0         2.5         0           10         0         0         0           10         0         0         0           11         0         0         0         0           10         52.5         3         13         13           10         0         0         4.9         0         0           10         0         0         0         0         0         0           10         0         0         0         0         0         0         0           10         0         0         0         0         0         0         0         0         0           10         0         0         0         0         0         0         0         0         0         0 <td< td=""><td>0</td></td<>	0	
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Oplit Main Channel	Riffle	0	2.4	5
			Multiple Split Main Channel	Run	0	0	0
				Backwater Pool	0		
				Glide	0	4.9	0
			Side Channel	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM	Susitna Biver	FA		Glide	0		0
148.4)	INIVEI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	3.9		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	14.6		0
				Run			0
			<b>_</b> /	Glide	0		0
			Iributary	Pool	0		

# Table E38-Continued.

					A	rctic grayling	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Teilersteine	Riffle	0		
Geo- morphic ReachStrMR-6 (cont.)Susiti RiverMR-7 (PRM 107.8- 122.7)Susiti River			Tributary	Run	5.7		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	2.6	0	0
			Cide Channel	Pool	0	0	1.8
MR-6 (cont.)	Susitna River		Side Charliner	Riffle	0	0	
(00111.)			Side Slough	Glide		0	0
		Non- FA	Side Slough	Pool	1.3	0	32.3
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	4	0
			Tributary	Boulder Riffle	0	0	0
Geo- morphic ReachStreamMR-6 (cont.)Susitna RiverMR-7 (PRM 107.8- 122.7)Susitna River			Upland Slough	Pool	1.8	0	0
			Upland Slough Beaver Complex	t TypeMesohabitat TypeEarly SummerLate SummerRiffle0Run5.7Glide0ComplexBeaver Pond0Backwater Pool00Clearwater Plume2.60Pool00Riffle00Riffle00Pool1.30mplexBeaver Pond0Boulder Riffle00Pool1.80ComplexBeaver Pond0Beaver Pond00Run00ComplexBeaver Pond0Beaver Pond00ComplexBeaver Pond0Beaver Pond00ComplexBeaver Pond0Run00Run00Riffle00Riffle00Riffle00Run4.40Cascade00Pool00Riffle00Run4.40ComplexRun0Pool00Run00Run00Run00Run00Run00Run00Run00Run00Run00Run0	0	0	
Geo- morphic ReachStreamMR-6 (cont.)Susitna RiverMR-7 (PRM 107.8- 122.7)Susitna River			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	3.1
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	6.1	
		F۸		Run	4.4	0	0
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	72.9		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E38-Continued.

					А	rctic grayling	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
Geo- morphic Reach			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	1.6	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		17	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
Geo- morphic ReachStreamMR-7 (cont.)Susitna RiverMR-7 (cont.)Susitna RiverMR-8 (PRM 102.4- 107.8)Susitna River			Upland Slough Beaver Complex	Beaver Pond	0	0	0
Geo- morphic ReachSMR-7 (cont.)Sus 			Main Channol	Glide	0		
				Run	0	0	1.5
				Glide			0
			Side Channel	Pool	0	0	0
		FA		Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	2.4	0
			Split Main Channel	Run	0	0	0
Geo- morphic ReachStrestMR-7 (cont.)Susitna 			Linland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Table E39. Average CPUE (fish per hour of shocking time) for Arctic grayling using boat electrofishing in the Middle River, 2013.

				Arctic grayling		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	5.5	0
(PRM 184.6-		Main Channel	Run	0	0	14.5
187.1)	NON-FA	Side Channel	Riffle			23.0
	FA	Main Channel	Run	0	4.7	0
MR-2		Clearwater Plume	Clearwater Plume	18.0	168.3	44.2
(PRM 169.6-		Main Channel	Run	0	35.6	3.6
184.6)	NON-FA	Side Channel	Run	0		43.6
		Split Main Channel	Run	0	11.9	13.3
		Devils Canyo	on (PRM 153.9-166.1)			
	EA	Clearwater Plume	Clearwater Plume			0
MR-5	ГА	Main Channel	Run		0	0
153.9)	Non EA	Main Channel	Run	0	0	0
,	NON-FA	Split Main Channel	Run	0	0	5.7
MR-6		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
		Split Main Channel	Run			0
(PRW 122.7- 148.4)		Backwater	Backwater Pool	0		0
	Non-FA	Main Channel	Run	0	0	1.9
		Tributary Mouth	Run	0	0	9.3
	ГА	Main Channel	Run		0	5.4
MR-7	FA	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	0		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	5.8
		Main Channol	Glide	0		
	EA		Run	0	0	2.2
	Γ <b>Α</b>	Side Channel	Riffle			6.9
		Side Chainlei	Run	0	0	
MR-8 (DDM 102 4		Main Channel	Run	0	0	0
107.8)			Glide	0		0
, ,	Non-FA	Side Channel	Pool	0	0	0
			Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

					Arctic grayling		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Proposed Watana	a Dam Location (PRM 187.1)				
		Main Channel	Run	0			
MR-1 (DDM 194 6 197 1)	FA		Riffle	0			
(FRIVI 104.0-107.1)		Side Channel	Run	3.8	3.3	0	
		Backwater	Backwater Pool		6.4		
		Clearwater Plume	Clearwater Plume	378.1	237.5		
MR-2 (PPM 160 6 184 6)	FA	Side Channel	Glide	200.0			
(FRIVI 109.0-104.0)			Glide		45.2		
		Side Slough	Run		1.7		
		Devils Can	yon (PRM 153.9-166.1)				
		Clearwater Plume	Clearwater Plume	0	0	0	
MR-5	FA		Glide	0			
(PRIM 146.1-153.9)		Main Channel	Run		0		
		Backwater	Backwater Pool	16.6	19.3		
		Clearwater Plume	Clearwater Plume	11.7	1.3		
		Main Channel	Run	0	0		
			Riffle		0		
		Multiple Split Main Channel	Run	0	0	1.5	
		Side Channel	Backwater Pool	0	0.9		
			Glide	0.1	0	0	
			Riffle	0	0		
			Run		0	0	
			Backwater Pool	0			
	FA		Beaver Pond		0	0	
MR-6 (PPM 122 7-148 4)		Side Slough Beaver Complex	Glide	0		0	
(11(11)122.7-140.4)			Pool		0		
		Split Main Channel	Run			0	
		Tributen	Glide		0	0	
		Indutary	Pool	0			
		Tributer Mauth	Pool	0			
		I noutary mouth	Riffle		0		
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	
		Main Channel	Run	0	0	0	
	Non-FA	Side Channel	Riffle		0		
		Tributary Mouth	Run	0			
		Backwater	Backwater Pool	0			
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0	
(PRM 107.8-122.7)		17	Main Channel	Run		0	

### Table E40. Average CPUE (fish per 1,000 square meters) for Arctic grayling using seining in the Middle River, 2013.

### Table E40-Continued.

				Arctic grayling			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
			Backwater Pool			0	
		Side Channel	Glide	0	0		
			Pool	0	1.4		
		Culit Main Channel	Riffle	0	0		
		Split Main Channel	Run	0	0		
MR-7 (cont.)	FA		Backwater Pool			0	
		Tributary	Pool	0			
			Riffle			0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	
			Glide	0	0		
		Complex	Run	0			
	Non-FA	Split Main Channel	Run	0	0	0	
		Main Channel	Run			1.6	
			Backwater Pool	1.8		0	
			Glide			0	
		Side Channel	Pool	0	0		
			Riffle		0	6.7	
	FA		Run	0	0		
MR-8			Glide	2.2	1.5	0.8	
(PRM 102.4-107.8)		Side Slough	Pool			0.5	
			Run		0		
		Upland Slough Beaver	Glide	0	0	0	
		Complex	Run		0	0	
		Main Channel	Run	0	0	0	
	Non-FA	Split Main Channel	Run	0		0	
		Upland Slough	Glide	0			

Gao					Arctic grayling		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	21.9	0	1.3
				Glide			13.6
			Side Channel	Pool			0
		FA		Backwater Pool	86.1	22.7	
			Side Slough	Glide		105.3	47.5
	Susitna River			Pool	14.6		
			<b>T</b> 1 4 <b>M</b> 4	Cascade			0
			I ributary Mouth	Riffle	138.9	63.1	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	4.7		
184.6)		Non EA	Clearwater Plume	Clearwater Plume		0	
		Non-FA	Side Channel	Run	0		
			Side Slough	Pool	1.7		
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	18.3	0.3	6.4
				Pool	0	0	0
Fog Creek	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non EA	Tributer	Pool	0		0
	Tributary <sup>1</sup>	NON-FA	Tributary	Riffle	0		0
			Devils Canyon Uppe	er Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Lowe	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	5.0	0	0
MR-6			Side Channel	Backwater Pool	0		
(PRM 122.7- 148.4)	Susitna River	FA		Run			0
				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

## Table E41. Average CPUE (fish per 1,000 square meters) for Arctic grayling using snorkeling in the Middle River, 2013.

### TableE41-Continued

Gao						Arctic grayling	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	2.2	0	0
			Tributary	Pool	11.6		0
				Riffle	0		0
		FA		Run	3.4		0
	0.11			Glide	121.7	0	0
MR-6 (cont.)	Susitna River		Tributary Mouth	Pool	0		
· · · ·				Riffle	11.5	0	4.1
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
ND 7				Riffle	181.8	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Teileuter Mauth	Cascade	0		
			I ributary wouth	Riffle	16.6		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	22.2		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E41-Continued

0						Arctic grayling	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0		0
		FA		Glide		0	0
				Riffle	0	0	0
			Side Slough	Glide	0	0	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0.9	
			Tributary	Pool	0	0	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0.4
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				A	Arctic grayling	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	40.0	4.0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			1.0
		Devils Canyon (PRI	M 153.9-166.1)			
MR-6		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
		Side Channel	Riffle	0	0	
(PRM 122.7-	FA	Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
			Pool	1.0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		0
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	0
	<b>F A</b>		Glide		1.0	10.0
MR-8	FA	Side Slough	Pool			1.0
(PRM 102.4- 107 8)		Tributary	Pool			77.0
,	Non-FA	Upland Slough	Pool	0	0	0

## Table E42. Average CPUE (fish per trap) for Arctic grayling using fyke netting in the Middle River, 2013.

## Table E43. Average CPUE (fish per trap) for Arctic grayling using hoop trapping in the Middle River Focus Areas, 2013.

			Arctic grayling		1
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
•	Proposed Watana Dam	Location (PRM 187.1)			
	Main Channel	Run	0		0.1
MR-1 (PPM 184 6-187 1)		Glide			2.0
(11(1) 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0.2
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5	Clearwater Plume	Clearwater Plume			0
(PRM 148.1-153.9)	Main Channel	Run	0	0	
	Main Channel	Run	0	0	
MR-6	Multiple Split Main Channel	Run	0	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
	Split Main Channel	Run			0
	Main Channel	Run	0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0	0	0
(11(1)107.0-122.1)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Observal	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0	
(11(1)102.4-107.0)	Tributary	Pool	0	0	
	Upland Slough Beaver Complex	Backwater Pool	0		

Table E44. Average CPUE (fish per trap) for Arctic grayling using minnow trapping in the Middle River Focus Areas,2013.

			Arctic grayling							
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall					
·	Proposed	Watana Dam Location (PRM 18								
		Glide			0					
MR-1 (DDM 184 6 187 1)	Side Channel	Riffle			0					
(FRW 104.0-107.1)		Run	0							
	Backwater	Backwater Pool	0	0						
	Clearwater Plume	Clearwater Plume	0	0	0					
	Side Channel	Glide			0					
MR-2 (PPM 160 6-184 6)		Backwater Pool	0	0.06						
(11(11109.0-104.0)	Side Slough	Glide		0.08	0.30					
		Pool	0							
	Tributary Mouth	Riffle	0	0						
Devils Canyon (PRM 153.9-166.1)										
	Backwater	Backwater Pool	0	0	0					
		Backwater Pool		0						
	Side Channel	Glide	0	0	0					
		Run		0						
		Backwater Pool	0		0					
		Beaver Pond	0	0	0					
	Cide Claugh Deguar Complex	Glide		0	0					
	Side Slough Beaver Complex	Pool		0	0					
		Riffle		0	0					
MR-6		Run			0					
(PRM 122.7-148.4)		Glide	0	0	0					
	Tributan	Pool	0		0					
	Thould y	Riffle	0		0					
		Run	0		0					
		Glide		0	0					
	Tributany Mouth	Rapid			0					
		Riffle	0.10	0	0					
		Run		0	0					
	Upland Slough	Glide			0					
	Upland Slough Beaver Complex	Beaver Pond	0	0	0					
	Backwater	Backwater Pool	0	0	0					
	Clearwater Plume	Clearwater Plume			0					
		Backwater Pool			0					
MK-7 (PRM 107 8-122 7)	Side Channel	Glide	0	0						
(110110122.1)		Pool		0						
		Riffle		0						
	Tributary	Backwater Pool			0					

## Table E44. Continued.

			Arctic grayling		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributony (cont.)	Pool	0	0	
	Thouary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributon Mouth	Cascade	0		
(cont.)		Riffle	0		
		Beaver Pond	0	0	0
	Linland Clough Deguer Complex	Glide	0	0	
	Opiand Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Oide Obererel	Glide		0	0.02
	Side Channel	Pool		0	0
		Riffle		0	0.50
		Glide	0	0	0.06
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

Table E45. Average CPUE (fish per hour of shocking time) for burbot using backpack electrofishing in the Middle River,2013.

						Burbot	
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	2.4	2	2.5
		-		Glide			0
MR-1		FA	Side Channel	Riffle	4	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	RIVEI		Main Channel	Run	1.8	0	0
		Non- FA	Cide Channel	Riffle			0
			Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	3.1
		FA	Side Slough	Backwater Pool	2.4	0	
			Side Slough	Glide		0	0.9
			Tributer Marsh	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
	Susitna		Clearwater Plume	Clearwater Plume	0	0	2.2
			Main Channel	Run	5.1	0	0
	INIVEI		Side Channel	Glide			0
				Riffle	0	0	
MD 2		Non- FA		Run	2	0	6.3
(PRM		17		Pool	12.8		5.8
169.6-			Side Slough	Riffle		5.6	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	8.4
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0
		17		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tilutan	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Iributary	Rapid	0		
				Riffle	0	0	0

# Table E45-Continued.

						Burbot	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Thouldry	ΓA	I Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				
166.1)				Riffle			0
	[	1	Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		FA		Glide	0		
MR-5			Main Channel	Riffle	0	0	0
(PRM	Susitna			Run			0
148.1-	River		Main Channel	Run	0	1.9	3.9
155.9)		Non-	Side Sloveb	Glide	0.5	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
			Multiple Split Main Channel	Run	0	0	0
				Backwater Pool	0		
				Glide	3.6	4.9	0
			Side Channel	Riffle	0	2.8	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM	Susitna Biver	FA		Glide	0		0
148.4)	RIVEI		Side Slough Beaver Complex	Pool			9
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
				Glide	0		0
			Inbutary	Pool	0		

# Table E45-Continued.

						Burbot	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tilutan	Riffle	0		
		<b>F</b> A	Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	1.5		3.3
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	2.2
	Susitna River		Cide Channel	Pool	0	0	0
MR-6 (cont.)			Side Channel	Riffle	0	0	
(00111.)			Cide Clough	Glide		0	12.2
		Non- FA	Side Slough	Pool	3.3	13.2	9.2
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	1.1
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	1.5	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	1.6	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	4.4	
MD 7		ΕΛ		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		6.1	
			moduly	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
				Run			3.2
		Non-	Clearwater Plume	Clearwater Plume			7.2
		FA	Main Channel	Glide			0

# Table E45-Continued.

						Burbot	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	3.4		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0.7	0
			Side Slough	Pool	0	1.6	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	6.2	0	0
(00)			Split Main Channel	Run	0	0	5.2
			Tributary Mouth	Riffle	0		15.8
			Tributary	Run	8.7	9.3	7.5
			Upland Slough	Pool	4.9	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	8.6		
				Run	4.3	0	0.9
		FA	Side Channel	Glide			3.6
				Pool	0	0	0
				Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0.5		
				Riffle	8.3	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	2.6		0
			Side Channel	Pool	2.8	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	8.8	8
			Split Main Channel	Run	0	4	4.3
			Linland Slough	Glide	1.9	0	0
			Upland Slough	Pool	2.9	3.1	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling

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# Table E46. Average CPUE (fish per hour of shocking time) for burbot using boat electrofishing in the Middle River, 2013.

					Burbot				
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
		Proposed Watana	Dam Location (PRM 187.1)	)					
MR-1	FA	Main Channel	Run	0	0	0			
(PRM 184.6-	Nex 54	Main Channel	Run	3.6	1.3	0			
187.1)	NON-FA	Side Channel	Riffle			0			
	FA	Main Channel	Run	0	0	0			
MR-2		Clearwater Plume	Clearwater Plume	0	0	2.5			
(PRM 169.6-	Nex 54	Main Channel	Run	0	0	0			
184.6)	NON-FA	Side Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
Devils Canyon (PRM 153.9-166.1)									
	EA	Clearwater Plume	Clearwater Plume			0			
MR-5	ГA	Main Channel	Run		0	0			
153.9)	Non EA	Main Channel	Run	0	0	0			
	NON-FA	Split Main Channel	Run	0	0	0			
MR-6 (PRM 122.7- 148 4)		Main Channel	Run		0				
	FA	Multiple Split Main Channel	Run		0	0			
		Split Main Channel	Run			0			
		Backwater	Backwater Pool	0		0			
- /	Non-FA	Main Channel	Run	0	0	0			
(PRM 122.7- 148.4)		Tributary Mouth	Run	0	0	9.3			
MR-6 (PRM 122.7- 148.4) MR-7	EV	Main Channel	Run		0	0			
MR-7	FA	Split Main Channel	Run		12.0	0			
(PRM 107.8-		Backwater	Backwater Pool	6.2					
122.7)	Non-FA	Main Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
		Main Channel	Glide	0					
	F۸		Run	0	0	0			
		Side Channel	Riffle			0			
			Run	0	0				
MR-8 (PPM 102 /-		Main Channel	Run	0	2.3	0			
107.8)			Glide	0		0			
	Non-FA	Side Channel	Pool	0	0	0			
			Run		0				
		Split Main Channel	Run	0	0	0			
		Upland Slough	Pool	0	0	13.0			

				Burbot			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Proposed Watan	a Dam Location (PRM 187.1)				
		Main Channel	Run	0			
MR-1 (DDM 194 6 197 1)	FA		Riffle	0			
(FRIVI 104.0-107.1)		Side Channel	Run	0	0	0	
		Backwater	Backwater Pool		1.9		
		Clearwater Plume	Clearwater Plume	0	0		
MR-2	FA	Side Channel	Glide	0			
(FRM 109.0-104.0)			Glide		0		
		Side Slough	Run		0		
		Devils Can	yon (PRM 153.9-166.1)				
		Clearwater Plume	Clearwater Plume	0	0	0	
MR-5	FA		Glide	0			
(PRIVI 140.1-155.9)		Main Channel	Run		0		
		Backwater	Backwater Pool	0	0		
		Clearwater Plume	Clearwater Plume	0	0		
		Main Channel	Run	0	0		
			Riffle		0		
		Multiple Split Main Channel	Run	0	0	0	
			Backwater Pool	0	0		
		Side Channel	Glide	0.2	0	0	
			Riffle	0	0		
			Run		0	0	
			Backwater Pool	0			
	FA	Cide Claush Desuga Complex	Beaver Pond		0	0	
MR-6 (PRM 122 7-148 4)		Side Slough Beaver Complex	Glide	0		0	
(11(11)122.1-140.4)			Pool		0		
		Split Main Channel	Run			0	
		Tributon	Glide		0	0	
		Thoulary	Pool	0			
		Tributany Mouth	Pool	0			
			Riffle		0		
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	
		Main Channel	Run	0	0	0	
	Non-FA	Side Channel	Riffle		0		
		Tributary Mouth	Run	0			
		Backwater	Backwater Pool	0.2			
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0	
(PRM 107.8-122.7)		ГА	Main Channel	Run		0	

### Table E47. Average CPUE (fish per 1,000 square meters) for burbot using seining in the Middle River, 2013.

### Table E47-Continued.

					Burbot	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			0
		Side Channel	Glide	0	0	
			Pool	0	0	
		Onlit Main Obannal	Riffle	0	0	
		Split Main Channel	Run	2.5	0	
	FA	Tributary	Backwater Pool			0
MR-/			Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Glide	0	0	
			Run	0		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
			Backwater Pool	0		0
			Glide			0
		Side Channel	Pool	0	0	
			Riffle		0	0
	FA		Run	0	0	
MR-8			Glide	0	0	0
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		0	0
		Main Channel	Run	13.8	4.4	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

					Burbot	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	1.0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			1.0
		Devils Canyon (PR	M 153.9-166.1)			
		Backwater	Backwater Pool		1.5	
MR-6 (PRM 122.7-		Side Channel	Glide	4.0	0.5	1.0
		Side Chariner	Riffle	0	0	
	FA	Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		3.0	
(PRM 122.7- 148.4)			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	1.3		18.5
MR-7		Backwater	TypeMesohabitat TypeEarly SummerLate SummerI Watana Dam Location (PRM 187.1)Backwater Pool0Clearwater Plume1vils Canyon (PRM 153.9-166.1)Backwater Pool1.5Glide4.0A.00.5Riffle0O0Riffle0Beaver Pond0O0 <t< td=""><td>4.0</td></t<>	4.0		
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Mesohabitat Type         Burbot           Mesohabitat Type         Early Summer         Late Summer         Fall           m Location (PRM 187.1)         0         1.0         1.0           Backwater Pool         0         1.0         1.0           Clearwater Plume         1.0         1.0           PRM 153.9-166.1)         1.5         1.0           Backwater Pool         1.5         1.0           Glide         4.0         0.5         1.0           Riffle         0         0         0           Beaver Pond         0         1.5         1.0           Beaver Pond         0         0         1.0           Beaver Pond         0         0         1.0           Beaver Pond         0         0         1.0           Backwater Pool         1.3         18.5         18.5           Backwater Pool         15.0         4.0         1.0           Riffle         0         0         0         0           Deaver Pond         0.0         0         0         0           Backwater Pool         1.0         6.0         0         0           Deaver Pond         0         0			
		Side Channel	Glide		1.0	6.0
	<b>F</b> A	Olda Olavash	Glide		6.0	0
MR-8	FA	Side Slough	Pool			0
(PRIVI 102.4- 107.8)		Tributary	Pool			1.0
,	Non-FA	Upland Slough	Pool	0	0	4.0

# Table E48. Average CPUE (fish per trap) for burbot using fyke netting in the Middle River, 2013.

## Table E49. Average CPUE (fish per trap) for burbot using hoop trapping in the Middle River Focus Areas, 2013.

				Burbot						
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall					
	Proposed Watana Dam	Location (PRM 187.1)								
	Main Channel	Run	0		0.1					
MR-1 (PPM 184 6, 187 1)		Glide			0					
(FRW 104.0-107.1)	Side Channel	Run			0					
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0					
Devils Canyon (PRM 153.9-166.1)										
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0					
	Main Channel	Run	0.5	1.0						
	Main Channel	Run	0	0.3						
MR-6	Multiple Split Main Channel	Run	0.3	0	0.1					
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0					
	Split Main Channel	Run			0					
	Main Channel	Run	0.5	0.3	0.2					
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0.5	0.2	0.3					
(11(1) 101.0 122.1)	Upland Slough Beaver Complex	Beaver Pond		0						
	Main Channel	Glide	0							
	Main Channel	Run	0	0.6	0.1					
MR-8 (PRM 102 4-107 8)	Side Channel	Pool	1.0	0						
(1100 102.7-107.0)	Tributary	Pool	0	0						
	Upland Slough Beaver Complex	Backwater Pool	0							

## Table E50. Average CPUE (fish per trap) for burbot using minnow trapping in the Middle River Focus Areas, 2013.

			Burbot		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Natana Dam Location (PRM 18	37.1)		
		Glide			0
MR-1 (PPM 184 6-187 1)	Side Channel	Riffle			0
(FRW 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0.05	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2 (PRM 169 6-184 6)		Backwater Pool	0.04	0	
(11(1)100.0-104.0)	Side Slough	Glide		0.17	0.02
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)	-		
	Backwater	Backwater Pool	0	0	0
		Backwater Pool		0	
	Side Channel	Glide	0	0	0
		Run		0	
		Backwater Pool	0		0
		Beaver Pond	0	0	0
	Side Slough Beauer Complex	Glide		0	0.06
	Side Slough Beaver Complex	Pool		0	0
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0	0	0
	Tributon	Pool	0		0.25
	Thoulary	Riffle	0		0
		Run	0		0
		Glide		0	0
	Tributany Mouth	Rapid			0
		Riffle	0	0	0
		Run		0	0
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0.05	0.07	0.23
	Backwater	Backwater Pool	0.33	0.05	0
	Clearwater Plume	Clearwater Plume			0
		Backwater Pool			0
MR-7	Side Channel	Glide	0.13	0.02	
(PRM 107.8-122.7)		Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			0
		Glide	0	0	

### Table E50. Continued.

			Burbot		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0.11	
	Tributary (cont.)	Riffle	1.00		0
		Run			0
MD 7	Tributon Mouth	Cascade	0		
MR-/	Thouary Mouth	Riffle	0		
(cont.)		Beaver Pond	0.04	0.08	0
	Liniand Claush Desugn Complex	Glide	0	0.13	
	Upland Slough Beaver Complex	Pool	Burbot           Early Summer         Late Summer         Fall           0         0.11         0           1.00         0         0           0         0.11         0           1.00         0         0           0         0         0           0         0         0           0         0         0           0         0.04         0.08         0           0         0.13         0         0           0         0.13         0         0           0         0.05         0         0           0         0.05         0         0           0         0.04         0         0           0         0.04         0         0           0         0.05         0         0           0         0.04         0         0           0         0.04         0         0           0         0         0.06         0           0         0         0         0           0         0         0         0           0         0         0         0		
		Run	0		0
		Backwater Pool			0
	Cide Channel	Glide		0	0.06
	Side Channel	Pool		0.05	0
		Riffle		0	0
		Glide	0	0.04	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0.15	
	Tributary	Pool		0	0.06
		Riffle		0	0
		Backwater Pool		0	
	Haland Olaush Daavan Oamalau	Beaver Pond			0
	Opland Slough Beaver Complex	Glide	0	0	0.07
		Run		0.33	0

Table E51. Average CPUE (fish per hour of shocking time) for Dolly Varden using backpack electrofishing in the Middle River, 2013.

					[	Oolly Varden	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	0	0	0
				Glide			0
MR-1		ГA	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)			Main Channel	Run	1.8	0	0
		Non- FA		Riffle			0
		17.	Side Channel	Run	0	0	
			Main Channel	Run	0	0	
		FA	Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	0	0	
				Glide		0	0
			Tributor Marith	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
	Susitna River		Clearwater Plume	Clearwater Plume	0	0	0
			Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
		Non-		Run	0	0	0
(PRM				Pool	0		0
169.6-			Side Slough	Riffle		0	
104.0)				Run	0	0	3.5
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	7.6	0	4
				Pool	6	0	6.8
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	33.8	32.9	0
				Run	14	15	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	28.6
	Tributary <sup>1</sup>	FA	Iributary	Rapid	0		
				Riffle	9.3	17.9	23.9

# Table E51-Continued.

					[	Oolly Varden	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(00111.)	Thouary	17	Devils Canyon Upper Extent (F	PRM 166.1)		L	
MR-4				Boulder Riffle	53.6	0	91.4
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			87.8
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		FA		Glide	0		
			Main Channel	Riffle	0	0	0
MR-5 (PRM	Susitna			Run			0
148.1- 153.9)	River		Main Channel	Run	0	0	0
		Non-	Side Slough	Glide	1	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			7.1
			Tributan	Glide	0		0
			Thoutary	Pool	6		

# Table E51-Continued.

					[	Oolly Varden	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Teile dame	Riffle	0		
			Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cide Channel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Charliner	Riffle	0	0	
(00111.)			Side Slough	Glide		0	0
		Non- FA		Pool	0	0	0
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		ΓΛ		Run	0	0	0
(PRM	Susitna	Γ <b>Α</b>	Tributary Mouth	Cascade	27		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributany	Pool		0	
			Thoulary	Riffle	0		
				Run			0
			Linland Slough Beaver Complex	Pool			0
			opiana oloagni beavel oumplex	Run			0
		Non- FA	Clearwater Plume	Clearwater Plume			0
			Main Channel	Glide			0
## Table E51-Continued.

					[	Oolly Varden	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
		17	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0
			Side Channel	Glide			0
		FA		Pool	0	0	0
				Riffle	0	0	2.5
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
			Upland Slough	Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

# Table E52. Average CPUE (fish per hour of shocking time) for Dolly Varden using boat electrofishing in the Middle River, 2013.

					Dolly Varden	-			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
		Proposed Watana	Dam Location (PRM 187.1)	)					
MR-1	FA	Main Channel	Run	0	0	0			
(PRM 184.6-		Main Channel	Run	0	0	0			
187.1)	NON-FA	Side Channel	Riffle			0			
	FA	Main Channel	Run	0	0	3.1			
MR-2		Clearwater Plume	Clearwater Plume	0	0	0			
(PRM 169.6-	Non EA	Main Channel	Run	0	0	0			
184.6)	NOII-FA	Side Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
Devils Canyon (PRM 153.9-166.1)									
	FΔ	Clearwater Plume	Clearwater Plume			0			
MR-5 (DDM 1/8 1		Main Channel	Run		0	0			
(PRW 140.1- 153.9)	Non EA	Main Channel	Run	0	0	0			
	NUII-FA	Split Main Channel	Run	0	0	0			
MR-6 (PRM 122.7- 148 4)		Main Channel	Run		0				
	FA	Multiple Split Main Channel	Run		0	0			
		Split Main Channel	Run			0			
		Backwater	Backwater Pool	0		0			
,	Non-FA	Main Channel	Run	0	0	0			
148.4)		Tributary Mouth	Run	0	0	0			
-	EA	Main Channel	Run		0	0			
MR-7	TA	Split Main Channel	Run		0	0			
(PRM 107.8-		Backwater	Backwater Pool	0					
122.7)	Non-FA	Main Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
		Main Channel	Glide	0					
	FΔ		Run	0	0	1.6			
	173	Side Channel	Riffle			0			
			Run	0	0				
MR-8 (PRM 102 /-		Main Channel	Run	0	0	0			
107.8)			Glide	0		0			
	Non-FA	Side Channel	Pool	0	0	0			
			Run		0				
		Split Main Channel	Run	0	0	0			
		Upland Slough	Pool	0	0	0			

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

				Dolly Varden			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Proposed Watan	a Dam Location (PRM 187.1)	•	•	•	
		Main Channel	Run	0			
MR-1 (DDM 184 6 187 1)	FA	Oide Obernel	Riffle	0			
(FRIVI 104.0-107.1)		Side Channel	Run	0	0	0	
		Backwater	Backwater Pool		0		
	FA	Clearwater Plume	Clearwater Plume	0	0		
MR-2 (PPM 160 6 184 6)		Side Channel	Glide	0			
(FRW 109.0-104.0)			Glide		0		
		Side Slough	Run		0		
		Devils Can	yon (PRM 153.9-166.1)				
		Clearwater Plume	Clearwater Plume	0	0	0	
MR-5	FA		Glide	0			
(PRIVI 140.1-155.9)		Main Channel	Run		0		
		Backwater	Backwater Pool	0.7	0		
		Clearwater Plume	Clearwater Plume	0	0		
		Main Channel	Run	0	0		
			Riffle		0		
		Multiple Split Main Channel	Run	0	0	0	
		Side Channel	Backwater Pool	0	0		
			Glide	0	0	0	
			Riffle	0	0		
			Run		0	0	
			Backwater Pool	0			
	ГA	Cide Clough Dequar Complex	Beaver Pond		0	0	
MR-6 (PRM 122 7-148 4)		Side Slough Beaver Complex	Glide	0		0	
(11(1)122.7 140.4)			Pool		0		
		Split Main Channel	Run			0	
		Tributon	Glide		0	0	
		moulary	Pool	0			
		Tributany Mouth	Pool	0			
			Riffle		0		
		Upland Slough Beaver Complex	Beaver Pond	0	0.1	0.8	
		Main Channel	Run	0	0	0	
	Non-FA	Side Channel	Riffle		0		
		Tributary Mouth	Run	0			
		Backwater	Backwater Pool	0			
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0	
(17XW107.0-122.7)		2.7)	Main Channel	Run		0	

## Table E53. Average CPUE (fish per 1,000 square meters) for Dolly Varden using seining in the Middle River, 2013.

## Table E53-Continued.

					Dolly Varden			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
			Backwater Pool			0		
		Side Channel	Glide	0	0			
			Pool	0	0			
		Onlit Main Obannal	Riffle	0	0			
		Split Main Channel	Run	0	0			
	FA		Backwater Pool			0		
MR-/		Tributary	Pool	0				
(cont.)			Riffle			0		
		Upland Slough Beaver Complex	Beaver Pond	0	0	0		
			Glide	0	0			
			Run	0				
	Non-FA	Split Main Channel	Run	0	0	0		
		Main Channel	Run			0		
			Backwater Pool	0		0		
			Glide			0		
		Side Channel	Pool	0	0			
			Riffle		0	0		
	FA		Run	0	0			
MR-8			Glide	0	0	0		
(PRM 102.4-107.8)		Side Slough	Pool			0		
			Run		0			
		Upland Slough Beaver	Glide	0	0	0		
		Complex	Run		0	12.5		
		Main Channel	Run	0	0	0		
	Non-FA	Split Main Channel	Run	0		0		
		Upland Slough	Glide	0				

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

6					Dolly Varden			
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
			Proposed Watana Da	m Location (PRM 187.1)				
			Clearwater Plume	Clearwater Plume	0	0	0	
				Glide			0	
			Side Channel	Pool			0	
		FA		Backwater Pool	0	0		
			Side Slough	Glide		0	0	
	Susitna River			Pool	0			
			<b>T</b> 1 4 <b>M</b> 4	Cascade			0	
			I ributary Mouth	Riffle	0	0		
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0			
(FRM 109.0- 184.6)		Non-FA	Clearwater Plume	Clearwater Plume		0.9		
			Side Channel	Run	0			
			Side Slough	Pool	0			
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0.7	0	0	
				Pool	224.6	0	2.4	
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	4.4	59.0	0	
				Run	3.0	27.3	0	
	Fog Creek	Non-FA	Tributary	Pool	35.4		0	
	Tributary <sup>1</sup>			Riffle	7.5		0	
			Devils Canyon Upp	er Extent (PRM 166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	8.9	1.4	0	
			Devils Canyon Low	er Extent (PRM 153.9)		I		
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		
			Backwater	Backwater Pool	0	0		
			Clearwater Plume	Clearwater Plume	0	0	0	
MR-6			Side Chansel	Backwater Pool	0			
(PRM 122.7- 148 4)	Susitna River	FA	Side Channel	Run			0	
. 10. 1)				Backwater Pool	0		0	
			Side Slough Beaver	Beaver Pond	0	0	0	
			Complex	Glide	0	0	0	

## Table E54. Average CPUE (fish per 1,000 square meters) for Dolly Varden using snorkeling in the Middle River, 2013.

## TableE54-Continued

Gao						Dolly Varden	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
			<b>T</b> 1 1	Pool	0		0
			Indutary	Riffle	0		0
		FA		Run	0		0
MR-6 (cont.)	<b>0</b> 14			Glide	243.5	0	0
	Susitna River		<b>T</b> 1 <b>1 1</b>	Pool	0		
				Riffle	2.0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributor Mouth	Cascade	0		
			Thoulary Mouth	Riffle	16.6		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	44.4		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E54-Continued

0						Dolly Varden	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0		0
		FA		Glide		0	0
	Susitna River			Riffle	0	0	0
			Side Slough	Glide	0	0.1	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-				Run		0	
107.8)				Glide	0	0	
			Tributary	Pool	0	2.1	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

				Dolly Varden		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	1.0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PRI	VI 153.9-166.1)			
		Backwater	Backwater Pool		0	
MR-6 (PRM 122.7-		Side Channel	Glide	0	0	0
		Side Channel	Riffle	0	0	
	FA	Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0.3		0
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)	Geomorphic ReachFA or Non-FAMacrohabitat TypeMeProposed Watana Dam LocationRM 169.6- 4.6)FABackwaterBackRM 169.6- 4.6)FAClearwater PlumeClearClearwater PlumeClearwater PlumeClearDevils Canyon (PRM 153.3)Devils Canyon (PRM 153.3)BackwaterBackSide ChannelSide ChannelRiffleRM 122.7- 8.4)FABackwaterBackSide Slough Beaver ComplexGlidePoolUpland Slough Beaver ComplexBackRM 107.8- 2.7)FASide ChannelRiffle2.7)FASide ChannelRiffleSide Slough Beaver ComplexBackBackRM 107.8- 2.7)FASide ChannelRiffle2.7)FASide ChannelGlideR-7 RM 102.4- 7.8)FASide ChannelGlideR-8 RM 102.4- 7.8)Non-FAUpland Slough Beaver ComplexBeavNon-FAUpland SloughPoolPool	Beaver Pond	0	0	0	
		Side Channel	Glide		0	4.0
	<b>F</b> A	Oida Olavat	Glide		0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			5.0
,	Non-FA	Upland Slough	Pool	0	0	0

## Table E55. Average CPUE (fish per trap) for Dolly Varden using fyke netting in the Middle River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

## Table E56. Average CPUE (fish per trap) for Dolly Varden using hoop trapping in the Middle River Focus Areas, 2013.

			Dolly Varden		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
·	Proposed Watana Dam	Location (PRM 187.1)			
	Main Channel	Run	0		0
MR-1 (PPM 184 6-187 1)		Glide			0
(FRW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run	0	0	
	Main Channel	Run	0	0	
MR-6	Multiple Split Main Channel	Run	0	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
	Split Main Channel	Run			0
	Main Channel	Run	0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0.5	0	0
(1101101122.1)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channel	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0	
(11(0) 102.4-107.0)	Tributary	Pool	0	0	
	Upland Slough Beaver Complex	Backwater Pool	0		

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

# Table E57. Average CPUE (fish per trap) for Dolly Varden using minnow trapping in the Middle River Focus Areas, 2013.

				Dolly Varden					
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
	Proposed \	Watana Dam Location (PRM 18	37.1)						
		Glide			0				
MR-1 (PRM 184 6-187 1)	Side Channel	Riffle			0				
(11(1)104.0-107.1)		Run	0						
	Backwater	Backwater Pool	0	0					
	Clearwater Plume	Clearwater Plume	0	0	0				
	Side Channel	Glide			0				
MR-2 (PRM 169 6-184 6)		Backwater Pool	0	0					
(11(1)100.0-104.0)	Side Slough	Glide		0	0				
		Pool	0						
	Tributary Mouth	Riffle	0	0					
Devils Canyon (PRM 153.9-166.1)									
	Backwater	Backwater Pool	0.08	0	0				
		Backwater Pool		0					
	Side Channel	Glide	0	0	0				
		Run		0					
		Backwater Pool	0		0				
		Beaver Pond	0	0	0				
	Sido Slough Boover Complex	Glide		0	0				
	Side Slough Beaver Complex	Pool		0	0				
		Riffle		0	0				
MR-6		Run			0				
(PRM 122.7-148.4)		Glide	0	0	0				
	Tributon	Pool	0		0				
	Thoulary	Riffle	0.67		0				
		Run	0.13		0				
		Glide		0	0				
	Tributan/ Mouth	Rapid			0				
		Riffle	0	0	0				
		Run		0	0				
	Upland Slough	Glide			0				
	Upland Slough Beaver Complex	Beaver Pond	0	0	0				
	Backwater	Backwater Pool	0	0	0				
	Clearwater Plume	Clearwater Plume			0				
		Backwater Pool	0		0				
MR-7	Side Channel	Glide		0					
(PRM 107.8-122.7)		Pool		0					
		Riffle		0					
	Tributan	Backwater Pool			0.13				
	libuary	Glide	0	0					

## Table E57. Continued.

			Dolly Varden		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
	Tributon Mouth	Cascade	0		
MR-7	Thoulary Moulin	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Liniand Claush Desugn Complex	Glide	0	0.13	
	Opland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Cide Channel	Glide		0	0.02
	Side Channel	Pool		0	0
		Riffle		0	0.50
		Glide	0	0	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0.25	0
		Riffle		0	0
		Backwater Pool		0	
	Haland Olaush Daavan Oamalau	Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

Table E58. Average CPUE (fish per hour of shocking time) for lamprey using backpack electrofishing in the Middle River, 2013.

						Lamprey	
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohahitat Type	Early Summer	Late Summer	Fall
Reach	otream	17	Proposed Watana Dam Location	(PRM 187.1)	ounner	ounner	1 dii
			Main Channel	Run	0	0	0
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM	Susitna			Run	0	0	0
187.1)	River		Main Channel	Run	0	0	0
		Non- FA		Riffle			0
		17	Side Channel	Run	0	0	
			Main Channel	Run	0	0	
		FA	Side Channel	Glide	0	0	0
			Sido Slough	Backwater Pool	0	0	
			Side Slough	Glide		0	0
			Tributon Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
MD 2		Non- FA		Run	0	0	0
(PRM				Pool	0		0
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
		17		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tilutan	Pool	0	0	0
	Tributary <sup>1</sup>	FA	I ributary	Rapid	0		
				Riffle	0	0	0

# Table E58-Continued.

						Lamprey	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Thoulary	ГA	Devils Canvon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
,	L		Devils Canyon Lower Extent (F	PRM 153.9)		L	
			Clearwater Plume	Clearwater Plume			0
		<b>F</b> A		Glide	0		
		FA	Main Channel	Riffle	0	0	0
MR-5 (PRM Susitna	Susitna			Run			0
148.1-	River		Main Channel	Run	0	0	0
153.9)		Non-	Side Slough	Glide	0	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			Tributan	Glide	0		0
			Thoutary	Pool	0		

# Table E58-Continued.

						Lamprey	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
			Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Oide Obernel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(00111.)			Side Sloveb	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
		17	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
			Side Channel	Backwater Pool			0
				Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		F۸		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

### Table E58-Continued.

						Lamprey	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		173	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	4.3	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0
			Side Channel	Glide			0
		FA		Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	10.2		
				Riffle	39.1	0	
(PRM	Susitna		Tributary	Riffle	7.1		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

0						Lamprey	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dan	n Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	0	0	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
				Cascade			0
			Tributary Mouth	Riffle	0	0	
MR-2			Backwater	Backwater Pool	0		
(PRIVI 109.0- 184.6)			Clearwater Plume	Clearwater Plume		0	
		Non-FA	Side Channel	Run	0		
			Side Slough	Pool	0		
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
		Non-FA		Pool	0	0	0
	Fog Creek <sup>1</sup>		Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Neg EA	Tributary	Pool	0		0
	Tributary <sup>1</sup>	Non-FA		Riffle	0		0
	•		Devils Canyon Uppe	er Extent (PRM 166.1)		•	
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Lowe	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
(ד.טדו				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

#### Table E59. Average CPUE (fish per 1,000 square meters) for lamprey using snorkeling in the Middle River, 2013.

## TableE59-Continued

Gao						Lamprey	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
				Pool	0		0
			I ributary	Riffle	0		0
		FA		Run	0		0
	Quality			Glide	0	0	0
MR-6 (cont.)	River		Tributor Mouth	Pool	0		
			Thoulary Mouth	Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributor Mouth	Cascade	0		
			Thoulary Mouth	Riffle	0		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	0		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E59-Continued

Cas					Lamprey			
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		FA	Side Channel	Backwater Pool	0.5		0	
				Glide		0	0	
				Riffle	0	0	0	
			Side Slough	Glide	0	0	0	
				Pool			0	
				Riffle	0	0	0	
MR-8 (PRM 102.4-	Susitna River			Run		0		
107.8)				Glide	0	0		
			Tributary	Pool	0	0	0	
				Riffle	0	0	0	
				Backwater Pool	0			
			Upland Slough Beaver	Beaver Pond	0		0	
			Complex	Glide	0	0	0	
				Run		0	0	

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

					Lamprey	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	M 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7-		Side Channel	Riffle	0	0	
	FA	Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		0
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	2.0
	<b>F</b> A	Olda Olavada	Glide		0	9.0
MR-8 (PRM 102.4- 107 8)	FA	Side Slough	Pool			0
		Tributary	Pool			0
,	Non-FA	Upland Slough	Pool	0	0	0

# Table E60. Average CPUE (fish per trap) for lamprey using fyke netting in the Middle River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

## Table E61. Average CPUE (fish per trap) for lamprey using minnow trapping in the Middle River Focus Areas, 2013.

				Lamprey					
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
	Proposed \	Natana Dam Location (PRM 18	37.1)						
		Glide			0				
MR-1 (PPM 184 6-187 1)	Side Channel	Riffle			0				
(11(1)104.0-107.1)		Run	0						
	Backwater	Backwater Pool	0	0					
	Clearwater Plume	Clearwater Plume	0	0	0				
MD 2	Side Channel	Glide			0				
MR-2 (PRM 169 6-184 6)		Backwater Pool	0	0					
(11(11)100.0-104.0)	Side Slough	Glide		0	0				
		Pool	0						
	Tributary Mouth	Riffle	0	0					
Devils Canyon (PRM 153.9-166.1)									
	Backwater	Backwater Pool	0	0	0				
		Backwater Pool		0					
	Side Channel	Glide	0	0	0				
		Run		0					
		Backwater Pool	0		0				
		Beaver Pond	0	0	0				
	Sido Slough Boover Complex	Glide		0	0				
	Side Slough Beaver Complex	Pool		0	0				
		Riffle		0	0				
MR-6		Run			0				
(PRM 122.7-148.4)		Glide	0	0	0				
	Tributan	Pool	0		0				
	Thoulary	Riffle	0		0				
		Run	0		0				
		Glide		0	0				
	Tributan/ Mouth	Rapid			0				
		Riffle	0	0	0				
		Run		0	0				
	Upland Slough	Glide			0				
	Upland Slough Beaver Complex	Beaver Pond	0	0	0				
	Backwater	Backwater Pool	0	0	0				
	Clearwater Plume	Clearwater Plume			0				
		Backwater Pool	0		0				
MR-7	Side Channel	Glide		0					
(PRM 107.8-122.7)		Pool		0					
		Riffle		0					
	Tributary	Backwater Pool			0				
		Glide	0	0					

## Table E61. Continued.

				Lamprey	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
	Tributon Mouth	Cascade	0		
MR-7	Thouary Mouth	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Unland Clough Deguer Complex	Glide	0	0	
	Opland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Oide Obererel	Glide		0	0
	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0.02	0
	Side Slough	Pool			0
MR-8		Run		0.50	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0	
	Haland Olaush Daavan Oamalau	Beaver Pond			0
	Opland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

Table E62. Average CPUE (fish per hour of shocking time) for longnose sucker using backpack electrofishing in the Middle River, 2013.

						Longnose	
Geo- morphic		FA or Non-			Early	Late	
Reach	Stream	FA	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
		1	Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	0	0	0.9
	Queiter	FA		Glide			0
MR-1			Side Channel	Riffle	0	0	6.7
(PRM 184.6-	River			Run	0	0	0
187.1)		Nez	Main Channel	Run	0	0	0
		FA	Side Channel	Riffle			0
				Run	0	0	
			Main Channel	Run	6.2	0	
			Side Channel	Glide	0	15.1	34.4
			Sida Slaugh	Backwater Pool	26.5	27.6	
		FA		Glide		0	26.3
			Trib. Ann Mariak	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
		Non-	Clearwater Plume	Clearwater Plume	2.3	0	0
	Susitna River		Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
				Run	0	7	6.3
MR-2 (PRM		FA		Pool	54.5		5.8
169.6-			Side Slough	Riffle		0	
184.6)				Run	16.5	0	7
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		4.2	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
	Oreek	17		Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0
				Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Ranid	0		
				Riffle	0	0	0

# Table E62-Continued.

						Longnose	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(00111.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
			Main Channel	Glide	0		
		FA		Riffle	0	0	0
MR-5 (PRM Susite	Susitna			Run			0
148.1-	River		Main Channel	Run	4.6	0	0
153.9)		Non-	Side Slaugh	Glide	38.7	10.5	3.4
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	7.2	4.9	3.5
				Riffle	3.4	2.8	0
				Run	0		5.8
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		10.6
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	3.9		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	2.1		3.7
				Run			0
			Tilliation	Glide	0		0
			Indutary	Pool	0		

# Table E62-Continued.

						Longnose	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Teilersteine	Riffle	0		
			Indutary	Run	2.9		
			Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	2.6	0	0
			Cide Channel	Pool	0	112.9	0
MR-6 (cont.)	Susitna River			Riffle	0	11.1	
(00111)			Sido Slough	Glide		0	0
		Non- FA	Side Slough	Pool	0	8.8	4.6
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	4	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	4.3	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
			Side Channel	Backwater Pool			2.6
				Glide	0	3.2	
				Pool	0	16.8	
				Riffle		7.2	
			Split Main Channel	Riffle	0	0	
		F۸		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Linland Slough Beaver Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

## Table E62-Continued.

						Longnose	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			6.3
			Side Channel	Riffle	12.5	0	9.4
				Run	0	1.5	15.8
			Side Slough	Pool	0	44.2	10.3
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		17.	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	2.2	1.9	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	2.9
			Side Channel	Glide			0
		FA		Pool	12.9	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	6.3
107.0)				Glide	0		8
			Side Channel	Pool	0	171.4	0
				Run		0	6.4
		Non- FA	Side Slough	Glide			7.3
				Pool	0	328.8	40
			Split Main Channel	Run	0	0	4.3
			Linland Slough	Glide	0	0	0
				Pool	0	3.1	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

Table E63. Average CPUE (fish per hour of shocking time) for longnose sucker using boat electrofishing in the Middle River, 2013.

				l	Longnose sucker					
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
		Proposed Watana	Dam Location (PRM 187.1)	)						
MR-1	FA	Main Channel	Run	0	0	0				
(PRM 184.6-		Main Channel	Run	3.6	0	0				
187.1)	NON-FA	Side Channel	Riffle			0				
	FA	Main Channel	Run	0	2.4	0				
MR-2		Clearwater Plume	Clearwater Plume	12.3	0	0				
(PRM 169.6-		Main Channel	Run	0	0	0				
184.6)	NON-FA	Side Channel	Run	0		0				
		Split Main Channel	Run	0	0	0				
Devils Canyon (PRM 153.9-166.1)										
	EA	Clearwater Plume	Clearwater Plume			0				
MR-5	ГА	Main Channel	Run		0	0				
(PRM 148.1- 153.9)	Non EA	Main Channel	Run	0	0	3.6				
	NON-FA	Split Main Channel	Run	0	0	0				
		Main Channel	Run		0					
MR-6 (PRM 122.7- 148.4)	FA	Multiple Split Main Channel	Run		0	0				
		Split Main Channel	Run			0				
		Backwater	Backwater Pool	0		0				
	Non-FA	Main Channel	Run	0	0	0				
		Tributary Mouth	Run	0	0	0				
	F۸	Main Channel	Run		0	0				
MR-7	FA	Split Main Channel	Run		0	4.0				
(PRM 107.8-		Backwater	Backwater Pool	34.3						
122.7)	Non-FA	Main Channel	Run	0		0				
MR-7 (PRM 107.8- 122.7)		Split Main Channel	Run	0	0	5.8				
		Main Channel	Glide	0						
	FΔ		Run	0	0	3.4				
		Side Channel	Riffle			0				
			Run	0	0					
MR-8 (PRM 102 /-		Main Channel	Run	6.0	0	0				
107.8)			Glide	0		18.7				
	Non-FA	Side Channel	Pool	0	0	0				
			Run		0					
		Split Main Channel	Run	0	0	16.4				
		Upland Slough	Pool	0	0	0				

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

			Longnose sucker			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•	Proposed Watana	a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1	FA		Riffle	0		
(FRIVI 104.0-107.1)		Side Channel	Run	1.3	1.7	0
		Backwater	Backwater Pool		5.2	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PPM 169 6-184 6)	FA	Side Channel	Glide	0		
(11(11103.0-104.0)		O'de Olevek	Glide		9.9	
		Side Slough	Run		0.4	
	•	Devils Can	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 148 1 153 0)	FA	Main Obernal	Glide	0		
(FRW 140.1-155.5)		Main Channel	Run		0	
		Backwater	Backwater Pool	6.7	0	
		Clearwater Plume	Clearwater Plume	0.8	14.6	
		Main Channel	Run	1.0	1.9	
		Multiple Oplit Main Observal	Riffle		0	
		Multiple Split Main Channel	Run	0	0	1.5
		Side Channel	Backwater Pool	0	16.9	
			Glide	0.2	1.3	0
			Riffle	0	0	
			Run		2.0	0
	ΕΛ		Backwater Pool	0		
		Sida Slaugh Baavar Complex	Beaver Pond		0.3	0
MR-6 (PRM 122 7-148 4)		Side Slough Beaver Complex	Glide	0		0
(11011221111011)			Pool		0	
		Split Main Channel	Run			0
		Tributary	Glide		0	0
			Pool	0		
		Tributary Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	0.2	0.8	0
		Main Channel	Run	0	5.6	0
	Non-FA	Side Channel	Riffle		8.9	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	0		
MR-7 (PRM 107 8-122 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(1101101.0-122.1)		Main Channel	Run		0	

## Table E64. Average CPUE (fish per 1,000 square meters) for longnose sucker using seining in the Middle River, 2013.

## Table E64-Continued.

				Longnose sucker			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
			Backwater Pool			0	
		Side Channel	Glide	26.2	0		
			Pool	0	10.1		
		Onlit Main Obannal	Riffle	0	0		
		Split Main Channel	Run	0	6.0		
	FA		Backwater Pool			0	
MR-7 (cont.)		Tributary	Pool	0			
			Riffle			0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0	
			Glide	0	0		
			Run	30.8			
	Non-FA	Split Main Channel	Run	0	0	0	
		Main Channel	Run			0	
			Backwater Pool	2.7		0	
			Glide			13.7	
		Side Channel	Pool	20.0	0		
			Riffle		73.3	0	
	FA		Run	0	0		
MR-8			Glide	0	40.2	0	
(PRM 102.4-107.8)		Side Slough	Pool			253.2	
			Run		0		
		Upland Slough Beaver	Glide	0	0	0	
		Complex	Run		0	0	
		Main Channel	Run	0	0	6.7	
	Non-FA	Split Main Channel	Run	0		0	
		Upland Slough	Glide	0			

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

Cas					Longnose sucker		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	5.5	0	0
				Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	20.3	8.8	
			Side Slough	Glide		20.7	6.4
	Susitna River			Pool	1.1		
			Tributer Mandh	Cascade			0
			I ributary Mouth	Riffle	0	0	
MR-2 (PRM 169 6-			Backwater	Backwater Pool	0		
184.6)		Non-FA	Clearwater Plume	Clearwater Plume		0	
			Side Channel	Run	0		
ר ( F			Side Slough	Pool	2.8		
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek		Tributer	Pool	0		0
	Tributary <sup>1</sup>	NON-FA	Indutary	Riffle	0		0
			Devils Canyon Uppe	er Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Lowe	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6			Cide Chennel	Backwater Pool	0		
(PRM 122.7- 148.4)	Susitna River	FA		Run			0
10.1)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	3.8

## Table E65. Average CPUE (fish per 1,000 square meters) for longnose sucker using snorkeling in the Middle River, 2013.

## TableE65-Continued

Gao					L	ongnose sucker	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
			<b>T</b> 1 1	Pool	0		0
			Thoulary	Riffle	0		0
	Susitna River	FA		Run	0		0
				Glide	0	0	0
MR-6 (cont.)			Teileuten Mauth	Pool	0		
· · ·			I ributary wouth	Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	12.9	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	36.4	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon Mouth	Cascade	0		
			Thoulary Mouth	Riffle	0		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	22.2		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E65-Continued

<b>C</b> ++	600			L	ongnose sucker		
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		FA		Backwater Pool	0		0
			Side Channel	Glide		1.3	0
				Riffle	0	0	0
			Side Slough	Glide	0	0	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0	
			Tributary	Pool	0	0	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0.3		0
			Complex	Glide	0	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within tributaries or mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas, mainstem GRTS sampling outside of Focus Areas, and direct tributary sampling.

				Lo	ngnose sucke	r
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	13.0	8.0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PRI	M 153.9-166.1)			
MR-6 (PRM 122.7- 148.4)		Backwater	Backwater Pool		3.0	
	FA	Side Channel	Glide	0	3.0	1.0
		Side Channel	Riffle	0	0	
		Side Slough Beaver Complex	Beaver Pond	0		
			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0.3		17.5
MR-7		Backwater	Mesohabitat TypeEarly SummerLate SummerDam Location (PRM 187.1)Backwater Pool13.08.0Clearwater Plume13.08.0Clearwater Plume03.0Glide03.0Glide00Beaver Pond00Glide00Backwater Pool3.0Riffle00Beaver Pond00Beaver Pond0.30Beaver Pond0.30Beaver Pond0.30Beaver Pond0.00Glide00Deaver Pond00Deaver Pond00Riffle00Beaver Pond00Pool00Pool012.0		2.0	
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)	rphic hFA or Non-FAMacrohabitat TypeProposed Watana Dam LoProposed Watana Dam LoProposed Watana Dam LoClearwaterBackwaterClearwater PlumeDevils Canyon (PRMSide ChannelSide ChannelUpland Slough Beaver ComplexSide Slough Beaver ComplexSide ChannelUpland Slough Beaver ComplexSide ChannelUpland Slough Beaver ComplexSide ChannelSide ChannelSide ChannelSide ChannelUpland Slough Beaver ComplexNon-FAVulpand SloughProposed Watana Dam LoDevils Canyon (PRMProposed Watana Dam LoDevils Canyon (PRMSide ChannelSide Slough Beaver ComplexSide ChannelProposed Watana Dam LoDevils Canyon (PRMSide Slough Beaver ComplexSide ChannelProposed Watana Dam LoProposed Watana Dam LoPro	Beaver Pond	0	0	0	
		Side Channel	Glide		22.0	12.0
	<b>F A</b>		Glide		6.0	2.0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			5.0
	Non-FA	Upland Slough	Pool	0	12.0	2.0

## Table E66. Average CPUE (fish per trap) for longnose sucker using fyke netting in the Middle River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas and mainstem GRTS sampling outside of Focus Areas.

Table E67. Average CPUE (fish per trap) for longnose sucker using hoop trapping in the Middle River Focus Areas,2013.

			Longnose sucker		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
•	Proposed Watana Dam	Location (PRM 187.1)		1	
	Main Channel	Run	0		0
MR-1 (DDM 184 6 187 1)		Glide			0
(FRW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run	0	0.3	
	Main Channel	Run	0	0.5	
MR-6	Multiple Split Main Channel	Run	0.3	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			3.0
	Split Main Channel	Run			0
	Main Channel	Run	1.0	0	0
MR-7 (PPM 107 8 122 7)	Split Main Channel	Run	0.5	0.3	0
(11(1) 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Observal	Glide	0		
	Main Channel	Run	0	0.5	0
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	1.0	
(11(1) 102.4-107.0)	Tributary	Pool	0	2.0	
	Upland Slough Beaver Complex	Backwater Pool	0		

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

Table E68. Average CPUE (fish per trap) for longnose sucker using minnow trapping in the Middle River Focus Areas,2013.

			Longnose sucker						
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
	Proposed \	Natana Dam Location (PRM 18	37.1)						
		Glide			0				
MR-1 (PRM 184 6-187 1)	Side Channel	Riffle			0				
(11(1)104.0-107.1)		Run	Longnose sucker           Early Summer         Late Summer         Fall           ocation (PRM 187.1)         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0.25         0.05           1ume         0         0           0         0.25         2.38           0         0.25         2.38           1.00         0         0.52           1.00         0         0           0         0         0           0         0.11         0           0         0.11         0           0         0.13         0.04           0         0.03         0.56           0         0         0           0         0.03         0.56           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0 </td						
	Backwater	Backwater Pool	0.25	0.05					
	Clearwater Plume	Clearwater Plume	0	0	0				
	Side Channel	Glide			0				
MR-2 (PRM 169 6-184 6)		Backwater Pool	0.25	2.38					
(11(1)100.0-104.0)	Side Slough	Glide		0	0.52				
		Pool	1.00						
	Tributary Mouth	Riffle	0	0					
Devils Canyon (PRM 153.9-166.1)									
	Backwater	Backwater Pool	0	0.11	0				
		Backwater Pool		0.08					
	Side Channel	Glide	0.13	0.04	0				
		Run		0					
		Backwater Pool	0.06		0				
		Beaver Pond	0	0.03	0.56				
	Side Slough Beaver Complex	Glide		0	0				
	Side Slough Deaver Complex	Pool		0	0.22				
		Riffle		0	0				
MR-6		Run			0				
(PRM 122.7-148.4)		Glide	0	0	0				
	Tributany	Pool	0		0				
	Thouary	Riffle	0		0				
		Run	0		0				
		Glide		0	0				
	Tributary Mouth	Rapid			0				
		Riffle	0	0	0				
		Run		0	0				
	Upland Slough	Glide			0				
	Upland Slough Beaver Complex	Beaver Pond	0.07	0.02	0.34				
	Backwater	Backwater Pool	0.25	0	0				
	Clearwater Plume	Clearwater Plume			0				
		Backwater Pool	0		0				
(PRM 107.8-122.7)	Side Channel	Glide		0					
		Pool		0.65					
		Riffle		0					
	Tributary	Backwater Pool			0				

# Table E68. Continued.

			Longnose sucker Early		•
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributany (cont.)	Pool	0	0	
	Thouary (cont.)	Riffle	0.17		0
		Run			0
MR-7 (cont.)	Tributon Mouth	Cascade	0		
		Riffle	0		
		Beaver Pond	0	0	0.01
	Linland Clough Deguer Complex	Glide	0	0	
	Opiand Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Oide Obererel	Glide		0.65	0
MR-7 (cont.) MR-8 (PRM 102.4-107.8)	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0.02	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem GRTS sampling within Focus Areas.

 Table E69. Average CPUE (fish per hour of shocking time) for sculpin using backpack electrofishing in the Middle River, 2013.

						Sculpin	
Geo- morphic		FA or Non-			Early	Late	
Reach	Stream	FA	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
		1	Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	36	59.5	56
		FA		Glide			64.9
MR-1	Quaitas		Side Channel	Riffle	109.1	71.4	93.4
(PRM 184.6-	River			Run	14.9	32.1	89.3
187.1)			Main Channel	Run	26.7	17.7	22.3
		Non- FA	Side Channel	Riffle			60.5
				Run	39.8	24.2	
			Main Channel	Run	54.9	31.8	
			Side Channel	Glide	253.8	90.8	153.3
		FA	Side Slough	Backwater Pool	102	11.4	
			Side Slough	Glide		46.1	12.6
			<b>T H H</b>	Cascade			9.4
			I ributary Mouth	Riffle		46.5	
			Backwater	Backwater Pool	52.8	4.4	15.5
			Clearwater Plume	Clearwater Plume	32.5	5.7	32.2
	Susitna River		Main Channel	Run	41.1	7.2	15.6
			Side Channel	Glide			0
				Riffle	64.6	0	
		Non-		Run	29.9	9.5	25.3
MR-2 (PRM		FA		Pool	82.6		0
169.6-			Side Slough	Riffle		0	
184.6)				Run	148.2	40.9	59.7
			Split Main Channel	Run	19.4	0	41.9
			Tributary Mouth	Difflo		46.3	21.5
	Tsusena	Non-		Rillie			
	Creek <sup>1</sup>	FA	Tributary	Boulder Riffle	15.3	20.7	7.9
				Pool	18	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	17.1	9.9	10.4
				Run	14	0	0
				Boulder Riffle	28.2		23.5
	Fog Creek	Non-		Pool	0	0	28.6
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0		
				Riffle	65.7	0	47.8
# Table E69-Continued.

						Sculpin	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			14.8
(cont.)	Thoutary		Devils Canyon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	13.9	0	22.9
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			26.3
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		<b>F</b> A		Glide	20.7		
		FA	Main Channel	Riffle	11.1	14.3	59.1
(PRM Susitna 148.1- River 153.9)			Run			40.4	
	River		Main Channel	Run	17.3	24.1	15.5
		Non-	Cide Claugh	Glide	77.5	43.2	27.4
		FA	Side Slough	Pool			0
			Split Main Channel	Run	14.3	7.8	60.7
			Backwater	Backwater Pool			0
			Main Channel	Run	0	88.7	
			Multiple Split Main Channel	Riffle	29.5	16.6	89.5
				Run	52	42.3	63.4
				Backwater Pool	75.9		
			Side Channel	Glide	6.9	9.9	51.4
				Riffle	40.5	37	129.8
				Run	36.1		32.1
MR-6				Beaver Pond			3
(PRM 122.7-	Susitna River	FA		Glide	39.2		85.3
148.4)			Side Slough Beaver Complex	Pool			45.1
				Riffle	0		
				Run	165.4		
			Split Main Channel	Run			44.7
				Glide			89
			Tributary Mouth	Riffle	94.4		41.7
				Run			63.5
			Tributon	Glide	42		12.5
			moulary	Pool	115.1		

# Table E69-Continued.

						Sculpin	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributan	Riffle	81.1		
			Tributary	Run	40		
		FA	Upland Slough	Glide			89.1
			Upland Slough Beaver Complex	Beaver Pond	1.8		2.6
			Backwater	Backwater Pool	0	8.6	
MR-6 Susitna (cont.) River			Clearwater Plume	Clearwater Plume	29.4	17.8	21.8
			Cide Channel	Pool	14.3	63.5	17.7
	Susitna River		Side Charliner	Riffle	10.6	140.6	
			Side Slough	Glide		36	85.4
		Non- FA	Side Slough	Pool	41.4	41.9	46.2
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	25.5	15.3	9.5
			Tributary	Boulder Riffle	357.8	98.2	38.5
			Upland Slough	Pool	50.9	123.4	0
			Upland Slough Beaver Complex	Beaver Pond	12.1	0	20.1
			Clearwater Plume	Clearwater Plume		83.2	
			Main Channel	Run	137.4	13.6	40.6
				Backwater Pool			22.4
			Side Channel	Glide	0	17.5	
				Pool	54.4	16.8	
				Riffle		43	
			Split Main Channel	Riffle	44.4	6.1	
MD 7		FΔ		Run	21.4	17.8	45.9
(PRM	Susitna		Tributary Mouth	Cascade	36		
107.8-	River			Riffle	262.3		
122.1)				Glide		18	
			Tributary	Pool		0	
			moduly	Riffle	398.5		
				Run			0
			Unland Slough Beaver Complex	Pool			42
			opiana oloagii beaver odilipiek	Run			39.2
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			27.7

#### Table E69-Continued.

						Sculpin	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	13.5		
				Glide			63.2
			Side Channel	Riffle	0	0	18.7
				Run	72.8	47.2	22.1
			Side Slough	Pool	37.6	23.7	10
MR-7	Susitna Bivor	Non-	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)	RIVEI		Split Main Channel	Run	7	0	41.6
			Tributary Mouth	Riffle	0		31.6
			Tributary	Run	11.9	26	22.6
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	17.9	77.9	29.3
				Glide			291.2
		FA	Side Channel	Pool	77.4	0	262.8
				Riffle	111.7	86.4	72.8
				Run	16.8	28.6	
			Side Slough	Glide	69.8		
				Riffle	341.3	271	
MR-8 (PRM	Susitna		Tributary	Riffle	205.5		
102.4-	River		Main Channel	Run	21.3	23.3	0
107.0)				Glide	29		24
			Side Channel	Pool	4.3	11.4	0
				Run		24.8	0
		Non- FA	Side Slough	Glide			0
			Side Slough	Pool	7.2	12	16
			Split Main Channel	Run	0	4	43.1
			Lipland Slough	Glide	43.5	138.5	4.4
				Pool	13.5	3.3	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

 Table E70. Average CPUE (fish per hour of shocking time) for sculpin using boat electrofishing in the Middle River, 2013.

					Sculpin	-
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	5.5	0
(PRM 184.6-		Main Channel	Run	0	1.3	0
187.1)	NON-FA	Side Channel	Riffle			0
	FA	Main Channel	Run	0	11.9	24.2
MR-2		Clearwater Plume	Clearwater Plume	3.6	0	1.7
(PRM 169.6-	Nex 54	Main Channel	Run	0	0	0
184.6)	NON-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
MR-5	EV	Clearwater Plume	Clearwater Plume			0
	FA	Main Channel	Run		0	0
(PRW 140.1- 153.9)	Non EA	Main Channel	Run	0	12.0	0
,	NON-FA	Split Main Channel	Run	0	0	0
MR-6		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
		Split Main Channel	Run			0
(PRW 122.7- 148.4)		Backwater	Backwater Pool	7.7		0
- /	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	9.3
	EV	Main Channel	Run		0	0
MR-7	FA	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	0		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	7.9	0	0
		Main Channel	Glide	0		
	FΔ		Run	0	0	0
		Side Channel	Riffle			0
			Run	0	0	
MR-8 (PRM 102 /-		Main Channel	Run	0	0	0
107.8)			Glide	0		9.3
	Non-FA	Side Channel	Pool	0	0	0
			Run		0	
		Split Main Channel	Run	0	14.9	0
		Upland Slough	Pool	0	0	13.0

				Sculpin			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Proposed Watana	a Dam Location (PRM 187.1)				
		Main Channel	Run	0			
MR-1	FA		Riffle	0			
(FRIVI 104.0-107.1)		Side Channel	Run	0.7	0	0	
		Backwater	Backwater Pool		0		
		Clearwater Plume	Clearwater Plume	16.4	40.6		
MR-2 (PPM 169 6-184 6)	FA	Side Channel	Glide	40.0			
(FRM 109.0-104.0)		Oide Olevek	Glide		6.4		
		Side Slough	Run		0.4		
	•	Devils Can	yon (PRM 153.9-166.1)	•	•		
	FA	Clearwater Plume	Clearwater Plume	0	0	0	
MR-5 (DDM 149 1 152 0)		Main Channel	Glide	0			
(FRIVI 140.1-155.9)		Main Channel	Run		0		
		Backwater	Backwater Pool	14.9	0		
		Clearwater Plume	Clearwater Plume	0	0		
		Main Channel	Run	0	0.9		
		Multiple Oplit Main Observal	Riffle		0		
		Multiple Split Main Channel	Run	0	0	0	
			Backwater Pool	0	5.1		
		Side Channel	Glide	2.6	0.9	0	
			Riffle	0	0		
			Run		0	0	
	ΕΛ		Backwater Pool	3.5			
		Side Slough Beaver Complex	Beaver Pond		0	0	
(PRM 122.7-148.4)		Side Slough Deaver Complex	Glide	0		0	
()			Pool		0		
		Split Main Channel	Run			0	
		Tributary	Glide		0	0	
		Thouary	Pool	569.3			
		Tributary Mouth	Pool	0			
			Riffle		0		
		Upland Slough Beaver Complex	Beaver Pond	0	0	0.8	
		Main Channel	Run	0	0	0	
	Non-FA	Side Channel	Riffle		0		
		Tributary Mouth	Run	0			
	1	Backwater	Backwater Pool	0.1			
MR-7 (PRM 107 8-122 7)	FA	Clearwater Plume	Clearwater Plume	16.2	0	0	
(FRIVI 107.8-122.7)		PRM 107.8-122.7)	Main Channel	Run		0	

# Table E71. Average CPUE (fish per 1,000 square meters) for sculpin using seining in the Middle River, 2013.

# Table E71-Continued.

				Sculpin			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
			Backwater Pool			0	
		Side Channel	Glide	8.1	0		
			Pool	0	4.3		
		Calit Main Channel	Riffle	0	0		
		Split Main Channel	Run	0	0		
	FA	Tributary	Backwater Pool			0	
MR-7 (cont.)			Pool	0			
(cont.)			Riffle			0	
		Upland Slough Beaver	Beaver Pond	0	0	0	
			Glide	0	0		
		Complex	Run	276.9			
	Non-FA	Split Main Channel	Run	0	0	0	
		Main Channel	Run			0	
		Side Channel	Backwater Pool	5.4		0	
			Glide			60.7	
			Pool	5.0	0		
			Riffle		20.0	0	
	FA		Run	0	0		
MR-8			Glide	18.6	3.3	4.5	
(PRM 102.4-107.8)		Side Slough	Pool			14.3	
			Run		5.1		
		Upland Slough Beaver	Glide	0	0.1	0	
		Complex	Run		0	25.0	
		Main Channel	Run	0	0	0	
	Non-FA	Split Main Channel	Run	0		0	
		Upland Slough	Glide	0			

Goo					Sculpin		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			6.8
		FA	Side Channel	Pool			0
				Backwater Pool	4.1	0.2	
			Side Slough	Glide		6.5	2.1
	Susitna River			Pool	0.3		
			Tributer Manth	Cascade			0
			moutary mouth	Riffle	111.1	9.0	
MR-2 (PRM 169 6-			Backwater	Backwater Pool	0		
184.6)			Clearwater Plume	Clearwater Plume		0	
-		Non-FA	Side Channel	Run	0		
			Side Slough	Pool	0.6		
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non EA	Teibuten	Pool	0		0
	Tributary <sup>1</sup>	NON-FA	Tributary	Riffle	0		0
			Devils Canyon Uppe	er Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0.7	0
			Devils Canyon Lowe	er Extent (PRM 153.9)			•
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	9.3	2.6	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6		-	Side Channol	Backwater Pool	0		
(PRM 122.7- 148.4)	Susitna River	FA		Run			7.9
- ,				Backwater Pool	4.4		1.1
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Complex	Glide	1.8	0.4	0.4

# Table E72. Average CPUE (fish per 1,000 square meters) for sculpin using snorkeling in the Middle River, 2013.

# TableE72-Continued

Gao						Sculpin	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	1.7
			Complex	Run	0.6		0
				Glide	0	0	1.3
			<b>T</b> 1 1	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	7.9		0
	0.11			Glide	0	0	12.3
MR-6 (cont.)	River		Teileuten Mauth	Pool	0		
			I ributary wouth	Riffle	0	18.5	0
				Run		0	4.7
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0.8	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	1.1	0	
				Riffle	36.4	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributor Mouth	Cascade	58.2		
			Thoulary Mouth	Riffle	16.6		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	66.7		25.4
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E72-Continued

0						Sculpin	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		FA	Side Channel	Backwater Pool	0.9		0
				Glide		0	2.5
				Riffle	12.1	0	0
			Side Slough	Glide	0.7	0.2	6.2
				Pool			12.0
				Riffle	23.9	49.1	5.4
MR-8 (PRM 102.4-	Susitna River			Run		2.8	
107.8)				Glide	0.9	0.9	
			Tributary	Pool	2.5	16.9	1.5
				Riffle	0	9.5	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0.4
				Run		8.2	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				Sculpin		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	5.0	0	
(PRM 169.6- FA 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	M 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7-			Riffle	1.0	0	
	FA		Beaver Pond	1.0		
148.4)		Side Slough Beaver Complex	Glide		0	
			Pool	5.0	0	
		Upland Slough Beaver Complex	Beaver Pond	1.3		0
MR-7		Backwater	Backwater Pool	1.0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0.5	0
		Side Channel	Glide		5.0	2.0
	<b>F</b> A	Oida Olavak	Glide		0	3.0
MR-8	FA	Side Slough	Pool			0
(PRIM 102.4- 107.8)		Tributary	Pool			0
,	Non-FA	Upland Slough	Pool	0	0	0

# Table E73. Average CPUE (fish per trap) for sculpin using fyke netting in the Middle River, 2013.

# Table E74. Average CPUE (fish per trap) for sculpin using hoop trapping in the Middle River Focus Areas, 2013.

			Sculp	oin, undifferen	tiated
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed Watana Dam	Location (PRM 187.1)			
	Main Channel	Run	0		0
MR-1 (PRM 184 6-187 1)		Glide			1.0
(11(1) 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0.2	0	0
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run	0	0	
	Main Channel	Run	0	0	
MR-6	Multiple Split Main Channel	Run	0	0	0
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			2.0
	Split Main Channel	Run			0
	Main Channel	Run	0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0	0	0
	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channel	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0	
(11(1)102.4-107.0)	Tributary	Pool	0	0	
	Upland Slough Beaver Complex	Backwater Pool	0		

# Table E75. Average CPUE (fish per trap) for sculpin using minnow trapping in the Middle River Focus Areas, 2013.

			Sculpin		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Natana Dam Location (PRM 18	37.1)	·	
		Glide			0.08
MR-1 (DDM 184 6 187 1)	Side Channel	Riffle			0
(FRW 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0.17	0.20	
	Clearwater Plume	Clearwater Plume	0.20	0	0.50
	Side Channel	Glide			0.20
MR-2 (PRM 169 6-184 6)		Backwater Pool	1.54	0.19	
(11(11)100.0-104.0)	Side Slough	Glide		1.47	0.43
		Pool	3.35		
	Tributary Mouth	Riffle	3.00	1.00	
	Devil	s Canyon (PRM 153.9-166.1)	-		
	Backwater	Backwater Pool	2.42	0.17	0
		Backwater Pool		0.08	
	Side Channel	Glide	0	0.06	0
		Run		0	
		Backwater Pool	0.30		0.15
		Beaver Pond	0.19	0.10	0.13
	Sida Slaugh Baayar Complex	Glide		0.03	0.22
	Side Slough Beaver Complex	Pool		0.07	0.67
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0.17	0	0
	Tributan	Pool	0.43		0
	Thoulary	Riffle	0.33		0
		Run	0		0.14
		Glide		0	0.25
	Tributan/ Mouth	Rapid			0
		Riffle	0.40	0.06	0
		Run		0.20	0.13
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0.18	0	0
	Backwater	Backwater Pool	0	0	0
	Clearwater Plume	Clearwater Plume			0
		Backwater Pool			0.11
MR-7	Side Channel	Glide	0	0.10	
(PRM 107.8-122.7)		Pool		0.06	
		Riffle		0	
	Tributary	Backwater Pool			0
		Glide	0.33	0.56	

# Table E75. Continued.

			Sculpin		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0.11	
	Tributary (cont.)	Riffle	0.67		0
		Run			0.08
	Tributon Mouth	Cascade	0.40		
MR-7	Thouary Mouth	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Liniand Claush Desugn Complex	Glide	0.25	0.25	
	Opland Slough Beaver Complex	Pool			0.17
		Run	0.25		0.19
		Backwater Pool			0.50
	Side Channel	Glide		0	0.19
		Pool		0	2.00
		Riffle		0.25	0
		Glide	2.60	0.39	0
	Side Slough	Pool			0.13
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0.23	
	Tributary	Pool		0	0.12
		Riffle		0	0
		Backwater Pool		0	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0.41	0.04	0.14
		Run		0	0.33

Table E76. Average CPUE (fish per hour of shocking time) for threespine stickleback using backpack electrofishing in the Middle River, 2013.

					Stickle	eback, threes	pine
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		_	Proposed Watana Dam Location	(PRM 187.1)			
		FA	Main Channel	Run	0	0	0
				Glide			0
MR-1	<b>-</b>		Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)			Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
			Run	0	0		
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		FA	Side Slough	Backwater Pool	0	0	
				Glide		0	0
			Tributon Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
				Glide			0
		Non- FA	Side Channel	Riffle	0	0	
MD 2				Run	0	0	0
(PRM				Pool	0		0
169.6-			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
Fo	Fog Creek <sup>1</sup>	Non-	Tributary	Riffle	0	0	0
		17.		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Inbutary	Rapid	0		
				Riffle	0	0	0

# Table E76-Continued.

					Stickle	eback, threes	pine
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Tribulary	ГА	Devils Canvon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
				Glide	0		
MR-5 (PRM Susitna 148.1- River 153.9)	FA	Main Channel	Riffle	0	0	0	
			Run			0	
		Main Channel	Run	0	0	0	
	Non-	Side Slough	Glide	0	0	0	
	FA	Side Slough	Pool			0	
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122 7-	Susitna River	FA		Glide	0		0
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			Tributan	Glide	0		0
		indutary	Pool	0			

# Table E76-Continued.

					Stickle	eback, threes	pine
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
			Tributary	Run	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
		Clearwater Plume	Clearwater Plume	0	0	0	
			Oide Obernel	Pool	0	0	0
MR-6 Susitna (cont.) River		Side Channel	Riffle	0	0		
		Cide Clough	Glide		0	0	
		Non- FA	Side Slough	Pool	1.3	2.2	0
		17	Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		EA		Run	0	0	0
(PRM	Susitna	FA	Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			Thoulding	Riffle	0		
				Run			0
			Linland Slough Beaver Complex	Pool			10.5
			opiana olougii beavel oomplex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E76-Continued.

					Stickle	eback, threes	pine
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non-	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	1.1	0	0
			Upland Slough	Pool	167.1	83.6	47.2
			Upland Slough Beaver Complex	Beaver Pond	32.7	8	2.2
			Main Channel	Glide	0		
				Run	0	0	0
				Glide			0
		FA	Side Channel	Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0.6		
				Riffle	0	12.9	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			29
				Pool	0	2.4	0
			Split Main Channel	Run	0	0	0
			Lipland Slough	Glide	0	0	0
			Upland Slough	Pool	2.9	43.2	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

 Table E77. Average CPUE (fish per 1,000 square meters) for threespine stickleback using seining in the Middle River, 2013.

				Stick	deback, threesp	ine		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
		Proposed Watana	a Dam Location (PRM 187.1)					
		Main Channel	Run	0				
MR-1 (PPM 184 6 187 1)	FA		Riffle	0				
(FRW 104.0-107.1)		Side Channel	Run	0	0	0		
		Backwater	Backwater Pool		0			
		Clearwater Plume	Clearwater Plume	0	0			
MR-2 (PPM 160 6 184 6)	FA	Side Channel	Glide	0				
(FRW 109.0-104.0)			Glide		0			
		Side Slougn	Run		0			
Devils Canyon (PRM 153.9-166.1)								
		Clearwater Plume	Clearwater Plume	0	0	0		
MR-5	FA		Glide	0				
(FRIVI 140.1-155.9)		Main Channel	Run		0			
		Backwater	Backwater Pool	0	0			
		Clearwater Plume	Clearwater Plume	0	0			
		Main Channel	Run	0	0			
			Riffle		0			
		Multiple Split Main Channel	Run	0	0	0		
			Backwater Pool	0	0			
		Side Channel	Glide	0	0	0		
			Riffle	0	0			
			Run		0	0		
			Backwater Pool	0				
	FA		Beaver Pond		0	0		
MR-6 (DDM 122 7 148 4)		Side Slough Beaver Complex	Glide	0		0		
(11111122.7-140.4)			Pool		0			
		Split Main Channel	Run			0		
		Tributen	Glide		0	0		
		Tributary	Pool	0				
		Tributer Mouth	Pool	0				
		Tributary Mouth	Riffle		0			
		Upland Slough Beaver Complex	Beaver Pond	0	0	0		
		Main Channel	Run	0	0	0		
	Non-FA	Side Channel	Riffle		0			
		Tributary Mouth	Run	0				
		Backwater	Backwater Pool	0				
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0		
(PRM 107.8-122.7)		Main Channel	Run		0			

# Table E77-Continued.

				Stick	Stickleback, threespine			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
			Backwater Pool			0		
		Side Channel	Glide	0	0			
			Pool	0	0			
		Onlit Main Obannal	Riffle	0	0			
		Split Main Channel	Run	0	0			
	FA		Backwater Pool			0		
MR-7 (cont.)		Tributary	Pool	0				
(cont.)			Riffle			0		
			Beaver Pond	67.1	5.5	10.8		
		Upland Slough Beaver	Glide	0	15.3			
		Complex	Run	0				
	Non-FA	Split Main Channel	Run	0	0	0		
		Main Channel	Run			0		
			Backwater Pool	2.7		0		
			Glide			15.7		
		Side Channel	Pool	0	0			
			Riffle		33.3	0		
	FA		Run	0	0			
MR-8			Glide	1.3	0	0		
(PRM 102.4-107.8)		Side Slough	Pool			13.3		
			Run		0			
		Upland Slough Beaver	Glide	1.3	2.3	3.5		
		Complex	Run		0	12.5		
		Main Channel	Run	0	0	0		
	Non-FA	Split Main Channel	Run	0		0		
		Upland Slough	Glide	0				

Table E78. Average CPUE (fish per 1,000 square meters) for threespine stickleback using snorkeling in the Middle River,2013.

600					Stickleback, threespine		ne
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam	Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
		FA	Side Channel	Pool			0
				Backwater Pool	0	0	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
			Tributary Mouth	Cascade			0
				Riffle	0	0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)			Clearwater Plume	Clearwater Plume		0	
Tsusena Creek <sup>1</sup> Fog Creek <sup>1</sup>	NON-FA	Side Channel	Run	0			
		Side Slough	Pool	0			
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Nen EA	<b>T</b> 11 (	Pool	0		0
	Tributary <sup>1</sup>	NON-FA	Indutary	Riffle	0		0
			Devils Canyon Upper	Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Lower	Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6 (PRM 122.7-	Susitna River	FA		Backwater Pool	0		
148.4)			Side Channel	Run			0
			Side Slough Beaver	Backwater Pool	0		0
			Complex	Beaver Pond	0	0	0

# TableE78-Continued

600				Stickleback, threespine			
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Glide	0	0	0
			Side Slough Beaver	Pool	0	0	0
			Complex	Riffle	0	0	0
				Run	0		0
				Glide	0	0	0
			Tributon	Pool	0		0
MR-6 Susitna (cont.) River	FA	TIDULALY	Riffle	0		0	
			Run	0		0	
			Glide	0	0	0	
	River		Tributan/ Mouth	Pool	0		
				Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
			Tributary	Boulder Riffle		0	
		Non-FA	Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			<b>-</b>	Cascade	0		
			Tributary Mouth	Riffle	0		
				Beaver Pond	3.5	1.1	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	0		0
		Non-FA	Upland Slough	Pool	6.9	4.8	0

#### Table E78-Continued

0					Stick	leback, threespi	ne
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Backwater Pool	0		0
			Side Channel	Glide		0	0
				Riffle	0	0	0
		FA	Side Slough	Glide	0	3.0	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0	
			Tributary	Pool	0	0	0.7
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	1.0		0
			Complex	Glide	0	0.4	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				Stick	leback, threesp	pine
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- FA 184.6)		Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	M 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7-		Side Channel	Riffle	0	0	
	FA	Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		0
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	254.3	503.0	22.7
		Side Channel	Glide		1.0	1.0
		Cide Claugh	Glide		0	0.5
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107 8)		Tributary	Pool			1.0
- /	Non-FA	Upland Slough	Pool	0	0	0

# Table E79. Average CPUE (fish per trap) for threespine stickleback using fyke netting in the Middle River, 2013.

# Table E80. Average CPUE (fish per trap) for threespine stickleback using minnow trapping in the Middle River Focus Areas, 2013.

			Stickleback, threespine			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
·	Proposed \	Natana Dam Location (PRM 18	37.1)			
		Glide			0	
MR-1 (DDM 184 6 187 1)	Side Channel	Riffle			0	
(FRW 104.0-107.1)		Run	0			
	Backwater	Backwater Pool	0	0		
	Clearwater Plume	Clearwater Plume	0	0	0	
	Side Channel	Glide			0	
MR-2 (PPM 160 6-184 6)		Backwater Pool	0	0		
(11(11109.0-104.0)	Side Slough	Glide		0	0	
		Pool	0			
	Tributary Mouth	Riffle	0	0		
	Devil	s Canyon (PRM 153.9-166.1)				
	Backwater	Backwater Pool	0	0	0	
		Backwater Pool		0		
	Side Channel	Glide	0	0	0	
		Run		0		
		Backwater Pool	0		0	
		Beaver Pond	0	0	0	
	Sido Slough Boover Complex	Glide		0	0	
	Side Slough Deaver Complex	Pool		0	0	
		Riffle		0	0	
MR-6		Run			0	
(PRM 122.7-148.4)		Glide	0	0	0	
	Tributany	Pool	0		0	
	Thoulary	Riffle	0		0	
		Run	0		0	
		Glide		0	0	
	Tributary Mouth	Rapid			0	
		Riffle	0	0	0	
		Run		0	0	
	Upland Slough	Glide			0	
	Upland Slough Beaver Complex	Beaver Pond	0	0	0	
	Backwater	Backwater Pool	0	0	0	
	Clearwater Plume	Clearwater Plume			0	
MD 7		Backwater Pool			0	
(PRM 107.8-122.7)	Side Channel	Glide	0	0		
( · ···· · · · · · · · · · · · · · · ·		Pool		0		
		Riffle		0		
	Tributary	Backwater Pool			0	

# Table E80. Continued.

			Stie	ckleback, threesp	ine
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributon (cont.)	Pool	0	0	
	Thouary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributan/Mouth	Cascade	0		
(cont.)		Riffle	0		
		Beaver Pond	46.59	3.01	6.77
	Linland Clough Deguer Complex	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	0.1 01 1	Glide		0.12	0
	Side Channel	Pool		0.10	0
		Riffle		0	0
		Glide	0	0.06	0.06
	Side Slough	Pool			0.03
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0.08	
	Tributary	Pool		0.25	0.06
		Riffle		0	0
		Backwater Pool		0.25	
		Beaver Pond			0.29
	Upland Slough Beaver Complex	Glide	0.21	0.54	0.37
		Run		0	0

Table E81. Average CPUE (fish per hour of shocking time) for rainbow trout using backpack electrofishing in the Middle River, 2013.

					Т	rout, rainbow	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohahitat Tyne	Early Summer	Late Summer	Fall
Reach	Otream		Proposed Watana Dam Location	(PRM 187 1)	Guinnei	ounnier	i an
			Main Channel	Run	0	0	0
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM	Susitna			Run	0	0	0
187.1)	River		Main Channel	Run	0	0	0
		Non-		Riffle			0
			Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributor (Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
		Non- FA	Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
MD 2				Run	0	0	0
(PRM				Pool	0		0
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
		173		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tributon	Pool	0	0	0
	Tributary <sup>1</sup>	FA	indutary	Rapid	0		
				Riffle	0	0	0

# Table E81-Continued.

					Т	rout, rainbow	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(00111.)	Thouldry	17	Devils Canyon Upper Extent (F	PRM 166.1)		L	
MR-4				Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		<b>F</b> A		Glide	0		
	FA	Main Channel	Riffle	0	0	3.7	
MR-5 (PRM	Susitna			Run			0
148.1-	River	Non-	Main Channel	Run	0	0	0
153.9)			Cide Clough	Glide	5.6	0	0
		FA	Side Slough	Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	3.9	0
				Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)	INIVEI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
				Glide	0		0
			Indutary	Pool	0		

# Table E81-Continued.

					Т	rout, rainbow	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Teilersteine	Riffle	0		
			Tributary	Run	5.7		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	2.2
			Cide Channel	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Charliner	Riffle	0	0	
(00111.)			Sido Slough	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	9.6
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	0	0	
				Pool	0	5.6	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		F۸		Run	0	0	0
(PRM	Susitna		Tributary Mouth	Cascade	9		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	13.3		
				Run			0
			Upland Slough Beaver Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E81-Continued.

					Т	rout, rainbow	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			6.3
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		17	Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0
			Side Channel	Glide			0
		FA		Pool	0	0	0
				Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

# Table E82. Average CPUE (fish per hour of shocking time) for rainbow trout using boat electrofishing in the Middle River, 2013.

					Trout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	1		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-		Main Channel	Run	0	0	0
187.1)	NON-FA	Side Channel	Riffle			0
	FA	Main Channel	Run	0	0	0
MR-2		Clearwater Plume	Clearwater Plume	0	0	0
(PRM 169.6-	Non EA	Main Channel	Run	0	0	0
184.6)	NON-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
	ΕΛ	Clearwater Plume	Clearwater Plume			0
MR-5 (PRM 148.1- 153.9)	Γ <b>Α</b>	Main Channel	Run		0	0
	Non-FA	Main Channel	Run	0	0	7.7
		Split Main Channel	Run	0	0	5.7
		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			19.2
(PRW 122.7- 148.4)		Backwater	Backwater Pool	0		0
,	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	EV	Main Channel	Run		0	5.4
MR-7	FА	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	0		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	1.0
		Main Channol	Glide	0		
	EV		Run	0	9.0	6.9
	r A	Side Channel	Riffle			0
		Side Ondrinei	Run	0	0	
MR-8 (PPM 102 4-		Main Channel	Run	0	0	0
107.8)			Glide	0		0
,	Non-FA	Side Channel	Pool	0	0	0
	NUIFEA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

					Trout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watan	a Dam Location (PRM 187.1)	•	•	•
		Main Channel	Run	0		
MR-1 (DDM 184 6 187 1)	FA	Oide Obernel	Riffle	0		
(FRW 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		0	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PPM 169 6-184 6)	FA	Side Channel	Glide	0		
(FRW 109.0-104.0)			Glide		0	
		Side Slough	Run		0	
		Devils Can	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA		Glide	0		
		Main Channel	Run		0	
		Backwater	Backwater Pool	0	4.8	
		Clearwater Plume	Clearwater Plume	0	0.6	
		Main Channel	Run	0	0	
			Riffle		0	
		Multiple Split Main Channel	Run	0	0	0
			Backwater Pool	0	0	
		Side Channel	Glide	0	0	0
			Riffle	0	0	
			Run		0	0
			Backwater Pool	0		
	ГA	Oide Olevela Desure Osmalau	Beaver Pond		0	0
MR-6 (PRM 122 7-1/8 /)		Side Slough Beaver Complex	Glide	0		0
(11(1)122.1-140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributor	Glide		0	0
		mbulary	Pool	0		
		Tributon Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	0	0.2	0
		Main Channel	Run	0	0	0
	Non-FA	Side Channel	Riffle		0	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	0		
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run	T	5.0	

#### Table E83. Average CPUE (fish per 1,000 square meters) for rainbow trout using seining in the Middle River, 2013.

# Table E83-Continued.

					Trout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			0
		Side Channel	Glide	0	0	
			Pool	0	0	
		Calit Main Channel	Riffle	0	0	
		Split Main Channel	Run	0	0	
	FA		Backwater Pool			0
MR-/		Tributary	Pool	3.3		
(cont.)			Riffle			0
		Upland Slough Beaver	Beaver Pond	0	0	0
			Glide	0	0	
		Complex	Run	0		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
			Backwater Pool	1.8		0
			Glide			0
		Side Channel	Pool	0	0	
			Riffle		0	0
	FA		Run	0	0	
MR-8			Glide	0	0	0
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		0	0
		Main Channel	Run	0	0	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

<b>C</b> ++					Trout, rainbow		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Da	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
			Side Channel	Pool			0
		FA	Side Slough	Backwater Pool	0	0	
				Glide		0	0
	Susitna River			Pool	0		
				Cascade			0
			I ridutary Mouth	Riffle	0	0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0		
Tsusena Creek <sup>1</sup>		Clearwater Plume	Clearwater Plume		0		
	Non-FA	Side Channel	Run	0			
		Side Slough	Pool	0			
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek			Pool	0		0
	Tributary <sup>1</sup>	NON-FA	Tributary	Riffle	0		0
			Devils Canyon Upp	er Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
		1	Devils Canyon Low	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6			Side Chansel	Backwater Pool	0		
(PRM 122.7- 148 4)	Susitna River	FA	Side Criannei	Run			0
. 10. 1/				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
				Glide	0	0	0

## Table E84. Average CPUE (fish per 1,000 square meters) for rainbow trout using snorkeling in the Middle River, 2013.

# TableE84-Continued

Gao						Trout, rainbow	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	2.2	0	0
			Tellester	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	6.8		0
	0.11			Glide	0	0	0
MR-6 (cont.)	River		Teileuten Mauth	Pool	0		
· · ·			I ributary wouth	Riffle	1.5	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	27.3	0	
				Riffle	36.4	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon Mouth	Cascade	0		
			Thoulary Mouth	Riffle	0		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	0		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E84-Continued

0						Trout, rainbow	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Backwater Pool	0		0
			Side Channel	Glide		0	0
				Riffle	0	0	0
		FA	Side Slough	Glide	0	0	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	1.9	0	
			Tributary	Pool	2.5	2.1	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0.7		0
			Complex	Glide	7.8	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				Т	rout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2	FA	Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)		Clearwater Plume	Clearwater Plume			0
		M 153.9-166.1)				
		Backwater	Backwater Pool		0.5	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7-			Riffle	0	0	
	FA		Beaver Pond	0		
148.4)		Side Slough Beaver Complex	Glide		0	
			Pool	1.0	0	
		Upland Slough Beaver Complex	Beaver Pond	0.3		0.5
MR-7		Backwater	Backwater Pool	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	2.0	0	0
		Side Channel	Glide		0	0
		Side Clause	Glide		11.0	0
MR-8	FA	Side Slough	Pool			0
(PRIM 102.4- 107.8)		Tributary	Pool			38.0
,	Non-FA	Upland Slough	Pool	7.0	3.0	0

## Table E85. Average CPUE (fish per trap) for rainbow trout using fyke netting in the Middle River, 2013.
# Table E86. Average CPUE (fish per trap) for rainbow trout using hoop trapping in the Middle River Focus Areas, 2013.

				Trout, rainbov	/
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed Watana Dam	Location (PRM 187.1)			
	Main Channel	Run	0		0
MR-1 (PRM 184 6-187 1)	Side Channel	Glide			0
(11(1) 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (PF	RM 153.9-166.1)			
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run	0	0	
MR-6	Main Channel	Run	0	0	
	Multiple Split Main Channel	Run	0	0	0.1
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
MR-6 (PRM 122.7-148.4)	Split Main Channel	Run			0
	Main Channel	Run	0	0	0
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0	0	0
(11(1) 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Observal	Glide	0		
		Run	0	0	0.1
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0	
(PRM 102.4-107.8)	Tributary	Pool	2.0	0	
	Upland Slough Beaver Complex	Backwater Pool	0.5		

# Table E87. Average CPUE (fish per trap) for rainbow trout using minnow trapping in the Middle River Focus Areas, 2013.

				Trout, rainbow						
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall					
	Proposed \	Watana Dam Location (PRM 18	37.1)							
		Glide			0					
MR-1 (PRM 184 6-187 1)	Side Channel	Riffle			0					
(11(1) 104.0-107.1)		Run	0							
	Backwater	Backwater Pool	0	0						
	Clearwater Plume	Clearwater Plume	0	0	0					
	Side Channel	Glide			0					
MR-2 (PRM 169 6-184 6)		Backwater Pool	0	0						
(111111100.0104.0)	Side Slough	Glide		0	0					
		Pool	0							
	Tributary Mouth	Riffle	0	0						
Devils Canyon (PRM 153.9-166.1)										
	Backwater	Backwater Pool	0	0	0					
		Backwater Pool		0						
	Side Channel	Glide	0	0	0					
		Run		0						
		Backwater Pool	0		0					
		Beaver Pond	0	0	0					
	Side Slough Beaver Complex	Glide		0	0					
		Pool		0	0					
		Riffle		0	0					
MR-6		Run			0					
(PRM 122.7-148.4)		Glide	0.17	0	0					
	Tributon	Pool	0		0					
	Thouldry	Riffle	0		0					
		Run	0		0					
		Glide		0	0					
	Tributany Mouth	Rapid			0					
		Riffle	0	0	0					
		Run		0	0					
	Upland Slough	Glide			0					
	Upland Slough Beaver Complex	Beaver Pond	0	0	0.02					
	Backwater	Backwater Pool	0	0	0					
	Clearwater Plume	Clearwater Plume			0					
		Backwater Pool			0					
MR-7	Side Channel	Glide	0	0						
(PRM 107.8-122.7)		Pool		0						
		Riffle		0						
	Tributan	Backwater Pool			0					
		Glide	0	0						

# Table E87. Continued.

				Trout, rainbow	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0.71	0	
MR-7 (cont.)	Tributary (cont.)	Riffle	0.50		0
		Run			0
	Tributon Mouth	Cascade	0		
	Thouary Mouth	Riffle	0		
		Beaver Pond	0	0	0
	Liniand Claush Desugn Complex	Glide	0	0	
	Opland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Oide Obergel	Glide		0	0
	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0.33
		Backwater Pool		0	
	Haland Olaush Daavan Oamalau	Beaver Pond			0
	Opland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

Table E88. Average CPUE (fish per hour of shocking time) for humpback whitefish using boat electrofishing in the Middle River, 2013.

	Whitefish, h			nitefish, humpba	humpback	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-		Main Channel	Run	0	0	0
187.1)	NON-FA	Side Channel	Riffle			0
	FA	Main Channel	Run	0	0	0
MR-2		Clearwater Plume	Clearwater Plume	0	0	0
(PRM 169.6-		Main Channel	Run	0	0	0
184.6)	NOU-LA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
	E۸	Clearwater Plume	Clearwater Plume			0
MR-5	ГА	Main Channel	Run		0	0
(PRI/ 140.1- 153.9)	Non EA	Main Channel	Run	0	0	0
,	NON-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRM 122.7- 148.4)		Backwater	Backwater Pool	25.1		0
,	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	EA	Main Channel	Run		0	0
MR-7	FA	Split Main Channel	Run		0	0
(PRM 107.8-		Backwater	Backwater Pool	12.5		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Main Channal	Glide	0		
	ΕΛ		Run	0	0	0
		Side Channel	Riffle			0
			Run	0	0	
MR-8 (PPM 102 4		Main Channel	Run	0	0	0
107.8)			Glide	0		0
,	Non-FA	Side Channel	Pool	0	0	0
			Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

Table E89. Average CPUE (fish per 1,000 square meters) for humpback whitefish using seining in the Middle River, 2013.

				Whitefish, humpback		ck
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1 (DDM 184 6 187 1)	FA		Riffle	0		
(FRW 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		0	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PPM 160 6 184 6)	FA	Side Channel	Glide	0		
(11(11103.0-104.0)		Cide Claugh	Glide		0	
		Side Slough	Run		0	
	•	Devils Can	yon (PRM 153.9-166.1)		•	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5	FA		Glide	0		
(FRIVI 140.1-155.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	2.2	1.0	
		Clearwater Plume	Clearwater Plume	0	0.3	
		Main Channel	Run	0	0	
			Riffle		0	
		Multiple Split Main Channel	Run	0	0	0
			Backwater Pool	0	0	
		Side Channel	Glide	0	0	0
			Riffle	0	0	
			Run		0	0
	EA		Backwater Pool	0		
	ГA	Side Clough Desver Complex	Beaver Pond		0	0
MR-6 (PRM 122 7-148 4)		Side Slough Deaver Complex	Glide	0		0
(110) 122.1 110.1			Pool		0	
		Split Main Channel	Run			0
		Tributon	Glide		0	0
		Thoulary	Pool	0		
		Tributany Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Main Channel	Run	0	0	0
	Non-FA	Side Channel	Riffle		0	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	33.6		
MR-7 (PRM 107 8-122 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

#### Table E89-Continued.

				Whi	tefish, humpbac	:k
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			0
		Side Channel	Glide	0	0	
			Pool	0	0	
		Oulit Main Obernal	Riffle	0	0	
		Split Main Channel	Run	0	0	
	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver	Beaver Pond	0	0	0
			Glide	0	0	
		Complex	Run	0		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
			Backwater Pool	0		0
			Glide			0
		Side Channel	Pool	0	0	
			Riffle		0	0
	FA		Run	0	0	
MR-8			Glide	0	0	0
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		0	0
		Main Channel	Run	0	0	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

				Whit	efish, humpba	ck
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (PR	M 153.9-166.1)			
	FA	Backwater	Backwater Pool		0	
MR-6		Side Channel	Glide	0	0	0
		Side Channel	Riffle	0	0	
(PRM 122.7-		Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		0
MR-7		Backwater	Backwater Pool	2.0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	0
	<b>F</b> A	Olda Olavash	Glide		0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107 8)		Tributary	Pool			0
,	Non-FA	Upland Slough	Pool	0	0	0

### Table E90. Average CPUE (fish per trap) for humpback whitefish using fyke netting in the Middle River, 2013.

Table E91. Average CPUE (fish per hour of shocking time) for round whitefish using backpack electrofishing in the Middle River, 2013.

					Wł	nitefish, roun	d
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		•	Proposed Watana Dam Location	(PRM 187.1)			
			Main Channel	Run	3.1	0	0
		EA		Glide			24.3
MR-1		FA	Side Channel	Riffle	0	0	3.3
(PRM 184 6-	Susitna River			Run	3	0	4.3
187.1)			Main Channel	Run	0	0	1.6
		Non- FA	Side Channel	Riffle			7.6
				Run	0	0	
			Main Channel	Run	5	0	
		FA	Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	0	0	
			Side Sidugii	Glide		0	0
			Tributon ( Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	5.1	7.2	0
			Side Channel	Glide			0
				Riffle	0	0	
MD 2		Non- FA		Run	0	0	0
(PRM		17.		Pool	0		0
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				Run	0	0	10.5
			Split Main Channel	Run	3.2	13.8	0
			Tributary Mouth	Riffle		0	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
				Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	- · · ·	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Iributary	Rapid	0		
				Riffle	0	0	0

# Table E91-Continued.

					W	nitefish, roun	d	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
MR-2 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0	
(00111.)	Devils Canvon Upper Extent (PRM 166.1)							
MR-4				Boulder Riffle	0	0	0	
(PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary				0	
166.1)				Riffle			, in the second s	
Devils Canyon Lower Extent (PRM 153.9)								
			Clearwater Plume	Clearwater Plume			0	
		FA		Glide	0			
MR-5		Main Channel	Riffle	0	0	0		
(PRM	Susitna			Run			0	
148.1- River 153.9)	River		Main Channel	Run	0	0	16.4	
	Non-	Side Slough	Glide	0.7	2.5	6.8		
		FA		Pool			0	
			Split Main Channel	Run	0	0	0	
			Backwater	Backwater Pool			0	
			Main Channel	Run	0	0		
			Multiple Split Main Channel	Riffle	0	7.1	0	
				Run	0	0	0	
				Backwater Pool	0			
			Side Channel	Glide	0	0	0	
			Side Charmer	Riffle	3.4	2.8	0	
				Run	0		0	
MR-6				Beaver Pond			0	
(PRM	Susitna	FA		Glide	0		0	
148.4)	NIVEI		Side Slough Beaver Complex	Pool			0	
				Riffle	0			
				Run	0			
			Split Main Channel	Run			0	
				Glide			0	
			Tributary Mouth	Riffle	0		0	
				Run			0	
				Glide	0		0	
			Tributary	Pool	0			

# Table E91-Continued.

					W	nitefish, roun	d
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributory	Riffle	0		
			Tributary	Run	0		
			Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	4.3	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6 Susitna		Cide Channel	Pool	0	14.1	0	
		Side Channel	Riffle	1.3	3.2		
(00111.)			Side Slough	Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	3.1
				Backwater Pool			2.6
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		ΓΛ		Run	0	8.9	8
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Linland Slough Beaver Complex	Pool			0
				Run			0
		Non- FA	Clearwater Plume	Clearwater Plume			0
			Main Channel	Glide			0

#### Table E91-Continued.

					W	nitefish, roun	d
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	3.1	0	0
				Run	0	27.5	0
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00111.)		17.	Split Main Channel	Run	0	0	5.2
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Main Channel	Glide	0		
				Run	0	0	0.9
			Side Channel	Glide			0
				Pool	0	0	0
		FA		Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		3.1	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Linland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Table E92. Average CPUE (fish per hour of shocking time) for round whitefish using boat electrofishing in the Middle River, 2013.

					Whitefish, round	ł
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana	Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	10.7
(PRM 184.6-		Main Channel	Run	0	0	22.7
187.1)	NON-FA	Side Channel	Riffle			5.8
	FA	Main Channel	Run	0	2.4	3.1
MR-2		Clearwater Plume	Clearwater Plume	7.2	13.4	1.7
(PRM 169.6-	Nex 54	Main Channel	Run	0	23.8	0
184.6)	NOU-LA	Side Channel	Run	0		34.9
		Split Main Channel	Run	0	0	0
		Devils Canyo	on (PRM 153.9-166.1)			
	F۸	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRW 140.1- 153.9)	Non EA	Main Channel	Run	0	0	22.5
/	NON-FA	Split Main Channel	Run	0	0	20.0
		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRW 122.7- 148.4)		Backwater	Backwater Pool	15.0		0
- /	Non-FA	Main Channel	Run	0	0	13.8
		Tributary Mouth	Run	0	0	18.7
	EA	Main Channel	Run		0	10.7
MR-7	ГA	Split Main Channel	Run		0	4.0
(PRM 107.8-		Backwater	Backwater Pool	15.6		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	7.9	0	0
		Main Channel	Glide	0		
	ΓΛ		Run	0	0	2.2
	FA	Side Channel	Riffle			41.5
			Run	0	0	
MR-8 (DDM 102 /		Main Channel	Run	0	0	0
107.8)			Glide	0		9.3
, ,	Non-FA	Side Channel	Pool	0	0	0
	NUN-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

				V	Vhitefish, round	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•	Proposed Watana	a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1	FA		Riffle	0		
(FRIVI 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		1.9	
		Clearwater Plume	Clearwater Plume	0	31.3	
MR-2 (PPM 169 6-184 6)	FA	Side Channel	Glide	0		
(11(11)103.0-104.0)		Oide Olevek	Glide		5.7	
		Side Slough	Run		0.8	
		Devils Can	yon (PRM 153.9-166.1)	•	•	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 149 1 152 0)	FA		Glide	0		
(FRIVI 140.1-155.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	5.1	2.0	
		Clearwater Plume	Clearwater Plume	1.7	6.3	
		Main Channel	Run	0	0.9	
		Multiple Oplit Main Observal	Riffle		0	
		Multiple Split Main Channel	Run	0	0	1.5
			Backwater Pool	0	9.2	
		Side Channel	Glide	1.3	1.7	0
			Riffle	0	0	
			Run		0	0
	ΕA		Backwater Pool	0		
	17	Sido Slough Boover Complex	Beaver Pond		1.7	0
MR-6 (PRM 122 7-148 4)		Side Slough Beaver Complex	Glide	0		0
(11011)			Pool		0	
		Split Main Channel	Run			5.0
		Tributary	Glide		2.8	0
			Pool	0		
		Tributary Mouth	Pool	0		
			Riffle		0	
		Upland Slough Beaver Complex	Beaver Pond	0	0.4	0
		Main Channel	Run	0	0	6.7
	Non-FA	Side Channel	Riffle		2.2	
		Tributary Mouth	Run	0		
		Backwater	Backwater Pool	249.5		
MR-7 (PRM 107 8-122 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

### Table E93. Average CPUE (fish per 1,000 square meters) for round whitefish using seining in the Middle River, 2013.

# Table E93-Continued.

				V	/hitefish, round	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Backwater Pool			2.4
		Side Channel	Glide	0	0	
			Pool	0	0	
		Onlit Main Obannal	Riffle	0	0	
		Split Main Channel	Run	0	1.0	
	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Glide	55.6	0	
		Complex	Run	0		
	Non-FA	Split Main Channel	Run	0	0	10.4
MR-7 (cont.) MR-8 (PRM 102.4-107.8)		Main Channel	Run			1.6
			Backwater Pool	0		0
			Glide			5.9
		Side Channel	Pool	5.0	0	
			Riffle		0	3.3
	FA		Run	0	0	
MR-8			Glide	0	0.2	0
(PRM 102.4-107.8)		Side Slough	Pool			0
			Run		0	
		Upland Slough Beaver	Glide	0	0	0
		Complex	Run		0	0
		Main Channel	Run	0	0	6.7
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

<b>C</b> aa					Whitefish, round		
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Da	m Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	0	0.2	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
				Cascade			0
			I ributary Mouth	Riffle	0	0	
MR-2			Backwater	Backwater Pool	0		
(PRIVI 109.0- 184.6)			Clearwater Plume	Clearwater Plume		0	
		Non-FA	Side Channel	Run	0		
			Side Slough	Pool	0		
Tsusena Creek <sup>1</sup>	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	1.0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek		Pool	0		0	
	Tributary <sup>1</sup>	Non-FA	Tributary	Riffle	0		0
			Devils Canyon Upp	er Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
	•		Devils Canyon Low	er Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	1.7	0	0
MR-6			Oide Oberry 1	Backwater Pool	0		
(PRM 122.7- 148 4)	Susitna River	FA	Side Channel	Run			0
(ד.סדי				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# Table E94. Average CPUE (fish per 1,000 square meters) for round whitefish using snorkeling in the Middle River, 2013.

#### TableE94-Continued

Gao					Whitefish, round		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
			Tributary	Pool	0		0
				Riffle	0		0
		FA		Run	0		0
	0.11		Tributary Mouth	Glide	0	0	0
MR-6 (cont.)	Susitna River			Pool	0		
				Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon Mouth	Cascade	0		
			Thoulary Moulin	Riffle	0		
				Beaver Pond	0	0	0
			Upland Slough Beaver	Glide	0	0	
			Complex	Pool			0
				Run	22.2		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E94-Continued

<b>C</b> ++					Whitefish, round		
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		FA	Side Channel	Backwater Pool	0		0
				Glide		0	0
				Riffle	0	0	0
			Side Slough	Glide	0	0	0
				Pool			0
				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0	
			Tributary	Pool	0	0	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

				W	hitefish, round	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam L	ocation (PRM 187.1)			
MR-2		Backwater	Backwater Pool	16.0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			1.0
Geomorphic Reach     FA or Non-FA     Macrohabitat Type     Mesohabitat Type     Whitefish, round       MR-2 (PRM 169.6- 184.6)     FA     FA     Backwater     Backwater Pool     16.0     0     -       MR-2 (PRM 169.6- 184.6)     FA     Backwater     Backwater Pool     16.0     0     -       Understand     Backwater     Backwater Plume     Clearwater Plume     1.0     -     -       Devils Canyon (PRM 153.9-166.1)     Backwater     Backwater Pool     0     -     -       MR-6 (PRM 122.7- 148.4)     FA     Backwater     Backwater Pool     0     0     -       Side Channel     Glide     0     0     -     -     -     -       MR-6 (PRM 122.7- 148.4)     FA     Side Slough Beaver Complex     Beaver Pond     0     -     -       MR-7 (PRM 107.8- 122.7)     FA     Backwater     Backwater Pool     1.0     0     -       MR-8 (PRM 102.4- 107.8)     FA     Side Channel     Riffle     0     -     -     -     -     -     -     <						
		Backwater	Backwater Pool		0	
Geomorphic Reach       MR-2 (PRM 169.6- 184.6)     I       MR-6 (PRM 122.7- 148.4)     I       MR-7 (PRM 107.8- 122.7)     I       MR-7 (PRM 107.8- 122.7)     I       MR-7 (PRM 107.8- 122.7)     I       MR-8 (PRM 102.4- 107.8)     I		Side Channel	Glide	0	0.5	0
			Riffle	0	0	
	FA	Side Slough Beaver Complex	Beaver Pond	0		
			Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		2.5
MR-7		Backwater	Mesohabitat TypeEarly SummerLate Summern Location (PRM 187.1)Backwater Pool16.00Clearwater Plume00PRM 153.9-166.1)00Backwater Pool00Glide00.5Riffle00Beaver Pond00Glide00Pool00Backwater Pool00Glide00Glide00Glide00Beaver Pond00Beaver Pond00Glide00Glide00Pool00Pool00Pool00Pool00Pool00Pool4.00		0	
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	Whitefish, round       Early Summer     Late Summer     Fall       16.0     0     1.0       16.0     0     1.0       0     0.5     0       0     0.5     0       0     0     2.5       1.0     0     2.5       1.0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       0     0     0       2.0     0     0       4.0     0     0		
		Side Channel	Glide		5.0	4.0
	<b>F A</b>		Glide		2.0	0
MR-8	FA	Side Slough	Pool			0
(PRIVI 102.4- 107.8)		Tributary	Pool			2.0
,	Non-FA	Upland Slough	Pool	4.0	0	0

### Table E95. Average CPUE (fish per trap) for round whitefish using fyke netting in the Middle River, 2013.

# Table E96. Average CPUE (fish per trap) for round whitefish using hoop trapping in the Middle River Focus Areas, 2013.

			v	/hitefish, roun	d					
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall					
•	Proposed Watana Dam	Location (PRM 187.1)								
	Main Channel	Run	0		0					
MR-1 (PRM 184 6-187 1)	Side Channel	Glide			0					
	Side Channel	Run			0					
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0					
Devils Canyon (PRM 153.9-166.1)										
MR-5 (PRM 148.1-153.9)	Clearwater Plume	Clearwater Plume			0					
	Main Channel	Run	0	0						
	Main Channel	Run	0	0						
MR-6	Multiple Split Main Channel	Run	0	0	0					
(PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0					
	Split Main Channel	Run			0					
	Main Channel	Run	0	0	0					
MR-7 (PRM 107 8-122 7)	Split Main Channel	Run	0	0	0.1					
(11(1)107.0-122.1)	Upland Slough Beaver Complex	Beaver Pond		0						
	Main Observal	Glide	0							
		Run	0	0	0.1					
MR-8 (PPM 102 / 107 8)	Side Channel	Pool	0	0						
(11(1)102.4-107.0)	Tributary	Pool	0	0						
	Upland Slough Beaver Complex	Backwater Pool	0							

Table E97. Average CPUE (fish per trap) for round whitefish using minnow trapping in the Middle River Focus Areas,2013.

			Whitefish, round							
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall					
	Proposed \	Natana Dam Location (PRM 18								
		Glide			0					
MR-1 (DDM 184 6 187 1)	Side Channel	Riffle			0					
(FRW 104.0-107.1)		Run	0							
	Backwater	Backwater Pool	0	0						
	Clearwater Plume	Clearwater Plume	0	0	0					
	Side Channel	Glide			0					
MR-2 (PPM 169 6-184 6)		Backwater Pool	0	0						
(FRW 109.0-104.0)	Side Slough	Glide		0	0					
		Pool	0.05							
	Tributary Mouth	Riffle	0	0						
Devils Canyon (PRM 153.9-166.1)										
	Backwater	Backwater Pool	0	0	0					
		Backwater Pool		0						
	Side Channel	Glide	0	0	0					
		Run		0						
		Backwater Pool	0		0					
		Beaver Pond	0	0	0					
	Cide Claugh Deguar Complex	Glide		0	0					
	Side Slough Beaver Complex	Pool		0	0					
		Riffle		0	0					
MR-6		Run			0					
(PRM 122.7-148.4)		Glide	0	0	0					
	Tributon	Pool	0		0					
	THOULATY	Riffle	0		0					
		Run	0		0					
		Glide		0	0					
	Tributany Mouth	Rapid			0					
		Riffle	0	0	0					
		Run		0	0					
	Upland Slough	Glide			0					
	Upland Slough Beaver Complex	Beaver Pond	0	0	0.06					
	Backwater	Backwater Pool	0	0.05	0					
	Clearwater Plume	Clearwater Plume			0					
		Backwater Pool			0					
MK-7 (PRM 107 8-122 7)	Sido Channol	Glide	0	0						
(1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		Pool		0						
		Riffle		0						
	Tributary	Backwater Pool			0					

# Table E97. Continued.

				Whitefish, round	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributony (cont.)	Pool	0	0	
	Thouary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributan/Mouth	Cascade	0		
(cont.)		Riffle	0		
		Beaver Pond	0	0	0
	Lipland Slough Boover Complex	Glide	0	0	
	Opialiu Slougii Deavel Complex	Pool			0
		Run	0.25		0
		Backwater Pool			0
	Oide Obererel	Glide		0	0
	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

# Table E98. Average CPUE (fish per hour of shocking time) for undifferentiated whitefish species using backpack electrofishing in the Middle River, 2013.

					Whitefis	sh, undifferen	tiated
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		1	Proposed Watana Dam Location	(PRM 187.1)	-		
			Main Channel	Run	0	0	0
		FA		Glide			0
MR-1	0.1		Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	-		Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
				Run	0	0	
			Main Channel	Run	0	0	
		FA	Side Channel	Glide	0	0	0
			Side Slough	Backwater Pool	33.6	0	
			Side Sidugii	Glide		0	0
			Tributon Mouth	Cascade			0
				Riffle		0	
			Backwater	Backwater Pool	0	0	0
	Susitna River		Clearwater Plume	Clearwater Plume	2.3	0	0
			Main Channel	Run	0	0	0
			Side Channel	Glide			0
				Riffle	0	0	
MD 2		Non- FA		Run	0	0	0
(PRM		17		Pool	0		0
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				Run	0	0	0
			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle		4.2	0
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0
		17		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Inbutary	Rapid	0		
				Riffle	0	0	0

# Table E98-Continued.

					Whitefis	sh, undifferer	ntiated
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non-	Tributary	Run			0
(cont.)	Tributary	FA	Devils Canvon Upper Extent (F	PRM 166.1)			
MR-4				Boulder Riffle	0	0	0
(PRM	Chinook	Non-	Tributary		-		0
166.1)	Creek	ГA		Riffle			U
			Devils Canyon Lower Extent (F	PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		ΓΛ		Glide	0		
			Main Channel	Riffle	0	0	0
(PRM	Susitna			Run			0
148.1-	River		Main Channel	Run	0	0	0
155.9)		Non-	Side Slough	Glide	0	0	0
		FA		Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	0	0
				Backwater Pool	10.8		
	Reach Stream   MR-2 (cont.) Fog Creek Tributary <sup>1</sup> IR-4 PRM 53.9- 66.1) Chinook Creek <sup>1</sup> IR-5 PRM 48.1- 53.9) Susitna River   IR-5 PRM 48.1- 53.9) Susitna River   IR-6 PRM 22.7- 48.4) Susitna River		Side Channel	Glide	0	0	0
				Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122 7-	Susitna River	FA		Glide	0		0
148.4)			Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			Tributon	Glide	0		0
				Pool	0		

# Table E98-Continued.

					Whitefis	sh, undifferen	itiated
Geo- morphic Reach	Stream	FA or Non-	Macrohabitat Tuna	Mesobabitat Type	Early	Late Summer	Fall
Reacti	Stream	ГА			0	Summer	Fall
			Tributary	Rille	0		
		FA	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
				Pool	0	0	0
MR-6	Susitna		Side Channel	Riffle	0	0	
(cont.)	River			Glide		0	0
		Non- FA	Side Slough	Pool	0	0	0
			Side Slough Beaver Complex	Beaver Pond	0	0	0
			Tributary Mouth	Run	0	0	0
			Tributary	Boulder Riffle	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	0	0
				Backwater Pool			0
			Side Channel	Glide	11.2	0	
				Pool	5.5	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
		ΕΛ		Run	0	0	3.7
(PRM	Susitna		Tributary Mouth	Cascade	0		
107.8-	River			Riffle	0		
122.1)				Glide		0	
			Tributary	Pool		0	
			moduly	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
				Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E98-Continued.

					Whitefis	sh, undifferer	ntiated
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Main Channel	Run	0		
				Glide			0
			Side Channel	Riffle	0	0	0
				Run	0	0	0
	<b>.</b>		Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(00)			Split Main Channel	Run	0	0	0
			Tributary Mouth	Riffle	0		0
			Tributary	Run	0	0	0
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	0	0	0	
			Main Channel Glide		0		
				Run	0	0	0
		FA		Glide			0
			Side Channel	Pool	0	0	0
				Riffle	0	0	0
				Run	4.2	0	
			Side Slough	Glide	0		
				Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4-	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
				Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Lipland Slough	Glide	0	0	0
				Pool	0	0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

# Table E99. Average CPUE (fish per hour of shocking time) for undifferentiated whitefish species using boat electrofishing in the Middle River, 2013.

				Whitefish, undifferentiated					
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
		Proposed Watana	Dam Location (PRM 187.1)	1					
MR-1	FA	Main Channel	Run	0	0	8.2			
(PRM 184.6-		Main Channel	Run	0	0	0			
187.1)	NON-FA	Side Channel	Riffle			0			
	FA	Main Channel	Run	0	0	3.1			
MR-2		Clearwater Plume	Clearwater Plume	0	0	0			
(PRM 169.6-		Main Channel	Run	0	0	0			
184.6)	NON-FA	Side Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
	Devils Ca		on (PRM 153.9-166.1)						
	ΕΛ	Clearwater Plume	Clearwater Plume			0			
MR-5	Γ <b>Α</b>	Main Channel	Run		0	0			
(PRW 140.1- 153.9)	Non EA	Main Channel	Run	0	0	0			
,	NUII-FA	Split Main Channel	Run	0	0	0			
MR-6 (PRM 122.7- 148.4)		Main Channel	Run		0				
	FA	Multiple Split Main Channel	Run		0	0			
		Split Main Channel	Run			0			
	Non-FA	Backwater	Backwater Pool	0		0			
- /		Main Channel	Run	0	0	0			
		Tributary Mouth	Run	0	0	0			
	EV	Main Channel	Run		0	0			
MR-7	ГА	Split Main Channel	Run		0	0			
(PRM 107.8-		Backwater	Backwater Pool	0					
122.7)	Non-FA	Main Channel	Run	0		0			
		Split Main Channel	Run	0	0	0			
		Main Channel	Glide	0					
	EV		Run	0	0	0			
	r A	Side Channel	Riffle			0			
		Side Ondrinei	Run	0	0				
MR-8 (DDM 102 4		Main Channel	Run	0	0	0			
(PRM 102.4- 107.8)			Glide	0		0			
,	Non-EA	Side Channel	Pool	0	0	0			
	NUITER		Run		0				
		Split Main Channel	Run	0	0	0			
		Upland Slough	Pool	0	0	0			

# Table E100. Average CPUE (fish per 1,000 square meters) for undifferentiated whitefish species using seining in the Middle River, 2013.

				Whitefish, undifferentiated						
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
		Proposed Watana	a Dam Location (PRM 187.1)							
		Main Channel	Run	0						
MR-1 (DDM 184 6 187 1)	FA		Riffle	0						
(11(1)104.0-107.1)		Side Channel	Run	0	0	0				
		Backwater	Backwater Pool		0					
		Clearwater Plume	Clearwater Plume	0	15.6					
MR-2 (PPM 160 6 184 6)	FA	Side Channel	Glide	0						
(FRW 109.0-104.0)		O'de Olevek	Glide		0					
		Side Slough	Run		0					
	•	Devils Can	yon (PRM 153.9-166.1)		•					
		Clearwater Plume	Clearwater Plume	0	0	0				
MR-5	FA		Glide	0						
(FRIVI 140.1-155.9)		Main Channel	Run		0					
		Backwater	Backwater Pool	2.9	4.8					
		Clearwater Plume	Clearwater Plume	0	1.6					
		Main Channel	Run	0	0					
			Riffle		0					
		Multiple Split Main Channel	Run	0	0	0				
			Backwater Pool	0	0					
		Side Chennel	Glide	6.5	0	0				
		Side Channel	Riffle	0	0					
			Run		0	0				
	EA		Backwater Pool	0						
	ГA	Sido Slough Boover Complex	Beaver Pond		0	0				
MR-6 (PRM 122 7-148 4)		Side Slough Deaver Complex	Glide	0		0				
(110) 122.7 110.1			Pool		0					
		Split Main Channel	Run			0				
		Tributon	Glide		0	0				
		Thouldry	Pool	0						
		Tributary Mouth	Pool	0						
			Riffle		0					
		Upland Slough Beaver Complex	Beaver Pond	0	0	0				
		Main Channel	Run	0	0	0				
	Non-FA	Side Channel	Riffle		0					
		Tributary Mouth	Run	0						
		Backwater	Backwater Pool	16.8						
MR-7 (PPM 107 9 100 7)	FA	Clearwater Plume	Clearwater Plume	0	0	0				
(11111107.0-122.7)		Main Channel	Run		0					

#### Table E100-Continued.

				Whitef	ish, undifferenti	h, undifferentiated			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
			Backwater Pool			0			
		Side Channel	Glide	2.0	0				
			Pool	0	0				
		Oulit Main Obernal	Riffle	0	0				
		Split Main Channel	Run	0	0				
	FA		Backwater Pool			0			
MR-7 (cont.)		Tributary	Pool	0					
(cont.)			Riffle			0			
			Beaver Pond	0	0	0			
		Upland Slough Beaver	Glide	0	0				
		Complex	Run	0					
	Non-FA	Split Main Channel	Run	0	0	0			
		Main Channel	Run			0			
			Backwater Pool	4.5		0			
			Glide			3.9			
		Side Channel	Pool	22.5	0				
			Riffle		0	0			
	FA		Run	0	0				
MR-8			Glide	6.4	1.5	0			
(PRM 102.4-107.8)		Side Slough	Pool			0			
			Run		0				
		Upland Slough Beaver	Glide	0	0	0			
		Complex	Run		0	0			
		Main Channel	Run	0	0	0			
	Non-FA	Split Main Channel	Run	0		0			
		Upland Slough	Glide	0					

Table E101. Average CPUE (fish per 1,000 square meters) for undifferentiated whitefish species using snorkeling in the Middle River, 2013.

Gao			White	ish, undifferenti	ated		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam	Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
				Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	4.5	0	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
			Teibudan Maudh	Cascade			0
			Indutary Mouth	Riffle	0	0	
MR-2 (PRM 169 6-			Backwater	Backwater Pool	0		
184.6)		Non 54	Clearwater Plume	Clearwater Plume		0	
		NON-FA	Side Channel	Run	0		
			Side Slough	Pool	0		
-	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
				Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek		<b>T</b> 11 (	Pool	0		0
	Tributary <sup>1</sup>	Non-FA	Iributary	Riffle	0		0
		•	Devils Canyon Upper	Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
			Devils Canyon Lower	Extent (PRM 153.9)			
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
MR-6 (PRM 122.7-	Susitna River	FA		Backwater Pool	17.0		
148.4)			Side Channel	Run			0
			Side Slough Beaver	Backwater Pool	0		0
			Complex	Beaver Pond	0	0	0

# TableE101-Continued

Gaa				White	ish, undifferenti	ated	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Glide	0	0	0
			Side Slough Beaver	Pool	0	0	0
			Complex	Riffle	0	0	0
				Run	0		0
				Glide	0	0	0
			Tributer	Pool	0		0
		FA	Tributary	Riffle	0		0
				Run	0		0
MR-6	Susitna			Glide	0	0	0
(cont.)	River		Tributon Mouth	Pool	0		
			Thoulary Moulin	Riffle	0	4.1	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Side Slough	Pool	0	0	0
		Non-FA	Tributary	Boulder Riffle		0	
			Upland Slough	Pool	0	0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	
			Backwater	Backwater Pool	0		
			Clearwater Plume	Clearwater Plume	0	0	0
				Backwater Pool			0
				Glide		0	
			Tributary	Pool	0	0	
				Riffle	0	0	0
MR-7 (PRM 107 8-	Susitna River	FA		Run			0
122.7)				Cascade	0		
			Tributary Mouth	Riffle	0		
				Beaver Pond	0	0	0
			Linland Slough Reaver	Glide	0	0	
			Complex	Pool			0
				Run	0		0
		Non-FA	Upland Slough	Pool	0	0	0

#### Table E101-Continued

<b>C</b> ++					Whitef	ish, undifferentia	ated
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Backwater Pool	0		0
			Side Channel	Glide		0	0
		FA		Riffle	0	0	0
				Glide	0.3	0	0
				Pool			0
			Side Slough	Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			Run		0	
107.8)				Glide	0	0	
			Tributary	Pool	0	0	0
				Riffle	0	0	0
				Backwater Pool	0		
			Upland Slough Beaver	Beaver Pond	0		0
			Complex	Glide	0	0	0
				Run		0	0

1. Tsusena Creek, Fog Creek, Fog Creek Tributary, and Chinook Creek were direct-sampling tributaries in which non-random site selection was used. See ISR Study 9.6 Section 4.4.2.2 for details.

Table E102. A	Average CPUE (fish p	per trap) for undifferentia	ted whitefish species	s using fyke netting in t	he Middle River,
2013.					

				Whitefish, undifferentiated						
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall				
		Proposed Watana Dam L	ocation (PRM 187.1)							
MR-2		Backwater	Backwater Pool	1.0	0					
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0				
		Devils Canyon (PRI	VI 153.9-166.1)							
		Backwater	Backwater Pool		0					
		Side Channel	Glide	0.5	0	0				
MR-6	FA	Side Channel	Riffle	0	0					
(PRM 122.7-			Beaver Pond	0						
148.4)		Side Slough Beaver Complex	Glide		0					
			Pool	0	0					
		Upland Slough Beaver Complex	Beaver Pond	0		0				
MR-7		Backwater	Backwater Pool	1.0		0				
(PRM 107.8-	FA	Split Main Channel	Riffle	0						
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0				
		Side Channel	Glide		0	1.0				
	<b>F</b> A	Oida Olavat	Glide		0	0				
MR-8	FA	Side Slough	Pool			0				
(PRIVI 102.4- 107.8)		Tributary	Pool			0				
,	Non-FA	Upland Slough	Pool	0	0	0				

# Table E103. Average CPUE (fish per trap) for undifferentiated whitefish species using minnow trapping in the Middle River Focus Areas, 2013.

			Whi	ated	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed	Natana Dam Location (PRM 18	37.1)		
		Glide			0
MR-1 (PRM 184 6-187 1)	Side Channel	Riffle			0
(11(1)104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2 (PRM 169 6-184 6)		Backwater Pool	0.04	0	
(11(1)100.0-104.0)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)			
	Backwater	Backwater Pool	0	0	0
		Backwater Pool		0	
	Side Channel	Glide	0	0	0
		Run		0	
		Backwater Pool	0		0
		Beaver Pond	0	0	0
	Side Slough Beauer Complex	Glide		0	0
	Side Slough Deaver Complex	Pool		0	0
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0	0	0
	Tributan	Pool	0		0
	Thould y	Riffle	0		0
		Run	0		0
		Glide		0	0
	Tributary Mouth	Rapid			0
		Riffle	0	0	0
		Run		0	0
	Upland Slough	Glide			0
	Upland Slough Beaver Complex	Beaver Pond	0	0	0
	Backwater	Backwater Pool	0	0	0
	Clearwater Plume	Clearwater Plume			0
MD 7		Backwater Pool			0
(PRM 107.8-122.7)	Side Channel	Glide	0	0	
, <u></u> ,		Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			0

# Table E103. Continued.

			White	iated	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributany (cont.)	Pool	0	0	
	Thouary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributan/Mouth	Cascade	0		
(cont.)		Riffle	0		
		Beaver Pond	0	0	0
	Lipland Slough Pagyor Compley	Glide	0	0	
	Opialiu Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Oide Obererel	Glide		0	0
	Side Channel	Pool		0	0
		Riffle		0	0
		Glide	0	0	0
	Side Slough	Pool			0
MR-8		Run		0	
(PRM 102.4-107.8)		Glide		0	
	Tributary	Pool		0	0
		Riffle		0	0
		Backwater Pool		0	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

# 3. LOWER RIVER CATCH PER UNIT EFFORT DATA

# Table E104. Summary of relative abundance by capture method for main channel, off-channel, and tributary habitats of the Lower River, 2013.

			Main Channel							0	ff-Chanr	rel			Tributary						All		
Species	Life Stage		Backpack Electrofishing (N=45; CPUE in fish/hour)	Boat Electrofishing (N=28; CPUE in fish/hour)	Snorkel (N=6; CPUE in fish/1,000 m^2)	Seine (N=54; CPUE in fish/1,000 m^2)	Minnow Trap (N=27; CPUE in fish/trap)	Hoop Trap (N=28; CPUE in fish/trap)	Backpack Electrofishing (N=13; CPUE in fish/hour)	Boat Electrofishing (N=9; CPUE in fish/hour)	Snorkel (N=4; CPUE in fish/1,000 m^2)	<b>Seine</b> (N=8; CPUE in fish/1,000 m^2)	Minnow Trap (N=16; CPUE in fish/trap)	Fyke Net (N=3; CPUE in fish/trap)	Hoop Trap (N=11; CPUE in fish/trap)	Backpack Electrofishing (N=4; CPUE in fish/hour)	Boat Electrofishing (N=3; CPUE in fish/hour)	Snorkel (N=9; CPUE in fish/1,000 m^2)	Seine (N=4; CPUE in fish/1,000 m^2)	Minnow Trap (N=12; CPUE in fish/trap)	Fyke Net (N=2; CPUE in fish/trap)	Hoop Trap (N=8; CPUE in fish/trap)	Percent of Sites with CPUE=0 (N=132; all methods)
Salmon,	adult	% CPUE=0			100%	100%	100%	96%			100%	100%	100%	100%	100%			89%	100%	100%	100%	100%	98%
Chinook		Max CPUE						1										2.5					
	juvenile	% CPUE=0	89%	100%	100%	85%	85%	89%	92%	89%	100%	50%	63%	33%	91%	100%	100%	100%	100%	58%	0%	63%	74%
		Max CPUE	43.7			17	0.1	1.5	2.4	5.9		20	0.5	11	2.5				4000/	0.4	2	8	
Salmon, chum	adult	% CPUE=0			83%	96%	100%	93%			100%	88%	100%	100%	91%			89%	100%	100%	100%	100%	94%
		Max CPUE	000/	400%	25	2.2	1000/	0.5	000/	100%	400%	4./	0.00/	070/	0.3	400%	1000/	0.3	100%	0.20/	4008/	100%	0.00%
	juvenile	% CPUE=0	98%	100%	100%	98%	100%	100%	92%	100%	100%	/5%	88%	6/%	91%	100%	100%	100%	100%	83%	100%	100%	92%
Colmon coho	odult		2		020/	Z.1	100%	100%	4.0		100%	759/	100%	100%	100%			100%	100%	10.0%	E09/	100%	0.5%
Sainon, cono	adult	Max CPUE-0			62.5	90%	100 %	100%			100%	15%	100 %	100%	100%			100%	100 %	100%	20%	100%	95%
	iuvenile	% CPUE=0	0.8%	100%	100%	01%	80%	80%	62%	100%	100%	88%	50%	100%	82%	100%	100%	100%	75%	50%	0%	38%	76%
	juvernie	Max CPUF	8	10070	100 /0	18.9	0.2	1.5	21.1	100 /0	100 /0	5.6	0.5	45	45	100 /0	100 /0	100 /0	1	0.5	10	3	1070
Salmon, pink	adult	%CPUE=0	Ů		100%	98%	100%	93%	2		100%	100%	100%	67%	91%			89%	100%	100%	100%	100%	94%
, p		Max CPUE				1.4		0.8						1	0.3			15					
	juvenile	% CPUE=0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		Max CPUE																					
Salmon,	adult	% CPUE=0			83%	98%	100%	96%			100%	100%	100%	100%	100%			89%	100%	100%	100%	100%	97%
sockeye		Max CPUE			1.3	1.7		0.3										1.3					
	juvenile	% CPUE=0	96%	100%	100%	78%	96%	100%	54%	100%	100%	38%	81%	33%	82%	75%	100%	100%	50%	75%	100%	100%	77%
		Max CPUE	4.2			6.7	0.1		69.2			280	0.5	10	1.5	3.6			3.1	0.3			
Arctic grayling		% CPUE=0	96%	89%	100%	89%	96%	100%	100%	89%	100%	75%	100%	67%	100%	100%	100%	100%	75%	92%	0%	100%	87%
		Max CPUE	7.8	8.6	4000/	3.5	0.1	E 40/	0.5.0/	5.9	4000/	1.2	5.00/	1	400/	750/	4000/	4000/	1	<0.1	3	5001	0.49/
Burbot		%CPUE=0	91%	86%	100%	85%	81%	54%	85%	/8%	100%	88%	56%	67%	18%	75%	100%	100%	100%	92%	100%	50%	64%
Dolly Vardon			4.0	100%	100%	2.1	100%	100%	10.0	47.0	100%	10.0%	100%	9	2	100%	100%	100%	100%	100%	50%	100%	06%
Dolly varueri		Max CPUE-0	5.2	100%	100 %	17	100 %	100%	100%	100%	100%	100%	100%	100 %	100%	100%	100 %	100%	100 %	100%	20%	100%	90%
Lamprev		%CPUE=0	91%	96%	100%	100%	96%	64%	100%	78%	100%	100%	94%	33%	82%	75%	100%	100%	100%	67%	100%	100%	81%
Lamproy		Max CPUE	28.6	8.9	10070	10070	0.1	9	10070	8.7	10070	10070	<0.1	1	0.5	2.8	10070	10070	10070	0.2	10070	100 /0	0170
Lonanose		% CPUE=0	51%	75%	100%	30%	70%	82%	77%	56%	100%	75%	44%	33%	36%	100%	100%	100%	75%	67%	0%	63%	37%
sucker		Max CPUE	34.2	59.2		100	0.9	6	23.6	52.9		50	2.9	188	23				1	0.1	5	0.3	
Northern pike		% CPUE=0	100%	93%	100%	100%	100%	100%	100%	100%	100%	88%	100%	100%	100%	75%	100%	89%	100%	92%	100%	100%	97%
		Max CPUE		29.6								0.5				15.7		40		0.5			
Sculpin,		% CPUE=0	11%	100%	100%	56%	78%	89%	46%	100%	100%	38%	31%	33%	82%	100%	100%	100%	25%	33%	100%	88%	37%
undifferentiated		Max CPUE	1009.8			16.7	0.3	1	77.8			5	0.5	1	0.5	125.1			8.7	0.7		8	
Stickleback,		% CPUE=0	100%	100%	100%	94%	85%	100%	92%	100%	100%	100%	81%	33%	91%	100%	100%	100%	100%	92%	50%	88%	89%
ninespine		Max CPUE		1000/	1000/	34	1.5	0.001	17.7	1000/		=00/	0.1	1	0.3	= 0.07		2004		<0.1	2	0.3	-
Stickleback,		% CPUE=0	91%	100%	100%	91%	50%	96%	38%	100%	100%	50%	25%	33%	82%	50%	100%	/8%	/5%	6/%	100%	63%	66%
Treespine			34.1	100%	100%	30	43.3	100%	100.0	100%	100%	102.0	22.4	1/0	495	0.3	100%	1.0	4.0	14.5	09/	100%	0.29/
TTOUL, TAILIDOW		Mox CPUE-0	50%	100%	100 %	90%	100%	100%	74	100%	100 %	100 %	94 %	100%	100 %	57	100%	100 %	100%	92%	7	100%	93%
Whitefish Rering	1	% CPUE=0	98%	100%	100%	100%	100%	100%	100%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%
cisco	5	Max CPUF	3.1	10070	10070	10070	10070	10070	10070	8.7	100 /0	10070	10070	10070	10070	100 /0	10070	10070	10070	10070	10070	.00/0	0070
Whitefish.		% CPUE=0	100%	100%	100%	98%	96%	100%	100%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%
humpback		Max CPUE				2.1	<0.1			29.4													
Whitefish, round		% CPUE=0	87%	96%	100%	69%	96%	93%	100%	100%	100%	88%	100%	67%	82%	100%	100%	100%	50%	100%	0%	88%	77%
		Max CPUE	12.9	6		12.5	1.2	1				1		3	0.5				3.1		1	10	
Whitefish,		% CPUE=0	93%	100%	100%	83%	96%	100%	92%	89%	100%	75%	100%	100%	91%	100%	100%	100%	100%	100%	100%	100%	89%
undifferentiated		Max CPUE	13.7			37.5	0.1		6.5	8.7		10			1.5								
Percent of Sit	es with No	Fish	4%	21%	83%	11%	19%	18%	15%	0%	100%	0%	6%	0%	0%	0%	67%	67%	25%	0%	0%	0%	
Table E105.	Sample sizes and total effort	rt used for calculating a	average CPUE for bac	cpack electrofishing in the	Lower																		
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River, 2013.	-	-	-																				

			Sa	mple Size ( <i>N</i>	)	Total Effort (pulse duration in seconds)			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
		Riffle	1			1847			
	Bar Island Complex	Run		1	1		858	2011	
	Clearwater Plume	Clearwater Plume	1			279			
LR-1 (PRM 87.9-	Cide Channel Complex	Riffle	1	1	1	1028	841	2205	
(PRM	Side Channel Complex	Run	1	1	1	667	933	90	
87.9- 102.4)		Backwater Pool	1			1509			
102.4)	Side Slough	Riffle		1	1		1250	749	
		Run	1			564			
	Split Main Channel	Run	1			526			
	Tributary Mouth	Run			1			1297	
	Clearwater Plume	Clearwater Plume			1			246	
	Main Channel	Run		1	1		157	738	
	Multiple Split Main Channel	Run			2			1374	
LR-2		Pool			1			1801	
(PRM	Side Channel	Riffle		1			727		
65.6-87.9)		Run	2			1472			
		Glide			2			1930	
	Side Channel Complex	Riffle		1			1608		
		Run	1	1		968	613		
	Split Main Channel	Run		2			2389		
		Backwater Pool	1			864			
	Bar Island Complex	Pool		1			1977		
		Run	1	1	2	793	883	1105	
	Clearwater Plume	Clearwater Plume	1	1		989	949		
LR-3 (PRM 44.6-65.6)	Sido Channol	Glide	1	1		1006	614		
		Run	1			347			
	Side Channel Complex	Glide			1			446	
	Split Main Channel	Run			1			712	
	Tributany	Glide		1			1007		
	Thouary	Pool	1			630			
	Upland Slough	Glide	1		2	651		787	
	Upland Slough Beaver Complex	Beaver Pond	1	1		350	2674		
LR-4 (PRM	Clearwater Plume	Clearwater Plume	1			330			
32.3-44.6)	Main Channel	Run		1			333		

### Table E105. Continued.

0			Sa	mple Size ( <i>N</i> )		Total Effort (pulse duration in seconds)		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-4 (cont.)	Side Channel	Glide	1	1		546	808	
		Run			1			461
	Tributary	Glide	1			690		
	Upland Slough	Backwater Pool	1			555		
		Glide		1			611	
		Run	1		1	681		1156

0				Sample Size ( <i>N</i>	)	(pulse	Total Effort duration in sec	conds)
Geo- morphic Reach	Macro- habitat Type	Meso-habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	· · ·	Glide	1			4		
LR-1	Side Slough	Riffle			1			78
(PRM 87.9-		Run		1			81	
Geo- morphic Reach           LR-1 (PRM 87.9- 102.4)           LR-2 (PRM 65.6- 87.9)           LR-3 (PRM 44.6- 65.6)           LR-3 (PRM 44.6- 65.6)           LR-4 (PRM 32.3- 44.6)	Split Main Channel	Run	1	1	1	24	168	245
	Main	Riffle	1			113		
LR-2 (PRM 65.6- 87.9)	Channel	Run		1	1		75	600
	Multiple Split Main Channel	Run	1		2	173		688
	Split Main Channel	Run	1	2		19	212	
LR-3 (PRM 44.6- 65.6)	Multiple Split Main Channel	Run		1			46	
	Side Channel Complex	Glide		1			620	
	Split Main Channel	Run	1			345		
C C PI M C M M C	Clearwater Plume	Clearwater Plume	1	1		642	365	
	Main Channel	Run		2	2		568	647
	Multiple Split Main Channel	Run	1			159		
	Side	Glide		1			548	
LR-4	Channel	Run	1	1	1	119	487	417
(PRM 32.3- 44.6)	Side Channel Complex	Run			1			404
	Cide Claush	Glide	1			23		
	Side Slough	Run	1	2	2	596	478	1028
	Split Main Channel	Run	1			134		
	Tributary	Glide		1	1		1200	606
	Tributary Mouth	Glide			1			385

 Table E106. Sample sizes and total effort used for calculating average CPUE for boat electrofishing in the Lower River, 2013.

						Total Ef	fort (area san	npled in
Geo-			S	ample Size ( <i>I</i>	V)	s	quare meters	5)
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Den Joland Complex	Riffle	1			900		
	Bar Island Complex	Run			1			400
	Clearwater Plume	Clearwater Plume	2	1	1	1120	960	1260
LR-1 (PRM 87.9- 102.4)	Side Channel	Riffle	1	1		270	150	
	Complex	Run	1		1	600		800
		Pool		1	1		810	640
	Side Slough	Riffle		1	1		720	960
		Run	1			600		
	Split Main Channel	Run	1	1	1	400	450	840
	Main Obannal	Riffle	1			2000		
	Main Channel	Run		1	1		600	800
	Multiple Split Main Channel	Run	1		1	1200		600
LR-2 (PRM	Cide Channel	Riffle		1			600	
65.6-	Side Channel	Run	2			2090		
87.9)	Side Channel	Glide			2			1640
	Complex	Run	1			300		
	Split Main Channel	Run	1	1		1600	600	
	Tributary	Run			1			1040
	Additional Open Water	Pool	1	1		1000	900	
	Bar Island Complex	Backwater Pool	1			840		
		Pool		1			720	
		Run	1	1	2	420	1050	540
	Clearwater Plume	Clearwater Plume	2	1	1	1820	1280	1170
LR-3	Multiple Split Main Channel	Run		1			1000	
(PRM 44.6-	Side Channel	Glide	1	1		1080	720	
65.6)	Side Channel	Glide		1	1		1000	360
00.07	Complex	Riffle			1			2000
	Split Main Channel	Run	1		1	2000		1200
	Tributer	Riffle	1			840		
	Tributary	Run			1			240
	Tributary Mouth	Run			1			980
	Upland Slough	Glide		1	1		200	360
	Main Channel	Run		2	1		1600	640
LR-4 (PRM	Multiple Split Main Channel	Run	1			1800		
32.3- 44.6)	Side Chargel	Glide		1			640	
	Side Gharillei	Run	1	1		400	600	

# Table E107. Sample sizes and total effort used for calculating average CPUE for seining in the Lower River, 2013.

### Table E107. Continued.

	Geo-	Macrohabitat Type	Mesohabitat Type	Sample Size ( <i>N</i> )	Total Effort (area sampled in
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morphic						s	quare meters	5)
Reach			Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-4 (cont.)	Side Channel Complex	Run			1			480
	Side Slough	Run	1			2000		

0			s	ample Size (N	)	Total Effort	Total Effort (area sampled in square meters)			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
	Clearwater Plume	Clearwater Plume		1			800			
1.5.4		Backwater Pool	1			840				
LR-1 (PRM	Cido Clouch	Pool		1			1600			
(PRM 87.9- 102.4) Tributary	Side Slough	Riffle		1			560			
		Run	1			480				
	Tributary	Glide	1	1		800	1600			
		Run			1			4000		
LR-2	Clearwater Plume	Clearwater Plume	1		1	1200		1000		
(PRM	Tributan	Glide	1			2000				
65.6-87.9) Tributary	Tributary	Run			1			1000		
LR-3	Clearwater Plume	Clearwater Plume		1			120			
(PRM	Tributan	Glide		2			1000			
44.6-65.6)	Tributary	Riffle	1			1200				
LR-4 (PRM	Additional Open Water	Pool	1	1		3000	3000			
32.3-44.6)	Tributary	Glide	1			100				

# Table E108. Sample sizes and total effort used for calculating average CPUE for snorkeling in the Lower River, 2013.

# Table E109. Sample sizes and total effort used for calculating average CPUE for fyke netting in the Lower River, 2013.

Geor		Meso-	Sample Size ( <i>N</i> )			Total Effort (# of nets set overnight)		
morphic Reach	Macro-habitat Type	habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-1	<b>-</b> 11 (	Alcove	1			1		
(PRM 87.9- 102.4)	Tributary	Glide		1			1	
LR-3 (PRM 44.6- 65.6)	Upland Slough	Glide			1			1
LR-4		Glide		1			1	
(PRM 32.3- 44.6)	Upland Slough	Run			1			1

				omalo Sizo //	Λ	(#	Total Effort	aiatht)
Geo-			3	ampie Size ( <i>i</i>	v)	(# 01 1	hets set over	light)
morphic Reach	Macro-habitat Type	Meso-habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		2	1		4	1
	Side Channel	Riffle			1			2
	Complex	Run		1			4	
		Glide	1			4		
I R-1	Cida Claugh	Pool			1			2
(PRM 87.9-	Side Slough	Riffle			1			4
102.4)		Run		1			4	
	Split Main Channel	Run			1			2
	Tributer	Glide		1			3	
	Tributary	Run			2			4
	Tributary Mouth	Run			1			5
	Clearwater Plume	Clearwater Plume		1			1	
	Side Channel	Pool			1			2
1 R-2		Glide			1			3
(PRM 65.6-	Side Channel	Riffle		1			1	
87.9)	Complex	Run		1			3	
	Split Main Channel	Run		1			1	
	Tributary	Glide		1			1	
	Clearwater Plume	Clearwater Plume		1	1		3	2
		Glide			1			4
	Side Channel	Run		1			2	
	Side Channel	Glide		1			3	
LR-3	Complex	Riffle			1			2
(PRM 44.6- 65.6)	Tributary	Run			1			1
00.0)	Tributary Mouth	Run			1			4
	Upland Slough	Glide		1			4	
	Upland Slough Beaver Complex	Beaver Pond		1			1	
	Additional Open Water	Pool			1			1
	Clearwater Plume	Clearwater Plume		1			4	
LR-4	Main Channel	Run		2	2		4	6
(PRIVI 32.3- 44.6)	Cide Charriel	Glide		1			2	
,	Side Channel	Run		1	1		3	2
	Side Channel Complex	Run			1			4

# Table E110. Sample sizes and total effort used for calculating average CPUE for hoop trapping in the Lower River, 2013.

### Table E110. Continued.

0	S	ample Size ( <i>I</i>	V)	Total Effort (# of nets set overnight)				
Geo- morphic Reach	Macro-habitat Type	Meso-habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-4	Side Slough	Run	1	2	2	2	4	8
(cont.)	Tributary Mouth	Glide			1			4

Table E111. Sample sizes and total effort used for calculating average CPUE for minnow trapping in the Lower Rive	r,
2013.	

Cas			Sam	ple Size ( <i>N</i> )	-	Total Effort (# of traps set overnight)			
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			1			8	
	Side Channel Complex	Riffle			1			16	
LR-1 (PRM 87.9-	Cide Claugh	Backwater Pool	1			16			
102.4)	Side Slough	Glide	1			8			
		Pool		1	2		16	39	
		Alcove	1			32			
	Tributary	Glide		2			56		
		Run			2			40	
I R-2	Clearwater Plume	Clearwater Plume		1			20		
	Side Channel	Pool			1			24	
(PRM 65.6-		Glide			1			8	
87.9)	Side Channel	Riffle		1			20		
	Complex	Run	1	1		9	8		
	Tributary	Glide	1	1		39	20		
	Additional Open Water	Pool	1	1	1	20	18	40	
	Bar Island	Pool		1			20		
	Complex	Run	1	1		20	20		
	Clearwater Plume	Clearwater Plume			1			16	
		Glide			1			20	
IR-3	Side Channel	Run	1	1		18	20		
(PRM 44.6- 65.6)	Side Channel Complex	Riffle			1			8	
		Glide		1			24		
	Tributary	Riffle	1			24			
	-	Run			1			30	
	Upland Slough	Glide	1	1	1	40	20	39	
	Upland Slough Beaver Complex	Beaver Pond	1	1		10	20		
	Additional Open Water	Pool	2	2	2	59	44	64	
LR-4 (PRM 32.3- 44.6)	Clearwater Plume	Clearwater Plume	1			20			
,	Side Channel	Glide	1			8			
	Tributary	Glide	1	1		20	20		

### Table E111. Continued.

0			Sample Size ( <i>N</i> )			Total Effort (# of traps set overnight)		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-4 (cont.)	Upland Slough	Backwater Pool	1			10		
		Glide		2			40	
		Run	1		2	10		39

# Table E112. Average CPUE (fish per hour of shocking time) for Chinook salmon using backpack electrofishing in the Lower River, 2013.

			Salmon, Chinook (juvenile)		
Geo-					
morphic Reach	Macrohabitat Type	Mesohahitat Type	Farly Summer	Late Summer	Fall
Reach	inderonabilat Type	Riffle	0		i un
	Bar Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	12.9		
		Riffle	3.5	0	4.9
LR-1 (PRM	Side Channel Complex	Run	0	0	0
87.9- 102.4)		Backwater Pool	2.4		
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
LR-2	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
		Pool			0
	Side Channel	Riffle		0	
(PRM 65.6-87.9)		Run	0		
,		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	43.7	0	
	Side Channel	Glide	7.2	0	
LR-3		Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
,	Split Main Channel	Run			0
	Tributon	Glide		0	
		Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E112. Continued.

			Salmon, Chinook (juvenile)			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume	0			
	Main Channel	Run		0		
	Cide Channel	Glide	0	0		
LR-4	Side Channel	Run			0	
(PRM 32.3-44.6)	Tributary	Glide	0			
02.0 11.0)		Backwater Pool	0			
	Upland Slough	Glide		0		
		Run	0		0	

			Salmon, Chinook (juvenile		nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0
		Run		0	
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
LR-2	Main Channel	Run		0	0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
LR-3	Multiple Split Main Channel	Run		0	
	Side Channel Complex	Glide		0	
(11(1) 44.0-03.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
15.4	Side Chalillei	Run	0	0	0
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(11(0) 32.3-44.0)	Cide Claugh	Glide	0		
	Side Slough	Run	0	0	2.9
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

# Table E113. Average CPUE (fish per hour of shocking time) for Chinook salmon using boat electrofishing in the Lower River, 2013.

			Salmon, Chinook (juvenile)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Der Joland Complay	Riffle	0			
	Bar Island Complex	Run			0	
	Clearwater Plume	Clearwater Plume	0	0	0	
	Cide Channel Complex	Riffle	0	0		
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0	
102.4)		Pool		1.2	0	
	Side Slough	Riffle		1.4	0	
		Run	6.7			
	Split Main Channel	Run	0	0	0	
		Riffle	0			
	Main Channel	Run		0	2.5	
	Multiple Split Main Channel	Run	0		0	
		Riffle		5.0		
LR-2 (PRM 65.6-	Side Channel	Run	0			
01.9)	Oide Obernel Osmulau	Glide			1.0	
	Side Channel Complex	Run	0			
	Split Main Channel	Run	0	0		
	Tributary	Run			0	
	Additional Open Water	Pool	0	0		
		Backwater Pool	0			
	Bar Island Complex	Pool		0		
		Run	0	0	0	
	Clearwater Plume	Clearwater Plume	11.3	0	0	
	Multiple Split Main Channel	Run		0		
LR-3 (PRM 44.6-	Side Channel	Glide	15.7	1.4		
65.6)	Side Channel Complex	Glide		0	0	
	Side Channel Complex	Riffle			0.5	
	Split Main Channel	Run	0		0	
	Tributon	Riffle	0			
	moulary	Run			0	
	Tributary Mouth	Run			0	
	Upland Slough	Glide		20.0	0	
	Main Channel	Run		0	0	
	Multiple Split Main Channel	Run	0			
LR-4 (PRM 32.3-	Sido Channol	Glide		0		
44.6)		Run	0	0		
	Side Channel Complex	Run			0	
	Side Slough	Run	0			

## Table E114. Average CPUE (fish per 1,000 square meters) for Chinook salmon using seining in the Lower River, 2013.

			Sal	mon, Chinook (ad	ult)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
		Backwater Pool	0		
	Sido Slough	Pool		0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle		0	
		Run	0		
	Tributory	Glide	2.5	0	
	Tribulary	Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65 6-87 9)	Tributon	Glide	0		
(114110010 0110)	moulary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44 6-65 6)	Tributant	Glide		0	
(1110144.0-00.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

 Table E115. Average CPUE (fish per 1,000 square meters) for Chinook salmon using snorkeling in the Lower River, 2013.

## Table E116. Average CPUE (fish per trap) for Chinook salmon using fyke netting in the Lower River, 2013.

			Salmon, Chinook (juve		nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributon	Alcove	2.0		
(PRM 87.9-102.4)	Thoulary	Glide		2.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Linland Claush	Glide		11.0	
(PRM 32.3-44.6)	Upland Slough	Run			2.0

# Table E117. Average CPUE (fish per trap) for Chinook salmon using hoop trapping in the Lower River, 2013.

Gaa	Gao		Salm	Salmon, Chinook (adult)			Salmon, Chinook (juvenile)		
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume		0	0		0.3	0	
	Side Channel	Riffle			0			0	
	Complex	Run		0			0		
		Glide	0			0			
	Cida Claugh	Pool			0			0	
(PRM 87.9-	Side Slough	Riffle			0			0	
102.4)		Run		0			0		
	Split Main Channel	Run			0			0	
	Tellesteres	Glide		0			6.7		
	Indutary	Run			0			0	
	Tributary Mouth	Run			0			0	
LR-2 (PRM 65.6-	Clearwater Plume	Clearwater Plume		1.0			1.0		
	Side Channel	Pool			0			0	
		Glide			0			0	
	Side Channel Complex	Riffle		0			0		
87.9)	e e mpier	Run		0			0		
	Split Main Channel	Run		0			0		
	Tributary	Glide		0			8.0		
	Clearwater Plume	Clearwater Plume		0	0		0	0	
	Sido Channol	Glide			0			0	
		Run		0			0		
	Side Channel	Glide		0			0		
LR-3 (PRM 44.6-	Complex	Riffle			0			1.5	
65.6)	Tributary	Run			0			2.0	
	Tributary Mouth	Run			0			0	
	Upland Slough	Glide		0			2.5		
	Upland Slough Beaver Complex	Beaver Pond		0			0		
	Additional Open Water	Pool			0			0	
LR-4	Clearwater Plume	Clearwater Plume		0			0		
(PRM 32.3- 44 6)	Main Channel	Run		0	0		0	0	
	Side Channel	Glide		0			0		
	Side Channel	Run		0	0		0	0	

# Table E117. Continued.

0			Salmon, Chinook (adult)			Salmon, Chinook (juvenile)		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-4 (cont.)	Side Channel Complex	Run			0			0
	Side Slough	Run	0	0	0	0	0	0
	Tributary Mouth	Glide			0			0

			Salmon, Chinook (juvenile)		venile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0.06
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0		
	Tributary	Glide		0.12	
		Run			0
	Clearwater Plume	Clearwater Plume		0.10	
LR-2 (PRM 65.6-87.9)	Side Channel	Pool			0
		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0.44	0.20	
	Additional Open Water	Pool	0.05	0	0
	Par Jaland Complex	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0.06
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0.21		
		Run			0
	Upland Slough	Glide	0.08	0	0.03
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(······)		Backwater Pool	0.10		
	Upland Slough	Glide		0.26	
		Run	0		0.03

# Table E118. Average CPUE (fish per trap) for Chinook salmon using minnow trapping in the Lower River, 2013.

# Table E119. Average CPUE (fish per hour of shocking time) for chum salmon using backpack electrofishing in the Lower River, 2013.

			Salmon, chum (juvenile)		
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rille	0	0	0
	Cleanuator Diuma	Cleanwater Dluma	0	0	0
			0	0	0
LR-1	Side Channel Complex	Rime	0	0	0
(PRM 87.9- 102.4)		Run	0	0	0
		Backwater Pool	4.8		-
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
		Pool			2.0
LR-2	Side Channel	Riffle		0	
(PRM 65.6-87.9)		Run	0		
		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44 6-65 6)	Side Channel Complex	Glide			0
11.0 00.0)	Split Main Channel	Run			0
		Glide		0	
	I ributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E119. Continued.

			Sal	mon, chum (juven	ile)
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

			Salm	on, chum (ad	dult)	Salmo	n, chum (juve	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Riffle	0			0		
	Bar Island Complex	Run			0			0
	Clearwater Plume	Clearwater Plume	0	0	0.8	0	0	0
		Riffle	0	0		0	0	
LR-1 (PRM	Side Channel Complex	Run	0		0	0		0
07.9-102.4)		Pool		0	4.7		16.0	0
	Side Slough	Riffle		0	0		0	0
		Run	0			3.3		
	Split Main Channel	Run	0	2.2	0	0	0	0
		Riffle	0			0		
		Run		0	0		0	0
	Multiple Split Main Channel	Run	0		0	0		0
	Oide Obernal	Riffle		0			0	
LR-2 (PRM	Side Channel	Run	0			0		
00.0-07.9)	Side Channel Complex	Glide			0			0
	Side Channel Complex	Run	0			0		
	Split Main Channel	Run	0	0		0	0	
	Tributary	Run			0			0
	Additional Open Water	Pool	0	0		0	0	
		Backwater Pool	0			0		
	Bar Island Complex	Pool		0			0	
		Run	0	0	0	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
	Multiple Split Main Channel	Run		0			0	
LR-3 (PRM	Side Channel	Glide	0	0		0	0	
44.6-65.6)	Side Channel Complex	Glide		0	0		0	0
	Side Channel Complex	Riffle			0			0
	Split Main Channel	Run	0		0	0		0
	Tributer	Riffle	0			0		
	moutary	Run			0			0
	Tributary Mouth	Run			0			0
	Upland Slough	Glide		0	0		0	0

## Table E120. Average CPUE (fish per 1,000 square meters) for chum salmon using seining in the Lower River, 2013.

### Table E120-Continued.

			Salmon, chum (adult)			Salmon, chum (juvenile)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Main Channel	Run		0	0		0	0	
	Multiple Split Main Channel	Run	0			0			
LR-4 (PRM		Glide		0			0		
32.3-44.6)	Side Channel	Run	0	0		0	0		
	Side Channel Complex	Run			0			2.1	
	Side Slough	Run	0			0			

			S	almon, chum (adult)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		25.0	
		Backwater Pool	0		
	Side Claureb	Pool		0	
LR-1 (PRM 87 9-102 4)	Side Slough	Riffle		0	
(11(01:07:02:4)		Run	0		
	Tributany	Glide	0	0	
	Tributary	Run			0.3
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65 6-87 9)	Tributor	Glide	0		
(11000001.0)	Thoulary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PPM 44 6-65 6)	Tributer	Glide		0	
(FRIVI 44.0-03.0)	Iributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

# Table E121. Average CPUE (fish per 1,000 square meters) for chum salmon using snorkeling in the Lower River, 2013.

### Table E122. Average CPUE (fish per trap) for chum salmon using fyke netting in the Lower River, 2013.

			Salmon, chum (juvenile)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Lipland Claush	Glide		1.0	
(PRM 32.3-44.6)	Opiand Slough	Run			0

# Table E123. Average CPUE (fish per trap) for chum salmon using hoop trapping in the Lower River, 2013.

Geo			Salr	Salmon, chum (adult)			Salmon, chum (juvenile)			
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
	Clearwater Plume	Clearwater Plume		0.2	0		0	0		
	Side Channel	Riffle			0			0		
	Complex	Run		0			0			
		Glide	0.3			0				
	Cida Clauch	Pool			0			0		
(PRM 87.9-	Side Slough	Riffle			0			0		
102.4)		Run		0			0			
	Split Main Channel	Run			0			0		
	Tellesteres	Glide		0			0			
	Indutary	Run			0			0		
	Tributary Mouth	Run			0			0		
	Clearwater Plume	Clearwater Plume		0			0			
	Side Channel	Pool			0			0		
		Glide			0			0		
(PRM 65.6-	Side Channel Complex	Riffle		0			0			
87.9)	Complex	Run		0			0			
	Split Main Channel	Run		0			0			
	Tributary	Glide		0			0			
	Clearwater Plume	Clearwater Plume		0	0		0	0		
	Sida Channal	Glide			0			0		
		Run		0			0			
	Side Channel	Glide		0			0			
LR-3 (PRM 44.6-	Complex	Riffle			0			0		
65.6)	Tributary	Run			0			0		
	Tributary Mouth	Run			0			0		
	Upland Slough	Glide		0			0.3			
	Upland Slough Beaver Complex	Beaver Pond		0			0			
	Additional Open Water	Pool			0			0		
LR-4	Clearwater Plume	Clearwater Plume		0			0			
(PRM 32.3- 44.6)	Main Channel	Run		0.3	0		0	0		
гт.0 <i>ј</i>	Side Channel	Glide		0			0			
		Run		0	0		0	0		

### Table E123. Continued.

0			Salm	on, Chinook (	adult)	Salmon, Chinook (juvenile)			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Side Channel Complex	Run			0			0	
(cont.)	Side Slough	Run	0	0	0	0	0	0	
<b>、</b> ,	Tributary Mouth	Glide			0			0	

			Salr	non, chum (juve	nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0.06	0
		Alcove	0		
	Tributary	Glide		0.01	
		Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
LR-2 (PRM 65.6-87.9)		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0.05	
	Additional Open Water	Pool	0	0	0
	Per laland Compley	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
(11002.0 +1.0)		Backwater Pool	0.10		
	Upland Slough	Glide		0	
		Run	0		0

# Table E124. Average CPUE (fish per trap) for chum salmon using minnow trapping in the Lower River, 2013.

Table E125. Average CPUE (fish per hour of shocking time) for coho salmon using backpack electrofishing in the Lower River, 2013.

			Salmon, coho (juvenile)		
Geo-					
morphic	Maayababitat Tura	Maaababiint Turra	Faste Summer	Lata Cumunan	<b>F</b> ell
Reach	Macronabitat Type	Riffle	Early Summer	Late Summer	Fall
	Bar Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		•
		Riffle	0	0	0
LR-1	Side Channel Complex	Run	0	0	0
(PRM 87.9-		Backwater Pool	0		•
102.4)	Side Slough	Biffle	0	0	0
		Pun	0	0	0
	Split Main Channol	Run	0		
		Dun	0		0
		Ruii Cleanuator Pluma			0
	Main Channel			0	0
	Multinla Split Main Channel	Dun		0	0
	Multiple Split Main Channel	Run			0
		P001			8.0
(PRM		Riffie		0	
65.6-87.9)		Run	0		
		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
	Side Channel	Glide	0	0	
LR-3		Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
		Glide		0	
	Iributary	Pool	0		
	Upland Slough	Glide	0		2.6
	Upland Slough Beaver Complex	Beaver Pond	0	6.7	

### Table E125. Continued.

			Sa	lmon, coho (juven	ile)
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	13.0		
	Upland Slough	Glide		0	
		Run	21.1		3.1

Salmon, coho (ad		ult)	Salmo	n, coho (juve	nile)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Riffle	0			0		
	Bar Island Complex	Run			0			0
	Clearwater Plume	Clearwater Plume	0	0	0.8	4.7	0	0
		Riffle	0	0		0	0	
LR-1 (PRM	Side Channel Complex	Run	0		0	0		0
07.9-102.4)		Pool		0	0		0	0
	Side Slough	Riffle		0	1.0		0	0
		Run	0			0		
	Split Main Channel	Run	0	0	0	0	0	0
		Riffle	0			0		
	Main Channel	Run		1.7	0		0	1.3
	Multiple Split Main Channel	Run	0		0	0		0
		Riffle		0			0	
LR-2 (PRM	Side Channel	Run	0			0		
05.0-07.9)	Cide Channel Complex	Glide			0			0
	Side Channel Complex	Run	0			0		
	Split Main Channel	Run	0	0		0	0	
	Tributary	Run			0			0
	Additional Open Water	Pool	0	0		11.0	18.9	
		Backwater Pool	0			0		
	Bar Island Complex	Pool		0			0	
		Run	0	0	0	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0	0.4	0	0
	Multiple Split Main Channel	Run		0			0	
LR-3 (PRM	Side Channel	Glide	0	0		0	0	
44.6-65.6)	Side Channel Complex	Glide		0	0		0	0
	Side Channel Complex	Riffle			0			0
	Split Main Channel	Run	0		0	0		0
	Tributan	Riffle	0			0		
		Run			0			0
	Tributary Mouth	Run			0			1.0
	Upland Slough	Glide		5.0	0		0	5.6

## Table E126. Average CPUE (fish per 1,000 square meters) for coho salmon using seining in the Lower River, 2013.

### Table E126-Continued.

			Salmon, coho (adult)			Salmon, coho (juvenile)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Main Channel	Run		0	0		0	0	
	Multiple Split Main Channel	Run	0			0			
LR-4 (PRM		Glide		0			0		
32.3-44.6)	Side Channel	Run	0	0		0	0		
	Side Channel Complex	Run			0			0	
	Side Slough	Run	0			0			

			Salmon, coho (adult)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1 (PRM 87.9-102.4)	Clearwater Plume	Clearwater Plume		62.5	
	Side Slough	Backwater Pool	0		
		Pool		0	
		Riffle		0	
		Run	0		
	<b>T</b> 1 (	Glide	0	0	
	Tributary	Run			0
LR-2 (PRM 65.6-87.9)	Clearwater Plume	Clearwater Plume	0		0
	Tributon	Glide	0		
	Thoulary	Run			0
LR-3 (PRM 44.6-65.6)	Clearwater Plume	Clearwater Plume		0	
	<b>T</b> 1 4	Glide		0	
	Tributary	Riffle	0		
LR-4 (PRM 32.3-44.6)	Additional Open Water	Pool	0	0	
	Tributary	Glide	0		

# Table E127. Average CPUE (fish per 1,000 square meters) for coho salmon using snorkeling in the Lower River, 2013.

Gaa			Salmon, coho (adult)			Salmon, coho (juvenile)		
morphic Reach	Macro- habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
LR-1 (PRM 87.9- Tributary 102.4)	Alcove	0			10.0			
	Glide		2.0			3.0		
LR-3 (PRM 44.6- 65.6)	Upland Slough	Glide			0			45.0
LR-4 (PRM 32.3- 44.6)	Upland Slough	Glide		0			4.0	
		Run			0			5.0

## Table E129. Average CPUE (fish per trap) for coho salmon using hoop trapping in the Lower River, 2013.

			Salmon, coho (juvenile)		nile)	
Geomorphic Beach	Macrohabitat Type	Mesobabitat Type	Early	Late	Fall	
	Clearwater Plume	Clearwater Plume	Summer	0.3	0	
		Riffle			0	
	Side Channel Complex	Run		0		
	Side Slough	Glide	0	-		
		Pool			0	
LR-1		Riffle			0	
(FRIVI 07.9-102.4)		Run		0		
	Split Main Channel	Run			0	
		Glide		0.3		
	Tributary	Run			1.8	
	Tributary Mouth	Run			0.4	
	Clearwater Plume	Clearwater Plume		1.0		
	Side Channel	Pool			1.5	
	Side Channel Complex	Glide			0	
LR-2 (PRM 65 6-87 9)		Riffle		0		
(11000001.0)		Run		0		
	Split Main Channel	Run		0		
	Tributary	Glide		3.0		
	Clearwater Plume	Clearwater Plume		0	0	
		Glide			0	
	Side Channel	Run		0		
	Cide Channel Complex	Glide		0		
LR-3 (PRM 44.6-65.6)	Side Charmer Complex	Riffle			0	
	Tributary	Run			0	
	Tributary Mouth	Run			0	
	Upland Slough	Glide		2.5		
	Upland Slough Beaver Complex	Beaver Pond		45.0		
	Additional Open Water	Pool			0	
	Clearwater Plume	Clearwater Plume		0		
	Main Channel	Run		0	0	
LR-4	Sido Channol	Glide		0		
(PRM 32.3-44.6)		Run		0	0	
	Side Channel Complex	Run			0	
	Side Slough	Run	0	0	0	
	Tributary Mouth	Glide			0	
			Salı	Salmon, coho (juvenile)		
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Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
		Backwater Pool	0			
LR-1	Side Slough	Glide	0			
(PRM 87.9-102.4)		Pool		0	0.22	
		Alcove	0			
	Tributary	Glide		0.11		
		Run			0.10	
	Clearwater Plume	Clearwater Plume		0		
	Side Channel	Pool			0.17	
LR-2		Glide			0	
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
		Run	0	0		
	Tributary	Glide	0.03	0.45		
	Additional Open Water	Pool	0	0	0.08	
	Des Island Osmalau	Pool		0		
	Bar Island Complex	Run	0	0		
	Clearwater Plume	Clearwater Plume			0	
	Side Channel	Glide			0	
LR-3	Side Channel	Run	0	0		
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
		Glide		0.21		
	Tributary	Riffle	0			
		Run			0	
	Upland Slough	Glide	0.03	0	0.10	
	Upland Slough Beaver Complex	Beaver Pond	0	0.45		
	Additional Open Water	Pool	0.03	0	0	
	Clearwater Plume	Clearwater Plume	0			
	Side Channel	Glide	0			
LR-4 (PPM 32 3-44 6)	Tributary	Glide	0	0		
(1 1110 02.0-44.0)		Backwater Pool	0			
	Upland Slough	Glide		0.03		
		Run	0.10		0.28	

#### Table E130. Average CPUE (fish per trap) for coho salmon using minnow trapping in the Lower River, 2013

			S	Salmon, pink (adult)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
	Par Jaland Complay	Riffle	0				
	Dal Island Complex	Run			0		
	Clearwater Plume	Clearwater Plume	0	0	0		
/	Side Channel Complex	Riffle	0	0			
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0		
102.4)		Pool		0	0		
	Side Slough	Riffle		0	0		
		Run	0				
	Split Main Channel	Run	0	0	0		
	Main Channel	Riffle	0				
LR-2 (PRM 65.6- 87.9)		Run		0	0		
	Multiple Split Main Channel	Run	0		0		
	Side Channel	Riffle		0			
	Side Channel	Run	0				
	Side Channel Complex	Glide			0		
	Side Charliner Complex	Run	0				
	Split Main Channel	Run	0	0			
	Tributary	Run			0		
	Additional Open Water	Pool	0	0			
		Backwater Pool	0				
	Bar Island Complex	Pool		0			
		Run	0	0	0		
	Clearwater Plume	Clearwater Plume	0.7	0	0		
	Multiple Split Main Channel	Run		0			
LR-3 (PRM 44.6-	Side Channel	Glide	0	0			
65.6)	Side Channel Complex	Glide		0	0		
		Riffle			0		
	Split Main Channel	Run	0		0		
	Tributany	Riffle	0				
		Run			0		
	Tributary Mouth	Run			0		
	Upland Slough	Glide		0	0		
	Main Channel	Run		0	0		
	Multiple Split Main Channel	Run	0				
LR-4 (PRM 32.3-	Side Channel	Glide		0			
44.6)		Run	0	0			
	Side Channel Complex	Run			0		
	Side Slough	Run	0				

## Table E131. Average CPUE (fish per 1,000 square meters) for pink salmon using seining in the Lower River, 2013.

			S	almon, pink (adul	t)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
		Backwater Pool	0		
	Cido Clough	Pool		0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle		0	
		Run	0		
	Tributon	Glide	15.0	0	
	Thoulary	Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65 6-87 9)	Tributon	Glide	0		
(1111100.001.0)	moulary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PPM 44 6.65 6)	Tributer	Glide		0	
(F MN 44.0-05.0)	Thoulary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

#### Table E132. Average CPUE (fish per 1,000 square meters) for pink salmon using snorkeling in the Lower River, 2013.

## Table E133. Average CPUE (fish per trap) for pink salmon using fyke netting in the Lower River, 2013.

			Sa	t)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	0		
(PRM 87.9-102.4)	Indutary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4	Linland Claush	Glide		0	
(PRM 32.3-44.6)	Upland Slough	Run			0

## Table E134. Average CPUE (fish per trap) for pink salmon using hoop trapping in the Lower River, 2013.

			Sal	mon, pink (adu	lt)
			Early	Late	
Geomorphic Reach	Macronabitat Type	Cleanwater Plume	Summer	0.2	- Fall
				0.2	0
	Side Channel Complex	Pup		0.8	0
		Glide	0.3	0.0	
		Pool	0.0		0
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0
		Run		0	0
	Split Main Channel	Run		, , , , , , , , , , , , , , , , , , ,	0
		Glide		0	
	Tributary	Bup		Ŭ	0
	Tributany Mouth	Run			0
		Cleanwater Plume		0	•
	Side Channel	Pool		Ŭ	0
LR-2		Glide			0
	Side Channel Complex	Riffle		0	
(PRM 65.6-87.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0
		Glide		-	0
	Side Channel	Bun		0	
		Glide		0	
LR-3	Side Channel Complex	Riffle		-	0
(PRM 44.6-65.6)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	
	Upland Slough Beaver Complex	Beaver Pond		0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
I R-4		Glide		0	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	0	0	0
	Tributary Mouth	Glide			0

# Table E135. Average CPUE (fish per hour of shocking time) for sockeye salmon using backpack electrofishing in the Lower River, 2013.

			Salmon, sockeye (juvenile)		nile)
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rillie	0	0	0
	Cleanuater Dluma	Cleanwater Diuma	0	0	0
			0	0	0
LR-1	Side Channel Complex	Rime	0	0	0
(PRM		Run	0	0	0
87.9- 102.4)		Backwater Pool	69.2		
	Side Slough	Riffle		14.4	0
		Run	31.9		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
		Pool			0
LR-2	Side Channel	Riffle		0	
(PRM 65.6-87.9)		Run	0		
	Side Channel Complex	Glide			0
		Riffle		0	
		Run	3.7	0	
	Split Main Channel	Run		0	
		Backwater Pool	4.2		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
++.0 00.0)	Split Main Channel	Run			0
		Glide		3.6	
	l ributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

#### Table E135. Continued.

			Salmon, sockeye (juvenile)		nile)
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Cide Channel	Glide	0	0	
LR-4	Side Channel	Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	6.5		
	Upland Slough	Glide		5.9	
		Run	10.6		0

			Salmo	n, sockeye (a	adult)	Salmon, sockeye (juvenile)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Riffle	0			0		
	Bar Island Complex	Run			0			0
	Clearwater Plume	Clearwater Plume	0	0	0	0.6	0	0
LR-1 (PRM 87.9-102.4)		Riffle	0	0		0	6.7	
	Side Channel Complex	Run	1.7		0	0		0
		Pool		0	0		50.6	7.8
	Side Slough	Riffle		0	0		18.1	0
		Run	0			280.0		
	Split Main Channel	Run	0	0	0	0	0	0
		Riffle	0			0		
	Main Channel	Run		0	0		0	0
	Multiple Split Main Channel	Run	0		0	0		0
		Riffle		0			1.7	
LR-2 (PRM	Side Channel	Run	0			0		
05.0-07.9)	Oide Obergel Osmalau	Glide			0			0
	Side Channel Complex	Run	0			0		
	Split Main Channel	Run	0	0		0.6	0	
	Tributary	Run			0			0
	Additional Open Water	Pool	0	0		1.0	4.4	
		Backwater Pool	0			1.2		
	Bar Island Complex	Pool		0			0	
		Run	0	0	0	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0	1.8	0.8	0
	Multiple Split Main Channel	Run		0			0	
LR-3 (PRM	Side Channel	Glide	0	0		2.8	0	
44.6-65.6)	Cide Channel Complex	Glide		0	0		0	0
	Side Channel Complex	Riffle			0			1.0
	Split Main Channel	Run	0		0	0.5		0
	Tributer	Riffle	0			1.2		
	moutary	Run			0			0
	Tributary Mouth	Run			0			3.1
	Upland Slough	Glide		0	0		5.0	0

## Table E136. Average CPUE (fish per 1,000 square meters) for sockeye salmon using seining in the Lower River, 2013.

#### Table E136-Continued.

			Salmon, sockeye (adult)			Salmon, sockeye (juvenile)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Main Channel	Run		0	0		0	0
	Multiple Split Main Channel	Run	0			0		
LR-4 (PRM	Cide Channel	Glide		0			0	
32.3-44.6)	Side Channel	Run	0	0		0	0	
	Side Channel Complex	Run			0			0
	Side Slough	Run	0			0		

			Sal	Salmon, sockeye (adult)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
LR-1 (PRM 87.9-102.4)	Clearwater Plume	Clearwater Plume		1.3			
		Backwater Pool	0				
	Sida Slaugh	Pool		0			
	Side Slough	Riffle		0			
		Run	0				
	Tributany	Glide	1.3	0			
	Thoutary	Run			0		
	Clearwater Plume	Clearwater Plume	0		0		
LR-2 (PRM 65 6-87 9)	Tributon	Glide	0				
(1 1 (1 1 (1 0 0 0 0 1 0 0 1 0 )	mbulary	Run			0		
	Clearwater Plume	Clearwater Plume		0			
LR-3 (PPM 44 6 65 6)	Tributer	Glide		0			
(F MIVI 44.0-03.0)	Tributary	Riffle	0				
LR-4	Additional Open Water	Pool	0	0			
(PRM 32.3-44.6)	Tributary	Glide	0				

Table E137. Average CPUE (fish per 1,000 square meters) for sockeye salmon using snorkeling in the Lower River, 2013.

## Table E138. Average CPUE (fish per trap) for sockeye salmon using fyke netting in the Lower River, 2013.

			Salmon, sockeye (juvenile)		enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributon	Alcove	0		
(PRM 87.9-102.4)	Thoulary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4	Lipland Claush	Glide		10.0	
(PRM 32.3-44.6)	Opiand Slough	Run			0

## Table E139. Average CPUE (fish per trap) for sockeye salmon using hoop trapping in the Lower River, 2013.

600			Salmon, sockeye (adult)			Salmon, sockeye (juvenile)		
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	0		0	0
	Side Channel	Riffle			0			0
	Complex	Run		0			0	
		Glide	0			0		
	Cide Claush	Pool			0			1.5
(PRM 87.9-	Side Slough	Riffle			0			0
102.4)		Run		0			0	
	Split Main Channel	Run			0			0
	<b>T</b> 1 (	Glide		0			0	
	Iributary	Run			0			0
	Tributary Mouth	Run			0			0
	Clearwater Plume	Clearwater Plume		0			0	
	Side Channel	Pool			0			0
10.0		Glide			0			0
(PRM 65.6-	Side Channel Complex	Riffle		0			0	
87.9)		Run		0			0	
	Split Main Channel	Run		0			0	
	Tributary	Glide		0			0	
	Clearwater Plume	Clearwater Plume		0	0		0	0
	Side Channel	Glide			0			0
	Side Channel	Run		0			0	
. – .	Side Channel	Glide		0			0	
LR-3 (PRM 44.6-	Complex	Riffle			0			0
65.6)	Tributary	Run			0			0
	Tributary Mouth	Run			0			0
	Upland Slough	Glide		0			0.5	
	Upland Slough Beaver Complex	Beaver Pond		0			0	
	Additional Open Water	Pool			0			0
LR-4	Clearwater Plume	Clearwater Plume		0.3			0	
(PRM 32.3- 44.6)	Main Channel	Run		0	0		0	0
- <del>-</del>	Sido Channal	Glide		0			0	
	Side Channel	Run		0	0		0	0

# Table E139. Continued.

0			Salmon, Chinook (adult)			Salmon, Chinook (juvenile)		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Side Channel Complex	Run			0			0
(cont.)	Side Slough	Run	0	0	0	0	0	0
(contra)	Tributary Mouth	Glide			0			0

			Salmo	on, sockeye (juv	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
	· · ·	Backwater Pool	0.50		
I R-1	Side Slough	Glide	0		
(PRM 87.9-102.4)	-	Pool		0.06	0.03
(		Alcove	0.31		
	Tributary	Glide		0.13	
		Run			0.02
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
()		Run	0	0	
	Tributary	Glide	0	0	
	Additional Open Water	Pool	0	0	0
	Des Island Complex	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3	Side Channel	Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0.05	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LK-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
(		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

# Table E140. Average CPUE (fish per trap) for sockeye salmon using minnow trapping in the Lower River, 2013.

# Table E141. Average CPUE (fish per hour of shocking time) for Arctic grayling using backpack electrofishing in the Lower River, 2013.

				Arctic grayling	
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rime	0	0	0
		Run		0	0
	Clearwater Plume	Clearwater Plume	0		-
I R-1	Side Channel Complex	Riffle	0	0	0
(PRM		Run	0	0	0
87.9-		Backwater Pool	0		
102.4)	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
(PRM 65.6-87.9)		Glide			3.1
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM	Side Channel Complex	Glide			0
44.0-03.0)	Split Main Channel	Run			0
		Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E141. Continued.

				Arctic grayling	
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			7.8
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

				Arctic grayling	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
		Riffle	0		
LR-2	Main Channel	Run		0	0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		3.8
(	Split Main Channel	Run	0	0	
LR-3 (PRM 44.6-65.6)	Multiple Split Main Channel	Run		0	
	Side Channel Complex	Glide		0	
	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
		Glide		6.6	
	Side Channel	Run	0	0	8.6
LR-4	Side Channel Complex	Run			0
(FRIVI 32.3-44.0)		Glide	0		
	Side Slough	Run	0	0	2.9
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

Table E142. Average CPUE (fish per hour of shocking time) for Arctic grayling using boat electrofishing in the Lower River, 2013.

				Arctic grayling	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Per Joland Complex	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		1.2	0
	Side Slough	Riffle		0	1.0
		Run	0		
	Split Main Channel	Run	0	0	0
		Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
LR-2 (PRM 65.6- 87.9)	Oide Obernel	Riffle		0	
	Side Channel	Run	0.8		
		Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
	Bar Island Complex	Backwater Pool	0		
		Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	2.6
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	1.9	1.4	
65.6)	Cide Channel Complex	Glide		0	0
	Side Channel Complex	Riffle			3.5
	Split Main Channel	Run	0		0
	Tributer	Riffle	0		
	Indutary	Run			0
	Tributary Mouth	Run			1.0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	1.6
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Olda Ohannal	Glide		0	
44.6)	Side Channel	Run	0	0	
LR-3 (PRM 44.6- 65.6) LR-4 (PRM 32.3- 44.6)	Side Channel Complex	Run			0
	Side Slough	Run	0		

# Table E143. Average CPUE (fish per 1,000 square meters) for Arctic grayling using seining in the Lower River, 2013.

## Table E144. Average CPUE (fish per trap) for Arctic grayling using fyke netting in the Lower River, 2013.

		Arctic grayling			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	3.0		
(PRM 87.9-102.4)	Tributary	Glide		2.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4	Linland Claush	Glide		0	
(PRM 32.3-44.6)	Upland Slough	Run			0

				Arctic grayling	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0.03		
	Tributary	Glide		0	
		Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0	
	Additional Open Water	Pool	0	0	0
	Par Island Complex	Pool		0	
	Bai Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0.13
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

## Table E145. Average CPUE (fish per trap) for Arctic grayling using minnow trapping in the Lower River, 2013.

Table E146. Average CPUE (fish per hour of shocking time) for burbot using backpack electrofishing in the Lower River, 2013.

				Burbot	
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rille	0	0	1 0
		Ruii	0	0	1.0
			0		
LR-1	Side Channel Complex	Riffie	3.5	0	0
(PRM		Run	0	0	0
87.9- 102 4)		Backwater Pool	0		
102.1)	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
,		Glide			1.6
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	Tilledam	Glide		7.1	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E146. Continued.

				Burbot	
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	4.5	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		5.9	
		Run	10.6		0

				Burbot	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
	Main Obana al	Riffle	0		
LR-2	Main Channel	Run		0	6.0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		17.4	
(FRIVI 44.0-05.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	19.7	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Cide Channel	Glide		0	
	Side Channel	Run	0	7.4	0
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(1 1(10 52.5-44.0)	Cida Claush	Glide	0		
	Side Slough	Run	12.1	23.8	0
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

Table E147. Average CPUE (fish per hour of shocking time) for burbot using boat electrofishing in the Lower River, 2013.

				Burbot	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Der Jaland Complay	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
		Riffle	0		
	Main Channel	Run		1.7	0
LR-1 (PRM 87.9- 102.4) LR-2 (PRM 65.6- 87.9) LR-3 (PRM 44.6- 65.6)	Multiple Split Main Channel	Run	0		0
	Oide Obergel	Riffle		1.7	
	Side Channel	Run	0.8		
	Side Channel Complex	Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
		Backwater Pool	1.2		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0.5		0
	Tributon	Riffle	0		
	Thoulary	Run			0
LR-3 (PRM 44.6- 65.6)	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0.5	1.6
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)	Side Unannei	Run	0	0	
LR-1 (PRM 87.9- 102.4) LR-2 (PRM 65.6- 87.9) LR-3 (PRM 44.6- 65.6) LR-4 (PRM 32.3- 44.6)	Side Channel Complex	Run			2.1
	Side Slough	Run	0.5		

## Table E148. Average CPUE (fish per 1,000 square meters) for burbot using seining in the Lower River, 2013.

## Table E149. Average CPUE (fish per trap) for burbot using fyke netting in the Lower River, 2013.

			Burbot		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	0		
(PRM 87.9-102.4)	Inbutary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4 (PRM 32.3-44.6) Upland Slough	Glide		0		
	Upland Slough	Run			9.0

## Table E150. Average CPUE (fish per trap) for burbot using hoop trapping in the Lower River, 2013.

			Burbot		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0.2	0
		Riffle			0
	Side Channel Complex	Run		0.8	
		Glide	0.8		
		Pool			0
LR-1 (PPM 87 9-102 /)	Side Slough	Riffle			1.8
(FRW 07.9-102.4)		Run		0.3	
	Split Main Channel	Run			0
	<b></b>	Glide		0.3	
	Inbutary	Run			0.3
	Tributary Mouth	Run			1.0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0.3
LR-2 (PPM 65 6-87 0)		Riffle		0	
(11(1105.0-07.5)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0.3	0
	Side Channel	Glide			0
		Run		0.5	
		Glide		1.3	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0
(1100-14.0-00.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0.8	
	Upland Slough Beaver Complex	Beaver Pond		0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		1.8	
	Main Channel	Run		1.0	1.3
LR-4	Cide Channel	Glide		1.5	
(PRM 32.3-44.6)	Side Channel	Run		0.7	0
	Side Channel Complex	Run			0.5
	Side Slough	Run	1.0	1.8	1.6
	Tributary Mouth	Glide			1.0

				Burbot		
Geomorphic Reach	Macrohabitat Type	Mesobabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
		Backwater Pool	0			
LR-1	Side Slough	Glide	0			
(PRM 87.9-102.4)		Pool		0	0.02	
		Alcove	0			
	Tributary	Glide		0		
		Run			0	
	Clearwater Plume	Clearwater Plume		0		
	Side Channel	Pool			0	
LR-2		Glide			0	
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
		Run	0	0.13		
	Tributary	Glide	0	0		
	Additional Open Water	Pool	0	0	0	
	Bar Island Complex	Pool		0		
		Run	0	0.05		
	Clearwater Plume	Clearwater Plume			0	
	Side Channel	Glide			0	
LR-3		Run	0.06	0		
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
		Glide		0		
	Tributary	Riffle	0			
		Run			0.03	
	Upland Slough	Glide	0	0.05	0	
	Upland Slough Beaver Complex	Beaver Pond	0	0		
	Additional Open Water	Pool	0	0	0.01	
	Clearwater Plume	Clearwater Plume	0.05			
	Side Channel	Glide	0			
LK-4 (PRM 32 3-44 6)	Tributary	Glide	0	0		
(111102.0-44.0)		Backwater Pool	0			
	Upland Slough	Glide		0.05		
		Run	0.50		0.18	

#### Table E151. Average CPUE (fish per trap) for burbot using minnow trapping in the Lower River, 2013.

Table E152. Average CPUE (fish per hour of shocking time) for Dolly Varden using backpack electrofishing in the Lower River, 2013.

			Dolly Varden		
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Bar Island Complex	Run	0	0	٥
	Cleanwater Pluma	Cleanwater Pluma	0	0	0
			0	4.2	0
	Side Channel Complex	Rille	0	4.5	0
(PRM			0	0	U
07.9- 102.4)		Backwater Pool	0		•
,	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			2.6
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
	Side Channel Complex	Glide			0
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
	Oide Obernel	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	Tributer	Glide		0	
	Thoutary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E152. Continued.

			Dolly Varden		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
<u> </u>		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

				Dolly Varden	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Per Jeland Complex	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
	Main Observal	Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
		Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
07.9)		Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	1.7	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
	Bar Island Complex	Backwater Pool	0		
		Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0.9	0	
65.6)	Side Channel Complex	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributon	Riffle	0		
	Thouary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

## Table E154. Average CPUE (fish per trap) for Dolly Varden using fyke netting in the Lower River, 2013.

			Dolly Varden		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributon	Alcove	0		
(PRM 87.9-102.4)	Iributary	Glide		2.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	1 32.3-44.6) Upland Slough	Glide		0	
(PRM 32.3-44.6)		Run			0

Table E155. Average CPUE (fish per hour of shocking time) for lamprey using backpack electrofishing in the Lower River, 2013.

			Lamprey		
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rille	0	0	0
	Cleanuater Diuma	Cleanuator Dhuma	0	0	0
			0	0	0
LR-1	Side Channel Complex	Rime	0	0	0
(PRM		Run	0	0	0
87.9- 102.4)		Backwater Pool	0		
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			2.8
	Clearwater Plume	Clearwater Plume			14.6
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
,	Side Channel Complex	Glide			0
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	21.8	11.4	
		Glide	28.6	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
,	Split Main Channel	Run			0
	Taihudanu	Glide		0	
	i noutary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

#### Table E155. Continued.

			Lamprey		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

			Lamprey			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Glide	0			
LR-1	Side Slough	Riffle			0	
(PRM 87.9-102.4)		Run		0		
	Split Main Channel	Run	0	0	0	
	Main Channel	Riffle	0			
LR-2	Main Channel	Run		0	0	
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0	
	Split Main Channel	Run	0	0		
	Multiple Split Main Channel	Run		0		
LR-3 (PPM 44 6 65 6)	Side Channel Complex	Glide		0		
(FRW 44.0-05.0)	Split Main Channel	Run	0			
	Clearwater Plume	Clearwater Plume	0	0		
	Main Channel	Run		0	0	
	Multiple Split Main Channel	Run	0			
	Side Channel	Glide		0		
	Side Channel	Run	0	0	0	
LR-4 (DDM 32 3 44 6)	Side Channel Complex	Run			8.9	
(FRW 52.5-44.0)	Cide Claurk	Glide	0			
	Side Slough	Run	0	0	7.3	
	Split Main Channel	Run	0			
	Tributary	Glide		0	0	
	Tributary Mouth	Glide			0	

# Table E156. Average CPUE (fish per hour of shocking time) for lamprey using boat electrofishing in the Lower River, 2013.

## Table E157. Average CPUE (fish per trap) for lamprey using fyke netting in the Lower River, 2013.

Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4 (PRM 32.3-44.6)	Linland Claush	Glide		1.0	
	Upland Slough	Run			0

## Table E158. Average CPUE (fish per trap) for lamprey using hoop trapping in the Lower River, 2013.

			Lamprey		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1 (PRM 87.9-102.4)	Clearwater Plume	Clearwater Plume		0.5	0
	Side Channel Complex	Riffle			0
		Run		0	
	Side Slough	Glide	0		
		Pool			0
		Riffle			0
		Run		0.3	
	Split Main Channel	Run			0
	Tributary	Glide		0	
		Run			0
	Tributary Mouth	Run			0
LR-2 (PRM 65.6-87.9)	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0
		Riffle		0	
		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Clearwater Plume	Clearwater Plume		0	0.5
	Side Channel	Glide			0.5
		Run		0	
	Side Channel Complex	Glide		0	
		Riffle			0.5
	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	
	Upland Slough Beaver Complex	Beaver Pond		0	
LR-4 (PRM 32.3-44.6)	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		5.0	1.8
	Side Channel	Glide		1.0	
		Run		0	0
	Side Channel Complex	Run			1.5
	Side Slough	Run	0	0.3	0
	Tributary Mouth	Glide			0
				Lamprey	-
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Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0		
	Tributary	Glide		0	
		Run			0.03
	Clearwater Plume	Clearwater Plume		0	
10.2	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
· · · ·		Run	0	0	
	Tributary	Glide	0.08	0	
	Additional Open Water	Pool	0	0	0
	Bar Island Complex	Pool		0	
		Run	0	0	
	Clearwater Plume	Clearwater Plume			0.13
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0.04	
	Tributary	Riffle	0.21		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
(110) 22.0 71.0		Backwater Pool	0		
LR-1 (PRM 87.9-102.4) LR-2 (PRM 65.6-87.9) LR-3 (PRM 44.6-65.6)	Upland Slough	Glide		0.02	
		Run	0		0

#### Table E159. Average CPUE (fish per trap) for lamprey using minnow trapping in the Lower River, 2013.

# Table E160. Average CPUE (fish per hour of shocking time) for longnose sucker using backpack electrofishing in the Lower River, 2013.

				Longnose sucker	
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Run	5.7	16.8	3.6
	Cleanwater Plume	Cleanwater Dluma	0	10.0	5.0
			24.5	30.0	0
LR-1	Side Channel Complex	Rille	24.5	30.0	0
(PRM		Run Baskustar Dask	0	0	U
102.4)		Backwater Pool	0		
,	Side Slough	Riffle		0	9.6
		Run	0		
	Split Main Channel	Run	34.2		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
LR-2 (PRM 65.6-87.9)	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			2.6
	Side Channel	Pool			0
		Riffle		0	
		Run	2.4		
	Side Channel Complex	Glide			3.9
		Riffle		11.2	
		Run	26.0	5.9	
	Split Main Channel	Run		2.2	
		Backwater Pool	0		
	Bar Island Complex	Pool		1.8	
		Run	4.5	0	3.1
	Clearwater Plume	Clearwater Plume	14.6	0	
		Glide	0	17.6	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			16.1
++.0-00.0)	Split Main Channel	Run			5.1
		Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E160. Continued.

				Longnose sucker	
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			7.8
(PRM 32.3-44.6)	Tributary	Glide	0		
02.0 ++.0)		Backwater Pool	0		
	Upland Slough	Glide		23.6	
		Run	0		12.5

Γable E161. Average CPUE (fish per hour of shocking time) for longnose sucker using boat electrofishing in the Lo	wer
River, 2013.	

			I	Longnose sucker	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
Geomorphic Reach LR-1 (PRM 87.9-102.4) LR-2 (PRM 65.6-87.9) LR-3 (PRM 44.6-65.6)		Run		0	
	Split Main Channel	Run	0	0	0
LR-2 (PRM 65.6-87.9)	Main Channel	Riffle	0		
	Main Channel	Run		0	24.0
	Multiple Split Main Channel	Run	0		3.8
	Split Main Channel	Run	0	0	
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		0	
(PRM 44.6-65.6)	Split Main Channel	Run	0		
Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)	Clearwater Plume	Clearwater Plume	44.9	59.2	
	Main Channel	Run		0	13.2
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
	Side Channel	Run	0	22.2	25.9
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(1111102.0-44.0)	Side Claugh	Glide	0		
	Side Slough	Run	6.0	21.5	30.8
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

				Longnose sucker	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Per Joland Complex	Riffle	1.1		
	Bai Island Complex	Run			100.0
	Clearwater Plume	Clearwater Plume	2.5	7.3	0
LR-1 (PRM 87.9- 102.4)		Riffle	3.7	6.7	
		Run	1.7		3.8
		Pool		0	0
	Side Slough	Riffle		0	1.0
		Run	0		
	Split Main Channel	Run	7.5	0	0
	Main Observal	Riffle	2.5		
	Main Channel	Run		1.7	0
LR-2 (PRM 65.6-	Multiple Split Main Channel	Run	0		0
	Side Channel	Riffle		25.0	
		Run	3.7		
07.9)	Side Channel Complex	Glide			15.5
		Run	13.3		
	Split Main Channel	Run	1.3	26.7	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
	Bar Island Complex	Backwater Pool	7.1		
		Pool		8.3	
		Run	0	0	4.2
	Clearwater Plume	Clearwater Plume	6.5	0	0
	Multiple Split Main Channel	Run		31.0	
LR-3 (PRM 44.6-	Side Channel	Glide	13.0	26.4	
65.6)		Glide		3.0	13.9
	Side Channel Complex	Riffle			0.5
	Split Main Channel	Run	5.0		0
	Tellester	Riffle	0		
	Iributary	Run			0
	Tributary Mouth	Run			1.0
	Upland Slough	Glide		0	0
	Main Channel	Run		31.3	34.4
	Multiple Split Main Channel	Run	14.4		
LR-4 (PRM 32.3-		Glide		1.6	
44.6)	Side Channel	Run	2.5	5.0	
LR-2 (PRM 65.6- 87.9) LR-3 (PRM 44.6- 65.6) LR-4 (PRM 32.3- 44.6)	Side Channel Complex	Run			25.0
	Side Slough	Run	50.0		

# Table E162. Average CPUE (fish per 1,000 square meters) for longnose sucker using seining in the Lower River, 2013.

### Table E163. Average CPUE (fish per trap) for longnose sucker using fyke netting in the Lower River, 2013.

			Longnose sucker		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributor	Alcove	1.0		
(PRM 87.9-102.4)	RM 87.9-102.4)			5.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Linland Claush	Glide		39.0	
(PRM 32.3-44.6)	Upland Slough	Run			188.0

### Table E164. Average CPUE (fish per trap) for longnose sucker using hoop trapping in the Lower River, 2013.

Geomorphic ReachMacrohabitat TypeMesohabitat TypeEarly SummerLate SummerFallLR-1 (PRM 87.9-102.4)Clearwater PlumeClearwater Plume0.50Nacrohabitat TypeRiffle00Run000Run0.50Run0.50Side SloughPool0Run0.50Run0.50Run0.50Run0.50Run0.50TributaryGlide0.3TributaryRun0.3Run0.30Tributary MouthRun0.2Clearwater PlumeClearwater Plume4.0Side ChannelPool00I.B.2Glide00				Lo	ongnose Sucke	<u>r</u>
Geomorphic ReachMacrohabitat TypeSummerSummerFailGlearwater PlumeClearwater Plume0.50Riffle00Side Channel ComplexRiffle00Run000Run0.500Side SloughRiffle0.50Riffle000Run0.500Run0.500Run0.500TributaryGlide0.30Tributary MouthRun0.30Side ChannelRun0.20.2Clearwater PlumeClearwater Plume4.00Side ChannelPool00LR-2Glide00		· · · · · · -		Early	Late	
LR-1 (PRM 87.9-102.4)     Clearwater Plume     0.3     0       Side Channel Complex     Riffle     0     0       Run     0     0     0       Side Slough     Glide     0.5     0       Run     0.5     0     0       Run     0.5     0     0       Run     0.5     0     0       Run     0.5     0     0       Split Main Channel     Run     0.5     0       Tributary     Glide     0.3     0       Tributary Mouth     Run     0     0       Run     0.2     0     0       Side Channel     Run     0.2     0       Run     0     0.2     0       Side Channel     Pool     0     0       Side Channel     Pool     0     0       Side Channel     Pool     0     0	Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
KittleImage: ComplexRittleImage: ComplexRun0Run0Run0.5Image: ComplexSide SloughGlide0.5Image: ComplexSide SloughRunImage: Complex0RunImage: ComplexRunImage: ComplexSplit Main ChannelRunImage: Complex0TributaryGlideImage: Complex0TributaryRunImage: Complex0Tributary MouthRunImage: Complex0Clearwater PlumeClearwater Plume4.0Image: ComplexSide ChannelPoolImage: Complex0Image: ComplexSide ChannelPoolImage: ComplexImage: ComplexSide ChannelImage: ComplexImage: ComplexImage: ComplexSide ChannelImage: ComplexImage: ComplexImage: ComplexSide ChannelImage: ComplexImage: ComplexImage: ComplexSide ChannelImage: ComplexImage: ComplexImage: Complex <td< td=""><td></td><td></td><td></td><td></td><td>0.5</td><td>0</td></td<>					0.5	0
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Side Channel Complex	Riffie		0	0
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			Run	0.5	0	
LR-1 (PRM 87.9-102.4)Side SloughPoolIIIRiffleIIIIISplit Main ChannelRunIIIITributaryGlideIIIITributary MouthRunIIIIClearwater PlumeClearwater PlumeIIIISide ChannelPoolIIIIIR2IIIIII			Glide	0.5		0
(PRM 87.9-102.4) Riffle 0 0   Split Main Channel Run 0.5   Tributary Glide 0.3   Tributary Mouth Run 0   Tributary Mouth Run 0   Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0 0	I R-1	Side Slough	Pool			0
Run 0.5   Split Main Channel Run 0   Tributary Glide 0.3   Tributary Mouth Run 0   Clearwater Plume Clearwater Plume 0.2   Side Channel Pool 0   Glide 0 0	(PRM 87.9-102.4)		Riffle		0.5	0
Split Main Channel Run 0   Tributary Glide 0.3   Tributary Mouth Run 0   Tributary Mouth Run 0   Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0 0			Run		0.5	
Glide 0.3   Tributary Run 0   Tributary Mouth Run 0.2   Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0 0		Split Main Channel	Run			0
Run 0   Tributary Mouth Run 0.2   Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0		Tributary	Glide		0.3	
Tributary Mouth Run 0.2   Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0			Run			0
Clearwater Plume Clearwater Plume 4.0   Side Channel Pool 0   Glide 0		Tributary Mouth	Run			0.2
Side Channel Pool 0   Glide 0		Clearwater Plume	Clearwater Plume		4.0	
Glide 0		Side Channel	Pool			0
		Side Channel Complex	Glide			0
(PRM 65 6-87 9) Side Channel Complex Riffle 6.0	LR-2 (PRM 65 6-87 9)		Riffle		6.0	
Run 1.3	(110000010)		Run		1.3	
Split Main Channel Run 0		Split Main Channel	Run		0	
Tributary Glide 0		Tributary	Glide		0	
Clearwater Plume Clearwater Plume 0.7 0		Clearwater Plume	Clearwater Plume		0.7	0
Glide 0		Olda Ohaanad	Glide			0
Run 0		Side Channel	Run		0	
Glide 0		Olda Ohannal Oannalau	Glide		0	
LR-3 Side Channel Complex Riffle 0	LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0
Tributary Run 0	(1100-14.0-00.0)	Tributary	Run			0
Tributary Mouth Run 0		Tributary Mouth	Run			0
Upland Slough Glide 3.8		Upland Slough	Glide		3.8	
Upland Slough Beaver Complex Beaver Pond 3.0		Upland Slough Beaver Complex	Beaver Pond		3.0	
Additional Open Water Pool 0		Additional Open Water	Pool			0
Clearwater Plume 0		Clearwater Plume	Clearwater Plume		0	
Main Channel Run 0 0		Main Channel	Run		0	0
LR-4 Glide 0	LR-4		Glide		0	
(PRM 32.3-44.6) Side Channel 0 0	(PRM 32.3-44.6)	Side Channel	Run		0	0
Side Channel Complex Run 0		Side Channel Complex	Run			0
Side Slough Run 23.0 0 0.5		Side Slough	Run	23.0	0	0.5
Tributary Mouth Glide 0.3		Tributary Mouth	Glide			0.3

				Longnose sucke	r
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0.03		
	Tributary	Glide		0	
		Run			0
	Clearwater Plume	Clearwater Plume		0.05	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0.55	
		Run	0	0	
	Tributary	Glide	0	0	
	Additional Open Water	Pool	0	0	0
	Bar Island Complex	Pool		0.25	
		Run	0	0.05	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0.04	
	Tributary	Riffle	0		
		Run			0.07
	Upland Slough	Glide	0.05	0	0.03
	Upland Slough Beaver Complex	Beaver Pond	0	0.30	
	Additional Open Water	Pool	0.47	0.08	0
	Clearwater Plume	Clearwater Plume	0.30		
	Side Channel	Glide	0		
LR-4 (PPM 32 3-44 6)	Tributary	Glide	0	0.05	
() () () () () () () () () () () () () (		Backwater Pool	0.30		
	Upland Slough	Glide		1.52	
		Run	0.20		0.82

#### Table E165. Average CPUE (fish per trap) for longnose sucker using minnow trapping in the Lower River, 2013.

# Table E166. Average CPUE (fish per hour of shocking time) for northern pike using backpack electrofishing in the Lower River, 2013.

				Northern pike	
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Rillie	0	0	0
	Cleanuator Diuma	Cleanuator Diuma	0	0	0
			0	0	0
LR-1	Side Channel Complex	Rime	0	0	0
(PRM		Run	0	0	0
87.9- 102.4)		Backwater Pool	0		
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
LR-2 (PRM 65.6-87.9)	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
		Riffle		0	
		Run	0		
	Side Channel Complex	Glide			0
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	Tilledam	Glide		0	
	indutary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E166. Continued.

				Northern pike	
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	15.7		
02.0 11.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

				Northern pike	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
LR-2 (PRM 65.6-87.9)	Main Observal	Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
LR-3	Multiple Split Main Channel	Run		0	
	Side Channel Complex	Glide		0	
(FRW 44.0-05.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	5.6	29.6	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
		Glide		0	
	Side Channel	Run	0	0	0
LR-4 (DDM 32 3 44 6)	Side Channel Complex	Run			0
(F MIN 32.3-44.0)	Cide Claurk	Glide	0		
	Side Slough	Run	0	0	0
	Split Main Channel	Run	0		

Table E167. Average CPUE (fish per hour of shocking time) for northern pike using boat electrofishing in the Lower River, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. CPUE was calculated within mainstem geomorphic reach as an average among sites by habitat type by season: Early Summer (July 13-August 11), Late Summer (August 12-September 9), and Fall (September 10-October 4). Data sources include: mainstem transect sampling.

Glide

Glide

Tributary

Tributary Mouth

0

0

0

# Table E168. Average CPUE (fish per 1,000 square meters) for northern pike using seining in the Lower River, 2013.

				Northern pike	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
Geomorphic Reach       LR-1 (PRM 87.9- 102.4)       LR-2 (PRM 65.6- 87.9)       LR-3 (PRM 44.6- 65.6)       LR-4 (PRM 32.3- 44.6)	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
		Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
		Riffle	0		
LR-2 (PRM 65.6- 87.9)	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
	Side Channel	Riffle		0	
	Side Channel	Run	0		
	Side Channel Complex	Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
LR-2 (PRM 65.6- 87.9) LR-3 (PRM 44.6- 65.6)	Additional Open Water	Pool	0	0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
Geomorphic Reach     LR-1 (PRM 87.9- 102.4)     LR-2 (PRM 65.6- 87.9)     LR-3 (PRM 44.6- 65.6)     LR-3 (PRM 44.6- 65.6)     LR-4 (PRM 32.3- 44.6)		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
		Riffle			0
	Split Main Channel	Run	0		0
	Tributary	Riffle	0		
		Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide	4	0	
44.6)		Run	0	0	
	Side Channel Complex	Run	4		0
	Side Slough	Run	0.5		

				Northern pike	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
		Backwater Pool	0		
	Cido Clough	Pool		0	
LR-1 (PRM 87 9-102 4)	Side Slough	Riffle		0	
(FRIVI 07.3-102.4)		Run	0		
	Tributary	Glide	0	0	
		Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65 6-87 9)	Tributon	Glide	0		
(1 1 1 1 1 0 0 0 0 1 0 )	Thould y	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44 6 65 6)	Tributer	Glide		0	
(11(1) 44.0-05.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	40.0		

#### Table E169. Average CPUE (fish per 1,000 square meters) for northern pike using snorkeling in the Lower River, 2013.

				Northern pike	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
I	Clearwater Plume	Clearwater Plume			0
Geomorphic Reach     LR-1 (PRM 87.9-102.4)     LR-2 (PRM 65.6-87.9)     LR-3 (PRM 44.6-65.6)     LR-4 (PRM 32.3-44.6)	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
Geomorphic Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)		Pool		0	0
		Alcove	0		
	Tributary	Glide		0	
		Run			0
Geomorphic Reach     LR-1 (PRM 87.9-102.4)     LR-2 (PRM 65.6-87.9)     LR-3 (PRM 44.6-65.6)     LR-4 (PRM 32.3-44.6)	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
Geomorphic Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0	
Geomorphic Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)	Additional Open Water	Pool	0	0	0
	Par Jaland Complex	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
		Run	0	0	
	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0.50	0	
		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

### Table E170. Average CPUE (fish per trap) for northern pike using minnow trapping in the Lower River, 2013.

Table E171. Average CPUE (fish per hour of shocking time) for sculpin using backpack electrofishing in the Lower River, 2013.

			Sculpin, undifferentiated		ted
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
Geo- morphic Reach	Bar Island Complex	Rine	0	20.4	<u>8/</u> 1
	Cleanuater Divers	Clearwater Divers	05.0	29.4	04.1
Geo- morphic Reach			25.8	47.4	40.0
	Side Channel Complex	Rime	35.0	47.1	18.0
		Run	16.2	11.6	0
		Backwater Pool	2.4		
	Side Slough	Riffle		20.2	4.8
		Run	25.5		
	Split Main Channel	Run	27.4		
	Tributary Mouth	Run			16.7
Geo- morphic Reach	Clearwater Plume	Clearwater Plume			1009.8
	Main Channel	Run		0	4.9
	Multiple Split Main Channel	Run			15.7
	Side Channel	Pool			56.0
		Riffle		89.1	
		Run	14.5		
		Glide			30.1
	Side Channel Complex	Riffle		40.3	
		Run	11.2	11.7	
	Split Main Channel	Run		57.8	
		Backwater Pool	8.3		
Geo- morphic Reach	Bar Island Complex	Pool		20.0	
		Run	18.2	65.2	23.2
	Clearwater Plume	Clearwater Plume	43.7	11.4	
		Glide	46.5	58.6	
LR-3	Side Channel	Run	10.4		
morphic Reach       LR-1 (PRM 87.9- 102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)	Side Channel Complex	Glide			72.6
	Split Main Channel	Run			10.1
	<b>T</b> 11 (	Glide	1	125.1	
	Iributary	Pool	5.7		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E171. Continued.

			Sci	Sculpin, undifferentiatedEarly SummerLate SummerFall010.810.86.607.85.210.910.9		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume	0			
	Main Channel	Run		10.8		
	Side Channel	Glide	6.6	0		
LR-4		Run			7.8	
(PRM 32 3-44 6)	Tributary	Glide	5.2			
,		Backwater Pool	77.8			
	Upland Slough	Glide		11.8		
		Run	42.3		0	

				Sculpin	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Par Jaland Complay	Riffle	1.1		
Geomorphic ReachMacrohaBar Island Complet Clearwater Plume Side Channel Com Side SloughLR-1 (PRM 87.9- 102.4)Side Channel Com Side SloughLR-2 (PRM 65.6- 	Dai Islanu Complex	Run			0
	Clearwater Plume	Clearwater Plume	0.6	0	0
	Side Channel Compley	Riffle	7.4	13.3	
	Side Channel Complex	Run	0		0
		Pool		0	0
	Side Slough	Riffle		1.4	1.0
		Run	1.7		
	Split Main Channel	Run	0	0	0
	Macrohabitat Type     Mesohabitat Type     Early Summer     Late Summer     F       Bar Island Complex     Riffle     1.1				
Geomorphic Reach     B       LR-1 (PRM 87.9- 102.4)     S       I     S       LR-2 (PRM 65.6- 87.9)     S       I     S       LR-2 (PRM 44.6- 65.6)     S       I	Main Channel	Run		0	1.3
	Multiple Split Main Channel	Run	0.8		0
		Riffle		0	
	Side Channel	Run	0		
		Glide			0.5
	Side Channel Complex	Run	16.7		
	Split Main Channel	Run	0.6	1.7	
	Tributary	Run			8.7
Geomorphic ReachMacrohabitatReachBar Island ComplexLR-1 (PRM 87.9- 102.4)Side Channel ComplexSide SloughSplit Main ChannelMain ChannelMultiple Split Main ChanLR-2 (PRM 65.6- 87.9)Side Channel ComplexSplit Main ChannelMultiple Split Main ChanLR-2 (PRM 65.6- 87.9)Side Channel ComplexSplit Main ChannelMultiple Split Main ChanLR-3 (PRM 44.6- 65.6)Side Channel ComplexLR-3 (PRM 44.6- 65.6)Side Channel ComplexSplit Main ChannelSide ChannelTributarySide ChannelSide Channel ComplexSide ChannelSide ChannelMain ChannelMultiple Split Main ChanSide ChannelSide Slough	Additional Open Water	Pool	0	0	
		Backwater Pool	3.6		
	Bar Island Complex	Pool		4.2	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	5.5	1.6	0.9
	Multiple Split Main Channel	Run		5.0	
LR-3 (PRM 44.6-	Side Channel	Glide	1.9	4.2	
Geomorphic Reach       LR-1 (PRM 87.9- 102.4)       LR-2 (PRM 65.6- 87.9)       LR-3 (PRM 44.6- 65.6)       LR-4 (PRM 32.3- 44.6)	Side Channel Compley	Glide		3.0	13.9
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0.8
	Tributon	Riffle	4.8		
	Thouary	Run			0
	Tributary Mouth	Run			2.0
LR-3 (PRM 44.6- 65.6)	Upland Slough	Glide		5.0	0
	Main Channel	Run		0.8	1.6
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	0	
LR-2 (PRM 65.6- 87.9) LR-3 (PRM 44.6- 65.6) LR-4 (PRM 32.3- 44.6)	Side Channel Complex	Run			0
	Side Slough	Run	2.5		

# Table E172. Average CPUE (fish per 1,000 square meters) for sculpin using seining in the Lower River, 2013.

# Table E173. Average CPUE (fish per trap) for sculpin using fyke netting in the Lower River, 2013.

			Sculpin		-
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1 (PRM 87.9-102.4) Tributary	Alcove	0			
	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Linland Claush	Glide		1.0	
(PRM 32.3-44.6)	Upland Slough	Run			1.0

# Table E174. Average CPUE (fish per trap) for sculpin using hoop trapping in the Lower River, 2013.

				Sculpin	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	- Cullinoi	0.2	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1 (DDM 87 0 102 4)	Side Slough	Riffle			0
(FRW 07.9-102.4)		Run		0.3	
	Split Main Channel	Run			0
		Glide		0	
	Tributary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
		Glide			0
LR-2 (PRM 65.6-87.9)	Side Channel Complex	Riffle		1.0	
		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		8.0	
	Clearwater Plume	Clearwater Plume		0	0
	Cide Channel	Glide			0
	Side Channel	Run		0	
	Side Channel Complex	Glide		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0
Geomorphic Reach     LR-1   (PRM 87.9-102.4)     LR-2   (PRM 65.6-87.9)     LR-3   (PRM 44.6-65.6)     LR-4   (PRM 32.3-44.6)	Tributary	Run			0
	Tributary Mouth	Run			0
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide		0.5	
	Upland Slough Beaver Complex	Beaver Pond		0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
LR-4	Side Channel	Glide		0.5	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	0	0	0
	Tributary Mouth	Glide			0

				Sculpin		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
		Backwater Pool	0.31			
LR-1	Side Slough	Glide	0			
Geomorphic Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)		Pool		0.06	0.21	
		Alcove	0.13			
	Tributary	Glide		0.03		
		Run			0.08	
	Clearwater Plume	Clearwater Plume		0.10		
LR-2 (PRM 65.6-87.9)	Side Channel	Pool			0.08	
		Glide			0	
	Side Channel Complex	Riffle		0.15		
		Run	0	0		
	Tributary	Glide	0.33	0.65		
	Additional Open Water	Pool	0	0	0	
	Den Jalan d Osmanlari	Pool		0.20		
	Bar Island Complex	Run	0.15	0.25		
	Clearwater Plume	Clearwater Plume			0	
Geomorphic Reach       LR-1 (PRM 87.9-102.4)       LR-2 (PRM 65.6-87.9)       LR-3 (PRM 44.6-65.6)       LR-4 (PRM 32.3-44.6)	Side Channel	Glide			0	
	Side Channel	Run	0	0		
	Side Channel Complex	Riffle			0	
		Glide		0.25		
	Tributary	Riffle	0.33			
		Run			0.07	
	Upland Slough	Glide	0.08	0.10	0.03	
	Upland Slough Beaver Complex	Beaver Pond	0	0		
	Additional Open Water	Pool	0	0	0	
	Clearwater Plume	Clearwater Plume	0			
	Side Channel	Glide	0			
LR-4 (PPM 32 3-44 6)	Tributary	Glide	0	0		
(i i (iii 02.0 <sup>-44</sup> .0)		Backwater Pool	0.50			
(PRM 44.6-65.6) LR-4 (PRM 32.3-44.6)	Upland Slough	Glide		0.15		
		Run	0.20		0	

#### Table E175. Average CPUE (fish per trap) for sculpin using minnow trapping in the Lower River, 2013.

# Table E176. Average CPUE (fish per hour of shocking time) for ninespine stickleback using backpack electrofishing in the Lower River, 2013.

			St	ickleback, ninespi	ne
Geo-					
morphic	Maanahah (64) Tana	Mara da bitat Tama	E. I. O.	L . ( . 0	<b>F</b> -11
Reach	Macronabitat Type	Riffle	Early Summer	Late Summer	Fall
Geo- morphic Reach	Bar Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		•
		Riffle	0	0	0
Geo- morphic Reach	Side Channel Complex	Run	0	0	0
		Backwater Pool	0		•
	Side Slough	Biffle	0	0	0
		Run	0	0	0
	Snlit Main Channel	Run	0		
	Tributon Mouth	Run	0		0
		Cleanwater Plume			0
Geo- morphic Reach	Main Channel	Run		0	0
	Multiple Split Main Chappel	Run		0	0
	Side Chappel	Rool			0
		Difflo		0	0
		Run	0	0	
		Rull	0		0
	Cide Channel Complex	Diffe		0	U
	Side Channel Complex	Rime	0	0	
		Run	0	0	
	Split Main Channel	Run	<u>^</u>	0	
Geo- morphic Reach LR-1 (PRM 87.9- 102.4) Sid Sp Tri 102.4) Sid Sp Tri Clu Ma Mu Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sid Sp Tri Sp Sp Tri Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Tri Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp		Backwater Pool	0	0	
	Bar Island Complex	Poul	0	0	0
		Run	0	0	0
	Clearwater Plume		0	0	
	Side Channel	Glide	0	0	
LR-3 (PRM		Run	0		
44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	Tributary	Glide		0	
LR-1 (PRM 87.9- 102.4) LR-2 (PRM 65.6-87.9) LR-3 (PRM 44.6-65.6)	~ ,	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E176. Continued.

			St	ickleback, ninespi	ne
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32 3-44 6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		17.7	
		Run	0		0

Table E177.	Average CPUE (fish per '	1,000 square meters) f	or ninespine stickleback	using seining in the Lower River	ζ,
2013.					

			Stic	kleback, ninespii	ne
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Den Jaland Complex	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
	Main Channei	Run		0	0
	Multiple Split Main Channel	Run	0		0
	Side Channel	Riffle		0	
LR-2 (PRM 65.6- 87 9)	Side Channel	Run	0		
01.5)	Side Channel Complex	Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	34.0	28.9	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	1.4	
65.6)	Side Channel Complex	Glide		0	0
		Riffle			0
	Split Main Channel	Run	0		0
	Tributan	Riffle	0		
	Thouary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

### Table E178. Average CPUE (fish per trap) for ninespine stickleback using fyke netting in the Lower River, 2013.

			Stickleback, ninespine		ine
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1		Alcove	2.0		
(PRM 87.9-102.4)	Indutary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Linland Claush	Glide		1.0	
(PRM 32.3-44.6)	Upland Slough	Run			1.0

# Table E179. Average CPUE (fish per trap) for ninespine stickleback using hoop trapping in the Lower River, 2013.

			Stick	Stickleback, Ninespine		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume		0	0	
		Riffle			0	
	Side Channel Complex	Run		0		
		Glide	0			
		Pool			0	
LR-1 (DDM 87 0 102 4)	Side Slough	Riffle			0	
(FRIVI 07.9-102.4)		Run		0		
	Split Main Channel	Run			0	
	<b>-</b>	Glide		0		
	Inbutary	Run			0	
	Tributary Mouth	Run			0	
	Clearwater Plume	Clearwater Plume	1	0		
	Side Channel	Pool			0	
	Side Channel Complex	Glide			0	
LR-2 (PPM 65 6-87 0)		Riffle		0		
(11(1) 05.0-07.5)		Run		0		
	Split Main Channel	Run		0		
	Tributary	Glide		0		
	Clearwater Plume	Clearwater Plume		0	0	
		Glide			0	
	Side Channel	Run		0		
	Cide Channel Complex	Glide		0		
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0	
	Tributary	Run			0	
	Tributary Mouth	Run			0.3	
	Upland Slough	Glide		0.3		
	Upland Slough Beaver Complex	Beaver Pond		0		
	Additional Open Water	Pool			0	
	Clearwater Plume	Clearwater Plume		0		
	Main Channel	Run		0	0	
LR-4	Side Channel	Glide		0		
(PRM 32.3-44.6)	Side Channel	Run		0	0	
	Side Channel Complex	Run			0	
	Side Slough	Run	0	0	0	
	Tributary Mouth	Glide			0	

			Stic	Stickleback, ninespine		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
LR-1		Backwater Pool	0			
	Side Slough	Glide	0			
(PRM 87.9-102.4)		Pool		0	0	
		Alcove	0			
	Tributary	Glide		0.01		
		Run			0	
	Clearwater Plume	Clearwater Plume		0		
	Side Channel	Pool			0	
LR-2		Glide			0	
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
		Run	0	0		
	Tributary	Glide	0	0		
	Additional Open Water	Pool	0	1.50	0.68	
	Bar Island Complex	Pool		0		
		Run	0	0		
	Clearwater Plume	Clearwater Plume			0	
	Side Channel	Glide			0	
LR-3	Side Channel	Run	0	0		
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
		Glide		0		
	Tributary	Riffle	0			
		Run			0	
	Upland Slough	Glide	0	0	0	
	Upland Slough Beaver Complex	Beaver Pond	0	0		
	Additional Open Water	Pool	0	0.06	0.19	
	Clearwater Plume	Clearwater Plume	0			
	Side Channel	Glide	0			
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0		
		Backwater Pool	0			
	Upland Slough	Glide		0.06		
		Run	0.10		0.03	

#### Table E180. Average CPUE (fish per trap) for ninespine stickleback using minnow trapping in the Lower River, 2013.

# Table E181. Average CPUE (fish per hour of shocking time) for threespine stickleback using backpack electrofishing in the Lower River, 2013.

			Stickleback, threespine		
Geo- morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
		Run		0	0
	Clearwater Plume	Clearwater Plume	0		
IR-1	Side Channel Complex	Riffle	0	0	0
(PRM		Run	0	0	0
87.9-		Backwater Pool	0		
102.4)	Side Slough	Riffle		0	19.2
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			8.3
	Clearwater Plume	Clearwater Plume			14.6
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
LR-2 (PRM 65.6-87.9)		Run	0		
00.0-07.0)		Glide			2.3
	Side Channel Complex	Riffle		4.5	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	34.1	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
++.0 00.0)	Split Main Channel	Run			0
		Glide		3.6	
	I ributary	Pool	0		
	Upland Slough	Glide	0		7.7
	Upland Slough Beaver Complex	Beaver Pond	30.9	82.1	

#### Table E181. Continued.

			Stickleback, threespine		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	84.3		
	Upland Slough	Glide		53.0	
		Run	158.6		12.5

Table E182.	Average CPUE (fish per <sup>·</sup>	1,000 square meters) for	threespine stickleback u	ising seining in the Lower River,
2013.			-	

			Stic	kleback, threespi	ne
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Den Jaland Complex	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	1.6	0	0
LR-1 (PRM 87.9- 102.4)	Side Channel Complex	Riffle	0	0	
	Side Channel Complex	Run	0		0
		Pool		0	0
	Side Slough	Riffle		0	1.0
		Run	1.7		
	Split Main Channel	Run	0	0	0
		Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
		Riffle		1.7	
LR-2 (PRM 65.6-	Side Channel	Run	0		
07.9)	Side Channel Complex	Glide			0
		Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			4.8
	Additional Open Water	Pool	38.0	27.8	
	Bar Island Complex	Backwater Pool	0		
		Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributan	Riffle	0		
	Thouary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	152.8
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	0	
	Side Channel Complex	Run			2.1
	Side Slough	Run	1.5		

Table E183. A	Average CPUE (fish per	1,000 square meters) f	or threespine stickleb	ack using snorkeling	j in the Lower
River, 2013.					

			Stickleback, threespine		ne
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
		Backwater Pool	0		
	Cide Clauch	Pool		0	
LR-1 (PRM 87 9-102 4)	Side Slough	Riffle		0	
(1107.5102.4)		Run	0		
	Tributary	Glide	1.3	0	
		Run			0.3
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65 6-87 9)	Tributon	Glide	0		
(1111100.001.0)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44 6-65 6)	Tributer	Glide		0	
(1 1(1) + .0-00.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

#### Table E184. Average CPUE (fish per trap) for threespine stickleback using fyke netting in the Lower River, 2013.

			Stickleback, threespine		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1 T-the term	Alcove	0			
(PRM 87.9-102.4)	Thoutary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Upland Slough	Glide		175.0	
(PRM 32.3-44.6)		Run			14.0

### Table E185. Average CPUE (fish per trap) for threespine stickleback using hoop trapping in the Lower River, 2013.

			Stickleback, Threespine		oine
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1 (DDM 87 0 102 4)	Side Slough	Riffle			0
(FRW 07.9-102.4)		Run		0	
	Split Main Channel	Run			0
		Glide		17.0	
	Tributary	Run			3.5
	Tributary Mouth	Run			12.0
	Clearwater Plume	Clearwater Plume		2.0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0
LR-2 (PPM 65.6-87.0)		Riffle		0	
(11(11)05.0-07.5)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0
	Oide Oberriel	Glide			0
	Side Channel	Run		0	
		Glide		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0
(11(1) 44.0 00.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		4.0	
	Upland Slough Beaver Complex	Beaver Pond		495.0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
LR-4	Side Channel	Glide		0	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	0	0	0
	Tributary Mouth	Glide			0

	Macrohabitat Type	Mesohabitat Type	Stickleback, threespine		
Geomorphic Reach			Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0.04
		Alcove	0		
	Tributary	Glide		1.36	
		Run			7.25
	Clearwater Plume	Clearwater Plume		0.15	
	Side Channel	Pool			0.08
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0.55	
	Additional Open Water	Pool	0	5.33	6.03
	Bar Island Complex	Pool		0	
		Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0.05
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
	Tributary	Glide		0	
		Riffle	0		
		Run			0
	Upland Slough	Glide	0.28	0.20	0.10
	Upland Slough Beaver Complex	Beaver Pond	13.30	22.35	
	Additional Open Water	Pool	3.49	21.92	0.07
	Clearwater Plume	Clearwater Plume	0.25		
	Side Channel	Glide	0		
LR-4	Tributary	Glide	0	0	
(i i (iii 02.0 <sup>-44</sup> .0)	Upland Slough	Backwater Pool	1.90		
		Glide		8.17	
		Run	11.10		1.02

#### Table E186. Average CPUE (fish per trap) for threespine stickleback using minnow trapping in the Lower River, 2013.

# Table E187. Average CPUE (fish per hour of shocking time) for rainbow trout using backpack electrofishing in the Lower River, 2013.

			Trout, rainbow		
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Run	0	0	0
LR-1	Cleanuater Plume	Cleanwater Plume	0	0	0
	Side Channel Complex	Difflo	0	0	0
		Dun	0	0	0
(PRM 87.9-	Side Slough	Rull Reductor Red	0	0	0
102.4)		Backwater Pool	0	0	0
,		Rime		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			2.6
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
,	Side Channel Complex	Glide			0
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
	Bar Island Complex	Backwater Pool	0		
		Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
	Side Channel	Glide	0	0	
LR-3 (PRM 44.6-65.6)		Run	0		
	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
		Glide		0	
	Tributary	Pool	5.7		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E187. Continued.

			Trout, rainbow		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-4 (PRM 32.3-44.6)	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
		Run			0
	Tributary	Glide	0		
	Upland Slough	Backwater Pool	25.9		
		Glide		0	
		Run	74.0		0

			Trout, rainbow		
Geomorphic			Early		
Reach	Macrohabitat Type	Mesohabitat Type	Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
		Run			0
	Clearwater Plume	Clearwater Plume	0	1.0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	Side Chalinei Complex	Run	0		0
	Side Slough	Pool		0	0
		Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
	Oide Obernel	Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
07.9)	Oide Obergred Osmalau	Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	1.0	0	
	Bar Island Complex	Backwater Pool	0		
		Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
I R-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
		Riffle			0
	Split Main Channel	Run	0		0
	Tributary	Riffle	0		
		Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
LR-4 (PRM 32.3- 44.6)	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
		Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

#### Table E188. Average CPUE (fish per 1,000 square meters) for rainbow trout using seining in the Lower River, 2013.
## Table E189. Average CPUE (fish per trap) for rainbow trout using fyke netting in the Lower River, 2013.

			Trout, rainbow		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributon	Alcove	5.0		
(PRM 87.9-102.4)	Thoulary	Glide		7.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Linland Claush	Glide		0	
(PRM 32.3-44.6)	Upland Slough	Run			0

				Trout, rainbow	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0.06		
	Tributary	Glide		0	
		Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0	
	Additional Open Water	Pool	0	0	0
	Den Jaland Complex	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Oide Obergel	Glide			0
LR-3	Side Channel	Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	1.30	0	
	Additional Open Water	Pool	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
(, , , , , , , , , , , , , , , , , , ,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

## Table E190. Average CPUE (fish per trap) for rainbow trout using minnow trapping in the Lower River, 2013.

Table E191. Average CPUE (fish per hour of shocking time) for Bering cisco using backpack electrofishing in the Lower River, 2013.

			Whitefish, Bering cisco		со
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Bar Island Complex	Pun	0	0	0
	Cleanwater Dluma	Cleanwater Pluma	0	0	0
			0	0	0
	Side Channel Complex	Rime	0	0	0
(PRM		Run	0	0	0
87.9- 102.4)		Backwater Pool	0		-
- /	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
	Side Channel Complex	Glide			1.6
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44 6-65 6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	<b>- - - - -</b>	Glide		0	
	Iributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E191. Continued.

			Whitefish, Bering cisco		CO
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
02.0 1 1.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

		Whitefish, Bering cisco			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
	Main Observal	Riffle	0		
LR-2	Main Channel	Run		0	0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		0	
(11(1) 44.0-05.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
	Side Channel	Run	0	0	0
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(1 1(10 52.5-44.0)	Cida Clauch	Glide	0		
	Side Slough	Run	0	0	4.3
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

# Table E192. Average CPUE (fish per hour of shocking time) for Bering cisco using boat electrofishing in the Lower River, 2013.

# Table E193. Average CPUE (fish per hour of shocking time) for humpback whitefish using boat electrofishing in the Lower River, 2013.

			Whitefish, humpback		k
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
LR-2		Run		0	0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		0	
(1110144.0-00.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
		Run	0	0	0
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(11102.0 +1.0)	Side Slough	Glide	0		
	Side Slough	Run	0	0	14.7
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

Table E194. Average CPUE (fish per 1,000 square meters) for humpback whitefish using seining in the Lower River, 2013.

			Wh	itefish, humpbac	k
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Der Jeland Complex	Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9- 102 4)		Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
		Run		0	0
	Multiple Split Main Channel	Run	0		0
	Side Channel	Riffle		0	
LR-2 (PRM 65.6- 87 9)	Side Channel	Run	0		
01.5)	Side Channel Complex	Glide			0
		Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
		Riffle			0
	Split Main Channel	Run	0		0
	Tributan	Riffle	0		
	Thouary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	0	
	Side Channel Complex	Run			2.1
	Side Slough	Run	0		

			W	Whitefish, humpback		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
		Backwater Pool	0			
I R-1	Side Slough	Glide	0			
(PRM 87.9-102.4)		Pool		0	0	
		Alcove	0			
	Tributary	Glide		0		
		Run			0	
	Clearwater Plume	Clearwater Plume		0		
	Side Channel	Pool			0	
I R-2		Glide			0	
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
		Run	0	0		
	Tributary	Glide	0	0		
	Additional Open Water	Pool	0	0	0	
	Bar Island Complex	Pool		0		
		Run	0	0		
	Clearwater Plume	Clearwater Plume			0	
	Side Channel	Glide			0	
IR-3		Run	0	0		
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
		Glide		0		
	Tributary	Riffle	0			
		Run			0	
	Upland Slough	Glide	0	0	0	
	Upland Slough Beaver Complex	Beaver Pond	0	0		
	Additional Open Water	Pool	0	0	0.01	
	Clearwater Plume	Clearwater Plume	0			
	Side Channel	Glide	0			
LR-4	Tributary	Glide	0	0		
(FRIVI 32.3-44.0)		Backwater Pool	0			
	Upland Slough	Glide		0		
	-	Run	0		0	

## Table E195. Average CPUE (fish per trap) for humpback whitefish using minnow trapping in the Lower River, 2013.

# Table E196. Average CPUE (fish per hour of shocking time) for round whitefish using backpack electrofishing in the Lower River, 2013.

			Whitefish, round		
Geo-					
morphic					
Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Run	0	0	1.8
	Cleanuater Plume	Cleanwater Plume	12.0	0	1.0
		Difflo	0	0	0
LR-1	Side Channel Complex	Run	0	2.0	0
(PRM 87.9-		Ruil	0	5.5	0
102.4)	Oide Olauah		0	0	
	Side Slough	Riffie		0	0
		Run	0		
	Split Main Channel	Run	0		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
,	Side Channel Complex	Glide			1.6
		Riffle		0	
		Run	0	0	
	Split Main Channel	Run		3.4	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	
		Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44 6-65 6)	Side Channel Complex	Glide			0
11.0 00.0)	Split Main Channel	Run			0
	<b>-</b>	Glide		0	
	Iributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E196. Continued.

			Whitefish, round		
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume	0		
	Main Channel	Run		0	
	Side Channel	Glide	0	0	
LR-4		Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

Table E197. Average CPUE (fish per hour of shocking time) for rou	nd whitefish using boat electrofishing in the Lower
River, 2013.	

			Whitefish, round		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0		
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		Run		0	
	Split Main Channel	Run	0	0	0
	Main Channel	Riffle	0		
LR-2		Run		0	6.0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
	Split Main Channel	Run	0	0	
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		0	
(1 1(1) 44.0-05.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
	Side Channel	Run	0	0	0
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0
(1111102.0-44.0)	Side Slough	Glide	0		
	Side Slough	Run	0	0	0
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

				Whitefish, round	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Por Joland Complex	Riffle	0		
	Bar Island Complex	Run			12.5
	Clearwater Plume	Clearwater Plume	1.6	3.1	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9- 102 4)		Run	0		1.3
102.4)		Pool		0	0
	Side Slough	Riffle		0	1.0
		Run	0		
	Split Main Channel	Run	0	0	0
	Main Observal	Riffle	0		
	Main Channel	Run		1.7	5.0
	Multiple Split Main Channel	Run	0		0
	Oide Obernel	Riffle		1.7	
LR-2 (PRM 65.6- 87.9)	Side Channel	Run	0.8		
	Cide Channel Complex	Glide			3.0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	3.3	
	Tributary	Run			0
	Additional Open Water	Pool	0	0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	2.9	0	0.9
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Side Channel Complex	Glide		0	0
	Side Channel Complex	Riffle			0.5
	Split Main Channel	Run			0
	Tributon	Riffle	2.4		
	Thouary	Run	0		0
	Tributary Mouth	Run			3.1
	Upland Slough	Glide		0	0
	Main Channel	Run		1.0	3.1
	Multiple Split Main Channel	Run	0		
LR-4 (PRM 32.3-	Side Channel	Glide		0	
44.6)		Run	0	3.3	
	Side Channel Complex	Run			4.2
	Side Slough	Run	0		

## Table E198. Average CPUE (fish per 1,000 square meters) for round whitefish using seining in the Lower River, 2013.

## Table E199. Average CPUE (fish per trap) for round whitefish using fyke netting in the Lower River, 2013.

			Whitefish, round		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributer	Alcove	1.0		
(PRM 87.9-102.4)	Indutary	Glide		1.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			3.0
LR-4		Glide		0	
(PRM 32.3-44.6)	Upland Slough	Run			0

## Table E200. Average CPUE (fish per trap) for round whitefish using hoop trapping in the Lower River, 2013.

			Whitefish, round		
Geomorphic Reach	Macrobabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1 (PPM 87.0.102.4)	Side Slough	Riffle			0.5
(FRIVI 07.9-102.4)		Run		0	
	Split Main Channel	Run			0
	<b>-</b>	Glide		0	
	Inbutary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0.3
LR-2 (PPM 65 6-87 0)		Riffle		0	
(PRM 65.6-87.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		10.0	
	Clearwater Plume	Clearwater Plume		0	0
		Glide			0
	Side Channel	Run		0	
	Cide Channel Complex	Glide		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle			0
(1100 00.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0.3	
	Upland Slough Beaver Complex	Beaver Pond		0	
	Additional Open Water	Pool			1.0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
LR-4	Cide Channel	Glide		0	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	0	0	0
	Tributary Mouth	Glide			0

				Whitefish, round		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Clearwater Plume	Clearwater Plume			0	
	Side Channel Complex	Riffle			0	
		Backwater Pool	0			
LR-1	Side Slough	Glide	0			
(PRM 87.9-102.4)		Pool		0	0	
		Alcove	0			
	Tributary	Glide		0		
		Run			0	
	Clearwater Plume	Clearwater Plume		0		
	Side Channel	Pool			0	
LR-2		Glide			0	
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
		Run	0	0		
	Tributary	Glide	0	0		
	Additional Open Water	Pool	0	0	0	
	Den Jahan di Osmanlari	Pool		0		
	Bar Island Complex	Run	0	0		
	Clearwater Plume	Clearwater Plume			0	
	Side Channel	Glide			0	
LR-3	Side Channel	Run	0	0		
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
		Glide		0		
	Tributary	Riffle	0			
		Run			0	
	Upland Slough	Glide	0	0	0	
	Upland Slough Beaver Complex	Beaver Pond	0	0		
	Additional Open Water	Pool	0	0.60	0	
	Clearwater Plume	Clearwater Plume	0			
	Side Channel	Glide	0			
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0		
(11002.0 +1.0)		Backwater Pool	0			
	Upland Slough	Glide		0		
		Run	0		0	

## Table E201. Average CPUE (fish per trap) for round whitefish using minnow trapping in the Lower River, 2013.

# Table E202. Average CPUE (fish per hour of shocking time) for undifferentiated whitefish species using backpack electrofishing in the Lower River, 2013.

			Whitefish, undifferentiated		
Geo-					
morphic	Maayababitat Tura	Maaababitat Tuwa	Faste Summer	Lata Cumunan	<b>F</b> ell
Reach	Macronabitat Type	Riffle	Carly Summer	Late Summer	Fall
	Bar Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
		Riffle	0	0	0
LR-1	Side Channel Complex	Run	0	0	0
(PRM 87.9-		Backwater Pool	0		
102.4)	Side Slough	Riffle	-	0	0
		Run	0		-
	Split Main Channel	Run	13.7		
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
LR-2		Riffle		0	
LR-2 (PRM 65.6-87.9)		Run	0		
00.0-07.9)		Glide	-		0
	Side Channel Complex	Riffle		0	
		Run	0	0	
	Split Main Channel	Run		0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
	· · · · · · ·	Run	0	0	0
	Clearwater Plume	Clearwater Plume	3.6	0	
		Glide	0	11.7	
LR-3	Side Channel	Run	0		
(PRM	Side Channel Complex	Glide			0
44.0-05.0)	Split Main Channel	Run			0
		Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E202. Continued.

			Whit	Whitefish, undifferentiated			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
	Clearwater Plume	Clearwater Plume	0				
	Main Channel	Run		0			
		Glide	0	0			
LR-4	Side Channel	Run			0		
(PRM 32.3-44.6)	Tributary	Glide	0				
,		Backwater Pool	6.5				
	Upland Slough	Glide		0			
		Run	0		0		

# Table E203. Average CPUE (fish per hour of shocking time) for undifferentiated whitefish species using boat electrofishing in the Lower River, 2013.

				Whitefish, undifferentiated			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
		Glide	0				
LR-1	Side Slough	Riffle			0		
(PRM 87.9-102.4)		Run		0			
	Split Main Channel	Run	0	0	0		
	Main Channal	Riffle	0				
LR-2	Main Channel	Run		0	0		
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0		
	Split Main Channel	Run	0	0			
	Multiple Split Main Channel	Run		0			
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Glide		0			
(FRW 44.0-05.0)	Split Main Channel	Run	0				
	Clearwater Plume	Clearwater Plume	0	0			
	Main Channel	Run		0	0		
	Multiple Split Main Channel	Run	0				
	Side Channel	Glide		0			
	Side Channel	Run	0	0	0		
LR-4 (PRM 32 3-44 6)	Side Channel Complex	Run			0		
(1 1111 52.5-44.0)	Cide Clough	Glide	0				
	Side Slough	Run	0	0	4.3		
	Split Main Channel	Run	0				
	Tributary	Glide		0	0		
	Tributary Mouth	Glide			0		

# Table E204. Average CPUE (fish per 1,000 square meters) for undifferentiated whitefish species using seining in the Lower River, 2013.

			Whitefish, undifferentiated		ated
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Der Jeland Complex	Riffle	0		
	Bar Island Complex	Run			0
LR-1 (PRM 87.9-	Clearwater Plume	Clearwater Plume	3.1	0	0
	Side Channel Complex	Riffle	0	0	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	1.7		
	Split Main Channel	Run	37.5	0	0
		Riffle	0.5		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	1.7		0
LR-2 (PRM 65.6- 87.9)		Riffle		0	
	Side Channel	Run	0		
		Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run			0
	Additional Open Water	Pool	1.0	0	
		Backwater Pool	0		
	Bar Island Complex	Pool		0	
		Run	0	0	0
	Clearwater Plume	Clearwater Plume	0	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0.9	1.4	
65.6)		Glide		0	0
	Side Channel Complex	Riffle			1.0
	Split Main Channel	Run			0
	Tributon	Riffle	0		
	Thoulary	Run	0		0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	1.1		
LR-4 (PRM 32.3-	Sido Channol	Glide		0	
44.6)		Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	10.0		

Table E205. Average CPUE (fish per trap) for undifferentiated whitefish species using hoop trapping in the Lower R	≀iver,
2013.	

			Whitefish, undifferentiated		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1 (DDM 87 0 102 4)	Side Slough	Riffle			0
(FRW 07.9-102.4)		Run		0	
	Split Main Channel	Run			0
	<b>T</b> 1 4	Glide		0	
	Tributary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume	1	0	
	Side Channel	Pool			0
		Glide			0
LR-2 (PPM 65 6-87 9)	Side Channel Complex	Riffle		0	
(111100.0-07.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0
	Side Channel	Glide			0
	Side Channel	Run			
. – .	Side Channel Complex	Glide		0	
LR-3 (PRM 44 6-65 6)	Side Channel Complex	Riffle		0	0
(11.000.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		0	
	Upland Slough Beaver Complex	Beaver Pond		0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
LR-4	Sida Channal	Glide		0	
(PRM 32.3-44.6)		Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	1.5	0	0
	Tributary Mouth	Glide			0

Table E206	Average CPUE	(fish per trap) fo	r undifferentiated	whitefish species	using minnow	trapping in the	Lower
River, 2013							

			Whitefish, undifferentiated		tiated
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume			0
	Side Channel Complex	Riffle			0
		Backwater Pool	0		
LR-1	Side Slough	Glide	0		
(PRM 87.9-102.4)		Pool		0	0
		Alcove	0		
	Tributary	Glide		0	
		Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0	
	Additional Open Water	Pool	0	0	0
	Par Island Compley	Pool		0	
	Bai Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3		Run	0	0	
(PRM 44.6-65.6)	Side Channel Complex	Riffle			0
		Glide		0	
	Tributary	Riffle	0		
		Run			0
	Upland Slough	Glide	0	0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	
	Additional Open Water	Pool	0.03	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32 3-44 6)	Tributary	Glide	0	0	
(1.1.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

# Susitna-Watana Hydroelectric Project (FERC No. 14241)

# Study of Fish Distribution and Abundance in the Middle and Lower Susitna River Study (9.6)

Part A - Appendix F Habitat Association Tables

**Initial Study Report** 

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants Inc.

Golder Associates Inc. &

HDR, Inc.]

June 2014

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Geomorphic Reach /PRM	Habitat	Sample Type	Salmon, Chinook (juvenile)	Salmon, Chinook (adult)	Salmon, chum (juvenile)	Salmon, chum (adult)	Salmon, coho (juvenile)	Salmon, coho (adult)	Salmon, pink (juvenile)	. Salmon, pink (adult)	Salmon, sockeye (adult)	Salmon, sockeye (juvenile)	Salmon, undifferentiated (juvenil	Arctic grayling	Burbot	Dolly Varden	Lamprey	Longnose sucker	Salmonid, undifferentiated	Sculpin, undifferentiated	Stickleback, threespine	Trout, rainbow	Whitefish, humpback	Whitefish, round	Whitefish, undifferentiated	Grand Total
						Propo	sed Wa	tana	Dam L	ocatio	1 PRI	1 187.1												<u> </u>		
MR-1/184.6-187.1	Susitna River	GRIS												63	8			9		246				11	2	339
MR-2	Susitna River	GRTS	1											298	7	2		56	0	281				36	7	688
169.6-184.6	Susitna River: Off-Channel	GRTS												660	7	1		299		276				15	10	1,268
	Tributary	GRTS												24	1	2				67						94
						Upp	er Exte	nt De	vils C	anyon F	PRM 1	66.1														
						Low	er Exte	nt Dev	ils C	anyon	PRM	153.9						-								
MR-5 / 148.1-153.9	Susitna River	GRTS	5	3		7	20	22		7	7	6	6	27	8			6	1	26		6	3	2	2	164
MR-6	Susitna River	ELH, GRTS	14	1	18	34	18	9		55	1	57	15	32	46			165	5	344		14	4	48	67	947
122 7-148 4	Susitna River: Off-Channel	ELH, GRTS	420		1,017	130	421	2	1		52	1,221	47	24	83	8		237	14	542		20	4	34	41	4,318
122.7-140.4	Tributary	ELH, GRTS	53	12	16	250	404	23	2	3,083		24	20	53	1	27		5	10	319		23		2	1	4,328
MP.7	Susitna River	ELH, GRTS	30		20	4	31	3		17	1	2	9	5	22	1		97		161	1	5	1	11	8	429
107 8-122 7	Susitna River: Off-Channel	ELH, GRTS	94				1,884					67	447	1	38	8		57	2	41	5,309	7	8	22	19	8,004
107.0-122.7	Tributary	GRTS	28				565					27	3	12	8	8		2	33	86		65				837
MD_9	Susitna River	GRTS	117		14	3	284			6		134	34	12	22	8	3	93		333	22	9		25	18	1,137
102 4 107 9	Susitna River: Off-Channel	ELH, GRTS	394		3		654	46				215	163	31	19	2	61	149	33	556	131	19	7	11	24	2,518
102.4-107.0	Tributary	ELH, GRTS	161		9	4	156	66	1	2	3	2	3	78	5	7	6	8	5	86	12	45		2		661
Gr	and Total		1,317	16	1,097	432	4,437	171	4	3,170	64	1,755	747	1,320	275	74	70	1,183	103	3,364	5,475	213	27	219	199	25,732

Middle River Focus Areas

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

Table F1. Middle River fish observations within Focus Areas, 2013.

**MIDDLE RIVER** 

## Table F2. Middle River fish observations outside of Focus Areas, 2013.

							Middl	e Rive	r Nor	n-Foo	us A	reas															
Geomorphic Reach /PRM	Habitat	Sample Type	Salmon, Chinook (adult)	Salmon, Chinook (juvenile)	Salmon, chum (adult)	Salmon, chum (juvenile)	Salmon, coho (adult)	Salmon, coho (juvenile)	Salmon, pink (adult)	Salmon, pink (juvenile)	Salmon, sockeye (adult)	Salmon, sockeye (juvenile)	Salmon, undifferentiated (juvenile)	Arctic grayling	Burbot	Dolly Varden	Lamprey	Longnose sucker	Salmonid, undifferentiated	Sculpin, un differentiated	Stickleback, threespine	Stickleback, undifferentiated	Trout, rainbow	Whitefish, humpback	Whitefish, round	Whitefish, undifferentiated	Grand Total
						Pro	posed I	Natana	Dam	Locat	ion P	RM 18	37.1													r	
MR-1/184.6-187.1	Susitna River	GRTS												47	4	2		1		110					21		185
	Susitna River	GRTS	1											236	8	2		13		176					31	1	468
	Susitna River: Off-Channel	GRTS												123	6	7		29		197					3		365
MR-2	Tributary	GRTS												18	3			3		36						1	61
169.6-184.6	Fog Creek	ELH, Direct														315				95							410
	Fog Creek Tributary	ELH, Direct														5				25						$ \blacksquare$	30
	Fog Creek: Off-Channel	Direct														3				4						$ \longrightarrow $	7
	Tsusena Creek	Direct	1											74		4				25					3		107
						U	pper Ex	tent De	vils (	anyo	n PRI	M 166.	.1													r	
MR-4 / 153.9-166.1	Chinook Creek	Direct														63				13							76
			•			Lo	ower Ex	tent De	vils C	anyo	n PR	M 153	.9	•													
MR-5	Susitna River	GRTS			24		12	1	19					5	4			6		75			9		32	2	189
148.1-153.9	Susitna River: Off-Channel	GRTS			106			17	1	1	5	4		3	2	2		81		162			10		6		400
MR-6	Susitna River	GRTS		2	18		6	9	68			5		7	2			74		197			3		25	1	417
122 7-148 4	Susitna River: Off-Channel	GRTS		6	92	1	2	644	3		139	13		15	20			31	45	274	3		4	5	4		1,301
122.1 - 140.4	Tributary	GRTS		13	26		1	25	229			4		7	3	1		4	15	102			18		2	1	451
MP_7	Susitna River	GRTS	2		14			9	75		1	6		2	14	2		27		207			3		20		382
107 8-122 7	Susitna River: Off-Channel	GRTS		26	6			255	17	4		22	3	1	43			43		94	1,760	177	13	4	5		2,473
107.0-122.7	Tributary	GRTS					48	69	90						25		5	4		69	3		7				320
MR-8	Susitna River	GRTS	2		23	1		11	9			1			9			48	9	105					5	1	224
102.4-107.8	Susitna River: Off-Channel	GRTS		15	1			113				15	21	1	22			124		81	359	71	12		4		839
Gr	and Total		6	62	310	2	69	1,153	511	5	145	70	24	539	165	406	5	488	69	2,047	2,125	248	79	9	161	7	8,705

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

## Table F3. Adult Chinook salmon observations in Middle River Focus Areas by habitat, 2013.

	Salmon, Chinook (adult)													
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Grand Total									
	Prop	osed Watana Dam Lo	ocation PRM 187.1											
	Upper Extent Devils Canyon PRM 166.1													
Lower Extent Devils Canyon PRM 153.9														
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume	3	3									
	Susitna River	Clearwater Plume	Clearwater Plume	1	1									
MD 6 100 7 149 1	Tributary	Tributary	Riffle	1	1									
WIR-0 122.7-140.1			Run	8	8									
		Tributary Mouth	Riffle	3	3									
Grand Total				16	16									

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

## Table F4. Adult Chinook salmon observations outside of Focus Areas in the Middle River by habitat, 2013

	Gamon, Cimook (addit)													
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Fall	Grand Total								
	Pro	oposed Watana Dam I	ocation PRM 187.1											
MD-2 160 6-184 6	Susitna River	Clearwater Plume	Clearwater Plume	1		1								
WIX-2 109.0-104.0	Tsusena Creek		Boulder Riffle	1		1								
	Upper Extent Devils Canyon PRM 166.1													
	L	ower Extent Devils C	anyon PRM 153.9											
MR-7 107.8-122.7	Susitna River	Main Channel	Run		2	2								
MR-8 102.4-107.8	Susitna River	Main Channel	Run	2		2								
Grand Total				4	2	6								

## Salmon Chinook (adult)

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

Salmon, Chinook, (juvenile)												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
		Proposed Watana Dam L	ocation PRM 187.1									
MR-2 169.6-184.6	Susitna River	Backwater	Backwater		1			1				
		Upper Extent Devils Ca	anyon PRM 166.1									
	·	Lower Extent Devils Ca	nyon PRM 153.9									
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		2		1	3				
		Main Channel	Riffle			2		2				
	Susitna River	Multi Split Main Channel	Run				2	2				
		Side Channel	Glide	7			2	9				
			Run	2				2				
		Split Main Channel	Run				1	1				
	Susitna River: Off-Channel	Backwater	Backwater		22	7		29				
		Side Slough	Glide	1				1				
		Side Slough Beaver Complex	Backwater Pool		1		9	10				
			Beaver Pond	2	3	1	2	8				
			Glide				5	5				
			Pool	14	9	11	6	40				
MR-6 122.7-148.1			Run	3				3				
		Upland Slough	Backwater Pool	2				2				
		Upland Slough Beaver Complex	Beaver Pond	28	161	107	26	322				
	Tributary	Tributary	Backwater Pool	22				22				
			Glide	4		1	1	6				
			Pool	7				7				
			Riffle	1			2	3				
			Run	2			1	3				
		T ributary Mouth	Glide				1	1				
			Rapid				3	3				
			Riffle		1			1				
			Run				7	7				
	Susitna River	Backwater	Backwater				1	1				
		Clearwater Plume	Clearwater Plume				2	2				
		Side Channel	Glide	26	1			27				
	Susitna River: Off-Channel	Upland Slough	Backwater Pool	7				7				
			Pool	6				6				
MR-7 107.8-122.7		Upland Slough Beaver Complex	Beaver Pond	1	29	41	8	79				
			Glide		1			1				
			Run		1			1				
	Tributary	Tributary	Backwater Pool				21	21				
			Glide			2		2				
			Run				5	5				
	Susitna River	Side Channel	Backwater Pool		11		2	13				
			Glide			67	32	99				
			Riffle			1	4	5				
	Susitna River: Off-Channel	Side Slough	Glide	78	2	61	9	150				
			Pool	2			2	4				
			Run	2		1		3				
		Upland Slough Beaver Complex	Backwater Pool	1		16		17				
MR-8 102.4-107.8												
			Beaver Pond	<u> </u>	10		17	27				
			Glide	5	0	77	3	85				
			Pool	70				70				
			Run			30	8	38				
	Tributary	Tributary	Glide	14	15	33		62				
			Pool	10	20	37	15	82				
			Riffle			4		4				
			Run	13				13				
Grand Total				330	290	499	198	1.317				

## Table F5. Juvenile Chinook salmon observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
	-	Proposed Watana Dam Location	PRM 187.1				
		Upper Extent Devils Canyon P	RM 166.1				
		Lower Extent Devils Canyon P	RM 153.9				
	Susitna River	Main Channel	Run	1			1
		Side Channel	Riffle		1		1
MR-6 122.7-148.1	Susitna River: Off-Channel	Upland Slough	Pool	5			5
		Upland Slough Beaver Complex	Beaver Pond	1			1
	Tributary	Tributary	Boulder Riffle	13			13
	Susitna River: Off-Channel	Side Slough	Run			2	2
MD-7 107 8-122 7		Side Slough Beaver Complex	Beaver Pond	5		10	15
WIK-7 107.0-122.7		Upland Slough	Pool	2			2
		Upland Slough Beaver Complex	Beaver Pond	7			7
MR-8 102.4-107.8	Susitna River: Off-Channel	Upland Slough	Pool	14	1		15
Grand Total				48	2	12	62

## Table F6. Juvenile Chinook salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Loca	tion PRM 187.1	-			
		Upper Extent Devils Cany	on PRM 166.1				
		Lower Extent Devils Cany	on PRM 153.9				
MR-5 148.1-153.9	Susitna River	Main Channel	Run	7			7
	Susitna River	Clearwater Plume	Clearwater Plume	2	22	1	25
		Main Channel	Run	2			2
		Side Channel	Glide		7		7
	Susitna River: Off-Channel	Backwater	Backwater		67		67
		Side Slough Beaver Complex	Beaver Pond		1		1
			Glide		49		49
			Pool		3		3
MR-6 122.7-148.1			Riffle		1	1	2
WIN-0 122.7-140.1			Run			8	8
	Tributary	Tributary	Glide	9		1	10
			Pool	125			125
			Riffle	10			10
			Run	40			40
		Tributary Mouth	Glide		3		3
			Riffle	30	5		35
			Run		27		27
MR-7 107 8-122 7	Susitna River	Split Main Channel	Riffle	2			2
WIX-7 107.0-122.7			Run	1	1		2
	Susitna River	Main Channel	Run	1			1
MR-8 102 /-107 8		Side Channel	Pool		2		2
107.0	Tributary	Tributary	Glide		2		2
			Pool		2		2
Grand Total				229	192	11	432

## Table F7. Adult chum salmon observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

O	11-h-14-4	Saimon, cnum (ad	luit) Maaababitat	Fault Commence	1 ata 0	E-II	Owned Tatal
Geomorphic Reach	Habitat	Macronabitat	Mesonabitat	Early Summer	Late Summer	Fall	Grand Total
		Upper Extent Devile Conver	DDM 166 1				
		Lower Extent Devils Canyon	DDM 152 0				
	Sucitaa Divor	Main Channel	Pun	i	5		Б
MD 5 149 1 152 0		Split Main Chappel	Run		10		10
WIK-5 140.1-155.9			Run		19		19
	Susitna River: Off-Channel	Side Slough	Glide		106		106
	Susitna River	Clearwater Plume	Clearwater Plume		14		14
		Main Channel	Run	3			3
		Side Channel	Riffle		1		1
	Susitna River: Off-Channel	Backwater	Backwater		8		8
MR-6 122.7-148.1		Side Slough	Glide		72		72
		Upland Slough	Pool		1		1
		Upland Slough Beaver Complex	Beaver Pond	3	3	5	11
	Tributary	Tributary	Boulder Riffle	12			12
		T ributary Mouth	Run	1	13		14
	Susitna River	Clearwater Plume	Clearwater Plume	3			3
MD 7 407 0 400 7		Side Channel	Run		2		2
MR-/ 10/.8-122./		Split Main Channel	Run	9			9
	Susitna River: Off-Channel	Side Slough	Pool		6		6
	Susitna River	Main Channel	Run	2	15		17
MR-8 102 4-107 8		Side Channel	Run		4		4
10/.0		Split Main Channel	Run		2		2
	Susitna River: Off-Channel	Side Slough	Glide			1	1
Grand Total				33	271	6	310

## Table F8. Adult chum salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

_		Salmon, chum (juv	enile)				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Grand Total
		Proposed Watana Dam Locat	ion PRM 187.1				
		Upper Extent Devils Canyo	n PRM 166.1				
		Lower Extent Devils Canyo	n PRM 153.9				
	Susitna River	Side Channel	Backwater Pool	2			2
			Glide	15	1		16
	Susitna River: Off-Channel	Side Slough Beaver Complex	Backwater Pool	9			9
			Beaver Pond	301			301
			Glide	11			11
			Pool	17			17
MR-6 122.7-148.1			Riffle	18			18
			Run	657	4		661
	Tributary	Tributary	Glide	1			1
			Pool	1	1		2
			Riffle	5			5
			Run	2			2
		T ributary Mouth	Glide		6		6
MD 7 407 9 400 7	Susitna River	Side Channel	Glide	19			19
WIR-/ 10/.0-122./			Riffle			1	1
	Susitna River	Side Channel	Backwater Pool		10		10
			Pool			1	1
MD 0 400 4 407 0			Riffle		1	2	3
WIR-0 102.4-107.0	Susitna River: Off-Channel	Side Slough	Glide	2			2
		Upland Slough Beaver Complex	Glide	1			1
	Tributary	Tributary	Pool	9			9
Grand Total				1,070	23	4	1,097

## Table F9. Juvenile chum salmon observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

Table F10. Juvenile chum salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Salmon, chum (juvenile)								
Geomorphic Reach	Habitat	Macrohabitat	tat Mesohabitat Early Summer Grand T					
Proposed Watana Dam Location PRM 187.1								
Upper Extent Devils Canyon PRM 166.1								
Lower Extent Devils Canyon PRM 153.9								
MR-6 122.7-148.1	Susitna River: Off-Channel	Upland Slough Beaver Complex	Beaver Pond	1	1			
MR-8 102.4-107.8	Susitna River	Side Channel	Pool	1	1			
Grand Total				2	2			

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total			
	Proposed Watana Dam Location PRM 187.1									
Upper Extent Devils Canyon PRM 166.1										
		Lower Extent Devils	Canyon PRM 153.9							
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		6	16	22			
	Susitna River	Clearwater Plume	Clearwater Plume		6	3	9			
	Susitna River: Off-Channel	Backwater	Backwater		2		2			
MR-6 122.7-148.1	Tributary	Tributary	Glide		3	9	12			
			Pool	10			10			
			Run			1	1			
MD_7 107 8-122 7	Susitna River	Main Channel	Run		2		2			
WIR-7 107.0-122.7		Split Main Channel	Run	1			1			
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide		37	5	42			
			Run		4		4			
	Tributary	Tributary	Glide		31		31			
			Pool		26	9	35			
Grand Total				11	117	43	171			

## Table F11. Adult coho salmon observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

## Table F12. Adult coho salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Samon, cono (adun)								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	Grand Total		
Proposed Watana Dam Location PRM 187.1								
Upper Extent Devils Canyon PRM 166.1								
Lower Extent Devils Canyon PRM 153.9								
MR-5 148.1-153.9	Susitna River	Main Channel	Run	12		12		
MR-6 122.7-148.1	Susitna River	Main Channel	Run	4	2	6		
	Susitna River: Off-Channel	Side Slough	Glide	2		2		
	Tributary	Tributary Mouth	Run	1		1		
MR-7 107.8-122.7	Tributary	Tributary	Run	48		48		
Grand Total				67	2	69		

Salmon coho (adult)

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

Salmon, coho (juvenile)								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam L	ocation PRM 187.1					
		Upper Extent Devils C	anyon PRM 166.1					
	I	Lower Extent Devils C	anyon PRM 153.9					
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		20			20
	Susitna River	Clearwater Plume	Clearwater Plume			1		1
		Side Channel	Backwater Pool	1				1
	Susitive Divers Off Channel	Deslavator	Glide	1	10	8	1	16
	Susitna River: On-Channel	Backwaler	Backwaler Deever Dend		12	C C	41	00
		Side Slough Beaver Complex	Beaver Pond	4	10		10	44
			Glide	1	10	1	30	38
			POOL	2	10	33	49	94
			Rillie Dup	1	11		1	13
MP-6 122 7-1/8 1		Lipland Claugh	Ruii Baakwatar Daal	1	11			13
WIK-0 122.7-140.1		Upland Slough Upland Slough Peopler Complex	Backwaler Pool	1	10	05	76	170
	Tributon	Tributory	Beakwater Deal	1	10	00	70	172
	Tributary	THDUIDIN		4	10		7	4
			Pool	2	85		1	21
			Piffo	2	00			6
			Run	3	10		1	18
		Tributary Mouth	Glide	4	10			30
		Thouary Wouth	Riffle		89	16	- 21	108
			Run			30	91	121
	Susitna River	Clearwater Plume	Clearwater Plume		14		13	27
		Side Channel	Backwater Pool				2	2
			Glide			1	-	1
			Pool		1			1
	Susitna River: Off-Channel	Backwater	Backwater		10	1	2	13
		Upland Slough	Backwater Pool	44	10		-	44
		- p	Pool	12				12
		Upland Slough Beaver Complex	Beaver Pond	33	55	826	574	1.488
MD 7 407 0 400 7			Glide		15	37	-	52
WIR-/ 10/.8-122./			Pool				29	29
			Run		221		25	246
	Tributary	Tributary	Backwater Pool				87	87
			Glide		1	14		15
			Pool		311	35		346
			Riffle		68		1	69
			Run				8	8
		T ributary Mouth	Cascade		29			29
			Riffle		11			11
	Susitna River	Side Channel	Backwater Pool		54			54
			Glide			103	114	217
MR-8 102.4-107.8			Pool		5	1		6
			Riffle			3	4	7
	Susitna River: Off-Channel	Side Slough	Glide		189	52	4	245
			Run			5		5
		Upland Slough Beaver Complex	Backwater Pool	2	42			44
			Beaver Pond		18		1	19
			Glide	6	22	64	82	174
	<b>T</b> 11 (	<b>T</b> 11 (	Run	-		142	25	167
	Tributary	I ributary	Glide	3	19	39		61
			P00l	2	17	50	11	80
			KIITIE Dur	40	1	3	1	5
Grand Tatal			KUN	10	4 205	4 570	4 2 2 2	10
Grand Total				141	1,395	1,5/2	1,329	4,437

## Table F13. Juvenile coho salmon observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

Salmon, coho (juvenile)								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total	
Proposed Watana Dam Location PRM 187.1								
Upper Extent Devils Canyon PRM 166.1								
Lower Extent Devils Canyon PRM 153.9								
	Susitna River	Split Main Channel	Run			1	1	
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	1	4	10	15	
			Pool			2	2	
	Susitna River	Clearwater Plume	Clearwater Plume			1	1	
		Main Channel	Run	1		3	4	
		Side Channel	Pool		4		4	
	Susitna River: Off-Channel	Backwater	Backwater	1	3	24	28	
		Side Slough	Glide		9	1	10	
MR-6 122.7-148.1			Pool	6	3	68	77	
		Side Slough Beaver Complex	Beaver Pond	15		9	24	
		Upland Slough	Pool		3	26	29	
		Upland Slough Beaver Complex	Beaver Pond	90	1	385	476	
	Tributary	Tributary	Boulder Riffle	21	3		24	
		Tributary Mouth	Run		1		1	
	Susitna River	Side Channel	Run	9			9	
	Susitna River: Off-Channel	Backwater	Backwater		3	2	5	
		Side Slough	Pool			29	29	
MD 7 107 9 100 7			Run		1	15	16	
WIR-7 107.0-122.7		Side Slough Beaver Complex	Beaver Pond		7		7	
		Upland Slough	Pool	1	4	71	76	
		Upland Slough Beaver Complex	Beaver Pond	4	26	92	122	
	Tributary	Tributary	Run	48	15	6	69	
MR-8 102.4-107.8	Susitna River	Side Channel	Pool	3	6	2	11	
	Susitna River: Off-Channel	Side Slough	Glide			1	1	
			Pool	8	4		12	
		Upland Slough	Glide		15	2	17	
			Pool	20	55	8	83	
Grand Total				228	167	758	1,153	

## Table F14. Juvenile coho salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).
		Salmon,	pink (adult)			
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total
		Proposed Watana Da	am Location PRM 187	.1		
		Upper Extent Devi	ls Canyon PRM 166.1			
		Lower Extent Devi	ls Canyon PRM 153.9			
MR-5 148 1-153 9	Susitna River	Clearwater Plume	Clearwater Plume	2	1	3
MIX-0 140.1-100.0		Main Channel	Run	4		4
	Susitna River	Clearwater Plume	Clearwater Plume	38	5	43
		Main Channel	Run	11		11
		Multi Split Main Channel	Run	1		1
	Tributary	Tributary	Glide	502		502
MP-6 122 7-1/8 1			Pool	1,800		1,800
WIK-0 122.7-140.1			Riffle	28		28
			Run	652		652
		Tributary Mouth	Glide		25	25
			Riffle	65		65
			Run		11	11
	Susitna River	Main Channel	Run	6		6
MR-7 107.8-122.7		Split Main Channel	Riffle	2		2
			Run	9		9
	Susitna River	Main Channel	Run	5		5
MD 9 102 4 107 9		Side Channel	Run		1	1
WIR-0 102.4-107.0	Tributary	Tributary	Glide		1	1
			Pool		1	1
Grand Total				3,125	45	3,170

## Table F15. Adult pink salmon observations in Middle River Focus Areas by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total
		Proposed Watana Dam Location	PRM 187.1			
		Upper Extent Devils Canyon PF	RM 166.1			
		Lower Extent Devils Canyon PF	RM 153.9			
	Susitna River	Main Channel	Run	2	4	6
MR-5 148.1-153.9		Split Main Channel	Run	5	8	13
	Susitna River: Off-Channel	Side Slough	Glide		1	1
	Susitna River	Clearwater Plume	Clearwater Plume	12	40	52
		Main Channel	Run	8	7	15
		Side Channel	Riffle		1	1
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater		2	2
		Upland Slough Beaver Complex	Beaver Pond		1	1
	Tributary	Tributary	Boulder Riffle	127	33	160
		T ributary Mouth	Run	5	64	69
	Susitna River	Clearwater Plume	Clearwater Plume	52		52
		Split Main Channel	Run	22	1	23
MR-7 107.8-122.7	Susitna River: Off-Channel	Side Slough	Pool		17	17
	Tributary	Tributary	Riffle	80		80
			Run	10		10
MP-9 102 4-107 9	Susitna River	Main Channel	Run	6	2	8
WITE 102.4-107.0		Side Channel	Pool		1	1
Grand Total				329	182	511

## Table F16. Adult pink salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

#### Table F17. Juvenile pink salmon observations in Middle River Focus Areas by habitat, 2013.

	Sa	almon, pink (juvenile)										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Grand Total							
	Proposed	Watana Dam Location PRM 187.1										
	Upper Extent Devils Canyon PRM 166.1											
Lower Extent Devils Canyon PRM 153.9												
	Susitna River: Off-Channel	Upland Slough Beaver Complex	Beaver Pond	1	1							
MR-6 122.7-148.1	Tributary	Tributary	Backwater Pool	1	1							
			Riffle	1	1							
MR-8 102.4-107.8	Tributary	Tributary	Glide	1	1							
Grand Total				4	4							

Table F to. Juvenile pink salmon observations outside of Focus Areas in the middle River by habitat, 2013	Table F18.	Juvenile	pink salmon	observations	outside of Focus	Areas in the I	Middle River b	y habitat, 2013.
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	Salmon, pink (juvenile)												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Grand Total								
	Proposed Watana Dam Location PRM 187.1												
Upper Extent Devils Canyon PRM 166.1													
Lower Extent Devils Canyon PRM 153.9													
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	1	1								
MR-7 107.8-122.7	Susitna River: Off-Channel	Backwater	Backwater	4	4								
Grand Total				5	5								

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

#### Table F19. Adult sockeye salmon observations in Middle River Focus Areas by habitat, 2013.

		Salmon, sockeye	(adult)				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Loca	ation PRM 187.1				
		Upper Extent Devils Cany	on PRM 166.1				
		Lower Extent Devils Cany	on PRM 153.9				
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume	7			7
	Susitna River	Clearwater Plume	Clearwater Plume	1			1
	Susitna River: Off-Channel	Side Slough Beaver Complex	Glide		36		36
MR-6 122.7-148.1			Pool		9		9
			Riffle			1	1
			Run			6	6
MR-7 107.8-122.7	Susitna River	Split Main Channel	Run	1			1
MD 9 102 4 107 9	Tributary	Tributary	Glide		1		1
WIR-0 102.4-107.0			Pool		2		2
Grand Total				9	48	7	64

		Saimon, Sockeye (adult)									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	Grand	Total				
	Prope	osed Watana Dam Location PRM 187	<b>'.1</b>								
	Upper Extent Devils Canyon PRM 166.1										
Lower Extent Devils Canyon PRM 153.9											
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	5							
	Susitna River: Off-Channel	Backwater	Backwater	1	3		4				
MR-6 122.7-148.1		Side Slough	Glide	30			30				
		Upland Slough Beaver Complex	Beaver Pond	55	50		105				
MR-7 107.8-122.7	Susitna River	Side Channel	Riffle	1			1				
Grand Total				92	53		145				

# Table F20. Adult sockeye salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

		Saimon, sockeye	(juvenile)					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Lo	cation PRM 187.1					
		Upper Extent Devils Car	1yon PRM 166.1					
		Lower Extent Devils Car	1yon PRM 153.9					
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		5		1	6
	Susitna River	Side Channel	Backwater Pool			13		13
			Glide	27	12	5		44
	Susitna River: Off-Channel	Backwater	Backwater		28	2	1	31
		Side Slough Beaver Complex	Backwater Pool	175	699		2	876
			Beaver Pond	2		9		11
			Glide		93		63	156
MD 6 400 7 449 4			Pool	14	111	10	1	136
WIR-0 122./-140.1			Riffle		2			2
		Upland Slough	Glide				1	1
		Upland Slough Beaver Complex	Beaver Pond			7	1	8
	Tributary	Tributary	Pool		11			11
		T ributary Mouth	Glide				2	2
			Riffle				2	2
			Run				9	9
	Susitna River	Side Channel	Glide	1		1		2
	Susitna River: Off-Channel	Backwater	Backwater		61			61
MD 7 407 0 400 7		Upland Slough Beaver Complex	Beaver Pond			4	1	5
WIR-/ 10/.8-122./			Run		1			1
	Tributary	Tributary	Backwater Pool				8	8
			Pool		15	4		19
	Susitna River	Side Channel	Backwater Pool		60			60
			Glide			25	37	62
			Pool			8		8
			Riffle			4		4
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide		191	9		200
		Upland Slough Beaver Complex	Backwater Pool			1		1
			Glide	2	1	2	2	7
			Run			7		7
	Tributary	Tributary	Glide		1	1		2
Grand Total				221	1,291	112	131	1,755

# Table F21. Juvenile sockeye salmon observations in Middle River Focus Areas by habitat, 2013.

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Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Locati	on PRM 187.1				
		Upper Extent Devils Canyor	PRM 166.1				
		Lower Extent Devils Canyor	PRM 153.9				
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	4			4
	Susitna River	Clearwater Plume	Clearwater Plume	1	1		2
		Side Channel	Pool		2	1	3
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater	6			6
		Side Slough	Pool	1			1
		Upland Slough	Pool			4	4
		Upland Slough Beaver Complex	Beaver Pond	1	1		2
	Tributary	Tributary Mouth	Run	1	3		4
	Susitna River	Side Channel	Run	6			6
MR-7 107.8-122.7	Susitna River: Off-Channel	Side Slough	Pool	2	16	2	20
		Side Slough Beaver Complex	Beaver Pond			2	2
	Susitna River	Main Channel	Run		1		1
MD 9 102 4 107 9	Susitna River: Off-Channel	Side Slough	Pool	10			10
WIIX-0 102.4-10/.0		Upland Slough	Glide	3			3
			Pool		1	1	2
Grand Total				35	25	10	70

# Table F22. Juvenile sockeye salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

		Salmon, undifferenti	ated (juvenile)	-		-		
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Lo	ocation PRM 187.1					
		Upper Extent Devils Ca	nyon PRM 166.1					
		Lower Extent Devils Ca	nyon PRM 153.9				-	
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		5	0		5
	o i o oi	Main Channel	Run			1		1
	Susitha River	Clearwater Plume	Clearwater Plume		3			3
		Main Channel	Run		1	4		1
		Multi Split Main Channel	Run Daalamatan Daal		0	1		1
		Side Channel	Backwater Pool		8	4		8
			Glide	4		1		1
	Susitive Divers Off Channel	Deelewater	Run	1	4			1
	Susitha River: Off-Channel	Backwater	Backwater Beelswater Deel		1			1
		Side Slough Beaver Complex	Backwater Pool		2	2		Z
MD 6 400 7 449 4			Beaver Pond		1	3	4	4
WIR-0 122./-146.1			Glide		6		1	/
			P001		4	0		10
			Run		3	-		3
	Tributen	Upland Slough Beaver Complex	Beaver Pond	4	14	5	1	20
	Tributary	l ributary	Glide	4	4			4
			Pool	2	1			1
			Rime	3	^			3
		Tributor Mouth	Run		2			2
		Thoulary would	Rille		3		- 7	3
	Sucitors Diver	Main Channel	Run			4	1	1
	Susitha River	Main Channel	Run Diffi-			1		
		Split Main Channel	Rime		3	4		3
	Susitive Divers Off Channel	Deelewater	Run		4	I		5
MD 7 407 0 400 7	Susitna River: Off-Channel	Backwater	Backwater Deelswater Deel	7	4			4
WIR-/ 10/.0-122./		Upland Slough	Backwater Pool	/	075	4	40	1
		Upland Slough Beaver Complex	Beaver Pond	8	375	1	40	430
	Tributer	Taileater	Gilde		2	4		0
	Tributary	Tributary	Pool		2			Z
	Sucitae Diver	Tributary Mouth	Cascade		1	1		1
	Susilia River		Ruli Deelsweter Deel		1	1	2	2
		Side Channel	Backwater Pool		24	1	2 1	20
			Bool			4	-	1
	Susitna River: Off-Channel	Side Slough	Glide		2	32	2	36
	ousiana raver. On-onanner	olde oldgil	Pool		2	52	80	80
MR-8 102.4-107.8			Riffle	<u> </u>	γ		00	00 2
		Linland Slough Beaver Complex	Backwater Pool		20	2		22
		opland clough bourier complex	Glide		20	17	2	22
			Run			1	1	21
	Tributary	Tributary	Glide			1		1
			Pool		1	1		2
Grand Total				23	497	84	143	747

# Table F23. Undifferentiated juvenile salmon observations in Middle River Focus Areas by habitat, 2013.

\*: differentiating between juvenile Chinook and coho salmon in an upland slough beaver complex located in FA-115 (Slough 6A) was particularly difficult in the field. Further work is planned to identify individuals collected in 2013 to species from photographs and to collect voucher specimens and genetics samples during the 2014 field season.

Table F24. Juvenile salmon (species undifferentiated) observations outside of Focus Areas in the Middle River by habitat, 2013.

		Salmon, undifferentiated (juv	enile)							
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total				
		Proposed Watana Dam Location PR	RM 187.1							
Upper Extent Devils Canyon PRM 166.1										
Lower Extent Devils Canyon PRM 153.9										
MP-7 107 8-122 7	Susitna River: Off-Channel	Side Slough	Pool		1	1				
WIX-7 107.0-122.7		Upland Slough Beaver Complex	Beaver Pond	2		2				
MD-8 102 4-107 8	Susitna River: Off-Channel	Side Slough	Pool		20	20				
WIR-0 102.4-107.0		Upland Slough	Pool	1		1				
Grand Total				3	21	24				

Geomorphic Reach         Heiso         Macrohabita         Meschabita         Spring         Bertysumme         Lenstmme / Lenstme / Lenst			Arctic	grayling					
NR-1184.51871         Solian River         Main Alannel         Run         Image: Solian River         Main Channel         Run         Image: Solian River         Run         Solian River	Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
Susina River         Main Channell         Run         ()           MR-1186.168.61         Susina River         Clearvater Plume         Clearvater Plume         Clearvater Plume         ()         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <t< td=""><td></td><td></td><td>Proposed Watana D</td><td>am Location PRM 18</td><td>7.1</td><td></td><td></td><td></td><td>-</td></t<>			Proposed Watana D	am Location PRM 18	7.1				-
MR-1184.6-187.1         Side Channel         Click         Image		Susitna River	Main Channel	Run			19	10	29
MR-8 100.         Control         Run         Control         Control <thcontrol< th=""> <thcontrol< th=""> <thcon< td=""><td>MR-1 184.6-187.1</td><td></td><td>Side Channel</td><td>Glide</td><td></td><td></td><td></td><td>12</td><td>12</td></thcon<></thcontrol<></thcontrol<>	MR-1 184.6-187.1		Side Channel	Glide				12	12
Backwater         Backwater         Add         Add         Add           Clearwater Plume         Clearwater Plume<				Riffle			2	10	12
Sustan RiverBackwaterBackwaterAAAAACearwater PlumeCearwater Plume6.856.84417.3523.55 <td< td=""><td></td><td></td><td></td><td>Run</td><td></td><td>3</td><td>5</td><td>2</td><td>10</td></td<>				Run		3	5	2	10
Image: Cleanwater Plume         65         64         4         117           Main Channel         Run         2         9         2         313           Side Channel         Glide         112         17         29         583           Mar 2169.6194.6         Susitna River: Off-Channel         Side Slough         Backwater Pool         119         92         214           Mar 2169.6194.6         Cleanwater Pool         70         1         70         17         29         258           Mar 2169.6194.6         Cleanwater Pool         70         1         70         2         24           Mar 2169.6194.7         Run         10         12         24         24           Mar 2169.6194.7         Cleanwater Plume         S         1         10         21           Mar 2169.6194.7         Cleanwater Plume         S         1         10         22           Mar 2169.7         Cleanwater Plume         S         1         10         22           Mar 2169.7         Cleanwater Plume         S         1         1         2         2           Mar 2169.7         Cleanwater Plume         Cleanwater Plume         1         1         2         2 <td></td> <td>Susitna River</td> <td>Backwater</td> <td>Backwater</td> <td></td> <td>40</td> <td>14</td> <td></td> <td>54</td>		Susitna River	Backwater	Backwater		40	14		54
Main Channel         Run         2         9         2         113           Side Channel         Gilóe         112         17         23         58           MR-2 169.5-184.6         Suitma River: Off-Channel         Side Slough         Backwater Pool         119         95         214           Image: Class of the state of the s			Clearwater Plume	Clearwater Plume		85	84	4	173
Side ChannelCicke1217296.85NR-2 169.6-184.6Sustina River: Off-ChannelSide SoughSackwater Pool11995214Image: Constraint of Side SoughSackwater Pool70Image: Constraint of Side Sough70<			Main Channel	Run		2	9	2	13
MR2 169.6.184.6Sustma River: Off-ChannelSide SloughBackwater Pool11995214Image: Constraint of the state of the s			Side Channel	Glide		12	17	29	58
Image: state of the state of	MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		119	95		214
Image: state in the state in				Glide			252	115	367
Image: book of the second se				Pool		70			70
Tributary         Thubary Nouth         Riffle         12         12         12         12           Upper Extant Devils Caryon PRM 153.9           MR-5 148.1-153.9         Susitna River         Clearwater Plume         Clearwater Plume         5          5           MR-5 148.1-153.9         Main Channel         Rufn         11         10         27           MR-5 148.1-153.9         Main River         Clearwater Plume         Clearwater Plume         17         4         4         25           Mull Split Main Channel         Rufn         1				Run			9		9
Busina River         Clearwater Plume         Clearwater Plume         S         S           MR-5 148.11530         Main Channel         Rtfle         1         1         0         2         5           MR-5 148.11530         Main Channel         Rtfle         1		Tributary	Tributary Mouth	Riffle		12	12		24
Sustina River         Clearwater Plume         Clearwater Plume         S         S         S           MR-5 148.1-153.9         Main Channel         Riffe         1         1         0         2           MR-5 148.1-153.9         Main Channel         Riffe         1<			Upper Extent Devi	ls Canyon PRM 166.	1				
Sustina River         Clearwater Plume         Clearwater Plume         5         5           Main Channel         Riffe         11         10         221           Rus         Run         11         10         221           Multi Spitt Main Channel         Riffe         11         10         221           Multi Spitt Main Channel         Riffe         11         10         22           Multi Spitt Main Channel         Riffe         11         10         22           Side Channel         Backwater Pool         11         10         22         2           Sustra River: Off-Channel         Backwater Backwater Pool         11         10         22         2           Side Slough Beaver Complex         Pool         11         10         22         2           Tributary         Tibutary         Glide         11         10         2         2           Tributary         Tibutary Mouth         Glide         11         10         10         11         10         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2			Lower Extent Dev	Is Canyon PRM 153.	9	i			
MR-5 148.1-153.9       Main Channel       Riffle       1       11       10       21         Run       Run       1 </td <td></td> <td>Susitna River</td> <td>Clearwater Plume</td> <td>Clearwater Plume</td> <td></td> <td>5</td> <td></td> <td></td> <td>5</td>		Susitna River	Clearwater Plume	Clearwater Plume		5			5
MR-1     Run     Image     Image     Image     Image     Image     Image     Image     Image     Image       Susta River     Cleanvater Plume     Cleanvater Plume     Image	MR-5 148.1-153.9		Main Channel	Riffle			11	10	21
Susina River         Cleanvater Plume         Cleanvater Plume         17         4         4         25           Multi Split Main Channel         Riffle         1         1         2           Image: Stating River         Side Channel         Backwater Pool         1         1         1         2           Susina River: Off-Channel         Backwater Pool         1         1         1         2         2           Susina River: Off-Channel         Backwater Pool         1         1         1         2         2           Susina River: Off-Channel         Backwater Pool         1         1         1         2         2         2           Susina River: Off-Channel         Backwater Complex         Pool         1         1         1         2         2         2         2         2         1         1         1         1         1         1         2         2         2         1				Run				1	1
Multi Split Main Channel         Riffle         Image: Control of the split Main Channel         Backwater Pool         Image: Control of the split Main Channel         Backwater Pool         Image: Control of the split Main Channel         Backwater Pool         Image: Control of the split Main Channel         Backwater Pool         Image: Control of the split Main Channel         <		Susitna River	Clearwater Plume	Clearwater Plume		17	4	4	25
Run         Run         Image: Complex Side Channel         Backwater Pool         Image: Complex Side Channel         Backwater Side Channel         Side Channel <th< td=""><td rowspan="4"></td><td></td><td>Multi Split Main Channel</td><td>Riffle</td><td></td><td></td><td>1</td><td>1</td><td>2</td></th<>			Multi Split Main Channel	Riffle			1	1	2
MR-6 122.7-148.1     Image: Side Channel     Backwater Pool     Image: Side Slough Beaver Complex     Image: Side Slough Beaver Complex     Image: Side Slough Beaver Complex     Pool     Image: Side Slough Beaver Complex     Image: Side Slough Side Slough Beaver Complex     Image: Side Slough Side Slo				Run				1	1
MR-6 122.7.148.1       Backwater       Backwater       Backwater       Backwater       11       1			Side Channel	Backwater Pool			2		2
MR-6 122.7-148.1     Susitina River: Off-Channel     Backwater     Backwater     Pool     17     4     21       Image: Image				Glide		1	1		2
MR-6 122.7.148.1     Side Slough Beaver Complex     Pool     1     1     1       Tributary     Run     1     1     0     0       Tributary     Tributary     Glide     1     1     0     0       Tributary     Tributary     Glide     1     1     0     0       Tributary     Tributary     Glide     1     1     0     0       Tributary     Run     0     8     0     0       Tributary     Main Channel     Run     0     0     0     0       Susitna River     Main Channel     Run     0     0     0     0       Side Channel     Pool     0     1     0     0     1       MR-7 107.8-122.7     Side Channel     Run     1     0     0     1       Side Slough Beaver Complex     Run     1     0     0     1     0       Tributary     Tributary     Riffle     0     1     0     1     1       MR-7 107.8-122.7     Side Channel     Run     1     0     1     1       MR-7 107.8-122.7     Tributary     Riffle     0     1     1     1       MR-7 107.8-122.7     Side Channel     Run		Susitna River: Off-Channel	Backwater	Backwater		17	4		21
MR-7 107.8-122.7         Susitna River: Off-Channel         Upland Slough Beaver Complex         Run         1         <	MR-6 122.7-148.1		Side Slough Beaver Complex	Pool		1			1
MR-7 107.8-122.7       Tributary       Tributary       Glide       1       1       1       1         MR-8 102.4-107.8       Susitna River       Main Channel       Run       0				Run	1	1			2
MR-7 107.8-122.7Susitna RiverMain ChannelRun868MR-7 107.8-122.7Susitna River: Off-ChannelRun1132MR-7 107.8-122.7Susitna River: Off-ChannelRun1111MR-7 107.8-122.7Susitna River: Off-ChannelRun11111MR-7 107.8-122.7Susitna River: Off-ChannelRun11 <td></td> <td>Tributary</td> <td>Tributary</td> <td>Glide</td> <td></td> <td>1</td> <td></td> <td></td> <td>1</td>		Tributary	Tributary	Glide		1			1
Run       5       5         Image: Constraint of the second				Pool		8			8
Image: Second				Run		5			5
MR-8 102.4-107.8       Image: Control of the second s			T ributary Mouth	Glide		7			7
Susitha RiverMain ChannelRunC22Side ChannelPool111Split Main ChannelRiffle111Run1111Susitha River: Off-ChannelUpland Slough Beaver ComplexRun111TributaryTributaryRiffle515TributaryTributaryRiffle511Kusitha River:Tributary MouthCascade111Kusitha RiverMain ChannelRun6511Kusitha RiverMain ChannelRun1111Kusitha RiverMain ChannelRun144Susitha RiverMain ChannelRun1111MR-8 102.4-107.8Susitha River:Main ChannelRun111MR-8 102.4-107.8Susitha River:Side SloughGlide1111MR-8 102.4-107.8Susitha River:Side SloughGlide11111MR-8 102.4-107.8Susitha River:Off-ChannelSide SloughGlide1111MR-8 102.4-107.8Susitha River:Off-ChannelSide SloughGlide1111MR-8 102.4-107.8Susitha River:Off-ChannelSide SloughSide1111MR-8 102.4-107.8Susitha River:Off-Channel <t< td=""><td></td><td></td><td></td><td>Riffle</td><td></td><td>31</td><td></td><td>1</td><td>32</td></t<>				Riffle		31		1	32
MR-7 107.8-122.7Side ChannelPool111Image: Side ChannelRiffleImage: Side ChannelRiffleImage: Side ChannelImage: Side ChannelImage: Side ChannelRiffleImage: Side ChannelImage: Side ChannelImage: Side ChannelRunImage: Side ChannelImage: Side ChannelImage: Side ChannelImage: Side ChannelImage: Side ChannelRunImage: Side ChannelImage: Side Cha		Susitna River	Main Channel	Run				2	2
MR-7 107.8-122.7       Split Main Channel       Riffle       1       1       1         MR-7 107.8-122.7       Susitna River: Off-Channel       Upland Slough Beaver Complex       Run       1       1       1       1         Susitna River: Off-Channel       Upland Slough Beaver Complex       Run       1       1       1       1       1         Tributary       Tributary       Riffle       5       1       5       5       1			Side Channel	Pool			1		1
MR-7 107.8-122.7       Image: mark transmission of the mark transmissicon of the			Split Main Channel	Riffle			1		1
Susitna River: Off-Channel       Upland Slough Beaver Complex       Run       1       1       1         Tributary       Tributary       Riffle       5       5         Tributary       Tributary Mouth       Cascade       1       1       1         Run       Cascade       1       1       1       1         Run       Cascade       1       1       1       1         Run       Cascade       1       6       6       6       6         Susitna River       Main Channel       Run       6       1       4       4         Side Channel       Backwater Pool       2       1	MR-7 107.8-122.7			Run		1			1
Tributary         Inbutary         Riffle         5         5         5           Tributary Mouth         Cascade         1         1         1         1           Riffle         6         1<		Susitna River: Off-Channel	Upland Slough Beaver Complex	Run		1			1
Main Channel         Run         Cascade         1         4         6           Main Channel         Run         Cascade		Tributary	I ributary	Riffle		5			5
Number         Num         Num         Number			Tributary Mouth	Cascade		1			1
Sustra River         Main Channel         Run         Image: Comparison of the system         Addition of the system           MR-8 102.4-107.8         Side Channel         Backwater Pool         2         3         3         3         3         3         3         3         3         3				Riffle		6			6
MR-8 102.4-107.8         Side Channel         Backwater Pool         2         2         2           Image: MR-8 102.4-107.8         Susitna River: Off-Channel         Side Slough         Glide         1         4         5           Susitna River: Off-Channel         Side Slough         Glide         2         2         23         27           Image: MR-8 102.4-107.8         Susitna River: Off-Channel         Side Slough         Glide         2         23         27           Image: MR-8 102.4-107.8         Side Slough         Glide         2         2         23         27           Image: MR-8 102.4-107.8         Side Slough         Glide         2         2         23         27           Image: MR-8 102.4-107.8         Side Slough Beaver Complex         Glide         2         2         3		Susitna River	Main Channel	Run				4	4
MR-8 102.4-107.8         Image: Constraint of the second seco			Side Channel	Backwater Pool		2			2
MR-8 102.4-107.8         Susitna River: Off-Channel         Side Slough         Glide         2         2         23         27           MR-8 102.4-107.8         Susitna River: Off-Channel         Side Slough         Glide         2         2         23         27           MR-8 102.4-107.8         Upland Slough         Pool         3				Glide				1	1
MR-8 102.4-107.8         Sustria River: On-Channel         Side Slough         Glide         2         2         23         27           Pool         Pool         3 <td>MD 0 400 4 407 0</td> <td>Susita - Diuse Off Ohemal</td> <td>Cide Oleviek</td> <td>Rime</td> <td></td> <td>0</td> <td>1</td> <td>4</td> <td>5</td>	MD 0 400 4 407 0	Susita - Diuse Off Ohemal	Cide Oleviek	Rime		0	1	4	5
Image: Pool         3 <th< td=""><td>WIR-8 102.4-107.8</td><td>Susitha River: Off-Channel</td><td>Side Slondu</td><td>Gilde</td><td></td><td>2</td><td>2</td><td>23</td><td>27</td></th<>	WIR-8 102.4-107.8	Susitha River: Off-Channel	Side Slondu	Gilde		2	2	23	27
Upiand Slougn Beaver Complex         Uilde         1         1         1           Tributary         Tributary         Glide         1         1         1           Pool         77         77           Grand Total         1         455         547         317         1 320			Unload Olaush Data a Olaush					3	3
Indutary         Indutary         Glide         1         1           Pool         77         77           Grand Total         1         455         547         317         1 320		Tributanı	Upland Slough Beaver Complex	Glide				1	1
Grand Total 1 455 547 317 1 220		Thoutary	i noutary	Bool			1	77	
	Grand Total				1	455	547	317	1 2 2 0

## Table F25. Arctic grayling (all life stages) observations in Middle River Focus Areas by habitat, 2013.

Arctic graying									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total		
	Р	roposed Watana Dam	Location PRM 187.1						
	Susitna River	Main Channel	Run	2	5	24	31		
MR-1 184.6-187.1		Side Channel	Riffle			12	12		
			Run		4		4		
	Susitna River	Clearwater Plume	Clearwater Plume	24	57	45	126		
		Main Channel	Run	2	18	6	26		
		Side Channel	Riffle		7		7		
			Run	3	17	15	35		
		Split Main Channel	Run	5	31	6	42		
MR-2 169.6-184.6	Susitna River: Off-Channel	Backwater	Backwater	26	8	22	56		
		Side Slough	Pool	11			11		
			Riffle		2		2		
			Run	7	5	42	54		
	Tributary	Tributary Mouth	Riffle		18		18		
	Tsusena Creek		Boulder Riffle	58	3	13	74		
		Upper Extent Devils	Canyon PRM 166.1						
		Lower Extent Devils	Canyon PRM 153.9						
	Susitna River	Main Channel	Run			1	1		
MR-5 148.1-153.9		Split Main Channel	Run			4	4		
	Susitna River: Off-Channel	Side Slough	Glide		3		3		
	Susitna River	Clearwater Plume	Clearwater Plume	3			3		
		Main Channel	Run			1	1		
		Side Channel	Pool			3	3		
MR-6 122.7-148.1	Susitna River: Off-Channel	Side Slough	Pool	1		13	14		
		Upland Slough	Pool	1			1		
	Tributary	Tributary	Boulder Riffle	2	1	1	4		
		Tributary Mouth	Run		1	2	3		
	Susitna River	Split Main Channel	Run			2	2		
MR-7 107.8-122.7	Susitna River: Off-Channel	Side Slough	Pool		1		1		
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Pool		1		1		
Grand Total				145	182	212	539		

#### Table F26. Arctic grayling (all life stages) observations outside of Focus Areas in the Middle River by habitat, 2013. . ..

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		Arctic grayling,	juvenile (<190mm	ı)				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana D	am Location PRM 18	7.1	1			1
	Susitna River	Main Channel	Run			17	9	26
MR-1 184.6-187.1		Side Channel	Glide				9	9
			Riffle			2	10	12
			Run		3	5	2	10
	Susitna River	Backwater	Backwater Pool		37	13		50
		Clearwater Plume	Clearwater Plume		73	77	1	151
		Main Channel	Run		2	7	2	11
		Side Channel	Glide		12	17	28	57
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		119	95		214
			Glide			248	85	333
			Pool		70			70
			Run			8		8
	Tributary	T ributary Mouth	Riffle		12	11		23
		Upper Extent Devi	ils Canyon PRM 166.	1				
		Lower Extent Dev	ils Canyon PRM 153.	9	1			
	Susitna River	Clearwater Plume	Clearwater Plume		3			3
MR-5 148.1-153.9		Main Channel	Riffle			11	7	18
			Run				1	1
	Susitna River	Clearwater Plume	Clearwater Plume		13			13
			Run			2		2
		Multi Split Main Channel	Riffle			1	1	2
-			Run				1	1
		Side Channel	Backwater Pool			2		2
			Glide		1	1		2
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater		16	4		20
		Side Slough Beaver Complex	Pool		1			1
			Run	1	1			2
	Tributary	Tributary	Glide		1			1
			Pool		8			8
			Run		4			4
		T ributary Mouth	Glide		7		<u> </u>	7
			Riffle		28		1	29
	Susitna River	Main Channel	Run				1	1
		Side Channel	Pool			1	<u> </u>	1
		Split Main Channel	Riffle			1	<u> </u>	1
MR-7 107.8-122.7	Susitna River: Off-Channel	Upland Slough Beaver Complex	Run		0		<b> </b>	0
	Tributary	Tributary	Riffle		5		<b> </b>	5
		T ributary Mouth	Cascade		1		<u> </u>	1
			Riffle		6		<u> </u>	6
	Susitna River	Main Channel	Run				3	3
		Side Channel	Backwater Pool		2		<u> </u>	2
			Glide				1	1
			Riffle			1	3	4
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide		2	2	23	27
			Pool				3	3
		Upland Slough Beaver Complex	Glide				1	1
	l ributary	l ributary	Glide			1	<u> </u>	1
			Pool			_	76	76
Grand Total				1 1	427	527	268	1,223

# Table F27. Juvenile Arctic grayling observations in Middle River Focus Areas by habitat, 2013.

Arctic grayling, juvenile (<190mm)									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total		
	P	roposed Watana Dam	Location PRM 187.1	0					
	Susitna River	Main Channel	Run	1	5	16	22		
MR-1 184.6-187.1		Side Channel	Riffle			5	5		
			Run		4		4		
	Susitna River	Clearwater Plume	Clearwater Plume	1	8	5	14		
		Main Channel	Run	2	3	3	8		
		Side Channel	Riffle		3		3		
			Run	3	5	11	19		
		Split Main Channel	Run	5	7	2	14		
MR-2 169.6-184.6	Susitna River: Off-Channel	Backwater	Backwater	23	6	22	51		
		Side Slough	Pool	9			9		
			Riffle		2		2		
			Run	7	5	37	49		
	Tributary	Tributary Mouth	Riffle		7		7		
	Tsusena Creek		Boulder Riffle	24	2	6	32		
		Upper Extent Devils	Canyon PRM 166.1						
		Lower Extent Devils	Canyon PRM 153.9						
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide		3		3		
	Susitna River	Clearwater Plume	Clearwater Plume	1			1		
		Side Channel	Pool			3	3		
MD_6 122 7-1/8 1	Susitna River: Off-Channel	Side Slough	Pool	1		13	14		
WIN-0 122.1-140.1		Upland Slough	Pool	1			1		
	Tributary	Tributary	Boulder Riffle	2		1	3		
		Tributary Mouth	Run		1		1		
MR-7 107.8-122.7	Susitna River: Off-Channel	Side Slough	Pool		1		1		
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Pool		1		1		
Grand Total				80	63	124	267		

# Table F28. Juvenile Arctic grayling observations outside of Focus Areas in the Middle River by habitat, 2013.

Arctic grayling, juvenile or adult (190-328mm)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
	Proposed Watana Dam Location PRM 187.1										
MD 1 19/ 6 197 1	Susitna River	Main Channel	Run		1	1	2				
WIK-1 104.0-107.1		Side Channel	Glide			3	3				
	Susitna River	Clearwater Plume	Clearwater Plume	4	4	1	9				
		Main Channel	Run		2		2				
MR-2 169.6-184.6		Side Channel	Glide			1	1				
	Susitna River: Off-Channel	Side Slough	Glide		4	30	34				
	Tributary	Tributary Mouth	Riffle		1		1				
		Upper Extent Devils Cany	on PRM 166.1								
		Lower Extent Devils Canyo	on PRM 153.9								
MP-5 1/8 1-153 0	Susitna River	Clearwater Plume	Clearwater Plume	2			2				
WIX-5 140.1-155.5		Main Channel	Riffle			3	3				
MD 6 122 7 1/8 1	Susitna River	Clearwater Plume	Clearwater Plume	4	1		5				
WIK-0 122./-140.1	Susitna River: Off-Channel	Backwater	Backwater	1			1				
MD 7 107 8 122 7	Susitna River	Split Main Channel	Run	1			1				
WIN-7 107.0-122.7	Susitna River: Off-Channel	Upland Slough Beaver Complex	Run	1			1				
MP-8 102 4-107 8	Susitna River	Main Channel	Run			1	1				
WIIX-0 102.4-107.0	Tributary	Tributary	Pool			1	1				
Grand Total				13	13	41	67				

## Table F29. Juvenile or adult Arctic grayling observations in Middle River Focus Areas by habitat, 2013.

Arctic grayling, juvenile or adult (190-328mm)								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total	
	F	Proposed Watana Dam	Location PRM 187.1					
MP-1 184 6-187 1	Susitna River	Main Channel	Run	1		5	6	
MIX-1 104.0-107.1		Side Channel	Riffle			4	4	
	Susitna River	Clearwater Plume	Clearwater Plume	11	47	24	82	
		Main Channel	Run		4	1	5	
		Side Channel	Riffle		4		4	
			Run		7	1	8	
MD 2 160 6 194 6		Split Main Channel	Run		14	2	16	
MR-2 109.0-104.0	Susitna River: Off-Channel	Backwater	Backwater	3	1		4	
		Side Slough	Pool	2			2	
			Run			5	5	
	Tributary	Tributary Mouth	Riffle		11		11	
	Tsusena Creek		Boulder Riffle	34	1	7	42	
		Upper Extent Devils	Canyon PRM 166.1					
		Lower Extent Devils	Canyon PRM 153.9					
MR-5 1/8 1-153 9	Susitna River	Main Channel	Run			1	1	
MIX-5 140.1-155.5		Split Main Channel	Run			2	2	
	Susitna River	Clearwater Plume	Clearwater Plume	2			2	
MR-6 122.7-148.1		Main Channel	Run			1	1	
	Tributary	Tributary Mouth	Run			1	1	
MR-7 107.8-122.7	Susitna River	Split Main Channel	Run			1	1	
Grand Total				53	89	55	197	

# Table F30. Juvenile or adult Arctic grayling observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

## Table F31. Adult Arctic grayling observations in Middle River Focus Areas by habitat, 2013.

		Arctic grayling, adul	t (>328mm)				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Loc	ation PRM 187.1				
MR-1 184.6-187.1	Susitna River	Main Channel	Run		1		1
MR-2 169.6-184.6	Susitna River	Backwater	Backwater Pool	3	1		4
		Clearwater Plume	Clearwater Plume	8	3	2	3
	Susitna River: Off-Channel	Side Slough	Run		1		1
		Upper Extent Devils Can	on PRM 166.1				
		Lower Extent Devils Can	on PRM 153.9				
MR-6 122.7-148.1	Susitna River	Clearwater Plume	Clearwater Plume		1	4	5
	Tributary	Tributary	Run	1			1
		T ributary Mouth	Riffle	3			3
MR-7 107.8-122.7	Susitna River	Main Channel	Run			1	1
MR-8 102.4-107.8	Susitna River	Side Channel	Riffle			1	1
Grand Total				15	7	8	30

Oserwanishin Deesk	11-6:4-4	Maanahahitat	Maaababitat		L	<b>F</b> - 11	Quere d Tetal
Geomorphic Reach	Habitat	Macronabitat	Mesonabitat	Early Summer	Late Summer	Fall	Grand Total
	P	roposed Watana Dam	Location PRM 187.1				
MR-1 184 6-187 1	Susitna River	Main Channel	Run			3	3
WIX-1 104.0-107.1		Side Channel	Riffle			3	3
	Susitna River	Clearwater Plume	Clearwater Plume	12	2	16	30
		Main Channel	Run		11	2	13
MR-2 169.6-184.6		Side Channel	Run		5	3	8
		Split Main Channel	Run		10	2	12
	Susitna River: Off-Channel	Backwater	Backwater		1		1
		Upper Extent Devils	Canyon PRM 166.1				
		Lower Extent Devils	Canyon PRM 153.9				
MR-5 148.1-153.9	Susitna River	Split Main Channel	Run			2	2
MD-6 122 7-1/8 1	Tributary	Tributary	Boulder Riffle		1		1
WIIX-0 122.7-140.1		Tributary Mouth	Run			1	1
Grand Total				12	30	32	74

# Table F32. Adult Arctic grayling observations outside of Focus Areas in the Middle River by habitat, 2013.

		Burbo	t					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Lo	ocation PRM 187.1					
MR-1 184 6-187 1	Susitna River	Main Channel	Run		2	2	3	7
MIX-1 104.0-107.1		Side Channel	Riffle		1			1
	Susitna River	Backwater	Backwater			5		5
		Clearwater Plume	Clearwater Plume				1	1
		Side Channel	Glide				1	1
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		2			2
			Glide			2	2	4
			Pool		1			1
	Tributary	Tributary Mouth	Riffle		1			1
		Upper Extent Devils Ca	nyon PRM 166.1					
		Lower Extent Devils Ca	nyon PRM 153.9					
MR-5 148.1-153.9	Susitna River	Main Channel	Run		2	6		8
	Susitna River	Main Channel	Run			1		1
		Multi Split Main Channel	Run		1		1	2
		Side Channel	Backwater Pool	8				8
			Glide	6	11	2	1	20
			Pool	12				12
			Riffle			1		1
MR-6 122.7-148.1			Run	2				2
	Susitna River: Off-Channel	Backwater	Backwater			3		3
		Side Slough Beaver Complex	Beaver Pond	1			-	1
			Glide			3	1	4
			Pool				1	1
		Upland Slough Beaver Complex	Beaver Pond	2	10	5	57	74
	Tributary	Tributary	Pool				1	1
	Susitna River	Main Channel	Run		1	1	1	3
		Side Channel	Glide	6	1	2		9
			Pool	2				2
		Split Main Channel	Riffle			1		1
			Run		3	2	2	7
MR-7 107.8-122.7	Susitna River: Off-Channel	Backwater	Backwater		21	8	4	33
		Upland Slough Beaver Complex	Beaver Pond		2	1		3
			Glide			1		1
			Run				1	1
	Tributary	Tributary	Pool			2		2
			Riffle		6			6
	Susitna River	Main Channel	Glide		1			1
			Run		1	6	2	9
		Side Channel	Glide			1	8	9
			Pool		1	1		2
			Riffle			1		1
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide	7	1	8		16
			Riffle		1			1
		Upland Slough Beaver Complex	Glide		L		1	1
			Run			1		1
	Tributary	Tributary	Glide			2		2
			Pool	1			2	3
Grand Total				47	70	68	90	275

## Table F33. Burbot observations in Middle River Focus Areas by habitat, 2013.

Burbot										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total			
		Proposed Watana Dam Locati	on PRM 187.1	1	1					
MR-1 184.6-187.1	Susitna River	Main Channel	Run	3	1		4			
	Susitna River	Clearwater Plume	Clearwater Plume			2	2			
		Main Channel	Run	1	1		2			
MP-2 169 6-184 6		Side Channel	Run	1	2	1	4			
WIX-2 105.0-104.0	Susitna River: Off-Channel	Side Slough	Pool	3		2	5			
			Riffle		1		1			
	Tributary	T ributary Mouth	Riffle		2	1	3			
	-	Upper Extent Devils Canyor	PRM 166.1	-						
		Lower Extent Devils Canyor	PRM 153.9							
MD 5 440 4 450 0	Susitna River	Main Channel	Run		1	3	4			
WIK-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	1	1		2			
	Susitna River	Clearwater Plume	Clearwater Plume			1	1			
		Main Channel	Run		1		1			
MD C 400 7 440 4	Susitna River: Off-Channel	Side Slough	Glide		1	3	4			
WR-0 122.7-148.1			Pool	3	6	6	15			
-		Upland Slough Beaver Complex	Beaver Pond	1			1			
	Tributary	T ributary Mouth	Run	1		2	3			
5	Susitna River	Clearwater Plume	Clearwater Plume			3	3			
		Main Channel	Run	1		3	4			
		Side Channel	Run		2		2			
		Split Main Channel	Run			5	5			
	Susitna River: Off-Channel	Backwater	Backwater	2			2			
MD 7 407 0 400 7		Side Slough	Pool		1		1			
WR-/ 10/.8-122./			Run			2	2			
		Side Slough Beaver Complex	Beaver Pond	6	6	2	14			
		Upland Slough	Pool	19	1	2	22			
		Upland Slough Beaver Complex	Beaver Pond		2		2			
	Tributary	Tributary	Run	8	12	4	24			
	-	T ributary Mouth	Riffle			1	1			
	Susitna River	Main Channel	Run	1	2		3			
		Side Channel	Glide	1			1			
			Pool	1	1		2			
MR-8 102.4-107.8		Split Main Channel	Run		1	2	3			
	Susitna River: Off-Channel	Side Slough	Pool	1	3	1	5			
		Upland Slough	Glide	1	1		2			
			Pool	4	3	8	15			
Grand Total				59	52	54	165			

## Table F34. Burbot observations outside of Focus Areas in the Middle River by habitat, 2013.

Dolly Varden										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total		
		Proposed Watana Dam Loo	cation PRM 187.1							
	Susitna River	Backwater	Backwater		1			1		
MD 2 160 6 194 6		Main Channel	Run				1	1		
WIK-2 109.0-104.0	Susitna River: Off-Channel	Side Slough	Pool		1			1		
	Tributary	Tributary Mouth	Riffle		2			2		
		Upper Extent Devils Can	yon PRM 166.1							
	Lower Extent Devils Canyon PRM 153.9									
	Susitna River: Off-Channel Backwater Backwater 2									
		Upland Slough	Glide	1				1		
		Upland Slough Beaver Complex	Beaver Pond	1	2	1	1	5		
	Tributary	Tributary	Pool		4			4		
MR-6 122.7-148.1			Riffle		3			3		
			Run		1			1		
		Tributary Mouth	Glide		14			14		
			Riffle		4			4		
			Run				1	1		
	Susitna River	Split Main Channel	Run		1			1		
	Susitna River: Off-Channel	Backwater	Backwater		2			2		
		Upland Slough	Backwater Pool	3				3		
MD 7 407 0 400 7		Upland Slough Beaver Complex	Glide			1		1		
WIR-/ 10/.0-122./			Run		2			2		
	Tributary	Tributary	Backwater Pool				1	1		
		Tributary Mouth	Cascade		6			6		
			Riffle		1			1		
	Susitna River	Main Channel	Run				1	1		
		Side Channel	Glide				5	5		
MD-8 102 /-107 9			Riffle				2	2		
WIIX-0 102.4-107.0	Susitna River: Off-Channel	Side Slough	Glide			1		1		
		Upland Slough Beaver Complex	Run				1	1		
	Tributary	Tributary	Pool			2	5	7		
Grand Total				5	46	5	18	74		

# Table F35. Dolly Varden observations in Middle River Focus Areas by habitat, 2013.

Dolly Varden									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total	
		Proposed Watana	Dam Location PRM 1	87.1					
MR-1 184.6-187.1	Susitna River	Main Channel	Run		2			2	
	Fog Creek		Boulder Riffle		1			1	
			Pool	14	140	2	4	160	
			Rapid		2			2	
			Riffle	48	39	32	9	128	
			Run		3	21		24	
MR-2 169.6-184.6	Fog Creek Tributary		Rapid	5				5	
	Fog Creek: Off-Channel	Side Slough	Pool		2	1		3	
	Susitna River	Clearwater Plume	Clearwater Plume			2		2	
	Susitna River: Off-Channel	Side Slough	Riffle			1		1	
			Run		1		5	6	
	Tsusena Creek		Boulder Riffle		3		1	4	
		Upper Extent De	evils Canyon PRM 16	6.1					
MD 4 152 0 166 1	Chinook Creek		Boulder Riffle		30	10	9	49	
WIK-4 155.9-100.1			Riffle				14	14	
		Lower Extent De	evils Canyon PRM 15	3.9					
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide		2			2	
MR-6 122.7-148.1	Tributary	Tributary Mouth	Run		1			1	
MR-7 107.8-122.7	Susitna River	Main Channel	Glide				2	2	
Grand Total				67	226	69	44	406	

# Table F36. Dolly Varden observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

#### Table F37. Lamprey observations in Middle River Focus Areas by habitat, 2013.

		l	Lamprey						
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand	Total
		Proposed Watana	a Dam Location Pl	RM 187.1					
	Upper Extent Devils Canyon PRM 166.1								
Lower Extent Devils Canyon PRM 153.9									
	Susitna River         Side Channel         Backwater Pool         1         1								
			Glide				2		2
	Susitna River: Off-Channel	Side Slough	Glide	5	17	1	18		41
			Pool	10					10
MD 0 400 4 407 0			Riffle		9				9
MR-8 102.4-107.0			Run			1			1
	Tributary	Tributary	Glide	2					2
			Pool	2					2
			Riffle		1				1
			Run	1					1
Grand Total				20	28	2	20		70

# Table F38. Lamprey observations outside of Focus Areas in the Middle River by habitat, 2013.

Lamprey												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total						
Proposed Watana Dam Location PRM 187.1												
	Upper Extent Devils Canyon PRM 166.1											
		Lower Extent	Devils Canyon	PRM 153.9								
MR-7 107.8-122.7	MR-7 107.8-122.7 Tributary Tributary Run 4 1 5											
Grand Total				4	1	5						

Table F39, Lond	anose sucker observation	s in Middle River Focus	s Areas by habitat. 2013.
	gilose sucher observation		S Alcus by Hubitut, 2010.

Longnose sucker												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
		Proposed Watana Dam Lo	ocation PRM 187.1									
	Susitna River	Main Channel	Run				1	1				
MR-1 184.6-187.1		Side Channel	Riffle			2	2	4				
			Run		1	3		4				
	Susitna River	Backwater	Backwater		16	17		33				
		Clearwater Plume	Clearwater Plume		1			1				
		Main Channel	Run		5	1		6				
		Side Channel	Glide			5	11	16				
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		44	91		135				
			Glide			50	48	98				
			Pool		64			64				
			Run			2		2				
		Upper Extent Devils Ca	nvon PRM 166.1									
		I ower Extent Devils Ca	nvon PRM 153.9									
	Susitna River	Clearwater Plume	Clearwater Plume		4			4				
MR-5 148.1-153.9		Main Channel	Run			2		2				
	Susitna River	Cleanwater Plume	Cleanwater Plume		1	6		7				
		Main Channel	Run		1	4	-	5				
		Multi Split Main Channel	Run		1	4	1					
		Side Channel	Backwater Pool	6		10		2				
			Glide	0	E	10	٨	24				
			Pool	30	5	12	4	10				
			Piffle	39	1	1		39				
			Run	1		1	2	2				
	Queites Divers Off Observal	Deslaustes	Run		0	2	2	5				
	Sustina River: On-Channel		Dackwaler		0	0		10				
MR-6 122.7-148.1		Side Slough Beaver Complex	Backwater Pool	2	1	0	40	3				
			Beaver Pond	1		2	12	15				
			Glide				14	14				
			Pool	<u> </u>			2	2				
			Run	1	1			2				
		Upland Slough	Backwater Pool	2				2				
		Upland Slough Beaver Complex	Beaver Pond	119	5	3	56	183				
	Tributary	Tributary	Riffle	2				2				
			Run		1			1				
		T ributary Mouth	Riffle		1		1	2				
	Susitna River	Main Channel	Run		2			2				
		Side Channel	Backwater Pool				1	1				
			Glide	44	13	2		59				
			Pool			21		21				
			Riffle			3		3				
MR-7 107.8-122.7		Split Main Channel	Run	<u> </u>	2	8	1	11				
	Susitna River: Off-Channel	Backwater	Backwater	<u> </u>	19	2	2	23				
		Upland Slough	Backwater Pool	3				3				
		Upland Slough Beaver Complex	Beaver Pond	28			1	29				
			Run		2			2				
	Tributary	Tributary	Riffle	L	2			2				
	Susitna River	Main Channel	Run			5	4	9				
		Side Channel	Backwater Pool		6		L	6				
			Glide			36	19	55				
			Pool		9	3		12				
			Riffle			11		11				
MR-8 102 4-107 8	Susitna River: Off-Channel	Side Slough	Glide	67		34	4	105				
			Pool	1			39	40				
		Upland Slough Beaver Complex	Backwater Pool		2			2				
			Beaver Pond		1			1				
			Glide	1				1				
	Tributary	Tributary	Pool			2	5	7				
			Run	1				1				
Grand Total				378	219	356	230	1,183				

		Longnose	e sucker				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
	, P	roposed Watana Dam	Location PRM 187.1				
MR-1 184.6-187.1	Susitna River	Main Channel	Run	1			1
	Susitna River	Clearwater Plume	Clearwater Plume	4			4
		Side Channel	Run	3	5	1	9
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Pool	22		2	24
			Run	3		2	5
	Tributary	Tributary Mouth	Riffle		3		3
	-	Upper Extent Devils	Canyon PRM 166.1				
		Lower Extent Devils	Canyon PRM 153.9				
	Susitna River	Main Channel	Run	2		3	5
MR-5 148.1-153.9		Split Main Channel	Run		1		1
	Susitna River: Off-Channel	Side Slough	Glide	73	7	1	81
	Susitna River	Clearwater Plume	Clearwater Plume	1			1
		Main Channel	Run		2		2
		Side Channel	Pool	1	56		57
			Riffle		14		14
WIR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater	12	3		15
		Side Slough	Pool		13	2	15
		Upland Slough	Pool		1		1
	Tributary	Tributary Mouth	Run		4		4
	Susitna River	Side Channel	Glide			1	1
			Riffle	4		1	5
			Run		4	7	11
MR-7 107.8-122.7		Split Main Channel	Run		4	6	10
	Susitna River: Off-Channel	Backwater	Backwater	11			11
		Side Slough	Pool		24	8	32
	Tributary	Tributary	Run	2	2		4
	Susitna River	Main Channel	Run	4	1	4	9
		Side Channel	Glide	3		5	8
			Pool		21		21
			Run			4	4
MR-8 102.4-107.8		Split Main Channel	Run			6	6
	Susitna River: Off-Channel	Backwater	Backwater			2	2
		Side Slough	Glide			1	1
		-	Pool		84	18	102
		Upland Slough	Pool		17	2	19
Grand Total				146	266	76	488

# Table F40. Longnose sucker observations outside of Focus Areas in the Middle River by habitat, 2013.

# Table F41. Sculpin observations in Middle River Focus Areas by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Lo	ocation PRM 187.1		,			
	Susitna River	Main Channel	Run		25	56	46	127
MR-1 184.6-187.1		Side Channel	Glide				11	11
			Riffle		27	15	28	70
	Susitas Divor	Paalawatar	Run		6	11	21	38
	Susitina River	Cleanwater Plume	Clearwater Plume		1	4	3	20
		Main Channel	Run		43	33	8	84
		Side Channel	Glide		82	30	54	166
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		79	11		90
			Glide			67	24	91
			Pool		93			93
			Run			2		2
	Tributary	T ributary Mouth	Cascade				1	1
			Riffle		40	26		66
		Upper Extent Devils Ca	nyon PRM 166.1					
	Susitna River	Cleanwater Plume	Cleanwater Plume		1			1
		Main Channel	Glide		2			2
MR-5 148.1-153.9			Riffle		1	3	16	20
			Run				3	3
	Susitna River	Main Channel	Run			20		20
		Multi Split Main Channel	Riffle		1	5	18	24
			Run		10	16	39	65
		Side Channel	Backwater Pool	4	11	13		28
			Gilde	27	28	8	54	117
			PUOI Diffio	1	10	40	44	1
			Rime	3	13	13	11	40
		Split Main Channel	Run	3	8		20 12	3/
	Susitna River: Off-Channel	Backwater	Backwater		51	4	12	55
		Side Slough	Backwater Pool	1	51			1
			Glide	1				1
		Side Slough Beaver Complex	Backwater Pool	33	17		10	60
			Beaver Pond	32	4	3	5	44
MD-6 122 7-148 1			Glide	34	81	3	60	178
WIK-0 122.7-140.1			Pool	55	5	2	11	73
			Riffle	5	3		2	10
			Run	19	43			62
		Upland Slough	Backwater Pool	7				7
			Glide	16	40		10	26
	Tributany	Upland Slough Beaver Complex	Beaver Pond Realwater Real	9	13		3	25
	Tributary	Thouary	Glide	24	8		17	/0
			Pool	24	71			73
			Riffle	1	79			80
			Run	2	21		1	24
		T ributary Mouth	Glide				14	14
			Pool		1			1
			Riffle		45	7	11	63
			Run			2	11	13
	Susitna River	Clearwater Plume	Clearwater Plume		3	5		4
		Main Channel	Run		20	2	13	35
		Side Channel	Backwater Pool	05			17	17
			Gilde	25	4	9		38
			Pool	1	12	1		20
		Split Main Channel	Riffle		2	23	_	23
		apman onanibi	Run		4	2	11	17
	Susitna River: Off-Channel	Backwater	Backwater		2	-		2
MR-7 107.8-122.7		Upland Slough Beaver Complex	Beaver Pond			1		1
			Glide		1	2		3
			Pool				5	5
			Run		13		17	30
	Tributary	Tributary	Glide		5	10		15
			Pool		1	1		2
			Riffle		35			35
		Taikutan Mauth	Run				1	1
		1 Houtary Mouth	Cascade Riffle		14			14
	Susitna River	Main Channel	Run		19	12	28	19
		Side Channel	Backwater Pool		4	13	20	40
			Glide		10	5	121	126
			Pool		8	-	12	20
			Riffle		21	29	30	80
			Run		4	9		13
	Susitna River: Off-Channel	Side Slough	Glide	61	164	26	32	283
			Pool	31			58	89
MR-8 102.4-107.8			Riffle		84	23	8	115
		Haland Claugh Direction Control	Kun	3		17		20
		upland Slough Beaver Complex	DdCKWater Pool	11				11
		1	Gilde	7	14	5	8	34
	Tributary	Tributary	Glide	4	n	1	3	4
		- nookiny	Pool	20	3	4	4	35
			Riffle		29	3	-1	32
			Run	12	20			12
Cound Tatal				452	1 / 30	572	000	2 264

Table F42. Scul	pin observations	outside of Focus	Areas in the Middl	e River by habitat. 2013.

Sculpin												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
		Proposed Watana Dam L	ocation PRM 187.1	1								
	Susitna River	Main Channel	Run		30	27	24	81				
MR-1 184.6-187.1		Side Channel	Riffle				8	8				
			Run		12	9		21				
	Fog Creek		Boulder Riffle		4		1	5				
			Pool	2		1	2	5				
			Riffle	6	40	7	24	77				
			Run		5	1	2	8				
	Fog Creek Tributary		Rapid	25				25				
	Fog Creek: Off-Channel	Side Slough	Pool		2		2	4				
	Susitna River	Clearwater Plume	Clearwater Plume		29	13	31	73				
		Main Channel	Run		18	1	8	27				
MR-2 169.6-184.6		Side Channel	Glide				1	1				
			Riffle		12	3		15				
			Run		15	14	6	35				
		Split Main Channel	Run		13	3	9	25				
	Susitna River: Off-Channel	Backwater	Backwater		23	4	2	29				
		Side Slough	Pool		52			52				
			Run		66	22	28	116				
	Tributary	Tributary Mouth	Riffle			21	15	36				
	Tsusena Creek		Boulder Riffle		8	6	11	25				
		IInner Extent Devils Ca	nvon PRM 166 1									
	Chinook Creek	Opper Extent Devils Ca	Boulder Diffle	r	4	1	3	8				
MR-4 153.9-166.1	Chillook Creek		Douider Kille		4	1	5	5				
		Lawar Extant Davila Ca					J	J				
	Sucitos Divor	Lower Extent Devils Ca	Dup	r –	14	25	10	51				
	Sustina River		Run		14	20	12	04				
MR-5 148.1-153.9	Susitas Divers Off Channel	Split Main Channel	Run		105	2	10	24				
	Sustina River: On-Channel	Side Slough	Gilde		125	20	10	101				
	Quality a Divers	Ola anualea Diuma	P00I		10	2	1	1				
	Susitha River	Clearwater Plume	Clearwater Plume		19	3	11	33				
			Run			6	1	1				
		Side Channel	Pool		9	11	17	37				
			Riffle		31	89		120				
	Susitna River: Off-Channel	Backwater	Backwater		9	5		14				
MR-6 122./-148.1		Side Slough	Glide			13	44	57				
			Pool		55	22	40	117				
		Upland Slough	Pool		34	30		64				
		Upland Slough Beaver Complex	Beaver Pond		9		13	22				
	Tributary	Tributary	Boulder Riffle		57	10	7	74				
		T ributary Mouth	Run		9	7	12	28				
	Susitna River	Main Channel	Glide				11	11				
			Run		4			4				
		Side Channel	Glide				14	14				
			Riffle			2	3	5				
MR-7 107 8-122 7			Run		102	40	11	153				
WIN-7 107.0-122.7		Split Main Channel	Run		2		18	20				
	Susitna River: Off-Channel	Backwater	Backwater				3	3				
		Side Slough	Pool		61	16	14	91				
	Tributary	Tributary	Run		12	46	9	67				
		T ributary Mouth	Riffle				2	2				
	Susitna River	Main Channel	Run		10	16		26				
		Side Channel	Glide		25		11	36				
			Pool		2	2		4				
MD-8 103 4 407 9			Run			14	1	15				
WITC-0 102.4-10/.8		Split Main Channel	Run			2	22	24				
	Susitna River: Off-Channel	Side Slough	Pool		7	4	2	13				
		Upland Slough	Glide		24	10	2	36				
			Pool		18	7	7	32				
Grand Total				33	978	541	495	2,047				

O	11-1-24-4	Stickleback, thre	espine	0	Factor Community	L - 4- 0	<b>F</b> - 11	O		
Geomorphic Reach	Habitat	Macronabitat	Mesonabitat	Spring	Early Summer	Late Summer	Fall	Grand Total		
		Proposed Watana Dam Loo	cation PRM 187.1							
		Upper Extent Devils Can	yon PRM 166.1							
Lower Extent Devils Canyon PRM 153.9										
	Susitna River	Side Channel	Glide	1				1		
	Susitna River: Off-Channel	Upland Slough	Backwater Pool	25				25		
MP-7 107 8-122 7			Pool	7				7		
WIX-7 107.0-122.7		Upland Slough Beaver Complex	Beaver Pond	29	3,237	1,326	682	5,274		
			Glide			2		2		
			Pool				1	1		
	Susitna River	Side Channel	Backwater Pool		3			3		
			Glide			3	9	12		
			Pool			2		2		
			Riffle			5		5		
	Susitna River: Off-Channel	Side Slough	Glide		3	5	2	10		
			Pool				3	3		
MD 0 400 4 407 0			Riffle			1		1		
WIK-0 102.4-107.0		Upland Slough Beaver Complex	Backwater Pool	5		2		7		
			Beaver Pond		3		2	5		
			Glide	6	11	56	31	104		
			Run				1	1		
	Tributary	Tributary	Glide	2	3	1		6		
			Pool			1	3	4		
			Run	2				2		
Grand Total				77	3,260	1,404	734	5,475		

# Table F43. Threespine stickleback observations in Middle River Focus Areas by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (April 29-June 29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and habitat stratified random sampling (GRTS).

#### Table F44. Threespine stickleback observations outside of Focus Areas in the Middle River by habitat, 2013.

	Stickleback, threespine											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total					
	-	Proposed Watana Dam Location	PRM 187.1									
Upper Extent Devils Canyon PRM 166.1												
Lower Extent Devils Canyon PRM 153.9												
MR-6 122.7-148.1	Susitna River: Off-Channel	Side Slough	Pool	1	2		3					
	Susitna River: Off-Channel	Backwater	Backwater			1	1					
MD-7 107 8-122 7		Upland Slough	Pool	900	150	319	1,369					
WIN-7 107.0-122.7		Upland Slough Beaver Complex	Beaver Pond	303	10	77	390					
	Tributary	Tributary	Run	3			3					
	Susitna River: Off-Channel	Side Slough	Glide			4	4					
MR-8 102.4-107.8			Pool		1		1					
		Upland Slough	Pool	314	39	1	354					
Grand Total				1,521	202	402	2,125					

		l rout, rain	bow								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total			
Proposed Watana Dam Location PRM 187.1											
		Upper Extent Devils Ca	nyon PRM 166.1								
	i	Lower Extent Devils Ca	nyon PRM 153.9	·	i	. <u> </u>					
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		5			5			
-		Main Channel	Riffle				1	1			
	Susitna River	Clearwater Plume	Clearwater Plume			2	3	5			
		Multi Split Main Channel	Riffle			1		1			
			Run				1	1			
		Side Channel	Glide	1	1			2			
			Riffle	1				1			
			Run	2				2			
		Split Main Channel	Run				2	2			
	Susitna River: Off-Channel	Backwater	Backwater			2		2			
		Side Slough Beaver Complex	Beaver Pond	2				2			
MR-6 122.7-148.1			Glide		1			1			
			Pool		1			1			
			Riffle	1				1			
			Run	5				5			
		Upland Slough	Glide	1				1			
		Upland Slough Beaver Complex	Beaver Pond	2	1	2	2	7			
	Tributary	l ributary	Glide		4			4			
			Riffle		4			4			
			Run		10		1	11			
		Tributary Mouth	Rapid				1	1			
			Riffle		3			3			
	Susitna River	Main Channel	Run			1	1	2			
		Side Channel	Pool			1		1			
			Run	2				2			
MR-/ 10/.8-122./	Susitna River: Off-Channel	Upland Slough Beaver Complex	Beaver Pond		6	1		7			
	Tributary	Tributary	Pool		55			55			
			Riffle		5			5			
		Tributary Mouth	Cascade		5			5			
	Susitna River	Main Channel	Run			1	5	6			
		Side Channel	Backwater Pool		2			2			
			Riffle			1		1			
	Susitna River: Off-Channel	Side Slough	Glide	4		11		15			
MR-8 102.4-107.8		Upland Slough Beaver Complex	Backwater Pool		1			1			
			Beaver Pond		2			2			
	Talkatan	T dhadana	Glide		1			1			
	Tributary	i libutary			2		20	2			
			PU01		3	1	<u>ა</u> გ	42			
Crand Total			Rille	04	440		50	1			
Grand Total				Z1	112	24	50	213			

# Table F45. Rainbow trout observations in Middle River Focus Areas by habitat, 2013.

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Trout, rainbow											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
		Proposed Watana Dam Locati	on PRM 187.1								
		Upper Extent Devils Canyor	n PRM 166.1								
		Lower Extent Devils Canyor	n PRM 153.9								
	Susitna River	Main Channel	Run			4	4				
MR-5 148.1-153.9		Split Main Channel	Run			5	5				
	Susitna River: Off-Channel	Side Slough	Glide	10			10				
	Susitna River	Clearwater Plume	Clearwater Plume	1		1	2				
		Main Channel	Run			1	1				
	Susitna River: Off-Channel	Backwater	Backwater			2	2				
MR-6 122.7-148.1		Side Slough	Pool	1			1				
		Upland Slough Beaver Complex	Beaver Pond	1			1				
	Tributary	Tributary	Boulder Riffle	11	2	3	16				
		Tributary Mouth	Run			2	2				
	Susitna River	Clearwater Plume	Clearwater Plume			1	1				
		Side Channel	Glide			1	1				
		Split Main Channel	Run			1	1				
MR-7 107.8-122.7	Susitna River: Off-Channel	Side Slough Beaver Complex	Beaver Pond	4			4				
		Upland Slough Beaver Complex	Beaver Pond	8		1	9				
	Tributary	Tributary	Run	1			1				
		Tributary Mouth	Riffle			6	6				
MR-8 102.4-107.8	Susitna River: Off-Channel	Upland Slough	Pool	7	5		12				
Grand Total				44	7	28	79				

# Table F46. Rainbow trout observations outside of Focus Areas in the Middle River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

## Table F47. Humpback whitefish observations in Middle River Focus Areas by habitat, 2013.

i	Whitefish, humpback											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Grand Total					
Proposed Watana Dam Location PRM 187.1												
		Upper Extent Devils Cany	on PRM 166.1									
		Lower Extent Devils Cany	on PRM 153.9									
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		3		3					
	Susitna River	Clearwater Plume	Clearwater Plume			1	1					
		Side Channel	Glide			2	2					
MR-6 122.7-148.1			Pool	1			1					
	Susitna River: Off-Channel	Backwater	Backwater		2	1	3					
		Upland Slough Beaver Complex	Beaver Pond	1			1					
MD 7 407 9 400 7	Susitna River	Side Channel	Run	1			1					
WIR-7 107.0-122.7	Susitna River: Off-Channel	Backwater	Backwater		8		8					
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide	7			7					
Grand Total				10	13	4	27					

#### Table F48. Humpback whitefish observations outside of Focus Areas in the Middle River by habitat, 2013.

Whitefish, humpback												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Grand Total							
	Proposed Watana Dam Location PRM 187.1											
	Upper Extent Devils Canyon PRM 166.1											
	Lower Extent D	evils Canyon PR	М 153.9									
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater	5	5							
MR-7 107.8-122.7	MR-7 107.8-122.7 Susitna River: Off-Channel Backwater Backwater 4 4											
Grand Total				9	9							

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH), habitat stratified random sampling (GRTS), and direct tributary sampling (Direct).

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		Whitefish, r	ound			·		
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam L	ocation PRM 187.1					
	Susitna River	Main Channel	Run		2		3	5
MR-1 184 6-187 1		Side Channel	Glide				3	3
WIX-1 104.0-107.1			Riffle				1	1
			Run		1		1	2
	Susitna River	Backwater	Backwater		16	3		19
		Clearwater Plume	Clearwater Plume			10	1	11
		Main Channel	Run		4	1	1	6
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool			1		1
			Glide			8		8
			Pool		2			2
			Run			4		4
	· <u> </u>	Upper Extent Devils Ca	nyon PRM 166.1					
		Lower Extent Devils Ca	nyon PRM 153.9					
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		2			2
	Susitna River	Clearwater Plume	Clearwater Plume		3	4		7
		Main Channel	Run			1		1
		Multi Split Main Channel	Riffle			3		3
			Run				1	1
		Side Channel	Backwater Pool			14		14
			Glide	3	11	5		19
			Riffle		1	1		2
MR-6 122./-148.1		Split Main Channel	Run				1	1
	Susitna River: Off-Channel	Backwater	Backwater		7	2		9
		Side Slough Beaver Complex	Beaver Pond			6		6
		-	Run	5				5
		Upland Slough Beaver Complex	Beaver Pond			5	9	14
	Tributary	Tributary	Glide			1		1
			Pool		1			1
	Susitna River	Main Channel	Run				3	3
		Side Channel	Backwater Pool				2	2
		Split Main Channel	Run			2	4	6
MR-/ 10/.8-122./	Susitna River: Off-Channel	Backwater	Backwater		18	1		19
		Upland Slough Beaver Complex	Glide		1			1
			Run		2			2
	Susitna River	Main Channel	Run				4	4
		Side Channel	Glide			5	7	12
			Pool		2			2
MR-8 102.4-107.8			Riffle				7	7
	Susitna River: Off-Channel	Side Slough	Glide	8		3		11
	Tributary	Tributary	Pool				2	2
Grand Total				16	73	80	50	219

# Table F49. Round whitefish observations in Middle River Focus Areas by habitat, 2013.

Whitefish, round												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total					
	. F	roposed Watana Dam	Location PRM 187.1									
MR-1 184 6-187 1	Susitna River	Main Channel	Run			17	17					
		Side Channel	Riffle			4	4					
	Susitna River	Clearwater Plume	Clearwater Plume	4	3	3	10					
		Main Channel	Run	1	4		5					
MD 2 460 6 494 6		Side Channel	Run			11	11					
WIK-2 109.0-104.0		Split Main Channel	Run	1	4		5					
	Susitna River: Off-Channel	Side Slough	Run			3	3					
	Tsusena Creek		Boulder Riffle	3			3					
	-	Upper Extent Devils	Canyon PRM 166.1									
		Lower Extent Devils	Canyon PRM 153.9									
	Susitna River	Main Channel	Run			23	23					
MR-5 148.1-153.9		Split Main Channel	Run			9	9					
	Susitna River: Off-Channel	Side Slough	Glide	1	3	2	6					
	Susitna River	Main Channel	Run			18	18					
		Side Channel	Pool		2		2					
MR-6 122.7-148.1			Riffle	1	4		5					
	Susitna River: Off-Channel	Backwater	Backwater	3	1		4					
	Tributary	Tributary Mouth	Run			2	2					
	Susitna River	Side Channel	Riffle	1			1					
MD 7 407 9 400 7			Run		16		16					
WIR-7 107.0-122.7		Split Main Channel	Run	1		2	3					
	Susitna River: Off-Channel	Backwater	Backwater	5			5					
	Susitna River	Main Channel	Run			3	3					
MD 9 400 4 407 9		Side Channel	Glide			1	1					
WITE 0 102.4-107.0			Run		1		1					
	Susitna River: Off-Channel	Upland Slough	Pool	4			4					
Grand Total				25	38	98	161					

# Table F50. Round whitefish observations outside of Focus Areas in the Middle River by habitat, 2013.

Whitefish, undifferentiated												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
		Proposed Watana Dam L	ocation PRM 187.1									
MR-1 184.6-187.1	Susitna River	Main Channel	Run				2	2				
	Susitna River	Backwater	Backwater		1			1				
MP-2 160 6-184 6		Clearwater Plume	Clearwater Plume			5		5				
WIR-2 109.0-104.0		Main Channel	Run				1	1				
	Susitna River: Off-Channel	Side Slough	Backwater Pool		10			10				
		Upper Extent Devils Ca	nyon PRM 166.1									
		Lower Extent Devils Ca	nyon PRM 153.9									
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		2			2				
	Susitna River	Clearwater Plume	Clearwater Plume			5		5				
		Side Channel	Backwater Pool	3	5			8				
			Glide	3	51			54				
	Susitna River: Off-Channel	Backwater	Backwater		3	1		4				
MR-6 122.7-148.1		Side Slough Beaver Complex	Glide		30			30				
			Run	2				2				
		Upland Slough Beaver Complex	Beaver Pond	5				5				
	Tributary	T ributary Mouth	Riffle			1		1				
	Susitna River	Side Channel	Glide	4	2			6				
MD 7 107 9 100 7			Pool		1			1				
WIR-7 107.0-122.7		Split Main Channel	Run				1	1				
	Susitna River: Off-Channel	Backwater	Backwater		19			19				
	Susitna River	Side Channel	Backwater Pool		5			5				
			Glide				3	3				
MR-8 102.4-107.8			Pool		9			9				
			Run		1			1				
	Susitna River: Off-Channel	Side Slough	Glide	10	7	7		24				
Grand Total				27	146	19	7	199				

# Table F51. Whitefish (species undifferentiated) observations in Middle River Focus Areas by habitat, 2013.

Table F52. Whitefish (species undifferentiated) observations outside of Focus Areas in the Middle River by habitat, 2013.

Whitefish, undifferentiated													
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total							
		Proposed Watana	Dam Location PRM	187.1									
MR-2 169 6-184 6	Susitna River	Clearwater Plume	Clearwater Plume	1		1							
WIX-2 105.0-104.0	Tributary	Tributary Mouth	Riffle		1	1							
	Upper Extent Devils Canyon PRM 166.1												
	Lower Extent Devils Canyon PRM 153.9												
MD 5 149 1 152 0	Susitna River	Main Channel	Run		1	1							
WIK-5 140.1-155.9		Split Main Channel	Run		1	1							
MD 6 100 7 149 1	Susitna River	Main Channel	Run		1	1							
WIR-0 122.7-140.1	Tributary	Tributary Mouth	Run	1		1							
MR-8 102.4-107.8	Susitna River	Split Main Channel	Run		1	1							
Grand Total				2	5	7							

## INITIAL STUDY REPORT

## LOWER RIVER

## Table F53. Lower River fish observations, 2013.

									LOWe	er RIN	/er																	
Geomorphic Reach/PRM	Habitat	Sample Type	Salmon, Chinook (adult)	Salmon, Chinook (juvenile)	Salmon, chum (adult)	Salmon, chum (Juvenile)	Salmon, coho (adult)	Salmon, coho (juvenile)	Salmon, pink (adult)	Salmon, sockeye (adult)	Salmon, sockeye (juvenile)	Salmon, undifferentiated (juvenile)	Arctic grayling	Burbot	Dolly Varden	Lamprey	Longnose sucker	Northern pike	Sculpin, undifferentiated	Stickleback, ninespine	Stickleback, threespine	Stickleback, undifferentiated	Trout, rainbow	Whitefish, Bering cisco	Whitefish, humpback	Whitefish, round	Whitefish, undifferentiated	Grand Total
	Susitna River	Transect		14	55	1	55	6	4	2	2	2		6	1	8	92		112		8		1			13	22	404
LR-1 97.0.102.4	Susitna River: Off-Channel	Transect		7	160	18	1	7	1	1	279	3	2	12		1	7		31		8					3	1	542
07.9-102.4	Tributary	ELH, Transect	2	59	56	2	2	116	12	3	103	24	6	8	2	11	9		44	3	634	1	14			10		1,121
LR-2	Susitna River	Transect	1	10		1	1	13	1		3	8	7	7	2	1	131		223		12		1	1		20	3	446
65.6-87.9	Tributary	ELH, Transect		57		18		22			1	1				8	2		115		18	1				10		253
10.2	Susitna River	Transect	1	60				1	2		13	2	14	13	1	23	133		141	1	10					6	7	428
LR-3 116656	Susitna River: Off-Channel	ELH, Transect		68		2	1	168	1		18		1	4		6	41		13	115	1,794		14			7	1	2,254
44.0-03.0	Tributary	ELH, Transect		35		7	1	14			5		1	3		14	7		94	2	8		4			5		200
	Susitna River	Transect, RT		9	1	1		1	1	1	2	5	4	36		46	144	6	8		11				1	9	2	288
32 3-11 6	Susitna River: Off-Channel	ELH, Transect		25		2	2	30			18	3	1	55		5	544	1	42	21	1,810	1	18	1	6	25	27	2,637
02.0-77.0	Tributary	ELH, Transect, RT										10		4			5	50	3		6				1			79
	Grand Total		4	344	272	52	63	378	22	7	444	58	36	148	6	123	1,115	57	826	142	4,319	3	52	2	8	108	63	8,652

Table F54. Adult Chinook salmon observations in the Lower River by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Grand Total
LR-1 87.9-102.4	Tributary	Tributary	Glide	2		2
LR-2 65.6-87.9	Susitna River	Clear Water Plume	Clear Water Plume		1	1
LR-3 44.6-65.6	Susitna River	Clear Water Plume	Run	1		1
Grand Total				3	1	4

Salmon, Chinook (adult)

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

## Table F55. Juvenile Chinook salmon observations in the Lower River by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
-	Susitna River	Clearwater Plume	Clearwater Plume	2	5	2		9
		Side Channel Complex	Riffle		1		4	5
	Susitna River: Off-Channel	Side Slough	Backwater Pool		1			1
			Pool			1		1
LR-1 87.9-102.4			Riffle			1		1
			Run		4			4
	Tributary	Tributary	Alcove		2			2
			Glide	4		27		31
			Run	26				26
	Susitna River	Clearwater Plume	Clearwater Plume			3		3
		Main Channel	Run				2	2
		Side Channel	Riffle			3		3
LR-2 65.6-87.9		Side Channel Complex	Glide				2	2
	Tributary	Tributary	Glide		17	12		29
			Run	20				20
		Tributary Mouth	Riffle	8				8
	Susitna River	Clearwater Plume	Clearwater Plume		35		1	36
		Side Channel	Glide		19	1		20
		Side Channel Complex	Riffle				4	4
	Susitna River: Off-Channel	Additional Open Water	Pool		1			1
LR-3 44.6-65.6		Upland Slough	Backwater Pool	3				3
			Glide		18	14	1	33
		Upland Slough Beaver Complex	Beaver Pond	31				31
	Tributary	Tributary	Riffle		5			5
			Run	27			2	29
		Tributary Mouth	Run	1				1
	Susitna River	Clearwater Plume	Clearwater Plume	9				9
	Susitna River: Off-Channel	Side Slough	Run				1	1
LR-4 32.3-44.6		Upland Slough	Backwater Pool		1			1
			Glide			20		20
			Run				3	3
Grand Total				131	109	84	20	344

Salmon, Chinook (juvenile)

	Salmon, chum (adult)												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total						
	Susitna River	Clearwater Plume	Clearwater Plume		21	33	54						
		Split Main Channel	Run		1		1						
	Susitna River: Off-Channel	Side Slough	Glide	1			1						
LR-1 87.9-102.4			Pool			156	156						
			Riffle			3	3						
	Tributary	Tributary	Run			56	56						
LR-4 32.3-44.6	Susitna River	Main Channel	Run		1		1						
Grand Total				1	23	248	272						

## Table F56. Adult chum salmon observations in the Lower River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F57. Juvenile chum salmon observations in the Lower River by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
	Susitna River	Clearwater Plume	Clearwater Plume	1				1
	Susitna River: Off-Channel	Side Slough	Backwater Pool		2			2
LR-1 87.9-102.4			Pool			14		14
			Run		2			2
	Tributary	Tributary	Glide	1		1		2
	Susitna River	Side Channel	Pool				1	1
ID 2656 970	Tributary	Tributary	Glide			1		1
LR-2 03.0-07.9			Run	4				4
		Tributary Mouth	Riffle	13				13
1 D 2 44 6 65 6	Susitna River: Off-Channel	Upland Slough	Glide		1	1		2
LR-3 44.0-03.0	Tributary	Tributary Mouth	Run	7				7
	Susitna River	Side Channel Complex	Run				1	1
LR-4 32.3-44.6	Susitna River: Off-Channel	Upland Slough	Backwater Pool		1			1
			Glide			1		1
Grand Total				26	6	18	2	52

	,	Salmon, cono (adu	t)			
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	Grand Total
	Susitna River	Clearwater Plume	Clearwater Plume	51	3	54
		Split Main Channel	Run		1	1
LR-1 07.9-102.4	Susitna River: Off-Channel	Side Slough	Riffle		1	1
	Tributary	Tributary	Glide	2		2
LR-2 65.6-87.9	Susitna River	Main Channel	Run	1		1
102446656	Susitna River: Off-Channel	Upland Slough	Glide	1		1
LR-3 44.0-03.0	Tributary	Tributary	Glide	1		1
LR-4 32.3-44.6	Susitna River: Off-Channel	Side Slough	Run	2		2
Grand Total				58	5	63

#### Table F58. Adult coho salmon observations in the Lower River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

## Table F59. Juvenile coho salmon observations in the Lower River by habitat, 2013.

Salmon, coho (juvenile)												
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River	Clearwater Plume	Clearwater Plume		4	2		6				
	Susitna River: Off-Channel	Side Slough	Pool				7	7				
101 070 1024	Tributary	Tributary	Alcove		10			10				
LK-1 01.9-102.4			Glide	9		13		22				
			Run	66			16	82				
		T ributary Mouth	Run				2	2				
	Susitna River	Clearwater Plume	Clearwater Plume			1		1				
		Main Channel	Run				1	1				
		Side Channel	Pool				11	11				
LK-2 03.0-01.9	Tributary	Tributary	Glide		1	12		13				
			Run	5				5				
		T ributary Mouth	Riffle	4				4				
	Susitna River	Clearwater Plume	Clearwater Plume		1			1				
	Susitna River: Off-Channel	Additional Open Water	Pool		11	17	3	31				
		Upland Slough	Backwater Pool	1				1				
102446656			Glide		4	10	52	66				
LK-3 44.0-03.0		Upland Slough Beaver Complex	Beaver Pond	11		59		70				
	Tributary	Tributary	Glide			7		7				
			Run	4				4				
		T ributary Mouth	Run	2			1	3				
	Susitna River	Clearwater Plume	Clearwater Plume	1				1				
	Susitna River: Off-Channel	Additional Open Water	Pool		1			1				
LR-4 32.3-44.6		Upland Slough	Backwater Pool		2			2				
			Glide			5		5				
			Run		5		17	22				
Grand Total				103	39	126	110	378				
#### Table F60. Adult pink salmon observations in the Lower River by habitat, 2013.

Salmon, pink (adult)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River	Clearwater Plume	Clearwater Plume		1		1				
		Side Channel Complex	Run		3		3				
LR-1 87.9-102.4	Susitna River: Off-Channel	Side Slough	Glide	1			1				
	Tributary	Tributary	Glide	12			12				
LR-2 65.6-87.9	Susitna River	Main Channel	Run		1		1				
1 D 2 44 6 65 6	Susitna River	Clearwater Plume	Clearwater Plume	2			2				
LK-3 44.0-03.0	Susitna River: Off-Channel	Upland Slough	Glide			1	1				
LR-4 32.3-44.6	Susitna River	Side Channel	Run	1			1				
Grand Total				16	5	1	22				

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F61. Adult sockeye salmon observations in the Lower River by habitat, 2013.

Salmon, sockeye (adult)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
LR-1 87.9-102.4	Susitna River	Clearwater Plume	Clearwater Plume		1		1				
		Side Channel Complex	Run	1			1				
	Susitna River: Off-Channel	Side Slough	Glide	1			1				
	Tributary	Tributary	Glide	1			1				
			Run			2	2				
LR-4 32.3-44.6	Susitna River	Clearwater Plume	Clearwater Plume		1		1				
Grand Total				3	2	2	7				

Salmon, sockeye (juvenile)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total			
	Susitna River	Clearwater Plume	Clearwater Plume		1			1			
		Side Channel Complex	Riffle			1		1			
	Susitna River: Off-Channel	Side Slough	Backwater Pool		37			37			
			Pool			42	9	51			
LR-1 87.9-102.4			Riffle			18		18			
			Run		173			173			
	Tributary	Tributary	Alcove		10			10			
			Glide	30		10		40			
			Run	52			1	53			
	Susitna River	Side Channel	Riffle			1		1			
		Side Channel Complex	Run		1			1			
LR-2 0J.0-07.9		Split Main Channel	Run		1			1			
	Tributary	Tributary Mouth	Riffle	1				1			
	Susitna River	Bar Island Complex	Backwater Pool		2			2			
		Clearwater Plume	Clearwater Plume		4	1		5			
		Side Channel	Glide		3			3			
		Side Channel Complex	Riffle				2	2			
		Split Main Channel	Run		1			1			
102446656	Susitna River: Off-Channel	Additional Open Water	Pool		1	4		5			
LK-3 44.0-03.0		Upland Slough	Backwater Pool	3				3			
			Glide		3	3	1	7			
		Upland Slough Beaver Complex	Beaver Pond	3				3			
	Tributary	Tributary	Glide			1		1			
			Riffle		1			1			
		T ributary Mouth	Run				3	3			
	Susitna River	Clearwater Plume	Clearwater Plume	2				2			
	Susitna River: Off-Channel	Additional Open Water	Pool		4			4			
LR-4 32.3-44.6		Upland Slough	Backwater Pool		1			1			
			Glide			11		11			
			Run		2			2			
Grand Total				91	245	92	16	444			

# Table F62. Juvenile sockeye salmon observations in the Lower River by habitat, 2013.

Salmon, undifferentiated (juvenile)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River	Clearwater Plume	Clearwater Plume			1	1				
LR-1 87.9-102.4		Split Main Channel	Run		1		1				
	Susitna River: Off-Channel	Side Slough	Glide	2			2				
			Run		1		1				
	Tributary	Tributary	Run			24	24				
	Susitna River	Main Channel	Riffle	1			1				
			Run		1		1				
10 2656 970		Side Channel	Run	1			1				
LK-2 05.0-07.9		Side Channel Complex	Run	2			2				
		Split Main Channel	Run	1	2		3				
	Tributary	Tributary	Glide	1			1				
I P-3 // 6-65 6	Susitna River	Multi Split Main Channel	Run		1		1				
LN-3 44.0-03.0		Side Channel Complex	Glide		1		1				
	Susitna River	Main Channel	Run		2		2				
		Multi Split Main Channel	Run	1			1				
		Side Channel	Run		1		1				
LR-4 32.3-44.6		Split Main Channel	Run	1			1				
	Susitna River: Off-Channel	Side Slough	Glide	1			1				
			Run		2		2				
	Tributary	Tributary	Glide		10		10				
Grand Total				11	22	25	58				

# Table F63. Juvenile salmon (species undifferentiated) observations in the Lower River by habitat, 2013.

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
	Susitna River: Off-Channel	Side Slough	Pool	,	1		1
			Riffle			1	1
LR-1 87.9-102.4	Tributary	Tributary	Alcove	4			4
			Glide		2		2
	Susitna River	Clearwater Plume	Clearwater Plume			3	3
10 265 6 97 0		Multi Split Main Channel	Run			1	1
LR-2 65.6-87.9		Side Channel	Run	1			1
		Side Channel Complex	Glide			2	2
	Susitna River	Clearwater Plume	Clearwater Plume			3	3
		Side Channel	Glide	2	1		3
LR-3 44.6-65.6		Side Channel Complex	Riffle			8	8
	Susitna River: Off-Channel	Upland Slough	Glide			1	1
	Tributary	T ributary Mouth	Run			1	1
	Susitna River	Main Channel	Run			1	1
I R-4 32 3-44 6		Side Channel	Glide		1		1
LIX-4 02.0-44.0			Run			2	2
:	Susitna River: Off-Channel	Side Slough	Run			1	1
Grand Total				7	5	24	36

# Table F64. Arctic grayling (all life stages) observations in the Lower River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

# Table F65. Juvenile Arctic grayling observations in the Lower River by habitat, 2013.

Arctic grayling, juvenile (<190mm)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River: Off-Channel	Side Slough	Pool		1		1				
LR-1 87.9-102.4	Tributary	Tributary	Alcove	3			3				
			Glide		2		2				
LR-2 65.6-87.9	Susitna River	Side Channel	Run	1			1				
		Side Channel Complex	Glide			1	1				
	Susitna River	Clearwater Plume	Clearwater Plume			3	3				
102446656		Side Channel	Glide	2	1		3				
LR-3 44.0-03.0		Side Channel Complex	Riffle			7	7				
	Tributary	T ributary Mouth	Run			1	1				
	Susitna River	Main Channel	Run			1	1				
LR-4 32.3-44.6		Side Channel	Run			2	2				
:	Susitna River: Off-Channel	Side Slough	Run			1	1				
Grand Total				6	4	16	26				

## Table F66. Juvenile or adult Arctic grayling observations in the Lower River by habitat, 2013.

Aloue graying, juvenie of addit (100-520mil)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
LR-1 87.9-102.4	Tributary	Tributary	Alcove	1			1				
	Susitna River	Clearwater Plume	Clearwater Plume			2	2				
LR-2 65.6-87.9		Multi Split Main Channel	Run			1	1				
		Side Channel Complex	Glide			1	1				
I P-3 // 6-65 6	Susitna River	Side Channel Complex	Riffle			1	1				
LR-3 44.0-03.0	Susitna River: Off-Channel	Upland Slough	Glide			1	1				
LR-4 32.3-44.6	Susitna River	Side Channel	Glide		1		1				
Grand Total				1	1	6	8				

#### Arctic grayling, juvenile or adult (190-328mm)

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F67. Adult Arctic grayling observations in the Lower River by habitat, 2013.

Arctic grayling, adult (>328mm)											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Fall	Grand Total						
LR-1 87.9-102.4	Susitna River: Off-Channel	Side Slough	Riffle	1	1						
LR-2 65.6-87.9	Susitna River	Clearwater Plume	Clearwater Plume	1	1						
Grand Total				2	2						

Table F68. Burbot	observations	in the Lower	River by	y habitat,	2013.
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Burbot											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River	Bar Island Complex	Run			1	1				
		Clearwater Plume	Clearwater Plume		1		1				
		Side Channel Complex	Riffle	1			1				
			Run		3		3				
	Susitna River: Off-Channel	Side Slough	Glide	3			3				
LR-1 87.9-102.4			Pool			1	1				
			Riffle			7	7				
			Run		1		1				
	Tributary	T ributary Mouth	Run			5	5				
		Tributary	Glide		1		1				
			Run			2	2				
	Susitna River	Main Channel	Run		1	1	2				
		Side Channel	Riffle		1		1				
LR-2 65.6-87.9			Run	1			1				
		Side Channel Complex	Glide			2	2				
			Run		1		1				
	Susitna River	Bar Island Complex	Backwater Pool	1			1				
			Run		1		1				
		Clearwater Plume	Clearwater Plume		1		1				
		Side Channel	Run	1	1		2				
LR-3 44.6-65.6		Side Channel Complex	Glide		7		7				
		Split Main Channel	Run	1			1				
	Susitna River: Off-Channel	Upland Slough	Glide		4		4				
	Tributary	Tributary	Glide		2		2				
			Run			1	1				
	Susitna River	Clearwater Plume	Clearwater Plume	1	9		10				
		Main Channel	Run		5	10	15				
		Multi Split Main Channel	Run	1			1				
		Side Channel	Glide		4		4				
			Run		3		3				
LR-4 32.3-44.6		Side Channel Complex	Run			3	3				
	Susitna River: Off-Channel	Additional Open Water	Pool			1	1				
		Side Slough	Run	5	10	13	28				
		Upland Slough	Glide		3		3				
			Run	7		16	23				
	Tributary	Tributary Mouth	Glide			4	4				
Grand Total				22	59	67	148				

	Dolly Varden											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total					
L P_1 87 0-102 /	Susitna River	Side Channel Complex	Riffle		1		1					
LK-1 07.5-102.4	Tributary	Tributary	Glide		2		2					
I D-2 65 6-87 0	Susitna River	Multi Split Main Channel	Run			1	1					
LR-2 0J.0-07.9		Split Main Channel	Run		1		1					
LR-3 44.6-65.6	Susitna River	Side Channel	Glide	1			1					
Grand Total				1	4	1	6					

# Table F69. Dolly Varden observations in the Lower River by habitat, 2013.

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F70. Lamprey observations in the Lower River by habitat, 2013.

	Lamprey											
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total				
	Susitna River	Clearwater Plume	Clearwater Plume	5		3		8				
	Susitna River: Off-Channel	Side Slough	Run			1		1				
LK-1 07.5-102.4	Tributary	Tributary	Run	9			1	10				
		Tributary Mouth	Run				1	1				
	Susitna River	Clearwater Plume	Clearwater Plume				1	1				
LR-2 65.6-87.9	Tributary	Tributary	Glide		3			3				
		Tributary Mouth	Riffle	5				5				
	Susitna River	Clearwater Plume	Clearwater Plume		6	3	3	12				
		Side Channel	Glide		8		2	10				
		Side Channel Complex	Riffle				1	1				
I P-3 // 6-65 6	Susitna River: Off-Channel	Upland Slough	Backwater Pool	5				5				
LIX-3 44.0-03.0			Glide				1	1				
	Tributary	Tributary	Glide			1		1				
			Riffle		5			5				
			Run	8				8				
	Susitna River	Clearwater Plume	Clearwater Plume	4				4				
		Main Channel	Run			20	13	33				
I P-4 32 3-44 6		Side Channel	Glide			2		2				
LIX-4 J2.J-44.0		Side Channel Complex	Run				7	7				
	Susitna River: Off-Channel	Side Slough	Run			1	2	3				
		Upland Slough	Glide			2		2				
Grand Total				36	22	33	32	123				

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
	Susitna River	Bar Island Complex	Riffle	3	6			6
			Run			4	42	46
		Clearwater Plume	Clearwater Plume		4	8		12
		Side Channel Complex	Riffle		8	8		16
			Run		1		3	4
		Split Main Channel	Run		8			8
LR-1 87.9-102.4	Susitna River: Off-Channel	Side Slough	Glide		2			2
			Riffle				3	3
			Run			2		2
	Tributary	Tributary	Alcove		2			2
			Glide			6		6
		T ributary Mouth	Run				1	1
	Susitna River	Clearwater Plume	Clearwater Plume			5		5
		Main Channel	Riffle		5			5
			Run			1	4	5
		Multi Split Main Channel	Run				2	2
		Side Channel	Riffle			15		15
LR-2 65.6-87.9			Run		8			8
		Side Channel Complex	Glide				33	33
			Riffle			22		22
			Run		11	5		16
		Split Main Channel	Run		2	18		20
	Tributary	T ributary Mouth	Riffle	2				2
	Susitna River	Bar Island Complex	Backwater Pool		6			6
			Pool			12		12
			Run		1	1	4	6
		Clearwater Plume	Clearwater Plume		18	2		20
		Multi Split Main Channel	Run			31		31
		Side Channel	Glide		14	22		36
I P-3 44 6-65 6		Side Channel Complex	Glide			3	7	10
LR-3 44.0-03.0			Riffle				1	1
		Split Main Channel	Run		10		1	11
	Susitna River: Off-Channel	Upland Slough	Glide		3	15	1	19
		Upland Slough Beaver Complex	Beaver Pond	13		9		22
	Tributary	Tributary	Glide			2		2
			Run				2	2
		T ributary Mouth	Run	2			1	3
	Susitna River	Clearwater Plume	Clearwater Plume	10	14	6		30
		Main Channel	Run			40	24	64
		Multi Split Main Channel	Run		26			26
		Side Channel	Glide			1		1
			Run		1	6	4	11
	-	Side Channel Complex	Run				12	12
LR-4 32.3-44.6	Susitna River: Off-Channel	Additional Open Water	Pool		36	3		39
		Side Slough	Run	<u> </u>	147	3	14	164
		Upland Slough	Backwater Pool		3			3
			Glide	<u> </u>		112		112
			Run		2		224	226
	Tributary	I ributary	Glide	3		1	<u> </u>	4
0		I ributary Mouth	Glide				1	1
Grand Total				30	338	363	384	1,115

### Table F71. Longnose sucker observations in the Lower River by habitat, 2013.

#### Table F72. Northern pike observations in the Lower River by habitat, 2013.

Northern pike									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total	
	Susitna River	Clearwater Plume	Clearwater Plume	2	1	3		6	
	Susitna River: Off-Channel	Side Slough	Run		1			1	
LK-4 32.3-44.0	Tributary	Tributary	Glide		18	22	2	42	
			Pool	8				8	
Grand Total				10	20	25	2	57	

# Table F73. Sculpin observations in the Lower River by habitat, 2013.

-		Sculpi	n					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
	Susitna River	Bar Island Complex	Riffle		1			1
			Run			7	47	54
		Clearwater Plume	Clearwater Plume	5	3	1		9
		Side Channel Complex	Riffle		12	13	11	36
			Run		5	3		8
LR-1 87.9-102.4		Split Main Channel	Run		4			4
	Susitna River: Off-Channel	Side Slough	Backwater Pool		6			6
			Pool			1	8	9
			Riffle			8	2	10
			Run		5	1		6
	Tributary	Tributary	Alcove		4			4
			Glide	7		2		9
			Run	21			4	25
		T ributary Mouth	Run				6	6
	Susitna River	Clearwater Plume	Clearwater Plume			2	69	71
		Main Channel	Run				2	2
		Multi Split Main Channel	Run		1		6	7
		Side Channel	Pool				30	30
			Riffle			18		18
			Run		6			6
LR-2 65.6-87.9		Side Channel Complex	Glide				16	16
			Riffle			22		22
			Run		8	2		10
		Split Main Channel	Run		1	40		41
	Tributary	Tributary	Glide		13	21		34
		,	Run	53			9	62
		T ributary Mouth	Riffle	19			-	19
	Susitna River	Bar Island Complex	Backwater Pool		6			6
			Pool		-	18		18
			Run		7	21	7	35
		Clearwater Plume	Clearwater Plume		22	5	. 1	28
		Multi Snlit Main Channel	Run			5		5
		Side Channel	Glide		15	13		28
			Bun		10	10		1
		Side Channel Complex	Glide		1	3	1/	17
I R-3 44 6-65 6		Side Channel Complex	Bup			J	14	17
	Sucitaa Divor: Off Channel	Upland Slough	Rackwater Pool	3			5	3
		opianu Sibugii		5	2	F	0	J 0
		Lipland Slough Peaver Complex	Boover Bond	1	5	J	0	1
	Tributary	Tributany	Glide	- 1		/1		/1
	Thoutary	Thouldry	Bool		1	41		41
			Piffo		12			12
			Rille	30	12		2	12
		Tributary Mouth	Run	JZ 1			2	54 £
	Susitna River	Clearwater Plume	Cleanwater Plumo	4 0			- 4	0 2
		Main Channel	Run			n	1	2
			Glide		4	2 1	<u> </u>	3 1
			Bun				-	2
104222446	Susitas Diver: Off Charges	Sida Slaugh	Run		-		1	1
LN-4 JZ.J-44.0	Susiula River: On-Channel	Side Slough	Rull		5		<u> </u>	5
		opiano Siougn	Dackwaler Pool		1/			1/
			Bup		40	9		9
	Tributory	Tributon	Clide		10		1	11
Grand Tatal	Thoutary	i noutary	Gilde	2	470	2014	240	3
Grand Total				149	170	264	242	825

#### Table F74. Ninespine stickleback observations in the Lower River by habitat, 2013.

Stickleback, ninespine										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total		
LR-1 87.9-102.4	Tributary	Tributary	Alcove		2			2		
			Glide			1		1		
	Susitna River	Side Channel	Glide			1		1		
	Susitna River: Off-Channel	Additional Open Water	Pool		34	53	27	114		
LR-3 44.6-65.6		Upland Slough	Glide			1		1		
	Tributary	Tributary	Run	1				1		
		Tributary Mouth	Run				1	1		
	Susitna River: Off-Channel	Additional Open Water	Pool			3	9	12		
LR-4 32.3-44.6		Upland Slough	Glide			6		6		
			Run		1		2	3		
Grand Total				1	37	65	39	142		

- 		Stickleback, th	reespine					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
	Susitna River	Clearwater Plume	Clearwater Plume	3	5			8
	Susitna River: Off-Channel	Side Slough	Pool				2	2
			Riffle				5	5
LR-1 87.9-102.4			Run		1			1
	Tributary	Tributary	Glide	2	1	95		98
			Run	219			254	473
		T ributary Mouth	Run				63	63
	Susitna River	Clearwater Plume	Clearwater Plume			5	1	6
		Side Channel	Pool				2	2
LR-2 65.6-87.9			Riffle			1		1
		Side Channel Complex	Glide				1	1
			Riffle			2		2
	Tributary	Tributary	Glide			11		11
			Run				5	5
		T ributary Mouth	Riffle	2				2
	Susitna River	Clearwater Plume	Clearwater Plume			9		9
		Side Channel	Glide				1	1
	Susitna River: Off-Channel	Additional Open Water	Pool		38	121	241	400
		Upland Slough	Backwater Pool	2				2
LR-3 44.6-65.6			Glide		16	20	58	94
		Upland Slough Beaver Complex	Beaver Pond	159	136	1,003		1,298
	Tributary	Tributary	Glide			1		1
			Run	6				6
		T ributary Mouth	Run	1				1
	Susitna River	Clearwater Plume	Clearwater Plume	5	5			10
		Side Channel Complex	Run				1	1
	Susitna River: Off-Channel	Additional Open Water	Pool		223	879	4	1,106
I R-4 32 3-44 6		Side Slough	Run		3			3
LI( 4 02.0 44.0		Upland Slough	Backwater Pool		32			32
			Glide			470		470
			Run		141		58	199
	Tributary	Tributary	Glide	6				6
Grand Total				405	601	2,617	696	4,319

# Table F75. Threespine stickleback observations in the Lower River by habitat, 2013.

#### Table F76. Rainbow trout observations in the Lower River by habitat, 2013.

Trout, rainbow									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total	
	Susitna River	Clearwater Plume	Clearwater Plume			1		1	
LR-1 87.9-102.4	Tributary	Tributary	Alcove		7			7	
			Glide			7		7	
LR-2 65.6-87.9	Susitna River	Multi Split Main Channel	Run				1	1	
	Susitna River: Off-Channel	Additional Open Water	Pool		1			1	
102446656		Upland Slough Beaver Complex	Beaver Pond		13			13	
LK-3 44.0-03.0	Tributary	Tributary	Pool		1			1	
			Run	2			1	3	
104222446	Susitna River: Off-Channel	Upland Slough	Backwater Pool		4			4	
LK-4 32.3-44.0			Run		14			14	
Grand Total				2	40	8	2	52	

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F77. Bering cisco whitefish observations in the Lower River by habitat, 2013.

#### Whitefish, Bering cisco

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Fall	Grand Total
LR-2 65.6-87.9	Susitna River	Side Channel Complex	Glide	1	1
LR-4 32.3-44.6	Susitna River: Off-Channel	Side Slough	Run	1	1
Grand Total				2	2

Notes: All data are provisional and subject to ongoing QA/QC. Sampling seasons include: Spring (June 1-29), Early Summer (July 9-August 10), Late Summer (August 11-September 10), and Fall (September 11-October 4). Data sources include: Early-Life History sampling (ELH) and mainstem transect sampling (Transect).

#### Table F78. Humpback whitefish observations in the Lower River by habitat, 2013.

Whitefish, humpback										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Fall	Grand Total					
	Susitna River	Side Channel Complex	Run	1	1					
104222446	Susitna River: Off-Channel	Additional Open Water	Pool	1	1					
LK-4 32.3-44.0		Side Slough	Run	5	5					
	Tributary	Tributary	Glide	1	1					
Grand Total				8	8					

Whitefish, round										
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total		
	Susitna River	Bar Island Complex	Run				6	6		
		Clearwater Plume	Clearwater Plume		2	3		5		
		Side Channel Complex	Run			1	1	2		
LR-1 87.9-102.4	Susitna River: Off-Channel	Side Slough	Riffle				3	3		
	Tributary	Tributary	Alcove		1			1		
			Glide			1		1		
			Run	8				8		
	Susitna River	Main Channel	Run			1	5	6		
LR-2 65.6-87.9		Side Channel	Riffle			1		1		
			Run		1			1		
		Side Channel Complex	Glide				8	8		
		Split Main Channel	Run			4		4		
	Tributary	Tributary	Glide			10		10		
	Susitna River	Clearwater Plume	Clearwater Plume		4		1	5		
		Side Channel Complex	Riffle				1	1		
	Susitna River: Off-Channel	Upland Slough	Backwater Pool	1				1		
LR-3 44.6-65.6			Glide			1	3	4		
		Upland Slough Beaver Complex	Beaver Pond	2				2		
	Tributary	Tributary	Riffle		2			2		
		T ributary Mouth	Run				3	3		
	Susitna River	Clearwater Plume	Clearwater Plume	1				1		
		Main Channel	Run			2	2	4		
LR-4 32.3-44.6		Side Channel	Run			2		2		
		Side Channel Complex	Run				2	2		
	Susitna River: Off-Channel	Additional Open Water	Pool			24	1	25		
Grand Total				12	10	50	36	108		

# Table F79. Round whitefish observations in the Lower River by habitat, 2013.

Whitefish, undifferentiated									
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Sumr	Fall	Grand Total		
	Susitna River	Clearwater Plume	Clearwater Plume	3			3		
LR-1 87.9-102.4		Side Channel Complex	Run	2			2		
		Split Main Channel	Run	17			17		
	Susitna River: Off-Channel	Side Slough	Run	1			1		
LR-2 65.6-87.9	Susitna River	Main Channel	Riffle	1			1		
		Multi Split Main Channel	Run	2			2		
	Susitna River	Clearwater Plume	Clearwater Plume	1			1		
		Side Channel	Glide	1	3		4		
LR-3 44.0-03.0		Side Channel Complex	Riffle			2	2		
	Susitna River: Off-Channel	Additional Open Water	Pool	1			1		
	Susitna River	Multi Split Main Channel	Run	2			2		
	Susitna River: Off-Channel	Additional Open Water	Pool	2			2		
LR-4 32.3-44.0		Side Slough	Run	23		1	24		
		Upland Slough	Backwater Pool	1			1		
Grand Total				57	3	3	63		