## Susitna-Watana Hydroelectric Project Document ARLIS Uniform Cover Page

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#### Notes

Contents: appendix D. Fish seasonal distribution tables -- appendix E. Relative abundance tables -- appendix F. Habitat association tables.

The following parts of Section 9.6 appear in separate files: Main report; Appendix A; Appendix B; Appendix C; Appendices D-F.

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APPENDIX D: FISH SEASONAL DISTRIBUTION TABLES

APPENDIX E: RELATIVE ABUNDANCE TABLES

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)

# Appendix D Fish Seasonal Distribution Tables

### **Initial Study Report**

Prepared for

Alaska Energy Authority



Prepared by

R2 Resource Consultants Inc.
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HDR, Inc.]

February 2014 Draft

#### 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					
	Adult					
(PRM 184.6-187.1) <sup>a</sup>				X		
MR-2	Juvenile				V	
(PRM 169.6-184.6) <sup>b</sup>	Adult			X	Х	
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			Χ	Х	Х
(PRM 148.4-153.9) <sup>a</sup>	Adult			Х		
MR-6	Juvenile	Х	X	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х		
MR-7	Juvenile		Х	Х	Х	Х
(PRM 107.8-122.7) <sup>a</sup>	Adult					
MR-8	Juvenile	Х	Х	Х	Х	Х
(PRM 102.4-107.8) <sup>a</sup>	Adult		Χ	Х		
LR-1	Juvenile		Х	Х	Х	Х
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х		
LR-2	Juvenile		Х	Х	Х	Х
(PRM 65.6-87.9) <sup>a</sup>	Adult				Х	
LR-3	Juvenile		Х	Χ	Х	Х
(PRM 44.6-65.6) <sup>a</sup>	Adult			Χ		
LR-4	Juvenile		Х	Χ	Х	Х
(PRM 32.3-44.6) <sup>a</sup>	Adult					

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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			X	Х	
MR-8	Juvenile	X	X	X	Χ	
(PRM 102.4-107.8) <sup>a</sup>	Adult			X	Χ	X
LR-1	Juvenile		X	X	X	
(PRM 87.9-102.4) <sup>a</sup>	Adult			X	X	X
LR-2	Juvenile		Х	Χ	Χ	X
(PRM 65.6-87.9) <sup>a</sup>	Adult			X	Χ	Χ
LR-3	Juvenile		X	Χ	X	
(PRM 44.6-65.6) <sup>a</sup>	Adult					
LR-4	Juvenile				X	
(PRM 32.3-44.6) <sup>a</sup>	Adult			X	Χ	X

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

<sup>&</sup>lt;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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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				Χ	X
MR-6	Juvenile	X	Χ	X	Χ	X
(PRM 122.7-148.4) <sup>a</sup>	Adult			X	Χ	X
MR-7	Juvenile		X	X	X	X
(PRM 107.8-122.7) <sup>a</sup>	Adult			Х	X	
MR-8	Juvenile	X	X	X	X	X
(PRM 102.4-107.8) <sup>a</sup>	Adult			X	X	X
LR-1	Juvenile		X	X	X	X
(PRM 87.9-102.4) <sup>a</sup>	Adult				X	X
LR-2	Juvenile		X	X	X	X
(PRM 65.6-87.9) <sup>a</sup>	Adult				X	X
LR-3	Juvenile		X	Х	X	X
(PRM 44.6-65.6) <sup>a</sup>	Adult				X	
LR-4	Juvenile		X	Х	X	X
(PRM 32.3-44.6) <sup>a</sup>	Adult				Χ	

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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			X	X	
MR-6	Juvenile		X	X		
(PRM 122.7-148.4) <sup>a</sup>	Adult			X	X	
MR-7	Juvenile			X		
(PRM 107.8-122.7) <sup>a</sup>	Adult			X		
MR-8	Juvenile	X	X	X		
(PRM 102.4-107.8) <sup>a</sup>	Adult			Х	X	
LR-1	Juvenile					
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х	Х	
LR-2	Juvenile		X	Х		
(PRM 65.6-87.9) <sup>a</sup>	Adult			Х	Х	
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			X		

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

### 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)	_	_	-	_	<del>-</del>	_
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			X		
MR-6	Juvenile	X	X	X	Χ	X
(PRM 122.7-148.4) <sup>a</sup>	Adult			Х	X	X
MR-7	Juvenile		X	X	X	X
(PRM 107.8-122.7) <sup>a</sup>	Adult			X	X	
MR-8	Juvenile	X	X	Х	X	X
(PRM 102.4-107.8) <sup>a</sup>	Adult			Χ	Χ	X
LR-1	Juvenile		X	Х	X	X
(PRM 87.9-102.4) <sup>a</sup>	Adult			Х	X	X
LR-2	Juvenile		X	Х	X	
(PRM 65.6-87.9) <sup>a</sup>	Adult					
LR-3	Juvenile		X	Х	Х	X
(PRM 44.6-65.6) <sup>a</sup>	Adult					
LR-4	Juvenile		X	Х	Х	
(PRM 32.3-44.6) <sup>a</sup>	Adult				X	

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

### **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			Х	Х	Х
(PRM 184.6-187.1) <sup>a</sup>			^	^	^
MR-2			Χ	Χ	Х
(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			Х	Х	Х
(PRM 148.4-153.9) <sup>a</sup>			^	^	^
MR-6		Х	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		^	^	^	^
MR-7			Х	Χ	Χ
(PRM 107.8-122.7) <sup>a</sup>			Λ	Λ	Α
MR-8		Х	Х	Χ	Χ
(PRM 102.4-107.8) <sup>a</sup>			^	^	
LR-1			Χ	Χ	Χ
(PRM 87.9-102.4) <sup>a</sup>			^	^	
LR-2			Χ	Χ	Х
(PRM 65.6-87.9) <sup>a</sup>			,,	,	,
LR-3			Χ	Χ	Х
(PRM 44.6-65.6) <sup>a</sup>					
LR-4				Χ	Χ
(PRM 32.3-44.6) <sup>a</sup>					

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

<sup>&</sup>lt;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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### **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			Χ	Х	Χ
(PRM 184.6-187.1) <sup>a</sup>			^	^	^
MR-2			Χ	Χ	Х
(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			Х	Х	Х
(PRM 148.4-153.9) <sup>a</sup>			^	^	^
MR-6		Х	Χ	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		Χ	Λ	X	^
MR-7		Х	Χ	Χ	Χ
(PRM 107.8-122.7) <sup>a</sup>		^	^	^	^
MR-8	Χ	Х	Χ	Χ	Χ
(PRM 102.4-107.8) <sup>a</sup>		^	^		Λ
LR-1			Χ	Χ	Χ
(PRM 87.9-102.4) <sup>a</sup>					Λ,
LR-2			Χ	Χ	Х
(PRM 65.6-87.9) <sup>a</sup>			.,		
LR-3			Χ	Χ	Х
(PRM 44.6-65.6) <sup>a</sup>					
LR-4			Χ	Χ	Х
(PRM 32.3-44.6) <sup>a</sup>					

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

<sup>&</sup>lt;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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### **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				Х	
(PRM 184.6-187.1) <sup>a</sup>				^	
MR-2		Χ	Х	Х	Х
(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			Х	Х	Х
(PRM 153.9-166.1) <sup>d</sup>			^	X	X
Devils Canyon D/S End					
(PRM 153.9)	-	-	-	-	-
MR-5			Х		
(PRM 148.4-153.9) <sup>a</sup>			^		
MR-6		Х	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		^	^	^	^
MR-7		Х	Х	Χ	Χ
(PRM 107.8-122.7) <sup>a</sup>		Λ	χ	Λ	Χ
MR-8		Х	Х	Χ	Х
(PRM 102.4-107.8) <sup>a</sup>		Λ	^	^	^
LR-1				Χ	
(PRM 87.9-102.4) <sup>a</sup>				^	
LR-2		Х	Х	Χ	Χ
(PRM 65.6-87.9) <sup>a</sup>		^	^	^	^
LR-3			Х		
(PRM 44.6-65.6) <sup>a</sup>			, ,		
LR-4					
(PRM 32.3-44.6) <sup>a</sup>					

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna Riv er 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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

### Lamprey

	Winter	Early Life History	Farly Summer	Late Summer	Fall
Location (PRM)	(Feb 1-Apr 14)		_		(Sep 10-Oct 12)
Proposed Watana Dam Location	(1.00.1746111)	(rip: 10 cane co)	(carrying roy	(rug :: cop o)	(66) 10 601 12)
(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			Х		
(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		V		V	V
(PRM 87.9-102.4) <sup>a</sup>		Х		Х	Х
LR-2		Х	Х	V	V
(PRM 65.6-87.9) <sup>a</sup>		X	X	Х	Х
LR-3		V	V	V	V
(PRM 44.6-65.6) <sup>a</sup>		Х	Х	X	Х
LR-4		V		V	V
(PRM 32.3-44.6) <sup>a</sup>		Х		Х	Х

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### Longnose sucker

	Winter	Early Life History		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			Х	Х	Х
(PRM 184.6-187.1) <sup>a</sup>			^	^	^
MR-2			Х	Х	Х
(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>			Χ	Х	Х
MR-6		Х	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		^	^	^	^
MR-7		Х	Χ	Х	Х
(PRM 107.8-122.7) <sup>a</sup>		X	Χ	Χ	^
MR-8		Х	Χ	Х	Χ
(PRM 102.4-107.8) <sup>a</sup>		^	^		^
LR-1			Χ	Х	Χ
(PRM 87.9-102.4) <sup>a</sup>					
LR-2		Х	Χ	Χ	Х
(PRM 65.6-87.9) <sup>a</sup>					
LR-3		Х	Χ	Χ	Х
(PRM 44.6-65.6) <sup>a</sup>		,	,		
LR-4		Х	Χ	Х	Χ
(PRM 32.3-44.6) <sup>a</sup>		,	,	,	

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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					
(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					
(PRM 65.6-87.9) <sup>a</sup>					
LR-3					
(PRM 44.6-65.6) <sup>a</sup>					
LR-4		Х	Χ	χ	Х
(PRM 32.3-44.6) <sup>a</sup>					-

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### Sculpin

	Winter	Early Life History	Early Summar	Lata Summar	Fall
Location (DDM)		(Apr 15-June 30)	_		
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			Χ	Χ	Х
(PRM 184.6-187.1) <sup>a</sup>			,	,	,
MR-2		Х	Χ	Х	Х
(PRM 169.6-184.6) <sup>b</sup>		^	^	Λ	^
Devils Canyon U/S End					
(PRM 169.6)	-	-	-	-	-
MR-3					
(PRM 166.1-169.6) <sup>c</sup>	-	<u>-</u>	•	1	-
MR-4			Х		Х
(PRM 153.9-166.1) <sup>d</sup>			^		^
Devils Canyon D/S End					
(PRM 153.9)	_		<u>-</u>	<del>-</del> 	-
MR-5			Х	Х	Х
(PRM 148.4-153.9) <sup>a</sup>			Λ	Λ	,
MR-6	Х	Х	Χ	Х	Х
(PRM 122.7-148.4) <sup>a</sup>					
MR-7		Х	Χ	Х	Х
(PRM 107.8-122.7) <sup>a</sup>			Α		, , , , , , , , , , , , , , , , , , ,
MR-8	Х	Х	Χ	Х	Х
(PRM 102.4-107.8) <sup>a</sup>	Λ	X	X	X	, , , , , , , , , , , , , , , , , , ,
LR-1		Х	Χ	Х	Х
(PRM 87.9-102.4) <sup>a</sup>		Λ	Λ	X	,
LR-2		Х	Х	Х	Х
(PRM 65.6-87.9) <sup>a</sup>		^	٨	^	^
LR-3		Х	Χ	Х	Х
(PRM 44.6-65.6) <sup>a</sup>		^	<b>A</b>	^	^
LR-4		Χ	Х	Х	Х
(PRM 32.3-44.6) <sup>a</sup>		Λ	٨	Χ	Χ
80 II I ND 4 ND 5 ND 6 N	10 7 110 0 10 4 10				

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

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

<sup>&</sup>lt;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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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			Χ	Χ	
(PRM 87.9-102.4) <sup>a</sup>			^		
LR-2		Х	Х		
(PRM 65.6-87.9) <sup>a</sup>		,	Λ		
LR-3		Х	Χ	Χ	Χ
(PRM 44.6-65.6) <sup>a</sup>		,	,	,	
LR-4			Х	Χ	Х
(PRM 32.3-44.6) <sup>a</sup>			<b>/</b> \	,	

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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			Х	Х	
(PRM 122.7-148.4) <sup>a</sup>			^	^	
MR-7		Х	Χ	Х	Χ
(PRM 107.8-122.7) <sup>a</sup>		Λ	Λ		^
MR-8	Χ	Х	Χ	Х	Χ
(PRM 102.4-107.8) <sup>a</sup>	^				^
LR-1		Х	Χ	Χ	Χ
(PRM 87.9-102.4) <sup>a</sup>					
LR-2		Х	Χ	Χ	Х
(PRM 65.6-87.9) <sup>a</sup>		,	, ,	, ,	,
LR-3		Х	Χ	Χ	Х
(PRM 44.6-65.6) <sup>a</sup>					
LR-4		Х	Χ	Χ	Χ
(PRM 32.3-44.6) <sup>a</sup>			•		

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### Trout, rainbow

	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			Х		Х
(PRM 148.4-153.9) <sup>a</sup>			^		^
MR-6		Х	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		Λ	^	Α	Λ
MR-7		Х	Х	Х	Χ
(PRM 107.8-122.7) <sup>a</sup>			^	^	Λ
MR-8	Χ	Х	Χ	Χ	Χ
(PRM 102.4-107.8) <sup>a</sup>	^				^
LR-1			Χ	Χ	
(PRM 87.9-102.4) <sup>a</sup>					
LR-2		Х	Х	Χ	Χ
(PRM 65.6-87.9) <sup>a</sup>		, ,	, ,		,
LR-3		Х	Χ		Х
(PRM 44.6-65.6) <sup>a</sup>		,	,		
LR-4			Х		
(PRM 32.3-44.6) <sup>a</sup>			, ,		

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

### 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					Χ
(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>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;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.

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

<sup>&</sup>lt;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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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			Х		
(PRM 148.4-153.9) <sup>a</sup>			^		
MR-6		Х	Х	Х	
(PRM 122.7-148.4) <sup>a</sup>		^	^	^	
MR-7		Х	Х		
(PRM 107.8-122.7) <sup>a</sup>		X	Λ		
MR-8		Х	Χ	Х	
(PRM 102.4-107.8) <sup>a</sup>		Α	Λ	Α	
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>					<b>X</b>

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

#### 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				Х	Х
(PRM 184.6-187.1) <sup>a</sup>				^	^
MR-2			Х	Х	Х
(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			Х	Х	Х
(PRM 148.4-153.9) <sup>a</sup>			^	^	^
MR-6		Х	Х	Х	Х
(PRM 122.7-148.4) <sup>a</sup>		^	^	^	^
MR-7			Х	Χ	Χ
(PRM 107.8-122.7) <sup>a</sup>			^	^	^
MR-8	Х	Х	Х	Χ	Χ
(PRM 102.4-107.8) <sup>a</sup>	Λ	Λ	^	^	^
LR-1		Х	Χ	Χ	Χ
(PRM 87.9-102.4) <sup>a</sup>			^	^	^
LR-2			Х	Χ	Χ
(PRM 65.6-87.9) <sup>a</sup>			Λ,		,
LR-3		Х	Χ	Χ	Χ
(PRM 44.6-65.6) <sup>a</sup>			Λ.		
LR-4		Χ		Χ	Χ
(PRM 32.3-44.6) <sup>a</sup>				Α,	,,

<sup>&</sup>lt;sup>a</sup> Geomorphic reaches MR-1, MR-5, MR-6, MR-7, MR-8, LR-1, LR-2, LR-3, and LR-4 include sites located in the mainstem Susitna River and its associated off-channel and tributary habitats within the Zone of Hydrologic Influence (ZHI). Directed sampling efforts outside of the ZHI did not occur in these reaches.

<sup>&</sup>lt;sup>b</sup> Geomorphic reach MR-2 includes sites located in the mainstem Susitna Riv er 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.

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

d 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.

<sup>&</sup>lt;sup>e</sup> Shaded cells indicate sampling effort.

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

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

# **Appendix E Relative Abundance Tables**

### **Initial Study Report**

Prepared for

Alaska Energy Authority



Prepared by

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

February 2014 Draft

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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  $CPUE_{Meso}$  = 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,

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

After determining  $CPUE_{Meso}$  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 abundance by capture method for main channel, off-channel, and tributary habitats of the Middle River, 2013.

					Ma	in Chan	nel					01	ff-Chanr	nel						Tributar	y			All
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)	Seine (N=93; CPUE in fish/1,000 m^2)	Minnow Trap (N=45; CPUE in fish'trap)	yke Net N=17; CPUE in fishtrap)	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)	yke Net N=23; CPUE in fish'trap)	Hoop Trap (N=3; CPUE in fish/frap)	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)	Seine (N=10; CPUE in fish/1,000 m^2)	Minnow Trap (N=36; CPUE in fish'trap)	Fyke Net (N=1; CPUE in fish/trap)	Hoop Trap (N=2; CPUE in fish/frap)	Percent of Sites with CPUE=0 (N=569; all methods)
Salmon,	adult	%CPUE=0	<u>ш</u> =	<b>m</b> =	97%	100%	100%	100%	100%	<u>m</u> =	ш =	100%	100%	100%	100%	100%	B =	<u>ш</u> =	94%	100%	100%	100%	100%	99%
Chinook	addii	Max CPUE			1.7	10070	10070	10070	10070			10070	10070	10070	10070	10070			6.8	10070	10070	10070	10070	7770
O'III IOOK	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%
	juvernie	Max CPUE	14.7	10070	2.7	35.5	1.9	31	0.2	18	10070	1053.4	130.5	4.7	33	10070	32.5	10070	37.9	3.1	7.8	14	1	0470
Salmon, chum	adult	%CPUE=0	14.7		91%	91%	100%	88%	92%	10		94%	100%	100%	100%	100%	32.3		85%	100%	100%	100%	100%	94%
Sainbii, Giuiii	auuii	Max CPUE			61.5	58	10070	13	3			19.5	10070	10070	10070	10070			289	10070	10070	10070	10070	7470
	iuvenile	% CPUE=0	98%	100%	100%	96%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	99%	90%	100%	100%	100%	98%
	juvernie	Max CPUE	8.7	10070	10070	13.3	10070	10070	10070	15.8	10070	10070	10070	10070	10070	10070	10070	10070	104.3	189.8	10070	10070	10070	7070
Salmon, coho	adult	%CPUE=0	0.7		97%	97%	100%	100%	98%	13.0		97%	96%	100%	96%	100%			93%	80%	100%	0%	50%	97%
Salition, cono	auuii	Max CPUE			5	29	10076	10076	1			1.9	0.9	10076	1.5	10076			52.7	8.4	100 /6	5	1	7170
	iuvonilo	%CPUE=0	94%	100%	78%	89%	73%	82%	98%	77%	67%	80%	58%	37%	43%	67%	78%	100%	73%	70%	33%	0%	50%	73%
	juvenile	Max CPUE	29.9	100%				41			13			9				100%			33%	10	30%	13%
Calara alah	adult	%CPUE=0	29.9		1125.5 94%	266 94%	3.3	100%	0.3 86%	269.7	13	1555.6 99%	4553.8 100%	100%	422 100%	21 100%	112.5		1054.5 87%	5502.8 100%	100%	100%	50%	95%
Salmon, pink	aduli						100%	100%					100%	100%	100%	100%				100%	100%	100%		95%
	Lucianilla.	Max CPUE	1000/	000/	6.7	26.7	1000/	1000/	6	000/	1000/	0.5	1000/	1000/	1000/	1000/	1000/	1000/	4334.4	1000/	1000/	1000/	1000/	000/
	juvenile	% CPUE=0	100%	99%	100%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	>99%
0.1		Max CPUE		12.5	070/	000/	4000/	4000/	4000/	1.6		050/	4000/	4000/	0/0/	4000/			070/	4000/	4000/	4000/	4000/	000/
Salmon,	adult	%CPUE=0			97%	99%	100%	100%	100%			95%	100%	100%	96%	100%			97%	100%	100%	100%	100%	98%
sockeye		Max CPUE	0/0/	000/	1.7	2.5	000/	0.007	4000/	000/	4000/	22.6	1001	000/	8	4000/	000/	4000/	4.2	700/	000/	4000/	4000/	0/0/
	juvenile	% CPUE=0	96%	99%	91%	86%	98%	82%	100%	88%	100%	92%	60%	89%	87%	100%	92%	100%	92%	70%	92%	100%	100%	86%
		Max CPUE	22.7	50.1	108.1	121.4	<0.1	25	0.40/	76.6	4000/	1410.2	676.6	1	111	4000/	16.2	1701	37.6	1897.5	0.1	201	4000/	750/
Arctic grayling		%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	9.3	181.8		0.1	77		
Burbot		% CPUE=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	8.9	24		13.8	0.5	15	2	26.4	13			0.8	37		31.6	9.3			1	1		
Dolly Varden		% CPUE=0	99%	98%	97%	99%	93%	88%	98%	98%	100%	98%	93%	99%	96%	100%	74%	100%	76%	100%	89%	0%	100%	91%
		Max CPUE	5.5	9.4	0.9	1.3	0.5	4	1	3.5		44.4	12.5	0.3	1		91.4		243.5		0.7	5		
Lamprey		% CPUE=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		41.4	505.9	2.4	19	3	8.4		36.4		0.2	5	2	
Sculpin,		% CPUE=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	2.4	5	1	583.3	13	66.7	276.9	3.4	5	2	398.5	9.3	111.1	1138.5	3	-0.		
Stickleback,		%CPUE=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				33.3	0.1	1		470.2		8.9	67.1	78.2	1002		2.2		0.7		0.3	1		
Trout, rainbow		% CPUE=0	97%	92%	100%	96%	100%	94%	96%	98%	100%	98%	98%	99%	65%	67%	95%	100%	89%	90%	89%	0%	50%	91%
		Max CPUE	7.9	27.1		14.5		1	0.3	14.1		23.4	0.7	0.1	11	0.5	13.3		54.5	3.3	1.4	38	2	
Whitefish,		% CPUE=0	100%	98%	100%	95%	100%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
humpback		Max CPUE		50.1		66.5		2																
Whitefish, round		%CPUE=0	84%	78%	97%	69%	98%	65%	96%	97%	100%	98%	87%	96%	87%	100%	100%	67%	99%	90%	100%	0%	100%	83%
		Max CPUE	54.9	41.5	1.7	498.7	0.1	16	0.3	10.5		22.2	55.6	0.3	5			18.7	1	2.8		2		
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 CPUE	11.2	24.7	17	33.2		1		67.2		9	12.8	0.1			8.4		8.2					
Percent of	Sites with	n No Fish	5%	45%	38%	39%	27%	12%	37%	20%	67%	22%	7%	6%	0%	0%	19%	67%	34%	50%	14%	0%	0%	L

Table E2. Sample sizes and total effort used for calculating average CPUE for backpack electrofishing in the Middle River, 2013.

Con		ΓΛ οπ	Maara	Mana	Sam	nple Size ( <i>N</i> )			Total Effort uration 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	am Location (F	PRM 187.1)				
			Main Channel	Run	3	3	3	2510	2996	2826
		FA	Cido	Glide			1			444
MR-1	0 '1		Side Channel	Riffle	1	1	1	891	756	1079
(PRM 184.6-	Susitna River			Run	2	2	1	876	852	847
187.1)	Tavor	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	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 169.6-			C'I	Glide			1			156
184.6)		Non-	Side Channel	Riffle	1	1		446	870	
,		FA	Oriannoi	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
				Pool	2	2	2	500	263	341
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	2	2	2	470	346	701
	Orcon	'''		Run	1	1	1	257	240	135

Table E2. Continued.

Geo-		FA or	Macro-	Meso-	Sam	ple Size ( <i>N</i> )			Total Effort uration in sec	conds)
morphic Reach	Stream	Non- FA	habitat Type	habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
				Boulder Riffle	1		1	255		153
MR-2	Fog Creek	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	Tributary	Riffle			1			410
ŕ	•		De	vils Canyon Low	er Extent (PR	M 153.9)		•		
			Clearwater Plume	Clearwater Plume			1			837
		FA		Glide	1			347		
			Main Channel	Riffle	1	1	1	323	755	974
	Cucitno		Channel	Run			1			267
	Susitna River	Non- FA	Main Channel	Run	2	2	2	1893	1470	1357
133.7)			Non- Side Slough	Glide	3	3	1	5335	1944	1053
				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
			- Criainio	Backwater Pool	1			332		
MR-6			Side	Glide	2	1	2	1550	729	3064
(PRM 122.7-	Susitna River	FA	Channel	Riffle	1	1	1	1066	1266	305
148.4)	IXIVOI			Run	1		1	299		1235
				Beaver Pond			1			1199
			Side Slough	Glide	3		2	3128	_	2326
			Beaver Complex	Pool			1			399
			Complex	Riffle	1			94		
				Run	1			914		
		!	Split Main Channel	Run			1			966

Table E2. Continued.

Geo-		FA or	Macro-	Moso	Sam	nple Size ( <i>N</i> )			Total Effort uration in sec	conds)			
morphic Reach	Stream	Non- FA	habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall			
			Talleritani	Glide			1			445			
			Tributary Mouth	Riffle	2		2	1219		928			
			Wodu	Run			1			510			
				Glide	1		1	600		288			
			Tributon	Pool	2			1523					
		FA	Tributary	Riffle	1			1243					
		(cont.)		Run	1			1260					
		(22)	Upland Slough	Glide			1			404			
			Upland Slough Beaver Complex	Beaver Pond	2		3	2184		5026			
		Non- FA	Backwater	Backwater Pool	2	2		949	763				
MR-6	Susitna River		Clearwater Plume	Clearwater Plume	2	1	2	1546	607	1383			
(cont.)	(cont.)		Side	Pool	1	1	3	1010	510	1165			
			Channel	Riffle	2	2		2748	1210				
			C'   C	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			Main Channel	Run	1	1	1	524	530	1153			
(PRM 107.8- 122.7)	Susitna River	FA		Backwater Pool			3			2762			
122.1)			Side Channel	Glide	1	2		321	1776				
			CHAIRE	Pool	2	1		1040	641				
				Riffle		2			1894				

Table E2. Continued.

Geo-		FA or	Macro-	Meso-	Sam	ple Size ( <i>N</i> )			Total Effort uration in sec	conds)		
morphic Reach	Stream	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				
		FA		Glide		1			1000			
		(cont.)	Tributary	Pool		1			590			
			· · · · · · · · · · · · · · · · · · ·	Riffle	1			271				
				Run			1			95		
			Upland Slough	Pool			1			343		
			Beaver Complex	Run			2			1077		
			Clearwater Plume	Clearwater Plume			1			497		
			Main	Glide			1			1040		
			Channel	Run	1			1070				
MR-7	Susitna		Side Channel	Glide			1			570		
(cont.)	River (cont.)	Non- FA		Riffle	1	1	1	1156	423	385		
	(COIII.)			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		
			Slough  Upland Slough	Beaver Pond	3	3	3	3255	2292	1307		
			Main	Glide	1			421				
MR-8			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)			Channel	Riffle	1	2	2	580	1179	1835		
				Run	1	1		855	1133			

Table E2. Continued.

Coo		ΓΛοr	Maoro	Maga	Sam	ple Size ( <i>N</i> )			Total Effort uration 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
		_,	Side Slough	Glide	2			6165		
		FA (cont.)	Side Slough	Riffle	2	1		1774	279	
		(COIII.)	Tributary	Riffle	1			508		
			Main Channel	Run	1	1	1	1350	1235	569
			Side Channel	Glide	1		1	1364		450
MR-8				Pool	2	1	1	1053	315	240
-			Ondriner	Run		1	1		1159	560
		Non-	Cido Clauah	Glide			1			496
		FA	Side Slough	Pool	3	3	2	1640	817	344
			Snlit Main	Run	1	1	1	1091	906	835
				Glide	1	1	1	1904	156	821
			Slough	Pool	2	2	1	2795	1659	168

<sup>1.</sup> 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 E3. Sample sizes and total effort used for calculating average CPUE for boat electrofishing in the Middle River, 2013.

Geo-	FA or			Sar	nple Size ( <i>N</i> )			Total Effort uration in seco	onds)
morphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed Wata	ına Dam Locat	ion (PRM 187.	1)			
MR-1	FA	Main Channel	Run	3	3	3	705	690	956
(PRM 184.6-	Non-FA	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-FA	Main Channel	Run	1	1	1	230	303	1001
184.6)	NOH-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	Clearwater Plume	Clearwater Plume			1			61
(PRM		Main Channel	Run		2	1		193	91
148.1-		Main Channel	Run	2	2	2	464	672	2064
153.9)	Non-FA	Split Main Channel	Run	1	1	1	278	706	1261
	FA	Main Channel	Run		1			194	
MR-6		Multiple Split Main Channel	Run		2	2		373	412
(PRM 122.7-		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
(PRM 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		
	FA	Main Chainei	Run	2	3	3	110	561	1942
MR-8 (PRM	'''	Side Channel	Riffle			1			520
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
			Pool	1	1	1	301	212	233

Table E3. Continued.

Can	ΓΛ ον			Sar	nple Size ( <i>N</i> )			Total Effort uration in seco	onds)
Geo- morphic Reach	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Side Channel (cont.)	Run		1			231		
MR-8 (cont.)	Non-FA (cont.)	Split Main Channel	Run	1	1	1	347	241	220
		Upland Slough	Pool	1	1	1	251	200	276

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

Con				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
			Proposed Watan	a Dam Locatio	on (PRM 187. <sup>-</sup>	1)			
MR-1		Main Channel	Run	1			142.5		
(PRM 184.6-	FA		Riffle	1			320.0		
184.0-		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		
/		Cido Clevel	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-	8.1-		Glide	1			292.5		
153.9)		Main Channel	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)	FA		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	Run			1			200.0
			Glide		1	1		359.0	384.9
		Tributary	Pool	2			198.5		
			Pool	1			469.0		
		Tributary Mouth	Riffle		1			121.9	

Table E4. Continued.

Geo-				San	nple Size ( <i>N</i> )		Total Effort	(area sampleo meters)	d in square
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 (cont.)		Main Channel	Run	3	3	3	143.0	440.0	142.0
(COIII.)	Non-FA	Side Channel	Riffle		1			450.0	
	NOII-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	
			Pool	2	1		800.0	696.0	
MR-7(PRM	FA	Split Main	Riffle	1	1		280.0	130.0	
107.8-		Channel	Run	1	2		400.0	662.5	
122.7)		T	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
		Beaver Complex	Glide	1	2		18.0	165.0	
		Complex	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
MD		Side Channel	Pool	1	1		400.0	360.0	
MR-8 (PRM			Riffle		1	1		150.0	300.0
102.4-	FA		Run	1	1		230.0	280.0	
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
		Beaver Complex	Run		1	1		122.7	80.0

Table E4. Continued.

Coo				Sam	ple 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
		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		

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

Geo-		FA or			Sam	ple Size (N)			rt (area samp iare meters)	oled in
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propos	sed Watana Dam I	Location (PRI	Л 187.1)				
			Clearwater Plume	Clearwater Plume	1	1	1	183	840	779
			Side Channel	Glide Pool			1			590 22
		FA		Backwater Pool	2	1	•	1110	4096	
	Susitna		Side Slough	Glide Pool	1	2	2	3760	1250	3480
	River		Tributary Mouth	Cascade Riffle	1	1	1	36	111	72
MR-2 (PRM			Backwater	Backwater Pool	1	ı		3000	111	
169.6- 184.6)		Non- FA	Clearwater Plume	Clearwater Plume		1			2310	
			Side Channel	Run	1			500		
			Side Slough	Pool	1			1800		
	Tsusena Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	1	1	1	3000	3000	1100
		N.		Pool	1	1	1	534	396	420
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	2	1	2	1727	390	875
				Run	1	1	1	660	660	325
	Fog Creek	Non-	Tributary	Pool	1		1	198		450
	Tributary <sup>1</sup>	FA	,	Riffle	1		1	804		1300
	Ī	I	Devi	ls Canyon Upper	Extent (PRM	166.1)		I		I
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	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 I	Clearwater Plume	1	2	1	600	675	600
148.4)	INIVE			Backwater Pool	1			236		
				Run			1			1900

Table E5. Continued.

Geo-		FA or			Sam	ple Size ( <i>N</i> )	ı		rt (area sam <sub>l</sub> uare meters)	oled in
morphic Reach	Stream	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	Tributon	Pool	2		1	608		144
		(cont.)	Tributary	Riffle	2		1	2226		237
				Run	1		1	888		28
MR-6	Susitna River			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		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
MD 7				Glide		1			91	
MR-7 (PRM	Susitna		Tributary	Pool	2	1		746	215	
107.8-	River	FA		Riffle	1	1	2	28	21	68
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	
			Beaver Complex	Pool			1			38
			Complex	Run	1		2	45		89

Table E5. Continued.

Geo-		FA or			Sam	ple Size ( <i>N</i> )			rt (area samp jare meters)	oled in
morphic Reach	Stream	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 Charral	Backwater Pool	1		1	2206		39
			Side Channel	Glide		1	2		2228	2075
				Riffle	1	1	1	249	185	330
			Side Slough	Glide	3	3	1	4394	5498	2426
				Pool			2			2075
MR-8			Side Slough	Riffle	2	1	1	1540	41	1480
(PRM	Susitna	FA		Run		1			2158	
102.4-	River	FA		Glide	1	1		1079	1122	
107.8)			Tributary	Pool	1	1	1	396	474	1345
				Riffle	1	1	1	138	315	216
			Upland 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

<sup>1.</sup> 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 E6. Sample sizes and total effort used for calculating average CPUE for fyke netting in the Middle River, 2013.

Geo-	FA or			S	ample Size (	<b>V</b> )	(# of r	Total Effort nets set over	night)
morphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed Watan	a 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 Can	yon (PRM 15	3.9-166.1)				
		Backwater	Backwater Pool		2			2	
		Side Channel	Glide	2	2	1	2	2	1
MR-6		Side Chaillei	Riffle	1	1		1	1	
(PRM	FA	Side Slough Beaver Complex	Beaver Pond	1			1		
122.7- 148.4)	I A		Glide		1			1	
140.4)			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 (PRM	Cido Clouab	Glide		1	1		1	2	
	FA	Side Slough	Pool			1			1
102.4- 107.8)		Tributary	Pool			1			1
107.0)	Non- FA	Upland Slough	Pool	1	1	1	1	1	1

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

Geo-		Meso-		Sample Size ( <i>N</i> )		Total Effo	rt (# of nets set o	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 Run			1			2 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	
107.8)	Upland Slough Beaver Complex	Backwater Pool	1			2		

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

Geo-			S	ample Size ( <i>N</i>		(# of t	Total Effort traps set overr	night)
morphic Reach	Macro-habitat Type	Meso- habitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Prop	oosed Watana [	Dam 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 Canyo	n (PRM 153.9-1	66.1)			
	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
	imbutary	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

Table E8. Continued.

Geo-			S	ample Size ( <i>N</i> )		(# of t	Total Effort raps set overn	ight)
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-		Backwater Pool			1			8
122.7)	<b>.</b>	Glide	1	1		3	9	
	Tributary	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 Complex	Pool			1			6
	John Provi	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
MD 0		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	

Table E8. Continued.

Coo		Sample Size (N)			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
	Upland Slough	Beaver Pond			1			7
MR-8 (cont.)	Beaver Complex	Glide	2	3	3	34	40	38
(COIII.)	(cont.)	Run		1	1		3	3

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
		FA		Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	Tavoi		Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
			Side Charmer	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		FA	Side Slough	Backwater Pool	0	0	
		IA	Side Slough	Glide		0	0
			Tributary Mouth	Cascade			0
			Tributary Wouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
	Tavoi			Glide			0
			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
		<u> </u>		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 E9-Continued.

					Salmon	, Chinook (ju	/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
(COIII.)	Tributary	IA	Devils Canyon Upper Exte	nt (PRM 166.1)		<u> </u>	
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 Exte	nt (PRM 153.9)			
			Clearwater Plume	Clearwater Plume			4.3
				Glide	0		
MDF		FA	Main Channel	Riffle	0	9.5	0
MR-5 (PRM	Susitna			Run			0
148.1-	River		Main Channel	Run	0	0	0
153.9)		Non-	Cido Clough	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
			ividitiple Split ividiri Charinei	Run	0	0	1.8
				Backwater Pool	0		
			Side Channel	Glide	0	0	1.9
			Side Chariner	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		3.2
148.4)	MIVO		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
			Tributary	Glide	0		12.5
			TTIDULAL Y	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
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
			Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cido Channal	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(cont.)	Tavol		Cido Claurah	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	
			Side Charmer	Pool	0	0	
				Riffle		0	
			Split Main Channel	Riffle	0	0	
MD 7		FA	Spill Main Chariner	Run	0	0	0
MR-7 (PRM	Susitna	FA	Tributary Mouth	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			Tributary	Pool		0	
			Tributary	Riffle	0		
				Run			0
			Upland Slough Beaver Complex	Pool			0
			Opiana Siough Deaver Complex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		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
			Side Slough	Pool	0	0	0
MR-7 (cont.)	Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)	Tavel	171	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		
			ividiri Cridrinei	Run	0	0	0
				Glide			0
			Side Channel	Pool	0	0	0
		FA	Side Chariner	Riffle	0	0	7.4
				Run	0	0	
			Side Slough	Glide	0.5		
MD 0			Side Slodgii	Riffle	0	0	
MR-8 (PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Side Slough	Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Sibagii	Pool	0	3.1	0

<sup>1.</sup> 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 E10. Average CPUE (fish per 1,000 square meters) for Chinook salmon using seining in the Middle River, 2013.

				Salmo	n, Chinook (juve	nile)
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 (PRM 184.6-187.1)	FA	Cido Channal	Riffle	0		
(1 KW 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		
(1 1011 107.0-104.0)		Cido Cloumb	Glide		0	
		Side Slough	Run		0	
		Devils Cany	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA	Main Channal	Glide	0		
(F IXIVI 140.1-133.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	21.7	4.0	
		Clearwater Plume	Clearwater Plume	0	0	
		Main Channel	Run	0	0	
		Multiple Collination Channel	Riffle		0	
		Multiple Split Main Channel	Run	0	0	0.8
			Backwater Pool	0	0	
		Side Channel	Glide	0	0	0
		Side Channel	Riffle	0	0	
			Run		0	0
	FA		Backwater Pool	0		
MD (	FA	Cida Claugh Daguar Camplay	Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1 IXIVI 122.7-140.4)			Pool		0.7	
		Split Main Channel	Run			0
		Tributany	Glide		2.8	0
		Tributary	Pool	0		
		Tributany Mouth	Pool	0		
		Tributary Mouth	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	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

### 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	
		Calit Main Channal	Riffle	0	0	
		Split Main Channel	Run	0	0	
	FA		Backwater Pool			3.1
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
			Beaver Pond	1.9	0	0
		Upland Slough Beaver Complex	Glide	55.6	0	
		Complex	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		

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

Geo-		FA or			Salmon,	Chinook (ad	ult)	Salmon, C	Chinook (juve	enile)		
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
			Propos	sed Watana Dam I	ocation (PRN	/I 187.1)						
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0		
			Side Channel	Glide			0			0		
			Side Chamilei	Pool			0			0		
	Susitna River	FA		Backwater Pool	0	0		0	0			
			Side Slough	Glide		0	0		0	0		
				Pool	0			0				
			Tributary	Cascade			0			0		
			Mouth	Riffle	0	0		0	0			
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0			0				
184.6)		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	0.3	0	0	0	0	0		
	_	Non- FA		Pool	0	0	0	0	0	0		
	Fog Creek <sup>1</sup>			-	Tributary	Riffle	0	0	0	0	0	0
				Run	0	0	0	0	0	0		
	Fog	Non-	Tributon	Pool	0		0	0		0		
	Creek Tributary <sup>1</sup>	FA	Tributary	Riffle	0		0	0		0		
		•	Devi	ls Canyon Upper I	Extent (PRM 1	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 I	Extent (PRM 1	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-Continued.

Geo-		FA			Salmon,	Chinook (ad	ult)	Salmon, C	chinook (juve	enile)
morphic Reach	Stream	or 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	Glide	0	0	0	0	0	0
			Complex	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	Tallerateur	Pool	0		0	0		0
			Tributary	Riffle	0.3		0	0		0
				Run	6.8		0	0		0
(cont.)				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
		Non-	Side Slough	Pool	0	0	0	0	0	0
			Tributary	Boulder Riffle		0			0	
			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 107.8- 122.7)	FA		Glide		0			0		
		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.

Geo-		FA			Salmon,	Chinook (ad	ult)	Salmon, C	Chinook (juve	enile)
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	0.3	5.4
		FA	Upland Slough Beaver	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
				Backwater Pool	0		0	2.7		0
			Side Channel	Glide		0	0		1.3	0
				Riffle	0	0	0	0	0	0
				Glide	0	0	0	0	0	0
			Side Slough	Pool			0			0
MR-8				Riffle	0	0	0	0	0	0
(PRM	Susitna	FA		Run		0			0	
102.4- 107.8)	River	171		Glide	0	0		0.9	3.6	
107.0)			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
			Beaver	Glide	0	0	0	351.1	0	0
				Run		0	0		0	0

<sup>1.</sup> 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 E12. Average CPUE (fish per trap) for Chinook salmon using fyke netting in the Middle River, 2013.

				Salmor	n, Chinook (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-2		Backwater	Backwater Pool	1.0	0				
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0			
		Devils Canyon (P	RM 153.9-166.1)						
		Backwater	Backwater Pool		1.5				
		Cido Chonnol	Glide	0	0	0			
MR-6	FA	Side Channel	Riffle	0	0				
(PRM 122.7-			Beaver Pond	3.0					
148.4)		Side Slough Beaver Complex	Glide		0				
							Pool	9.0	0
		Upland Slough Beaver Complex	Beaver Pond	16.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	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			
		Cide Claush	Glide		26.0	2.0			
MR-8	FA	Side Slough	Pool			2.0			
(PRM 102.4- 107.8)		Tributary	Pool			14.0			
,	Non-FA	Upland Slough	Pool	2.0	0	0			

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

		Salmon, Chinook (juve			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)	Cide Channel	Glide			0
(FIXIVI 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (PI	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			0.2
	Main Channel	Run	0	0	0
MR-7 (PRM 107.8-122.7)	Split Main Channel	Run	0	0	0
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(FIXIVI 102.4-107.0)	Tributary	Pool	0	1.0	
	Upland Slough Beaver Complex	Backwater Pool	0		

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

			Salr	non, Chinook (juver	nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed \	Watana Dam Location (PRM 1	87.1)		
MD 4		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(1 KW 104.0 107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
LID 0	Side Channel	Glide			0
MR-2 (PRM 169.6-184.6)		Backwater Pool	0	0	
(I KW 107.0-104.0)	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
	Cide Clevels Desires Commission	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
	Tallerdam	Pool	0		0
	Tributary	Riffle	0		0.50
		Run	0		0.14
		Glide		0	0.25
	T ' 1 NA 11	Rapid			0.60
	Tributary Mouth	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 (PRM 107.8-122.7)	Cido Channal	Glide	0	0	
	Side Channel	Pool		0	
		Riffle		0	
	Tallerdam	Backwater Pool			2.50
	Tributary	Glide	0	0.22	

Table E14. Continued.

			Salr	non, Chinook (juver	nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0.42
	Tributany Mouth	Cascade	0		
MR-7 (cont.)	Tributary Mouth	Riffle	0		
(COIII.)		Beaver Pond	0.67	0.45	0
	Unland Claugh Deguer Compley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0.25		0
		Backwater Pool			0.50
		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	
		Beaver Pond			2.43
	Upland Slough Beaver Complex	Glide	0	1.90	0.06
		Run		4.67	2.00

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	Mesohabitat Type	Early Summer	Late Summer	Fall			
		l	Proposed Watana Dam Location				-			
			Main Channel	Run	0	0	0			
				Glide			0			
MR-1		FA	Side Channel	Riffle	0	0	0			
(PRM 184.6-	Susitna River			Run	0	0	0			
187.1)	MVCI		Main Channel	Run	0	0	0			
		Non- FA	Side Channel	Riffle			0			
			Side Charliner	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			
			Tributary Mouth	Cascade			0			
			Tributary Mouth	Riffle		0				
			Backwater	Backwater Pool	0	0	0			
			Clearwater Plume	Clearwater Plume	0	0	0			
	Susitna River		Main Channel	Run	0	0	0			
	Rivei							Glide		
			Side Channel	Riffle	0	0				
MD 2		Non- FA		Run	0	0	0			
MR-2 (PRM		IA		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			
		' ' '		Run	0	0	0			
				Boulder Riffle	0		0			
	Fog Creek	Non-	T. II	Pool	0	0	0			
	Tributary <sup>1</sup>	FA	Tributary	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						
			Devils Canyon Upper Exte	ent (PRM 166.1)									
MR-4 (PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0						
166.1)			Devils Canyon Lower Exte	Riffle									
			Clearwater Plume	Clearwater Plume			0						
			Glearwater Flame	Glide	0		<u> </u>						
MR-5		FA	Main Channel	Riffle	0	0	0						
(PRM	Susitna			Run			0						
148.1- 153.9)	River		Main Channel	Run	0	0	0						
133.7)		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
			Watapie Spitt Wall Sharife	Run	0	0	0						
				Backwater Pool	0								
			Side Channel	Glide	0	0	0						
			Side Gridiner	Riffle	0	0	0						
				Run	0		0						
MR-6				Beaver Pond			0						
(PRM 122.7-	Susitna River	FA		Glide	0		0						
148.4)	141701		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						
			Tributary	Glide	0		0						
			Tributary	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			
			Tributary	Riffle	0					
		FA	Tributary	Run	0					
			Upland Slough	Glide			0			
			Upland Slough Beaver Complex	Beaver Pond	0		0			
			Backwater	Backwater Pool	0	0				
			Clearwater Plume	Clearwater Plume	0	0	0			
	MR-6 Susitna River		Cido Channal	Pool	0	0	0			
MR-6			Side Channel	Riffle	0	0				
(cont.)	TAIVOI		Cide Clevel	Glide		0	0			
		Non- FA	Side Slough	Pool	0	0	0			
		I A	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	
				Glide	0	0				
			Side Channel	Pool	0	0				
				Riffle		1.4				
				Riffle	0	0				
			Split Main Channel	Run	0	0	0			
MR-7 (PRM	Susitna	FA		Cascade	0					
107.8-	River		Tributary Mouth	Riffle	0					
122.7)				Glide		0				
				Pool		0				
			Tributary	Riffle	0					
				Run			0			
				Pool			0			
			Upland Slough Beaver Complex	Run			0			
		Non-	Clearwater Plume	Clearwater Plume			0			
		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			
			Side Channel	Glide			0	
				Riffle	0	0	0	
	MR-7 Susitna (cont.) River			Run	0	0	0	
			Side Slough	Pool	0	0	0	
		Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0	
(cont.)	Mivel	''	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			
		FA		Run	0	0	0	
				Glide			0	
				Side Channel	Pool	0	0	0
			A Side Charmer	Riffle	6.2	0	0	
				Run	0	0		
			Side Slough	Glide	0			
MD 0			Side Slough	Riffle	0	0		
MR-8 (PRM	Susitna		Tributary	Riffle	0			
102.4- 107.8)	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	
			Side Slough	Pool	0	0	0	
			Split Main Channel	Run	0	0	0	
			Upland Slough	Glide	0	0	0	
			Opiana Sibuyii	Pool	0	0	0	

<sup>1.</sup> 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 E16. Average CPUE (fish per 1,000 square meters) for chum salmon using seining in the Middle River, 2013.

	FA or			Salmo	n, chum (adu	lt)	Salmon,	chum (juver	nile)
Geomorphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		F	Proposed Watana Dam L	ocation (PRN	187.1)				
MR-1		Main Channel	Run	0			0		
(PRM 184.6-	FA	Side Channel	Riffle	0			0		
187.1)		Side Charlinei	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 Clevels	Glide		0			0	
		Side Slough	Run		0			0	
	•		Devils Canyon (PR	M 153.9-166.	1)				
MR-5		Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
(PRM 148.1-	FA	Main Channal	Glide	0			0		
153.9)		Main Channel	Run		0			0	
		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	
		Multiple Split Main	Riffle		0			0	
		Channel	Run	0	0	0	0	0	0
			Backwater Pool	0	0		0	0	
		Side Channel	Glide	0	1.1	0	0.2	0	0
			Riffle	0	0		0	0	
			Run		0	0		0	0
	FA		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
		Tributary	Pool	0			94.9		
		Tributary Mouth	Pool	0			0		
		Tributary Mouth	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- FA	Side Channel	Riffle		0			0	
	FA	Tributary Mouth	Run	0			0		

## Table E16-Continued.

	FA or			Salmoi	n, chum (adu	lt)	Salmon, 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		
	FA	Split Main Channel	Riffle	0	0		0	0		
MR-7 (PRM 107.8-	IA		Run	0	0		0	0		
(PRIVI 107.8- 122.7)			Backwater Pool			0			0	
122.77		Tributary	Pool	0			0			
			Riffle			0			0	
			Beaver Pond	0	0	0	0	0	0	
		Upland Slough Beaver Complex	Glide	0	0		0	0		
			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- 107.8)		Side Slough	Pool			0			0	
107.6)			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			

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

Geo-		FA			Salmor	n, chum (adu	It)	Salmon,	chum (juver	nile)		
morphic Reach	Stream	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall		
			Propos	sed Watana Dam I	ocation (PRI	Л 187.1)						
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0		
			Side Channel	Glide			0			0		
			Side Gridinici	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)	RM 9.6- 4.6) No		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		
	_		Niere	Non		Pool	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-	Talle dans	Pool	0		0	0		0		
	Creek Tributary <sup>1</sup>	FA	Tributary	Riffle	0		0	0		0		
			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	0	0	0	0	0	0		
			Devi	ls Canyon Lower I	Extent (PRM	153.9)						
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		0	0			
MP (			Backwater	Backwater Pool	0	61.5		0	0			
MR-6 (PRM 122.7-	Susitna River	FA	Clearwater FA Plume	Clearwater Plume	0	7.0	1.7	0	0	0		
148.4)	NIVCI		Side Channel	Backwater Pool	0			0				
				Run			0			0		

# Table E17-Continued.

Geo-		FA			Salmor	n, chum (adu	lt)	Salmon,	chum (juver	nile)
morphic Reach	Stream	or 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	Glide	0	6.9	0	0	0	0
			Complex	Pool	0	0.3	0	0	0	0
				Riffle	0	0	0.9	0	0	0
				Run	0		19.5	0		0
				Glide	17.8	0	1.3	0	0	0
		FA		Pool	144.5		0	0		0
		FA	Tributary	Riffle	3.1		0	0		0
				Run	42.8		0	0		0
MR-6 (cont.)	Susitna River			Glide	0	29.6	0	104.3	0	0
(00111.)	1		Tributary	Pool	0			0		
			Mouth	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
			Side Slough	Pool	0	0	0	0	0	0
			Tributary	Boulder Riffle		0			0	
		Non-	Upland Slough	Pool	0	0.8	0	0	0	0
		FA	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.

Geo-		FA or			Salmor	n, chum (adu	lt)	Salmon,	chum (juver	nile)
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	FA	Beaver 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
				Glide	0	0	0	0	0	0
				Pool			0			0
MR-8			Side Slough	Riffle	0	0	0	0	0	0
(PRM	Susitna	FA		Run		0			0	
102.4- 107.8)	River	17		Glide	0	1.8		0	0	
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
			Beaver	Glide	0	0	0	0	0	0
				Run		0	0		0	0

<sup>1.</sup> 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 E18. Average CPUE (fish per trap) for chum salmon using fyke netting in the Middle River, 2013.

				Saln	non, chum (adı	ılt)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam	Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		6.5	
		Side Channel	Glide	0	0	0
MR-6		Side Channel	Riffle	0	Summer   Summer	
(PRM 122.7-	FA		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	0		0
(PRM 107.8-	FA	Split Main Channel	Riffle	1.0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	0
		Cido Claush	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 E19. Average CPUE (fish per trap) for chum salmon using hoop trapping in the Middle River Focus Areas, 2013.

			Salr	mon, chum (ac	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)	Cide Champel	Glide			0
(1 KW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (P	RM 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
(FKIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0.5	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(r IXIVI 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- morphic		FA or Non-			Early	Late	
Reach	Stream	FA	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
		T	Proposed Watana Dam Location	i	0	0	0
			Main Channel	Run	U	U	0
		FA	C.1 O.	Glide	0	0	-
MR-1 (PRM	Susitna		Side Channel	Riffle	0	0	0
184.6-	River			Run			
187.1)		Non-	Main Channel	Run	0	0	0
		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	
		173		Glide		0	0
			Tributary Mouth	Cascade			0
			Tributary Wouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
	MIVO			Glide			0
			Side Channel	Riffle	0	0	
MR-2		Non- FA		Run	0	0	0
(PRM		170		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
	Fog Creek	Non-		Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0	0	0
				Riffle	0	0	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	
MR-2 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0	
(001111)			Devils Canyon Upper Exte	ent (PRM 166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0	
100.1)			Devils Canyon Lower Exte				U	
			Clearwater Plume	Clearwater Plume			0	
				Glide	0			
MR-5		FA	Main Channel	Riffle	0	0	0	
(PRM	Susitna			Run			0	
148.1- 153.9)	River		Main Channel	Run	0	0	0	
133.7)		Non-	Side Slough	Glide	0.5	3.7	27.4	
		FA	Side Slough	Pool			29	
			Split Main Channel	Run	0	0	4	
			Backwater	Backwater Pool			29.9	
				Main Channel Run		0	0	
					Multiple Split Main Channel Riffle	0	0	0
			manupro opin mani onamio	Run	0	0	0	
				Backwater Pool	0			
			Side Channel	Glide	0	0	0.9	
			Side Original	Riffle	0	0	0	
				Run	0		0	
MR-6				Beaver Pond			0	
(PRM 122.7-	Susitna River	FA		Glide	0		9.4	
148.4)	141701		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	
			Tributary	Glide	0		87.5	
			Tributary	Pool	4			

# 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
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
			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
			Cido Channal	Pool	0	28.2	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(cont.)	TAIVOI		Cido Cloudh	Glide		0	0
		Non- FA	Side Slough	Pool	0	6.6	110.8
			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 12.8 134.8 0	46.9
			Clearwater Plume	Clearwater Plume	134.8 0	0	
			Main Channel	Run	0	0	0
					Backwater Pool		
			Cide Channel	Glide	0	0	
			Side Channel	Pool	2.5	0	
				Riffle		0	
				Riffle	0	0	
		1	Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	T. 1	Cascade	18		
107.8-	River		Tributary Mouth	Riffle	43.7		
122.7)				Glide		7.2	
			T. 1	Pool		6.1	
			Tributary	Riffle	66.4		
				Run			0
				Pool			31.5
			Upland Slough Beaver Complex	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- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0						
(oonii)	141701	173	Split Main Channel	Run	0	0	0						
			Tributary Mouth	Riffle	0		0						
			Tributary	Run	2.2	61.8	7.5						
			Upland Slough	Pool	0	0	0						
			Upland Slough Beaver Complex	Beaver Pond	0	0	14.8						
				Main Channel	Glide	0							
			ividiri Cridiffiei	Run	0	0	0						
			Glide	Glide			0						
										Side Channel	Pool	12.9	0
		FA	Side Oridine	Riffle	0	0	2.5						
				Run	0	0							
			Side Slough	Glide	0.6								
MD 0			Side Slodgii	Riffle	0	0							
MR-8 (PRM	Susitna		Tributary	Riffle	7.1								
102.4- 107.8)	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						
			Side Slough	Pool	3.9	9.5	0						
			Split Main Channel	Run	0	0	0						
			Upland Slough	Glide	0	23.1	0						
			Opiana Sibagii	Pool	0	0	0						

<sup>1.</sup> 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	Non EA	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-	N F A	Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Can	yon (PRM 153.9-166.1)			
	ГЛ	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)	N FA	Main Channel	Run	0	0	0
100.7)	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	0		0
1 10. 1)	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	0		
122.7)	Non-FA	Main Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Main Channal	Glide	0		
	ΕΛ.	Main Channel	Run	0	0	0
	FA	Cide Observed	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		0
. 57. 57	N	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	13.0

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

	FA			Salmo	n, coho (adu	lt)	Salmon	coho (juven	ile)
Geomorphic Reach	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Pro	oposed Watana Dam Lo	cation (PRM	187.1)				
MR-1		Main Channel	Run	0			0		
(PRM 184.6-	FA	Cido Channal	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)		Cido Clough	Glide		0			0	
		Side Slough	Run		0			0	
			Devils Canyon (PRM	1 153.9-166.1)					
MR-5		Clearwater Plume	Clearwater Plume	0	6.0	0	129.7	0	0
(PRM 148.1-	FA		Glide	0			0		
153.9)		Main Channel	Run		0			0	
		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	
		61.1.01	Glide	0	0	0	0	0	0
		Side Channel	Riffle	0	0		0	0	
			Run		0	0		0	0
	ГЛ		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			10.0	
		Split Main Channel	Run			0			0
		Tributory	Glide		8.4	2.6		0	0
		Tributary	Pool	0			2751.4		
		Tributary Mouth	Pool	0			0		
		Tributary Mouth	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 0 0 0 10.0 0 0 0 0 0	
	ΓA	Tributary Mouth	Run	0			0		
		Backwater	Backwater Pool	0			133.1		
MR-7		Clearwater Plume	Clearwater Plume	0	0	0	5.4	0	0
(PRM 107.8- 122.7)	FA	Main Channel	Run		0			0	
122.1)		Side Channel	Backwater Pool	1		0		Date Summer  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0

## Table E22-Continued.

	FA			Salmo	n, coho (adu	lt)	Salmor	n, coho (juvenile)		
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 Charine	Pool	0	0		0	Late Summer F 0 0 0 0 0 0 0 0 44 0 0 24 0 0 0 0 0 0 0		
		Split Main Channel	Riffle	0	0		0			
		Spiit Main Channel	Run	0	0		0	0		
	FA		Backwater Pool			0			46.9	
MR-7	17	Tributary	Pool	0			52.4			
(cont.)			Riffle			0			0	
		Unland Claudh	Beaver Pond	0	0	0	0		3.9	
		Upland Slough Beaver Complex	Glide	0	0		500.0	23.6		
		Boavor complex	Run	0			4553.8			
	Non- FA	Split Main Channel	Run	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 (PRM 102.4-			Glide	0	0.4	0.4	137.8	5.6	0	
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	
		Upland Slough	Glide	0			0			

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

Geo-		FA			Salmo	n, coho (adu	lt)	Salmon	coho (juven	ile)
morphic Reach	Stream	or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Propos	sed Watana Dam I	Location (PRI	Л 187.1)				
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
			Side Channel	Glide			0			0
			Side Chariner	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-			Backwater	Backwater Pool	0			0		
184.6)		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
				Pool	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 Creek	Non-	Tributon	Pool	0		0	0		0
	Tributary <sup>1</sup>	FA	Tributary	Riffle	0		0	0		0
			Devi	ils Canyon Upper I	Extent (PRM	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	ils Canyon Lower I	Extent (PRM	153.9)				
MR-5 (PRM 148.1- 153.9)	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0		302.7	0	
145 (			Backwater	Backwater Pool	0	0		6.7	0	
MR-6 (PRM 122.7-	Susitna River	FA	Clearwater Plume	Clearwater Plume	0	0	5.0	0	0	0
148.4)	VIACI		Side Channel	Backwater Pool	0			0		
				Run			0			0

# Table E23-Continued.

Geo-		FA or			Salmoi	n, coho (adu	lt)	Salmon	, coho (juve	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	T.11 .	Pool	14.4		0	78.0		0
		171	Tributary	Riffle	0		0	0		0
	0 "			Run	0		0	5.6		0
MR-6 (cont.)	Susitna 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- FA	Upland Slough	Pool	0	0	0	0	0	0.9
		IA	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	MR-7 (PRM Susitna 107.8- 122.7)			Backwater Pool			0			312.5
(PRM		FA		Glide		0			22.0	
		TI	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		

## Table E23-Continued.

Geo-		FA or			Salmoi	n, coho (adu	lt)	Salmor	, coho (juve	nile)
morphic Reach	Stream	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	FA	Beaver 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	11.8		0
			Side Channel	Glide		0	0		9.0	97.9
				Riffle	0	0	0	0	0	0
				Glide	0	0.6	0.4	64.6	15.0	0
				Pool			0			0
MR-8			Side Slough	Riffle	0	0	0	0	0	0
(PRM	Susitna	FA		Run		1.9			1.9	
102.4- 107.8)	River	FA		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
				Run		0	0		831.6	12.5

<sup>1.</sup> 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 E24. Average CPUE (fish per trap) for coho salmon using fyke netting in the Middle River, 2013.

	FA or			Salmo	n, coho (adu	lt)	Salmon,	coho (juven	ile)
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 1	187.1)				
MR-2 (PRM	FA	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	
		Side Channel	Glide	0	0	0	0	4.0	0
		Side Charinei	Riffle	0	0		0	0	
MR-6 (PRM	i i i i i i i i i i i i i i i i i i i	0							
122.7-148.4)	FA	Side Slough Beaver Complex	Glide		0	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	FA	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		41.0	32.0
		Cido Claush	Glide		0	1.5		15.0	1.0
MR-8 (PRM 102.4-107.8)	FA	Side Slough	Pool			0		0 4.0 0 5.0 12 261.5 41.0 32 15.0	0
102.4-101.0)		Tributary	Pool			5.0			10.0
	Non-FA	Upland Slough	Pool	0	0	0	6.0	0	0

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

Geo-			Salmo	on, coho (adu	lt)	Salmo	on, coho (juve	nile)
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Proposed Wat	ana Dam Locat	on (PRM 187.	1)			
MR-1	Main Channel	Run	0		0	0		0
(PRM 184.6-	Side Channel	Glide			0			0
187.1)	Side Channel	Run			0			0
MR-2 (PRM 169.6- 184.6)	Main Channel	Run	0	0	0	0	0	0
		Devils Ca	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 (PRM	Multiple Split Main Channel	Run	0	0	0	0	0	0
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 Channal	Glide	0			0		
MR-8	Main Channel	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 E26. Average CPUE (fish per trap) for coho salmon using minnow trapping in the Middle River Focus Areas, 2013.

			Sá	almon, coho (juvenil	e)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall			
	Proposed \	Watana Dam Location (PRM 18	87.1)					
MD 1		Glide			0			
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0			
(17(11) 101.0 107.1)		Run	0					
	Backwater	Backwater Pool	0	0				
	Clearwater Plume	Clearwater Plume	0	0	0			
LID 0	Side Channel	Glide			0			
MR-2 (PRM 169.6-184.6)		Backwater Pool	0	0				
(1 KW 107.0 104.0)	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	0	0	0			
		Run		0				
		Backwater Pool	0		0			
		Beaver Pond	0	0.34	0.94			
		Glide						
	Side Slough Beaver Complex	Pool		0.67	4.00			
		Riffle		0	0.33			
MR-6		Run			0.50			
(PRM 122.7-148.4)		Glide	1.17	0	0			
	T	Pool	0		0			
	Tributary	Riffle	1.00		0			
		Run	0.63		0.57			
		Glide		0	4.75			
		Rapid			0			
	Tributary Mouth		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		Glide	0	0.02				
(PRM 107.8-122.7)	Side Channel	Pool		0				
		Riffle		0				
		Backwater Pool		†	2.75			
	Tributary	Glide	0	1.11				

Table E26. Continued.

			Sa	lmon, coho (juvenil	e)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	<b>J</b>	Pool	0.47	3.44	-
	Tributary (cont.)	Riffle	5.67		1.00
		Run			0.67
	Tributanu Mauth	Cascade	1.00		
MR-7	Tributary Mouth	Riffle	0		
(cont.)		Beaver Pond	0.48	6.96	5.95
	Haland Claush Daguer Canadau	Glide	1.50	4.13	
	Upland Slough Beaver Complex	Pool			3.67
		Run	0.75		1.31
		Backwater Pool			0
		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		0.50	
(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- morphic		FA or Non-			Early	Lato	
Reach	Stream	FA	Macrohabitat Type	Mesohabitat Type	Summer	Summer	Fall
			Proposed Watana Dam Location	n (PRM 187.1)			
			Main Channel	Run	0	0	0
		FA		Glide			0
MR-1		IA	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	1		Main Channel	Run	0	0	0
		Non- FA	Side Channel	Riffle			0
			Side Charmer	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		FA	Side Slough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Telbuton, Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	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           0         0         0		
	Susitna River		Main Channel	Run	0	0	0
	Rivei			Glide			0
			Side Channel	Riffle	0	0	
MD 0		Non- FA		Run	0	0	0
MR-2 (PRM		IA		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
		171		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	T	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 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0	
			Devils Canyon Upper Exte	ent (PRM 166.1)				
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0	
Í	•		Devils Canyon Lower Exte	ent (PRM 153.9)				
			Clearwater Plume	Clearwater Plume			0	
		E 4		Glide	0			
		FA	Main Channel	Riffle	0	0	0	
MR-5 (PRM	Susitna			Run			0	
148.1-	River		Main Channel	Run	0	0	0	
153.9)		Non-	Cido Cloumb	Glide	0.5	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	
			Multiple Split Main Charine	Run	0	0	0	
				Backwater Pool	0			
			Side Channel	Glide	0	0	0	
			Side Chaillei	Riffle	0	0	0	
				Run	0		0	
MR-6				Beaver Pond			0	
(PRM 122.7-	Susitna River	FA		Glide	0		0	
148.4)	KIVCI		Side Slough Beaver Complex	Pool			0	
				Riffle	0			
				Run	0			
			Split Main Channel	Run			0	
				Glide			0	
			Tributary Mouth	Riffle	0		0	
				Run		Summer   Fall   O		
			Tributory	Glide	0		0	
			Tributary	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		
			Tributary	Riffle	0				
		FA	Tributary	Run	0	mmer Summer 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
			Upland Slough	Glide			0		
			Upland Slough Beaver Complex	Beaver Pond	0		0		
			Backwater	Backwater Pool	0	0			
			Clearwater Plume	Clearwater Plume	0	0	0		
			Side Channel	Pool	0	0	0		
MR-6 (cont.)	Susitna River		Side Charliner	Riffle	0	0			
(oone)	Tavoi		Cido Clough	Glide		0	0		
		Non- FA	Side Slough	Pool	0	0	0		
		170	Side Slough Beaver Complex	Beaver Pond	0	0	0		
			Tributary Mouth	Run	0	0	0		
			Tributary	Run         0         0           Boulder Riffle         0         0	0				
			Upland Slough	Pool	0	0 0 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			
			Side Chariner	Pool	0	0			
				Riffle		0			
			Culit Main Channal	Riffle	0	0			
			Split Main Channel	Run	0	0	0		
MR-7 (PRM	Susitna	FA	Tributory Mouth	Cascade	0				
107.8-	River		Tributary Mouth	Riffle	0				
122.7)				Glide		0			
			Tallerdam	Pool		0			
			Tributary	Riffle	0				
				Run	e 0		0		
			Haland Claush Da C	Pool		0			
			Upland Slough Beaver Complex	Run		Summer   Fall			
		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		
				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
(001111)			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		
			Wall Challed	Run	0	0	0
			Side Channel	Glide			0
		FA		Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
MR-8			Side Slodgii	Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Upland Slough	Glide	0	0	0
			Opiana Sibugii	Pool	0	0	0

<sup>1.</sup> 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 (juven	ile)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watan	a 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
			yon (PRM 153.9-166.1)		ı L	
	ΕΔ.	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
		Split Main Channel	Run	0	0	0
	FA	Main Channel	Run		0	
		Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRM 122.7- 148.4)	Non-FA	Backwater	Backwater Pool	0		0
140.4)		Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
		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
			Glide	0		
		Main Channel	Run	0	0	0
	FA	C' L OL L	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		0
.57.0)	N	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

				Sa	lmon, pink (adult	)
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•		a Dam Location (PRM 187.1)	•		
		Main Channel	Run	0		
MR-1	FA		Riffle	0		
(PRM 184.6-187.1)		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		
(PRIVI 109.0-104.0)			Glide		0	
		Side Slough	Run		0	
	L	Devils Can	yon (PRM 153.9-166.1)	•		
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 140 1 152 0)	FA		Glide	0		
(PRM 148.1-153.9)		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
	Ε.Δ		Backwater Pool	0		
	FA		Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(FIXIVI 122.7-140.4)			Pool		0	
		Split Main Channel	Run			0
			Glide		0	0
		Tributary	Pool	0		
		Tallerden Merdle	Pool	0		
		Tributary Mouth	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	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

## Table E29-Continued.

				Sa	lmon, pink (adult	)
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	
		Split Main Channel	Riffle	7.1	0	
		Spiit Main Channei	Run	0	0	
145.7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
			Beaver Pond	0	0	0
		Upland Slough Beaver Complex	Glide	0	0	
			Run	0		
	Non-FA	Split Main Channel	Run	26.7	0	0
		Main Channel	Run			0
		Side Channel	Backwater Pool	0		0
			Glide			0
			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		

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

Geo-					Sa	lmon, pink (adult	)
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	n Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
			C' L OL L	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 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)		N FA	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	Non 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	6.7	1.0	0
MR-6				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE30-Continued

Geo-					Sa	lmon, 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 Complex	Riffle	0	0	0
			Сотрых	Run	0		0
				Glide	1113.3	0	0
			Telbutan	Pool	2167.2		0
			Tributary	Riffle	8.7		0
		FA		Run	732.0		0
				Glide	0	227.3	0
MR-6 (cont.)	Susitna River		T "	Pool	0		
(cont.)			Tributary Mouth	Riffle	32.4	0	0
				Run		8.3	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Non-FA	Side Slough	Pool	0	0	0
			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	
MD 7				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon, Mouth	Cascade	0		
			Tributary 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 E30-Continued**

Coo					Sal	mon, pink (adult	i)
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	
		FA	Side Slough	Pool			0
MD 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
				Run		0	0

<sup>1.</sup> 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 (PRM 184.6-187.1)	Side Channel	Glide			0
(1 KW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (P	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
(FRIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0.8	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(r IXIVI 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\	/enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		•	Proposed Watana Dam Location				
			Main Channel	Run	0	0	0
		FA		Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	MIVO		Main Channel	Run	0	0	0
		Non- FA	Cide Channel	Riffle			0
		171	Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		E 4	Cido Clough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributary Mouth	Cascade			0
			Tributary Wouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
	Rivei		Side Channel	Glide			0
				Riffle	0	0	
MD 2		Non- FA		Run	0	0	0
MR-2 (PRM		1 A		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
		171		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 E32-Continued.

					Salmon	, sockeye (ju\	venile)
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.)	Tributary	171	Devils Canyon Upper Exte	nt (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0
100.17		I .	Devils Canyon Lower Exte	·			
			Clearwater Plume	Clearwater Plume			4.3
				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-	Cide Clevel	Glide	2.8	0	0
		FA	Side Slough	Pool			0
			Split Main Channel	Run	0	0	0
			Backwater	Backwater Pool			1.9
			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
			Side Chariner	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	7.7		34.5
148.4)	KIVCI		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
			Tributory	Glide	0		0
			Tributary	Pool	2.9		

# Table E32-Continued.

					Salmon	, sockeye (ju	/enile)
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
		I 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
MR-6 Susitna River			Pool	0	14.1	5.3	
		Side Channel	Riffle	0	0		
		Cide Clause	Glide		0	0	
		Non- FA	Side Slough	Pool	1	0	0
		FA	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
				Glide	0	0	
			Side Channel	Pool	0	0	
				Riffle		0	
				Riffle	0	0	
			Split Main Channel	Run	0	0	0
MR-7	0 "	FA		Cascade	0	-	-
(PRM 107.8-	Susitna River		Tributary Mouth		0		
122.7)				Riffle		0	
				Glide		0	
			Tributary	Pool	0	, ,	
				Riffle			0
				Run			0
			Upland Slough Beaver Complex	Pool			0
			Clearwater Dluma	Run			0
		Non- FA	Clearwater Plume	Clearwater Plume			
		FA	Main Channel	Glide			0

## Table E32-Continued.

					Salmon	, sockeye (ju	/enile)
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
	MR-7 Susitna River		Side Slough	Pool	0	0	0
MR-7 (cont.)		Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(COIII.) River	171	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 Channel	Glide	0	0	0
			Wall Charles	Run			0
				Glide	0	0	0
		FA	Side Channel	Pool	0	0	0
				Riffle	0	0	
				Run	0		
			Side Slough	Glide	0	0	
MR-8			Side Slough	Riffle	0		
(PRM	Susitna		Tributary	Riffle	0	0	0
102.4- 107.8)	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
			Jide Jiougii	Pool	0	0	0
			Split Main Channel	Run	1.9	0	0
			Upland Slough	Glide	0	0	0
			Opiana Sibugii	Pool			0

<sup>1.</sup> 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.

				Salm	on, sockeye (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)	)		
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
			yon (PRM 153.9-166.1)		<u>.                                    </u>	
	ΕA	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)		Main Channel	Run	0	0	0
155.7)	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run		0	
	FA	Multiple Split Main Channel	Run		0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
MR-6		Split Main Channel	Run			0
(PRM 122.7- 148.4)		Backwater	Backwater Pool	25.1		0
140.4)	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
		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
			Glide	0		
	F.A.	Main Channel	Run	0	0	0
	FA	Cide Channel	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		0
,	N	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

Geo-	FA or			Salmon	, sockeye (ac	lult)	Salmon, se	ockeye (juve	nile)
morphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
			Proposed Watana Dan	n Location (PR	RM 187.1)				
MR-1		Main Channel	Run	0			0		
(PRM 184.6-	FA	Cido Channal	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)		CLL CL	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	FA		Glide	0			0		
148.1- 153.9)		Main Channel	Run		0			0	
,		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	Summer         Fall           0         0           0         0           0         0           0         0           0         0           0         0           0         0           2.0         0           0         0           0         0           0         0           0         0
		Channel	Run	0	0	0	0	0	
			Backwater Pool	0	0		0	26.5	
			Glide	0	0	0	1.6	1.1	0
		Side Channel	Riffle	0	0		0	0	
			Run		0	0		0	0
	E 4		Backwater Pool	0			338.8		
MR-6	FA	Side Slough Beaver	Beaver Pond		0	0		0.7	0
(PRM		Complex	Glide	0		0	1.9		0
122.7-			Pool		0			6.3	
148.4)		Split Main Channel	Run			0			0
		T.1	Glide		0	0		0	0
		Tributary	Pool	0			948.8		
		T '	Pool	0			0		
		Tributary Mouth	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	1
	FA	Tributary Mouth	Run	0			0		
		Side Channel	Backwater Pool			0			0

## Table E34-Continued.

Geo-	FA or			Salmon	, sockeye (ad	dult)	Salmon, s	sockeye (juve	enile)
morphic Reach	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		0			0	
			Backwater Pool			0			0
		Side Channel	Glide	0	0		0	0	
			Pool	0	0		0	0	
MR-7		Split Main Channel	Riffle	0	0		0	0	
(PRM		Split Mail Charline	Run	2.5	0		0	0	
107.8-	FA		Backwater Pool			0			9.4
122.7)		Tributary	Pool	0			22.9		
			Riffle			0			0
		Unland Claugh Deauer	Beaver Pond	0	0	0	0	0.5	0.1
		Upland Slough Beaver Complex	Glide	0	0		0	0 0	
		Complex	Run	0			30.8		
	Non- FA	Split Main Channel	Run	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	0	0		0	22.2	
			Riffle		0	0		26.7	0
MR-8	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	
		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			0.7		

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

Geo-		FA or			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	sed Watana Dam L	ocation (PRN	Л 187.1)				
			Clearwater Plume	Clearwater Plume	0	0	0	0	0	0
			Side Channel	Glide			0			0
			Side Charinei	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
MD 2			Mouth	Riffle	0	0		0	0	
MR-2 (PRM	(PRM 169.6-		Backwater	Backwater Pool	0			0		
184.6)	Non- FA	Clearwater Plume	Clearwater Plume		0			0		
		17	Side Channel	Run	0			0		0 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
	Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0	0	0	0
				Run	0	0	0	0		0
	Fog Creek	Non-	Tributary	Pool	0		0	0		0
	Tributary <sup>1</sup>	FA	Tibulary	Riffle	0		0	0		0
			Devi	ls Canyon Upper E	Extent (PRM	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 1	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 River	FA	Clearwater Plume	Clearwater Plume	1.7	0	0	0	0	0
148.4)	Rivel		Side Channel	Backwater Pool	0			0		
				Run			0			0

# Table E35-Continued.

Geo-		FA or			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
			71	Backwater Pool	0		0	705.1		0
				Beaver Pond	0	0	0	0	0	0
			Side Slough Beaver	Glide	0	6.6	0	11.9	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		Pool	0		0	0		0
		FA	Tributary	Riffle	0		0	0		0
				Run	0		0	0		0
MR-6 (cont.)	Susitna River			Glide	0	0	0	0	0	0
(001111)			Tributary	Pool	0			0		
			Mouth	Riffle	0	0	0	0	0	0 0
				Run		0	0		0	37.6
			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	0 10.4 0 0 0 0 0 0 0 0 0 37.6 0
		Non- FA	Upland Slough	Pool	0	0	0	0	0	
		TA	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		Late Summer   F	31.3
(PRM	Susitna	FA		Glide		0			0	
107.8- 122.7)	River		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.

Geo-		FA or			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
				Beaver Pond	0	0	0	0	0	0
			Upland Slough	Glide	0	0		0	0	
MR-7	Susitna	FA	Beaver 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	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
			Cido Clouah	Pool			0			0
MR-8			Side Slough	Riffle	0	0	0	0	0	0
(PRM	Susitna	FA		Run		0			0	
102.4- 107.8)	River	IA		Glide	0	0.9		0.9	0.9	
107.0)			Tributary	Pool	0	4.2	0	0	0	0 0 0 0 0 0 0
				Riffle	0	0	0	0	0	0
				Backwater Pool	0			0		
			Upland Slough Beaver	Beaver Pond	0		0	0		0
			Beaver Complex	Glide	0	0	0	0	0	0
				Run		0	0		16.3	0

<sup>1.</sup> 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 E36. Average CPUE (fish per trap) for sockeye salmon using fyke netting in the Middle River, 2013.

	FA or			Salmon,	sockeye (ad	lult)	Salmon, s	ockeye (juve	enile)
Geomorphic Reach	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
		Pro	Proposed Watana Dam Location (PRM 187.1)						
MR-2 (PRM	FA	Backwater	Backwater Pool	0	0		0	0	
169.6-184.6)	FA	Clearwater Plume	Clearwater Plume			0		0 0 0 0 0 0 2.0 1.0 25.0 0	0
			Devils Canyon (PRM	1 153.9-166.1	)				
		Backwater	Backwater Pool		0			0	
		Side Channel	Glide	0	0	0	0	0	0
		Side Charmer	Riffle	0	0		0	0	
MR-6 (PRM	FA		Beaver Pond	0			0	0	
122.7-148.4)	FA	Side Slough Beaver Complex	Glide		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	FA	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
	ГА	Cido Cloudh	Glide		0	0		0	0
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 E37. Average CPUE (fish per trap) for sockeye salmon using minnow trapping in the Middle River Focus Areas, 2013.

			Salr	mon, sockeye (juver	nile)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
	Proposed \		87.1)			
MD 1					0	
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0	
(1 141/1 10 1.0 107.1)		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		
(FRIVI 109.0-104.0)	Side Slough	Glide		0	0	
		Pool	0			
	Tributary Mouth	Riffle	0	0		
		s Canyon (PRM 153.9-166.1)	•	1 1		
	Backwater	Backwater Pool	0	0	0	
		Backwater Pool		0		
	Side Channel	Glide	0	0	0	
				0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
			0.05		0.08	
		Proposed Watana Dam Location (PRM 187.1)   Glide	0	0.27	0	
				0	0.33	
	Side Slough Beaver Complex			0.07	0.11	
MR-6					0	
(PRM 122.7-148.4)			0	0	0	
			0		0	
	Tributary		0			
			0		0	
				0	0	
					0	
	Tributary Mouth		0	0		
			-	+		
	Upland Slough					
	Upland Slough Beaver Complex		0	0		
	Backwater		0			
	Clearwater Plume					
	Groutwater Figure			+ +		
MR-7			0	0.02		
(PRM 107.8-122.7)	Side Channel					
	Tributary	Backwater Pool			0	

Table E37. Continued.

			Salr	non, sockeye (juver	nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributany (cont.)	Pool	0.06	0.11	
	Tributary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributany Mouth	Cascade	0		
(cont.)	Tributary Mouth	Riffle	0	er         Late Summer         Fall           0         0.11         0	
		Beaver Pond	0		0
	Unland Claugh Decuer Compley	Glide	Early Summer         Late Summer           0         0           0.06         0.11           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0		
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
		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
		Run		0	0

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

					А	rctic grayling	
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
Redeli	Stream	IA	Proposed Watana Dam Location		Julillion	Julillici	1 dii
			Main Channel	Run	0	19.4	13.3
		F.		Glide			64.9
MR-1		FA	Side Channel	Riffle	0	9.5	33.4
(PRM 184.6-	Susitna River			Run	0	23	8.5
187.1)	Rivei		Main Channel	Run	1.8	7.8	18.6
		Non- FA		Riffle			15.1
		171	Side Channel	Run	0	18.1	
			Main Channel	Run	2.5	8	
			Side Channel	Glide	21.9	51.5	65.7
		ГА	Side Slough	Backwater Pool	30.8	1.6	
		FA	Side Slough	Glide		13.5	15.6
			Tributory Mouth	Cascade			0
			Tributary Mouth	Riffle	Early Summer         Late Summer         Fall           0         19.4         13.3           64.9         0         9.5         33.4           0         23         8.5           1.8         7.8         18.6           15.1         0         18.1           2.5         8         21.9           21.9         51.5         65.7           30.8         1.6         0           13.3         15.6         0           13.3         13.1         170           2.3         3.9         1.9           5.1         28.8         15.6           0         0         12.4           12.1         11.3         12.6           23.8         0         0           27.4         13         112.4           16.2         55.2         8.4           34.6         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0		
			Backwater	Backwater Pool	33	19.4	170
			Clearwater Plume	Clearwater Plume	2.3		1.9
	Susitna River		Main Channel	Run	5.1	28.8	15.6
	KIVCI			Glide			0
			Side Channel	Riffle	0	Early Summer         Late Summer         Fall           0         19.4         13.3           64.9         0         9.5         33.4           0         23         8.5           1.8         7.8         18.6           15.1         0         18.1           2.5         8         21.9           51.5         65.7           30.8         1.6           13.5         15.6           0         13.3           33         13.1         170           2.3         3.9         1.9           5.1         28.8         15.6           0         0         12.4           12.1         11.3         12.6           23.8         0         0           27.4         13         112.4           16.2         55.2         8.4           34.6         0         0           7.6         10.4         23.8           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0	
MR-2		Non- FA		Run	Summer         Summer         Fall           0         19.4         13.3           64.9         0         9.5         33.4           0         23         8.5           1.8         7.8         18.6           15.1         0         18.1           2.5         8         21.9           21.9         51.5         65.7           30.8         1.6         0           13.3         15.6         0           2.3         3.9         1.9           5.1         28.8         15.6           0         0         12.4           12.1         11.3         12.6           23.8         0         0           5.6         27.4         13         112.4           16.2         55.2         8.4           34.6         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0		
(PRM		171		Pool	23.8		0
169.6- 184.6)			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
		' ' '		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Non-	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0		
				Riffle	0	0	0

# Table E38-Continued.

					A	rctic grayling	
Geo- morphic Reach MR-2	Stream Fog Creek	FA or Non- FA Non-	Macrohabitat Type Tributary	Mesohabitat Type	Early Summer	Late Summer	<b>Fall</b>
(cont.)	Tributary <sup>1</sup>	FA					
MR-4		1	Devils Canyon Upper Exte	· · ·			
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0
			Devils Canyon Lower Exte	ent (PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		FA		Glide	0		
MDE		FA	Main Channel	Riffle	0	52.5	37
MR-5 (PRM Susitna 148.1- River			Run			13.5	
148.1-	River		Main Channel	Run	0	0	4.2
153.9)		Non-	Cido Clough	Glide	0	2.5	0
		FA	Side Slough	Pool	0 0 0	0	
			Split Main Channel	Run	0	Late Summer  0  52.5  0 2.5	0
			Backwater	Backwater Pool			0
			Main Channel	Run	0	0	
			Multiple Split Main Channel	Riffle	0	2.4	5
			Multiple Split Main Charinei	Run	0	0	r Fall 0 0 0 0 37 13.5 4.2 0 0 0 0
				Backwater Pool	0		
			Side Channel	Glide	0	4.9	0
			Side Chaillei	Riffle	0	0	0
				Run	0		Fall 0  0  0  37  13.5  4.2  0  0  0  0  0  0  0  0  0  0  0  0  0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)	KIVCI		Side Slough Beaver Complex	Pool			- Fall 0 - 0 - 0 - 0 - 0 - 37 - 13.5 - 4.2 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
				Riffle	0		
				Run	3.9		
			Split Main Channel	Run			0
				Glide			Fall 0  0  0  37  13.5  4.2  0  0  0  0  0  0  0  0  0  0  0  0  0
			Tributary Mouth	Riffle	14.6		0
				Run			0
			Tributory	Glide	0		0
			Tributary	Pool	0		

# Table E38-Continued.

					А	rctic grayling	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributary	Run	5.7		
		' '	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	Summer         Summer         Fall           0         5.7         0           0         0         0           0         0         0           2.6         0         0           0         0         0           0         0         0           1.3         0         32.3           0         0         0           0         0         0           0         0         0           1.8         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0 <td></td>		
			Clearwater Plume	Clearwater Plume	2.6	0	0
			Side Channel	Pool	0	0	1.8
MR-6 (cont.)	Susitna River		Side Charlier	Riffle	0	0	
(oont.)	141701		Cido Clough	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
			Upland Slough	Pool	1.8	0 0 0 0 0 0 0 0 0 0 0 0 1.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0
			Upland Slough Beaver Complex	Beaver Pond	0		0
,			Clearwater Plume	Clearwater Plume		0	
			Main Channel	Run	0	Summer         Fall           0         0	
				Backwater Pool			0
			Cido Channal	Glide	0	0	
			Side Channel	Pool	0	0	
				Riffle		0	
			Culit Main Channal	Riffle	0	6.1	
		F.4	Split Main Channel	Run	4.4	0	0
MR-7 (PRM	Susitna	FA	Tolley days a Mary dis	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	72.9		
122.7)				Glide		0	
			Telleridani	Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	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
			Side Channel	Riffle	0	0	0
				Run	0	0	0
			Side Slough	Pool	0	1.6	0
MR-7 (cont.)	MR-7 Susitna River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(oont)	Tavoi		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
		FA	Main Channel	Glide	0		
			Ividili Cridililei	Run	0	0	1.5
			Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0		
MD 0			Side Slough	Riffle	0	0	
MR-8 (PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	River		Main Channel	Run	0	0	0
107.6)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
			Jide Jiougii	Pool	0	2.4	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Sibugn	Pool	0	0	0

<sup>1.</sup> 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	5.5	0
(PRM 184.6-	N FA	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-	Non EA	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 Can	yon (PRM 153.9-166.1)			
	ГА	Clearwater Plume	Clearwater Plume			0
(PRM 148.1-	FA	Main Channel	Run		0	0
	N FA	Main Channel	Run	0	0	0
100.7)	Non-FA	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			0
(PRM 122.7- 148.4)	Non-FA	Backwater	Backwater Pool	0		0
		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 Channel	Glide	0		
	FA	Main Charner	Run	0	0	2.2
	FA	Side Channel	Riffle			6.9
		Side Charliner	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
	INUII-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

					Arctic grayling	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA		Riffle	0		
(PRIVI 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 (PRM 169.6-184.6)	FA	Side Channel	Glide	200.0		
(PRIVI 109.0-104.0)			Glide		45.2	
		Side Slough	Run		1.7	
		Devils Can	yon (PRM 153.9-166.1)		<u> </u>	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5	FA		Glide	0		
(PRM 148.1-153.9)		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
	ГА		Backwater Pool	0		
	FA		Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1 1XIVI 1ZZ./-140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributan	Glide		0	0
		Tributary	Pool	0		
		Tributon, 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	1	0	

## 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	
		Calit Main Channal	Riffle	0	0	
MR-7 (cont.)		Split Main Channel	Run	0	0	
	FA		Backwater Pool			0
		Tributary	Pool	0		
(COIII.)			Riffle			0
			Beaver Pond	0	0	0
		Upland Slough Beaver Complex	Glide	0	0	
			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		

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

Geo-						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
			C' L OL L	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		
			Teller dam i Nasi de	Cascade			0
			Tributary Mouth	Riffle	138.9	63.1	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	4.7		
184.6)		Non-FA	Clearwater Plume	Clearwater Plume		0	
			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 <sup>1</sup>	Non-FA	Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non 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
	I	I.	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				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE41-Continued

Geo-						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 Complex	Riffle	0	0	0
			Сотрых	Run	0		0
				Glide	2.2	0	0
			Tributary	Pool	11.6		0
				Riffle	0		0
MR-6 Susitna (cont.) River	FA		Run	3.4		0	
			Glide	121.7	0	0	
	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	
MD 7				Riffle	181.8	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributany Mouth	Cascade	0		
			Tributary Mouth	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

Coo					ı	Arctic grayling	
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
		FA	Side Slough	Pool			0
MD 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

<sup>1.</sup> 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 E42. Average CPUE (fish per trap) for Arctic grayling using fyke netting in the Middle River, 2013.

				ļ	Arctic grayling	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dar	n Location (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 (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6 (PRM 122.7- 148.4)		Side Channel	Riffle	0	0	
	FA	FA Side Slough Beaver Complex	Beaver Pond	0		
			Glide		0	
			Pool	1.0	4.0  0 0 0	
		Upland Slough Beaver Complex	Beaver Pond	1.0  0 0 0 0 0 0 0 1.0 0 1.0 0 0 0 0 0 0	0	
MR-7		Backwater	Backwater Pool	0		0
	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	0
		Cido Clavela	Glide		1.0	10.0
MR-7 (PRM 107.8- 122.7) MR-8 (PRM 102.4- 107.8)	FA	Side Slough	Pool			1.0
		Tributary	Pool			77.0
,	Non-FA	Upland Slough	Pool	0	0	0

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

				Arctic grayling	J
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed Watana Da	am Location (PRM 187.1)			
	Main Channel	Run	0		0.1
MR-1 (PRM 184.6-187.1)	Cido Channal	Glide			2.0
(FIXWI 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0.2
·	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
MR-6 (PRM 122.7-148.4)	Side Slough Beaver Complex	Beaver Pond			0
	Split Main Channel	Run		Early Late Summer  0 0 0  0 0 0  0 0 0	0
	Main Channel	Run	0	0	0
MR-7 (PRM 107.8-122.7)	Split Main Channel	Run	0	0	0
(FRIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond	Early Summer Summer O O O O O O O O O O O O O O O O O O O		
	M : 01	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(FMW 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	87.1)	<del> </del>	
MR-1		Glide			0
(PRM 184.6-187.1)	Side Channel	Riffle			0
,		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	0.06	
(1 KW 107.0 104.0)	Side Slough	Glide		0.08	0.30
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	-	ls Canyon (PRM 153.9-166.1)	•	<u> </u>	
	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
		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
,		Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
		Rapid			0
	Tributary Mouth	Riffle	0.10	0	0
		Run	0.10	0	0
	Upland Slough	Glide		0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	0
			0	0	0
	Backwater Pluma	Backwater Pool	U	U	0
	Clearwater Plume	Clearwater Plume		+	
MR-7		Backwater Pool	0	0	0
(PRM 107.8-122.7)	Side Channel	Glide	0	0	
		Pool	1	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	
	Tributany (cont.)	Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributary Mouth	Cascade	0		
(cont.)	Tributary Moutif	Riffle	0		
		Beaver Pond	0	0	0
	Unland Claugh Deguar Campley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
		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
Reacii	Sireain	FA	Proposed Watana Dam Location		Julillel	Jullillei	ган
			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		Riffle			0
			Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	3.1
		F.4	Cido Clouah	Backwater Pool	2.4	0	
		FA	Side Slough	Glide		0	0.9
			Telbustons Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	2.2
	Susitna River	iver	Main Channel	Run	5.1	0	0
	Mivei			Glide			0
			Side Channel	Riffle	0	0	
MR-2		Non- FA		Run	2	0	6.3
(PRM		173		Pool	12.8		5.8
169.6- 184.6)			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- 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>	FA	Tributary	Rapid	0		
				Riffle	0	0	0

# Table E45-Continued.

						Burbot		
Geo- morphic Reach MR-2	Stream Fog Creek	FA or Non- FA Non-	Macrohabitat Type Tributary	Mesohabitat Type	Early Summer	Late Summer	<b>Fall</b>	
(cont.)	Tributary <sup>1</sup>	FA						
MD 4	T		Devils Canyon Upper External					
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0	
			Devils Canyon Lower Exte	ent (PRM 153.9)				
			Clearwater Plume	Clearwater Plume			0	
				Glide	0			
		FA	Main Channel	Riffle	0	0	0	
MR-5 (PRM	Susitna			Run			0	
148.1-	River		Main Channel	Run	0	1.9	3.9	
153.9)		Non-		Glide	0.5	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
			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 122.7-	Susitna	FA		Glide	0		0	
148.4)	River		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	
			Tributary	Pool	0			

# Table E45-Continued.

						Burbot	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
		'^	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	1.5		3.3
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume Clearwater Plume		0	2.2
			Cido Channol	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(cont.)	Tavol		Cido Clouah	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
			Cide Channel	Glide	0	1.6	
			Side Channel	Pool	0	0	
				Riffle		0	
			Calli Main Channal	Riffle	0	4.4	
			Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	Tallecter Menth	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			T	Pool		6.1	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			3.2
		Non-	Clearwater Plume	Clearwater Plume			7.2
		Non- 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
(001111)	1		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		
			main shame.	Run	4.3	0	0.9
			Side Channel FA	Glide			3.6
		FA		Pool	0	0	0
				Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0.5		
MR-8			Oldo Glodgii	Riffle	8.3	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Upland Slough	Glide	1.9	0	0
			Opiana Sibagii	Pool	2.9	3.1	0

<sup>1.</sup> 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 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	N. FA	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-	N 54	Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
			yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)	Non EA	Main Channel	Run	0	0	0
155.7)	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)	Non-FA	Backwater	Backwater Pool	0		0
140.4)		Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	9.3
		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
		M	Glide	0		
	F.A.	Main Channel	Run	0	0	0
	FA	C' L OL L	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	2.3	0
(PRM 102.4- 107.8)			Glide	0		0
107.07	N A	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	13.0

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

					Burbot	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA		Riffle	0		
(PRIVI 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		1.9	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2 (PRM 169.6-184.6)	FA	Side Channel	Glide	0		
(FIXIVI 107.0-104.0)		Clala Classala	Glide		0	
		Side Slough	Run		0	
		Devils Cany	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA	Main Channal	Glide	0		
(FRIVI 140.1-133.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	0	0	
		Clearwater Plume	Clearwater Plume	0	0	
		Main Channel	Run	0	0	
		Multiple Collination Channel	Riffle		0	
		Multiple Split Main Channel	Run	0	0	0
		Side Channel	Backwater Pool	0	0	
			Glide	0.2	0	0
			Riffle	0	0	
			Run		0	0
	FA		Backwater Pool	0		
MD (	FA	Cido Claugh Doguer Compley	Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1 1 1 1 1 1 2 2 . 1 - 1 7 U . 4 )			Pool		0	
		Split Main Channel	Run			0
		Tributory	Glide		0	0
		Tributary	Pool	0		
		Tributary Mouth	Pool	0		
		THIDUIALY WOULT	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 (PRM 107.8-122.7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(FKIVI 101.8-122.1)		Main Channel	Run	1	0	

## 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	
		Split Main Channel	Riffle	0	0	
		Spiit Main Channei	Run	2.5	0	
	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			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			0
		Side Channel	Backwater Pool	0		0
			Glide			0
			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		

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

					Burbot	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dar	n Location (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 (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		1.5	
	FA	Side Channel	Glide	4.0	0.5	1.0
MR-6 (PRM 122.7-		Side Channel	Riffle	0	0	
			Beaver Pond	0		
148.4)		Side Slough Beaver Complex	Glide		3.0	
			Pool	0	0	
148.4)		Upland Slough Beaver Complex	Beaver Pond	1.3		18.5
MR-7		Backwater	Backwater Pool	15.0		4.0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
122.7)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		1.0	6.0
		Cide Clavel	Glide		6.0	0
MR-8 (PRM 102.4- 107.8)	FA	Side Slough	Pool			0
		Tributary	Pool			1.0
/	Non-FA	Upland Slough	Pool	0	0	4.0

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 (PRM 184.6-187.1)	Cide Channel	Glide			0
(FIXW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (P	RM 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
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0.6	0.1
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	1.0	0	
(FIXIVI 102.4-107.0)	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 \	Watana Dam Location (PRM 18	87.1)		
MD 1		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(1 KW 101.0 107.1)		Run	0		
	Backwater	Backwater Pool	0	0.05	
	Clearwater Plume	Clearwater Plume	0	0	0
MD 0	Side Channel	Glide			0
MR-2 (PRM 169.6-184.6)		Backwater Pool	0.04	0	
(1 KW 107.0 104.0)	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
		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
	T	Pool	0		0.25
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
		Rapid			0
	Tributary Mouth	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		Glide	0.13	0.02	
(PRM 107.8-122.7)	Side Channel	Pool		0	
		Riffle		0	
		Backwater Pool		†	0
	Tributary	Glide	0	0	

Table E50. Continued.

				Burbot	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	<b>J</b>	Pool	0	0.11	
	Tributary (cont.)	Riffle	1.00		0
		Run			0
	Tributanu Mauth	Cascade	0		
MR-7	Tributary Mouth	Riffle	0		
(cont.)		Beaver Pond	0.04	0.08	0
	Haland Claush Daguer Canadau	Glide	0	0.13	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
	R B Side Channel	Backwater Pool			0
		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	
		Beaver Pond			0
	Upland 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.

					[	Dolly Varden	
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
rtodori	Ou oum		Proposed Watana Dam Location		Currino	Cummon	· uii
,			Main Channel	Run	0	0	0
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM Susitna 184.6- 187.1) River			Run	0	0	0	
		Main Channel	Run	1.8	0	0	
		Non- FA	Cida Channal	Riffle			0
		173	Side Channel	Run	0	0	
			Main Channel	Run	0	0	
			Side Channel	Glide	0	0	0
		F.	Side Slough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributory Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River	ver	Main Channel	Run	0	0	0
	MIVCI			Glide			0
			Side Channel	Riffle	0	0	
MR-2		Non- FA		Run	0	0	0
(PRM		170		Pool	0		0
169.6- 184.6)			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- FA	Tributary	Riffle	33.8	32.9	0
		171		Run	14	15	0
				Boulder Riffle	0		0
	Fog Creek	Non-	T	Pool	0	0	28.6
	Tributary <sup>1</sup>	FA	Tributary	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	Non-		Run	Summer	Julillei	0	
(cont.)	Tributary <sup>1</sup>	FA	Tributary				0	
	T		Devils Canyon Upper Exte					
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	53.6	0	91.4 87.8	
100.1)			Devils Canyon Lower Exte			<u> </u>		
			Clearwater Plume	Clearwater Plume			0	
		FA		Glide	0			
			Main Channel	Riffle	0	0	0	
MR-5 (PRM	Susitna			Run			0	
148.1-			Main Channel	Run	0	0	0	
153.9)		Non-		Glide	1	0	0	
		FA	Side Slough	Pool			0	
			Split Main Channel	Run	0	0	0	
			Backwater	Backwater Pool			0	
			Main Channel	Run	0	0		
			<u> </u>	Multiple Split Main Channel	Riffle	0	0	0
			Multiple Split Main Channel	Run	0	0	0	
				Backwater Pool	0			
				Glide	0	0	0	
			Side Channel	Riffle	0	0	0	
				Run	0		0	
MR-6				Beaver Pond			0	
(PRM 122.7-	Susitna River	FA		Glide	0		0	
148.4)	Rivei		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	
			T.1	Glide	0		0	
			Tributary	Pool	6			

# Table E51-Continued.

					[	Oolly Varden	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
		170	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Side Channel	Pool	0	0	0
MR-6 Susitna (cont.) River		Side Charlier	Riffle	0	0		
(oone)			Cido Clough	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
				Glide	0	0	
			Side Channel	Pool	0	0	
				Riffle		0	
			Culli Main Channal	Riffle	0	0	
		F.4	Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	Tolley days a Mary dis	Cascade	27		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			T. 1	Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

### Table E51-Continued.

					I	Dolly 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
(cont.)	''	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		
			ividiri Cridiffiei	Run	0	0	0
		FA	FA Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	0	2.5
				Run	0	0	
			Side Slough	Glide	0		
MR-8			Side Slodgii	Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Side Slough	Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Slough	Pool	0	0	0

<sup>1.</sup> 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 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	N FA	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-	N F A	Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Can	yon (PRM 153.9-166.1)			
	Гл	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
100.7)		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)	Non-FA	Backwater	Backwater Pool	0		0
,		Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	ГЛ	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		
	FA	Main Charner	Run	0	0	1.6
	FA	Side Channel	Riffle			0
		Side Charliner	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
	INUII-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

					Dolly Varden	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•		a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA		Riffle	0		
(PRIVI 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		
(FIXIVI 107.0-104.0)		Cido Cloumb	Glide		0	
		Side Slough	Run		0	
		Devils Cany	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA	Main Channal	Glide	0		
(F IXIVI 140.1-133.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	0.7	0	
		Clearwater Plume	Clearwater Plume	0	0	
		Main Channel	Run	0	0	
		Multiple Split Main Channel	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
	FA		Backwater Pool	0		
MD /	TA	Side Slough Beaver Complex	Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1.141.122.1.170.4)			Pool		0	
		Split Main Channel	Run			0
		Tributary	Glide		0	0
		THUULATY	Pool	0		
		Tributary Mouth	Pool	0		
		Tributary Wouth	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 (PRM 107.8-122.7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(FKIVI 101.8-122.1)		Main Channel	Run	1	0	

### 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	
		Cult Main Observal	Riffle	0	0	
		Split Main Channel	Run	0	0	
140.7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(COIII.)			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		

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

Geo-						Dolly Varden	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	n Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
			61.1 01 1	Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	0	0	
			Side Slough	Glide		0	0
	Susitna River			Pool	0		
			Tributon, Mouth	Cascade			0
			Tributary Mouth	Riffle	0	0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	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 EA	Telbutan	Pool	35.4		0
	Tributary <sup>1</sup>	Non-FA Tributary		Riffle	7.5		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	8.9	1.4	0
	•	ı	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
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE54-Continued

Geo-						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 Complex	Riffle	0	0	0
			Обтрох	Run	0		0
				Glide	0	0	0
			Tributany	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	0		0
MD /	0 "		Tributary Mouth	Glide	243.5	0	0
MR-6 (cont.)	Susitna River			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	
MD 7				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributory Manth	Cascade	0		
			Tributary 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**

Geo-						Dolly Varden	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0		0
				Glide		0	0
				Riffle	0	0	0
		na River FA	Side Slough	Glide	0	0.1	0
				Pool			0
MD 0				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River			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

<sup>1.</sup> 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 E55. Average CPUE (fish per trap) for Dolly Varden using fyke netting in the Middle River, 2013.

					Dolly Varden	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dar	n Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	1.0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (I	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0	
MR-6 (PRM 122.7- 148.4)	FA	Cido Channal	Glide	0	0	0
		Side Channel	Riffle	0	0	
			Beaver Pond	0		
		Side Slough Beaver Complex	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)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		0	4.0
		Cido Clough	Glide		0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			5.0
<b>,</b>	Non-FA	Upland Slough	Pool	0	0	0

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 (PRM 184.6-187.1)	Cide Channel	Glide			0
(FIXW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (Pl	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	0.5	0	0
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(1 IXIVI 102.4-107.0)	Tributary	Pool	0	0	
	Upland Slough Beaver Complex	Backwater Pool	0		

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
•		Watana Dam Location (PRM 1			
		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(PRIVI 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	
(PRIVI 109.0-104.0)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	1	s 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
		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
	T.1	Pool	0		0
	Tributary	Riffle	0.67		0
		Run	0.13		0
		Glide		0	0
	Talkastana Marath	Rapid			0
	Tributary Mouth	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	Cido Channal	Glide		0	
(PRM 107.8-122.7)	Side Channel	Pool		0	
		Riffle		0	
	Telbuton	Backwater Pool			0.13
	Tributary	Glide	0	0	

Table E57. Continued.

				Dolly Varden	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
,	<b>J</b> 1	Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
	Tributanu Mauth	Cascade	0		
MR-7	Tributary Mouth	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Haland Claush Daguer Canadau	Glide	0	0.13	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
		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	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

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

						Lamprey	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
rtodori	Outdan		Proposed Watana Dam Location		Cummor	Cummon	. u.i
			Main Channel	Run	0	0	0
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
	(PRM Susitna 184.6- 187.1) River			Run	0	0	0
			Main Channel	Run	0	0	0
		Non- FA	C: 1	Riffle			0
		171	Side Channel	Run	0	0	
		Main Channel	Run	0	0		
			Side Channel	Glide	0	0	0
			Cido Clough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributon Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River	Non- FA	Main Channel	Run	0	0	0
	Kivei			Glide			0
				Riffle	0	0	
MR-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
		'''		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tallendam	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	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 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(001111)	11		Devils Canyon Upper Exte	nt (PRM 166.1)		<u>                                     </u>	
MR-4 (PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
166.1)			Devils Canyon Lower Exte	Riffle			
			Clearwater Plume	Clearwater Plume			0
			Glearwater Figure	Glide	0		
MD F		FA	Main Channel	Riffle	0	0	0
MR-5 (PRM	Susitna			Run			0
148.1- River		Main Channel	Run	0	0	0	
153.9)	153.9)	Non-	Cido Clough	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
			Side Charlier	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)	KIVCI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			Tributoru	Glide	0		0
			Tributary	Pool	0		

# Table E58-Continued.

						Lamprey	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
		I A	Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cido Channal	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(cont.)	TAIVOI		Cide Clevel	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
			Ī		Backwater Pool		
			Side Channel	Glide	0	0	
				Pool	0	0	
				Riffle		0	
				Riffle	0	0	
		1	Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	T. 1	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			T. 1	Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	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
(cont.)		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		
		FA	Ividiri Gridifiici	Run	0	0	0
			Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	10.2		
MR-8			Oldo olougii	Riffle	39.1	0	
(PRM	Susitna		Tributary	Riffle	7.1		
102.4- 107.8)	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
		N		Run		0	0
		Non- FA	Side Slough	Glide			0
			oldo olougii	Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Slough	Pool	0	0	0

<sup>1.</sup> 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 E59. Average CPUE (fish per 1,000 square meters) for lamprey using snorkeling in the Middle River, 2013.

Geo-						Lamprey	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	1	1	Proposed Watana Dar	m Location (PRM 187.1)		1 1	
			Clearwater Plume	Clearwater Plume	0	0	0
			Side Channel	Glide			0
			Side Chariner	Pool			0
		FA		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)		No. TA	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	Non EA	Tributon	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	0	0	0
MR-6				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE59-Continued

Geo-						Lamprey	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver Complex	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
			Tributan	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	0		0
MR-6 (cont.)	Constitue			Glide	0	0	0
	Susitna River		Tributan, Mouth	Pool	0		
			Tributary Mouth	Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Non-FA	Side Slough	Pool	0	0	0
			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	
MD 7				Riffle	0	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributary Mouth	Cascade	0		
			THOULARY WOULT	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

Geo-						Lamprey	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0.5		0
				Glide		0	0
				Riffle	0	0	0
		FA	Side Slough	Glide	0	0	0
				Pool			0
MD 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

<sup>1.</sup> 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 E60. Average CPUE (fish per trap) for lamprey using fyke netting in the Middle River, 2013.

					Lamprey	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dan	Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- FA 184.6)		Clearwater Plume	Clearwater Plume			0
		Devils Canyon (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6		Side Channel	Riffle	0	0	
(PRM 122.7-	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
		Cido Clause	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 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 \	Watana Dam Location (PRM 18	87.1)		
MD 4		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(1 KW 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	
(PRIVI 169.6-184.6)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
		s Canyon (PRM 153.9-166.1)	•	<u>'</u>	
	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
		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
		Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
		Rapid			0
	Tributary Mouth	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		Glide		0	
(PRM 107.8-122.7)	Side Channel	Pool		0	
		Riffle		0	
		Backwater Pool			0
	Tributary	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
	Tributany Mouth	Cascade	0		
MR-7	Tributary Mouth	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Unland Claugh Decuer Compley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
		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	
		Beaver Pond			0
	Upland Slough Beaver Complex	Glide	0	0	0
		Run		0	0

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

						Longnose	
Geo-		FA or					
morphic Reach	Stream	Non- FA	Maarahahitat Tuna	Macababitat Type	Early Summer	Late Summer	Fall
Reacii	Stream	ГА	Macrohabitat Type Proposed Watana Dam Location	Mesohabitat Type	Summer	Summer	Ган
			Main Channel	Run	0	0	0.9
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	6.7
(PRM	(PRM Susitna 184.6- River			Run	0	0	0
187.1) River		Main Channel	Run	0	0	0	
	Non- FA		Riffle			0	
		IA	Side Channel	Run	0	0	
			Main Channel	Run	6.2	0	
			Side Channel	Glide	0	15.1	34.4
			Cido Clouah	Backwater Pool	26.5	27.6	
		FA	Side Slough	Glide		0	26.3
			Tributary Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	2.3	0	0
	Susitna River		Main Channel	Run	0	0	0
	Mivei		Side Channel	Glide			0
				Riffle	0	0	
MR-2				Run	0	7	6.3
(PRM		171		Pool	54.5		5.8
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				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
				Pool	0	0	0
Fog Creek <sup>1</sup>	Non- FA	Tributary	Riffle	0	0	0	
		171		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tributory	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	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 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
(001111)	11.2010.3		Devils Canyon Upper Exte	nt (PRM 166.1)		<u>                                     </u>	
MR-4 (PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
166.1)			Devils Canyon Lower Exte	Riffle			
			Clearwater Plume	Clearwater Plume			0
			Glearwater Figure	Glide	0		
MDE		FA	Main Channel	Riffle	0	0	0
MR-5 (PRM	Susitna			Run			0
148.1- River		Main Channel	Run	4.6	0	0	
153.9)		Non- FA	Cido Cloudh	Glide	38.7	10.5	3.4
			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	7.2	4.9	3.5
			Side Charliner	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)	MIVCI		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
			Tributory	Glide	0		0
			Tributary	Pool	0		

# Table E62-Continued.

						Longnose	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Riffle	0		
		ΓΛ	Tributary	Run	2.9		
		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
MR-6 Susitna River			Pool	0	112.9	0	
		Side Channel	Riffle	0	11.1		
			Glide		0	0	
	Non- FA	Side Slough	Pool	0	8.8	4.6	
		I FA	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
				Backwater Pool			2.6
				Glide	0	3.2	
			Side Channel	Pool	0	16.8	
				Riffle		7.2	
				Riffle	0	0	
			Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA		Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
				Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			0
		Ne:-	Clearwater Plume	Clearwater Plume			0
		Non- 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
	MR-7 Susitna River		Side Slough	Pool	0	44.2	10.3
		Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(oont.)		173	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		
			ividiri Cridiffiei	Run	0	0	2.9
		FA	Side Channel	Glide			0
				Pool	12.9	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
MR-8			Side Slodgii	Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Side Slough	Pool	0	328.8	40
			Split Main Channel	Run	0	0	4.3
			Upland Slough	Glide	0	0	0
			Opiana Sibugii	Pool	0	3.1	0

<sup>1.</sup> 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 E63. Average CPUE (fish per hour of shocking time) for longnose sucker using boat electrofishing in the Middle River, 2013.

				I	Longnose sucker	-
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	N 54	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
			yon (PRM 153.9-166.1)		<u>.                                      </u>	
	ГА	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	3.6
100.7)		Split Main Channel	Run	0	0	0
	FA	Main Channel	Run		0	
		Multiple Split Main Channel	Run		0	0
MR-6		Split Main Channel	Run			0
(PRM 122.7- 148.4)	Non-FA	Backwater	Backwater Pool	0		0
140.4)		Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	- A	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
		Split Main Channel	Run	0	0	5.8
			Glide	0		
	- A	Main Channel	Run	0	0	3.4
	FA	C' L OL L	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	6.0	0	0
(PRM 102.4- 107.8)			Glide	0		18.7
107.0)	N = 4	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	16.4
		Upland Slough	Pool	0	0	0

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

				Le	ongnose sucker	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		•	a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1	FA		Riffle	0		
(PRM 184.6-187.1)		Side Channel	Run	1.3	1.7	0
		Backwater	Backwater Pool		5.2	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2	FA	Side Channel	Glide	0		
(PRM 169.6-184.6)			Glide		9.9	
		Side Slough	Run		0.4	
	I.	Devils Can	yon (PRM 153.9-166.1)		<u>l</u>	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5	FA		Glide	0		
(PRM 148.1-153.9)		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	
			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
	Ε.Δ		Backwater Pool	0		
	FA		Beaver Pond		0.3	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1 IXIVI 122.7-140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributan	Glide		0	0
		Tributary	Pool	0		
		Tributory Mouth	Pool	0		
		Tributary Mouth	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	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run	1	0	

### Table E64-Continued.

				L	ongnose 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	
		Split Main Channel	Riffle	0	0	
		Spiit Main Channei	Run	0	6.0	
MD 7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(cont.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Glide	0	0	
		Complex	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		

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

Geo-					L	ongnose sucker	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	n Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	5.5	0	0
			C' L OL L	Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	20.3	8.8	
Susitna River			Side Slough	Glide		20.7	6.4
	Susitna River			Pool	1.1		
			Taller days Marville	Cascade			0
		Non-FA	Tributary Mouth	Riffle	0	0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)			Clearwater Plume	Clearwater Plume		0	
			Side Channel	Run	0		
			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	Non 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
	·	I	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
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	3.8

# TableE65-Continued

Coo					L	ongnose sucker	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver Complex	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
				Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	0		0
MD /	6 "			Glide	0	0	0
MR-6 (cont.)	Susitna River		T	Pool	0		
			Tributary Mouth	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	
MD 7				Riffle	36.4	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributany Mouth	Cascade	0		
			Tributary 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

Coo					Lo	ongnose sucker	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0		0
				Glide		1.3	0
			Riffle	0	0	0	
			Side Slough	Glide	0	0	0
				Pool			0
MD 0				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River	FA		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

<sup>1.</sup> 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 E66. Average CPUE (fish per trap) for longnose sucker using fyke netting in the Middle River, 2013.

				Lo	ngnose sucke	r
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dan	n Location (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 (F	PRM 153.9-166.1)			
	FA	Backwater	Backwater Pool		3.0	
MR-6 (PRM 122.7- 148.4)		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	Backwater Pool	3.0		2.0
(PRM 107.8-	FA	Split Main Channel	Riffle	0		
(PRM 122.7- 148.4)		Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Side Channel	Glide		22.0	12.0
		Cido Claureh	Glide		6.0	2.0
MR-8 (PRM 102.4- 107.8)	FA	Side Slough	Pool			0
		Tributary	Pool			5.0
,	Non-FA	Upland Slough	Pool	0	12.0	2.0

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

			L	ongnose sucke	er
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Proposed Watana D	am Location (PRM 187.1)			
	Main Channel	Run	0		0
MR-1 (PRM 184.6-187.1)	Cide Observed	Glide			0
(FKIVI 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	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 (PRM 107.8-122.7)	Split Main Channel	Run	0.5	0.3	0
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0.5	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	1.0	
(FIXIVI 102.4-107.0)	Tributary	Pool	0	2.0	
	Upland Slough Beaver Complex	Backwater Pool	0		

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
		Watana Dam Location (PRM 1	87.1)		
		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(FKIVI 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0.25	0.05	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2		Backwater Pool	0.25	2.38	
(PRM 169.6-184.6)	Side Slough	Glide		0	0.52
		Pool	1.00		
	Tributary Mouth	Riffle	0	0	
	Devil	s Canyon (PRM 153.9-166.1)	•	1	
	Backwater	Backwater Pool	0	0.11	0
		Backwater Pool	1	0.08	
	Side Channel	Glide	0.13	0.04	0
		Run		0	
		Backwater Pool	0.06		0
		Beaver Pond	0	0.03	0.56
		Glide	1	0	0
	Side Slough Beaver Complex	Pool		0	0.22
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0	0	0
	T	Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
	T '	Rapid			0
	Tributary Mouth	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
MR-7 (PRM 107.8-122.7)	Cide Channel	Glide		0	
(FKIVI 101.8-122.1)	Side Channel	Pool		0.65	
		Riffle		0	
	Tributary	Backwater Pool			0

Table E68. Continued.

				Longnose sucker	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
·		Glide	0	0	
	Tributony (cont.)	Pool	0	0	
	Tributary (cont.)	Riffle	0.17		0
		Run			0
MR-7	Tributany Mouth	Cascade	0		
(cont.)	Tributary Mouth	Riffle	0		
		Beaver Pond	0	0	0.01
	Upland Slough Beaver Complex	Glide	0	0	
		Pool			0
		Run	0		0
		Backwater Pool			0
		Glide		0.65	0
	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

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

						Sculpin	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dam Location				
			Main Channel	Run	36	59.5	56
		FA		Glide			64.9
MR-1		TA	Side Channel	Riffle	109.1	71.4	93.4
(PRM 184.6-	Susitna River			Run	14.9	32.1	89.3
187.1)	141701		Main Channel	Run	26.7	17.7	22.3
		Non- FA	Side Channel	Riffle			60.5
			Side Challiel	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	
		FA	Side Slough	Glide		46.1	12.6
			Tributary Mouth	Cascade			9.4
			Tributary 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
	KIVCI			Glide			0
			Side Channel	Riffle	64.6	0	
MD 2				Run	29.9	9.5	25.3
MR-2 (PRM		17		Pool	82.6		0
169.6- 184.6)			Side Slough	Riffle		0	
104.0)				Run	148.2	40.9	59.7
			Split Main Channel	Run	19.4	0	41.9
			Tributary Mouth	Riffle		46.3	21.5
	Tsusena Creek <sup>1</sup>	Non- 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
		171		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	- Cu		14.8
(cont.)	Tributary <sup>1</sup>	FA	Devils Canyon Upper Exte				
MR-4			Deviis Carryon Opper Exte	Boulder Riffle	13.9	0	22.9
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle	10.7		26.3
			Devils Canyon Lower Exte	nt (PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
		E 4		Glide	20.7		
		FA	Main Channel	Riffle	11.1	14.3	59.1
MR-5 (PRM	Susitna			Run			40.4
148.1-		Non-	Main Channel	Run	17.3	24.1	15.5
153.9)			Cide Clevel	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		
			Cide Observal	Glide	6.9	9.9	51.4
			Side Channel	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)	Rivei		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
			- " .	Glide	42		12.5
			Tributary	Pool	115.1		

# Table E69-Continued.

						Sculpin	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	81.1		
		FA	Tributal y	Run	40		
			Upland Slough	Glide			89.1
			Upland Slough Beaver Complex	Beaver Pond	1.8		2.6
			Backwater	Backwater Pool	0	8.6	
			Clearwater Plume Clearwater Plume		29.4	17.8	21.8
MR-6 Susitna (cont.) River		Side Channel	Pool	14.3	63.5	17.7	
		Side Charlier	Riffle	10.6	140.6		
(cont.)	KIVCI		Cido Cloudh	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	
				Riffle	44.4	6.1	
		1	Split Main Channel	Run	21.4	17.8	45.9
MR-7 (PRM	Susitna	FA	T. 1	Cascade	36		
107.8-	River		Tributary Mouth	Riffle	262.3		
122.7)				Glide		18	
			T. 1	Pool		0	
			Tributary	Riffle	398.5		
				Run			0
				Pool			42
			Upland Slough Beaver Complex	Run			39.2
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			27.7

## Table E69-Continued.

						Sculpin	ı
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-/ (cont.)	MR-7 Susitna (cont.) River	Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(=====			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		
			Walii Grannei	Run	17.9	77.9	29.3
			Side Channel	Glide			291.2
		FA		Pool	77.4	0	262.8
				Riffle	111.7	86.4	72.8
				Run	16.8	28.6	
			Side Slough	Glide	69.8		
MR-8			Side Slough	Riffle	341.3	271	
(PRM	Susitna		Tributary	Riffle	205.5		
102.4- 107.8)	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
				Pool	7.2	12	16
			Split Main Channel	Run	0	4	43.1
			Upland Slough	Glide	43.5	138.5	4.4
			Opiana Sibugii	Pool	13.5	3.3	0

<sup>1.</sup> 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	5.5	0
(PRM 184.6-	N 54	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-		Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
			yon (PRM 153.9-166.1)			
	ГА	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)	Non-FA	Main Channel	Run	0	12.0	0
100.7)		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)	Non-FA	Backwater	Backwater Pool	7.7		0
140.4)		Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	9.3
		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
		M ! Ol I	Glide	0		
	F.A.	Main Channel	Run	0	0	0
	FA	Cide Observed	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		9.3
,	N A	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	14.9	0
		Upland Slough	Pool	0	0	13.0

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

					Sculpin	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	•		a Dam Location (PRM 187.1)	•		
		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA		Riffle	0		
(PRIVI 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 (PRM 169.6-184.6)	FA	Side Channel	Glide	40.0		
(FIXIVI 107.0-104.0)		Clala Classala	Glide		6.4	
		Side Slough	Run		0.4	
	•	Devils Cany	yon (PRM 153.9-166.1)	•		
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA	M : 01	Glide	0		
(FKIVI 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	
			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
	Ε.Δ		Backwater Pool	3.5		
	FA		Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(FIXIVI 122.7-140.4)			Pool		0	
		Split Main Channel	Run			0
			Glide		0	0
		Tributary	Pool	569.3		
		Tributon, Mouth	Pool	0		
		Tributary Mouth	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		
		Backwater	Backwater Pool	0.1		
MR-7	FA	Clearwater Plume	Clearwater Plume	16.2	0	0
(PRM 107.8-122.7)		Main Channel	Run		0	

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	
		Split Main Channel	Riffle	0	0	
		Spiit Main Channei	Run	0	0	
MD 7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(COIII.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	0	0	0
			Glide	0	0	
			Run	276.9		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
			Backwater Pool	5.4		0
			Glide			60.7
		Side Channel	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		

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

Geo-						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
			C' L OL L	Glide			6.8
			Side Channel	Pool			0
		FA		Backwater Pool	4.1	0.2	
			Side Slough	Glide		6.5	2.1
	Susitna River			Pool	0.3		
			Tributan Mauth	Cascade			0
			Tributary Mouth	Riffle	111.1	9.0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)		Non EA	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
		Non-FA		Pool	0	0	0
	Fog Creek <sup>1</sup>		Tributary	Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non-FA	Tributary	Pool	0		0
	Tributary <sup>1</sup>		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
	•	I	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				Backwater Pool	0		
(PRM 122.7- 148.4)	Susitna River	FA	Side Channel	Run			7.9
140.4)				Backwater Pool	4.4		1.1
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	1.8	0.4	0.4

# TableE72-Continued

Geo-						Sculpin	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver Complex	Riffle	0	0	1.7
			Complex	Run	0.6		0
				Glide	0	0	1.3
			Tributory	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	7.9		0
	Constitue			Glide	0	0	12.3
	Susitna River		Tributory Mouth	Pool	0		
			Tributary Mouth	Riffle	0	18.5	0
				Run		0	4.7
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Non-FA	Side Slough	Pool	0	0	0
			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	
MR-7				Riffle	36.4	0	0
(PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributary Mouth	Cascade	58.2		
			THIDUIALY WOULH	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**

Geo-					Sculpin		
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Backwater Pool	0.9		0
			Side Channel	Glide		0	2.5
				Riffle	12.1	0	0
				Glide	0.7	0.2	6.2
		r FA	Side Slough	Pool			12.0
MD 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

<sup>1.</sup> 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 E73. Average CPUE (fish per trap) for sculpin using fyke netting in the Middle River, 2013.

					Sculpin	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dan	n Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	5.0	0	
(PRM 169.6- FA	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6			Riffle	1.0	0	
(PRM 122.7-	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
		Cide Classel	Glide		0	3.0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			0
•	Non-FA	Upland Slough	Pool	0	0	0

Table 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)	Cide Channel	Glide			1.0
· · · · · · · · · · · · · · · · · · ·	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0.2	0	0
	Devils Canyon (P	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			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
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0	0
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(FIXIVI 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
		Watana Dam Location (PRM 1	87.1)		
		Glide			0.08
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(FRIVI 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	
(FKW 109.0-104.0)	Side Slough	Glide		1.47	0.43
		Pool	3.35		
	Tributary Mouth	Riffle	3.00	1.00	
	·	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
	Side Slough Beaver Complex	Beaver Pond	0.19	0.10	0.13
		Glide		0.03	0.22
		Pool		0.07	0.67
		Riffle		0	0
MR-6		Run			0
(PRM 122.7-148.4)		Glide	0.17	0	0
		Pool	0.43		0
	Tributary	Riffle	0.33		0
		Run	0		0.14
		Glide		0	0.25
		Rapid			0
	Tributary Mouth	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		Glide	0	0.10	
(PRM 107.8-122.7)	Side Channel	Pool		0.06	
·		Riffle		0	
		Backwater Pool			0
	Tributary	Glide	0.33	0.56	-

Table E75. Continued.

				Sculpin	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
•	<b>J</b> 1	Pool	0	0.11	
	Tributary (cont.)	Riffle	0.67		0
		Run			0.08
	Tributany Mouth	Cascade	0.40		
MR-7	Tributary Mouth	Riffle	0		
(cont.)		Beaver Pond	0	0	0
	Unland Claugh Decuer Compley	Glide	0.25	0.25	
	Upland Slough Beaver Complex	Pool			0.17
		Run	0.25		0.19
		Backwater Pool			0.50
	Clala Channal	Glide		0	0.19
	Side Channel	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				
			Main Channel	Run	0	0	0
		FA		Glide			0
MR-1		ГА	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	TAVOI		Main Channel	Run	0	0	0
		Non- FA	Cida Channal	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
			Tributon Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	0	0	0
	Kivei			Glide			0
				Riffle	0	0	
MD 0		Non- FA		Run	0	0	0
MR-2 (PRM		IA		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
		1 A		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 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 (cont.)	Fog Creek Tributary <sup>1</sup>	Non- FA	Tributary	Run			0
, ,	1	L	Devils Canyon Upper Exte	ent (PRM 166.1)			
MR-4 (PRM 153.9-	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle	0	0	0
166.1)			Deville Common Levice Fish	Riffle			
			Devils Canyon Lower Exte				0
			Clearwater Plume	Clearwater Plume	0		U
		FA	Main Channel	Glide	0	0	0
MR-5			Main Channel	Riffle	0	U	0
(PRM 148.1-	Susitna River		Main Channal	Run	0	0	0
153.9)	Rivei		Main Channel	Run	0	0	0
		Non- FA	Side Slough	Glide	0	U	0
				Pool		0	
			Split Main Channel	Run	0	0	0
			Backwater Main Channel	Backwater Pool	0	0	U
			Main Channel	Run		0	0
			Multiple Split Main Channel	Riffle	0	0	0
				Run	0	U	U
				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	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
			Tributary	Glide	0		0
			Tributury	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
			Tributary	Riffle	0		
		FA	Tributary	Run	0		
			Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cido Channol	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel	Riffle	0	0	
(cont.)	Tavoi		Cido Clouah	Glide		0	0
		Non- FA	Side Slough	Pool	1.3	2.2	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	
			Side Charliner	Pool	0	0	
				Riffle		0	
			Callit Main Channal	Riffle	0	0	
			Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	Tallecter Menth	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			Tributoru	Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			10.5
			Upland Slough Beaver Complex	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- FA	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		
		FA	Walli Charliel	Run	0	0	0
			Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0.6		
MD 0			Side Slough	Riffle	0	12.9	
MR-8 (PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	River		Main Channel	Run	0	0	0
107.6)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			29
			Side Slough	Pool	0	2.4	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Siougn	Pool	2.9	43.2	0

<sup>1.</sup> 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, threespi	ne
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	_		a Dam Location (PRM 187.1)			
MD 1		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA	Side Channel	Riffle	0		
(11(11) 101:0 107:1)		Side Charmer	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		
(1 KW 107.0-104.0)		Cide Claush	Glide		0	
		Side Slough	Run		0	
	•	Devils Cany	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5	FA		Glide	0		
(PRM 148.1-153.9)		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
		Side Channel	Backwater Pool	0	0	
			Glide	0	0	0
			Riffle	0	0	
			Run		0	0
			Backwater Pool	0		
	FA		Beaver Pond		0	0
MR-6		Side Slough Beaver Complex	Glide	0		0
(PRM 122.7-148.4)			Pool		0	
		Split Main Channel	Run			0
			Glide		0	0
		Tributary	Pool	0		
			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	deback, threespi	ne
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	
		Split Main Channel	Riffle	0	0	
		Spiit Main Channei	Run	0	0	
	FA		Backwater Pool			0
MR-/ (cont.)	MR-7	Tributary	Pool	0		
(COIII.)			Riffle			0
		Upland Slough Beaver Complex	Beaver Pond	67.1	5.5	10.8
			Glide	0	15.3	
			Run	0		
	Non-FA	Split Main Channel	Run	0	0	0
		Main Channel	Run			0
		Side Channel	Backwater Pool	2.7		0
			Glide			15.7
			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.

Geo-					Stick	deback, threespi	ne
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	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 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)			Clearwater Plume	Clearwater Plume		0	
	No	Non-FA	Side Channel	Run	0		
		Side Slough	Pool	0			
	Tsusena Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
	0.001		Tributary	Pool	0	0	0
	Fog Creek <sup>1</sup>	Non-FA		Riffle	0	0	0
				Run	0	0	0
	Fog Creek		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 (PRM 122.7-	Susitna River	FA		Backwater Pool	0		
148.4)	340.0.0 1000		Side Channel	Run			0
			Side Slough Beaver	Backwater Pool	0		0
			Complex	Beaver Pond	0	0	0

# TableE78-Continued

Geo-					Stick	deback, threespi	ne
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
			Tributory	Pool	0		0
		FA	Tributary	Riffle	0		0
MR-6 Susitna River			Run	0		0	
			Glide	0	0	0	
		Tributary Mouth	Pool	0			
		Tributary Moutif	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) Sus	545			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**

Geo-					Stick	deback, threespi	ne
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	3.0	0
			Side Slough	Pool			0
MD 0				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River	FA		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

<sup>1.</sup> 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 E79. Average CPUE (fish per trap) for threespine stickleback using fyke netting in the Middle River, 2013.

				Stick	leback, threesp	oine
Geomorphic FA or Reach Non-FA		Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam	Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (P	RM 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0	0
MR-6		Side Channel	Riffle	0	0	
(PRM 122.7-	FA		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	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 Claush	Glide		0	0.5
MR-8 (PRM 102.4- 107.8)	FA	Side Slough	Pool			0
		Tributary	Pool			1.0
	Non-FA	Upland Slough	Pool	0	0	0

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 \	Watana Dam Location (PRM 18	37.1)			
MD 1		Glide			0	
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0	
(17(11) 101:0 107:1)		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		
(FRIVI 109.0-104.0)	Side Slough	Glide		0	0	
		Pool	0			
	Tributary Mouth	Riffle	0	0		
		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 Beaver Complex	Glide		0	0	
		Pool		0	0	
		Riffle		0	0	
MR-6		Run			0	
(PRM 122.7-148.4)		Glide	0	0	0	
,		Pool	0		0	
	Tributary	Riffle	0		0	
		Run	0		0	
		Glide		0	0	
		Rapid			0	
	Tributary Mouth	Riffle	0	0	0	
		Run		0	0	
	Upland Slough	Glide			0	
	Upland Slough Beaver Complex	Beaver Pond	0	0	0	
	Backwater Backwater	Backwater Pool	0	0	0	
	Clearwater Plume	Clearwater Plume		+	0	
	Oleanwater Figure	Backwater Pool		+	0	
MR-7		Glide	0	0		
(PRM 107.8-122.7)	Side Channel	Pool		0		
		Riffle		0		
	Tributary	Backwater Pool		+	0	

Table E80. Continued.

			St	ickleback, threespir	ne
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributary (cont.)	Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributany Mouth	Cascade	0		
(cont.)	Tributary Mouth	Riffle	0		
		Beaver Pond	46.59	3.01	6.77
	Unland Claugh Decuer Compley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
		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	, and the second	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.

					T	rout, rainbow	
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
Reacti	Sucam	IA	Proposed Watana Dam Location		Julilliel	Julilliel	ı alı
			Main Channel	Run	0	0	0
				Glide			0
MR-1		FA	Side Channel	Riffle	0	0	0
(PRM 184.6-	Susitna River			Run	0	0	0
187.1)	Rivei		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
		F.4	Cido Clough	Backwater Pool	0	0	
		FA	Side Slough	Glide		0	0
			Tributary Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
			Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River	Non- FA	Main Channel	Run	0	0	0
	Mivei			Glide			0
				Riffle	0	0	
MR-2				Run	0	0	0
(PRM		171		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
		' ' '		Run	0	0	0
				Boulder Riffle	0		0
	Fog Creek	Non-	Tributon	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0		
				Riffle	0	0	0

# Table E81-Continued.

					T	rout, rainbow	
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
			Devils Canyon Upper Exte	ent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0
100.1)			Devils Canyon Lower Exte			<u> </u>	
			Clearwater Plume	Clearwater Plume			0
				Glide	0		
MR-5		FA	Main Channel	Riffle	0	0	3.7
(PRM	(PRM Susitna			Run			0
148.1- River 153.9)		Main Channel	Run	0	0	0	
10017)		Non-	Side Slough	Glide	5.6	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	3.9	0
			тынарто ористант отнито.	Run	0	0	0
				Backwater Pool	0		
			Side Channel	Glide	0	0	0
			Side Gridinici	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)	TAIVOI		Side Slough Beaver Complex	Pool			0
				Riffle	0		
				Run	0		
			Split Main Channel	Run			0
				Glide			0
			Tributary Mouth	Riffle	0		0
				Run			0
			T.1	Glide	0		0
			Tributary	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
			Tributary	Riffle	0		
		FA	Tributary	Run	5.7		
			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
			Side Channel	Pool	0	0	0
MR-6 Susitna River		Side Charlier	Riffle	0	0		
		Cido Clough	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
			Cido Chamal	Glide	0	0	
			Side Channel	Pool	0	5.6	
				Riffle		0	
			Cult Main Channal	Riffle	0	0	
		_,	Split Main Channel	Run	0	0	0
MR-7 (PRM	Susitna	FA	Toller days March	Cascade	9		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			Tallerdam	Pool		0	
			Tributary	Riffle	13.3		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

## Table E81-Continued.

					T	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
(COIII.)	MIVEI	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		
			Ivialii Channei	Run	0	0	0
				Glide			0
			Side Channel	Pool	0	0	0
		FA		Riffle	0	2.2	0
				Run	0	0	
			Side Slough	Glide	0		
MDO			Side Slough	Riffle	0	0	
MR-8 (PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	River		Main Channel	Run	0	0	0
107.8)				Glide	0		0
			Side Channel	Pool	0	0	0
				Run		0	0
		Non- FA	Side Slough	Glide			0
			Side Slough	Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Sibagn	Pool	0	0	0

<sup>1.</sup> 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 Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	N FA	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-	N FA	Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
	•	Devils Can	yon (PRM 153.9-166.1)	•	. "	
	ГА	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	7.7
100.7)		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
(PRM 122.7- 148.4)		Backwater	Backwater Pool	0		0
140.4)	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	FA	Main Channel	Run		0	5.4
MR-7		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
		M ! Ol I	Glide	0		
		Main Channel	Run	0	9.0	6.9
	FA	611.01	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		0
.07.07	N A	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

				-	Trout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			a Dam Location (PRM 187.1)			
		Main Channel	Run	0		
MR-1 (PRM 184.6-187.1)	FA		Riffle	0		
(PRIVI 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		
(FIXIVI 107.0-104.0)		Cide Clevel	Glide		0	
		Side Slough	Run		0	
		Devils Cany	yon (PRM 153.9-166.1)			
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (PRM 148.1-153.9)	FA	Main Channal	Glide	0		
(FIXIVI 140.1-133.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	0	4.8	
		Clearwater Plume	Clearwater Plume	0	0.6	
		Main Channel	Run	0	0	
		Multiple Cult Main Channel	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
	FA		Backwater Pool	0		
MD (	FA	Cido Claugh Doguer Compley	Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(1 KW 122.7-140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributon	Glide		0	0
		Tributary	Pool	0		
		Tributary Mouth	Pool	0		
		THIDUIALY WOULT	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		5.0	

## 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	
		Split Main Channel	Riffle	0	0	
		Spiit Main Channei	Run	0	0	
140.7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	3.3		
(cont.)			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			0
		Side Channel	Backwater Pool	1.8		0
			Glide			0
			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		

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

Geo-						Trout, rainbow	
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		
			Tulle day Maride	Cascade			0
			Tributary Mouth	Riffle	0	0	
MR-2 (PRM 169.6- 184.6)			Backwater	Backwater Pool	0		
	No. TA	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
Fog Creek <sup>1</sup>				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 Uppe	r Extent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non-FA	Tributary	Boulder Riffle	0	0	0
	J	I	Devils Canyon Lowe	r 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
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE84-Continued

Geo-						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 Complex	Riffle	0	0	0
			Complex	Run	0		0
				Glide	2.2	0	0
			Tributan	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	6.8		0
MD /	6 "			Glide	0	0	0
MR-6 (cont.)	Susitna River		Taller days - NA acidle	Pool	0		
			Tributary Mouth	Riffle	1.5	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Non-FA	Side Slough	Pool	0	0	0
			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	
MD 7				Riffle	36.4	0	0
MR-7 (PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributon, Mouth	Cascade	0		
			Tributary 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**

Cas						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
			Side Slough	Glide	0	0	0
				Pool			0
MD 0				Riffle	0	0	0
MR-8 (PRM 102.4-	Susitna River	FA		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

<sup>1.</sup> 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 E85. Average CPUE (fish per trap) for rainbow trout using fyke netting in the Middle River, 2013.

				7	rout, rainbow	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dan	Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	0	0	
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0.5	
MR-6 (PRM 122.7- 148.4)		Cide Channel	Glide	0	0	0
		Side Channel	Riffle	0	0	
	FA		Beaver Pond	0		
		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
		Cide Clause	Glide		11.0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			38.0
,	Non-FA	Upland Slough	Pool	7.0	3.0	0

Table E86. Average CPUE (fish per trap) for rainbow trout using hoop 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 187.1)			
	Main Channel	Run	0		0
MR-1 (PRM 184.6-187.1)	Cide Channel	Glide			0
(FIXIVI 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (Pl	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	0.1
(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
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0	0.1
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(1 IXIVI 102.4-107.0)	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
,		Watana Dam Location (PRM 1	•		
		Glide			0
	Side Channel	Riffle			0
(PRIVI 184.0-187.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
		Backwater Pool	0	0	
(PRIVI 109.0-184.0)	Side Slough	Glide		0	0
	·	Pool	0		
Backwater Clearwater Plume Side Channel  Side Slough  Tributary Mouth  Backwater  Side Channel  Side Slough  Tributary Mouth  Side Slough Beave  Tributary  Tributary  MR-6 (PRM 122.7-148.4)  Tributary  Tributary  Upland Slough	Tributary Mouth	Riffle	0	0	
	1	s Canyon (PRM 153.9-166.1)	<u> </u>	l l	
		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
		Glide		0	0
	Side Slough Beaver Complex	Pool		0	0
		Riffle		0	0
MR-6		Run			0
		Glide	0.17	0	0
		Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
		Rapid			0
	Tributary Mouth	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	Cide Cham. I	Glide	0	0	
(PRM 107.8-122.7)	Side Channel	Pool		0	
		Riffle		0	
	T.11	Backwater Pool			0
	Tributary	Glide	0	0	

Table E87. Continued.

				Trout, rainbow  Early			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
•	<b>J</b> 1	Pool	0.71	0			
	Tributary (cont.)	Riffle	0.50		0		
		Run			0		
MR-7 (cont.)	Tributanu Mauth	Cascade	0				
	Tributary Mouth	Riffle	0				
(COIII.)		Beaver Pond 0 0 0  Glide 0 0  Pool 0  Run 0 0  Backwater Pool 0	0				
	Haland Claush Daguer Canadau						
	Upland Slough Beaver Complex	Pool	0.71     0       0.50     0       0     0       0     0       0     0       0     0       0     0       00     0       <				
		Run		0			
		Backwater Pool			0		
		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			
		Beaver Pond			0		
	Upland 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.

				WI	hitefish, humpba	ck
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	0
(PRM 184.6-	Non EA	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-	N FA	Main Channel	Run	0	0	0
184.6)	Non-FA	Side Channel	Run	0		0
		Split Main Channel	Run	0	0	0
		Devils Can	yon (PRM 153.9-166.1)			
	FA	Clearwater Plume	Clearwater Plume			0
MR-5	FA	Main Channel	Run		0	0
(PRM 148.1- 153.9)	N FA	Main Channel	Run	0	0	0
100.7)	Non-FA	Split Main Channel	Run	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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
1 10. 1)	Non-FA	Main Channel	Run	0	0	0
		Tributary Mouth	Run	0	0	0
	ГΛ	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		
	FA	Main Channel	Run	0	0	0
	FA	Cida Channal	Riffle			0
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		0
,	Non FA	Side Channel	Pool	0	0	0
	Non-FA		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.

				Wh	itefish, humpbac	k
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	1		a Dam Location (PRM 187.1)			-
		Main Channel	Run	0		
MR-1	FA		Riffle	0		
(PRM 184.6-187.1)		Side Channel	Run	0		0
		Backwater	Backwater Pool		0 0 0 0 0 0 1.0 0.3 0 0 0 0	
		Clearwater Plume	Clearwater Plume	0	0	
MR-2	FA	Side Channel	Glide	0		
(PRM 169.6-184.6)		Cido Cloumb	Glide		0	
		Side Slough	Run		0	
		Devils Can	yon (PRM 153.9-166.1)		<u>.                                      </u>	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5 (DDM 149 1 152 0)	FA		Glide	0		
(PRM 148.1-153.9)		Main Channel	Run		0	
		Backwater	Backwater Pool	2.2	1.0	
		Clearwater Plume	Clearwater Plume	0	0.3	
		Main Channel	Run	0	0	
		Maria Carana Carana	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
	FA		Backwater Pool	0		
MB (	FA	Cido Clough Doguer Compley	Beaver Pond		0	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(I KW 122.7 140.4)			Pool		0	
		Split Main Channel	Run			0
		Tributary	Glide		0	0
		Tributary	Pool	0		
		Tributary 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	33.6		
MR-7 (PRM 107.8-122.7)	FA	Clearwater Plume	Clearwater Plume	0	0	0
(FIXIVI 107.0-122.7)		Main Channel	Run		0	

### Table E89-Continued.

				Wh	itefish, 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	
		Split Main Channel	Riffle	0	0	
MR-7 (cont.)		Spiit Main Charinei	Run	0	0	
	FA		Backwater Pool			0
		Tributary	Pool	0		
			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	0	0	0
	Non-FA	Split Main Channel	Run	0		0
		Upland Slough	Glide	0		

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

				Whi	tefish, humpba	ck	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Proposed Watana Dar	n Location (PRM 187.1)				
MR-2		Backwater	Backwater Pool	0	0		
(PRM 169.6- 184.6)	FA	Clearwater Plume	Clearwater Plume			0	
		Devils Canyon (I	PRM 153.9-166.1)				
		Backwater	Backwater Pool		0		
MR-6 (PRM 122.7- 148.4)	FA	Si	Cido Channal	Glide	0	0	0
		Side Channel	Riffle	0	0		
		A Side Slough Beaver Complex	Beaver Pond	0			
			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	
		Cido Cloumb	Glide		0	0	
	FA	Side Slough	Pool			0	
		Tributary	Pool			0	
,	Non-FA	Upland Slough	Pool	0	0 0 0 0 0	0	

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

					WI	nitefish, roun	d
Geo-		FA or					
morphic Reach	Stream	Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
Rodon	Ou oum	1	Proposed Watana Dam Location		Currino	Cummor	· un
			Main Channel	Run	3.1	0	0
				Glide			24.3
MR-1		FA	Side Channel	Riffle	0	0	3.3
(PRM 184.6-	Susitna			Run	3	0	4.3
187.1)	184.6- River 187.1)		Main Channel	Run	0	0	1.6
		Non- FA	Cido Channal	Riffle			7.6
		.,,	Side Channel	Run	0	0	
			Main Channel	Run	5	0	
			Side Channel	Glide	0	0	0
		FA	Side Slough	Backwater Pool	0	0	
		FA		Glide		0	0
			Tributary Mouth	Cascade			0
			Tributary Mouth	Riffle		0	
		er	Backwater	Backwater Pool	0	0	0
			Clearwater Plume	Clearwater Plume	0	0	0
	Susitna River		Main Channel	Run	5.1	7.2	0
	KIVCI		Side Channel Non-	Glide			0
				Riffle	0	0	
MR-2		Non- FA		Run	0	0	0
(PRM		171		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-	T. 1	Pool	0	0	0
	Tributary <sup>1</sup>	FA	Tributary	Rapid	0		
				Riffle	0	0	0

# Table E91-Continued.

					WI	nitefish, round	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
, ,	1	L	Devils Canyon Upper Exte	ent (PRM 166.1)			
MR-4 (PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Boulder Riffle Riffle	0	0	0
100.1)			Devils Canyon Lower Exte				
			Clearwater Plume	Clearwater Plume			0
				Glide	0		
MR-5		FA	Main Channel	Riffle	0	0	0
(PRM Susitna			Run		_	0	
148.1- 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
				Riffle	3.4	2.8	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
		Tu!l1	Tributary	Glide	0		0
			inibutary	Pool	0		

# Table E91-Continued.

					Wh	nitefish, roun	d
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		FA	Tributary	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
		Cido Channal	Pool	0	14.1	0	
MR-6	MR-6 Susitna (cont.) River		Side Channel	Riffle	1.3	3.2	
(cont.)		Side Slough	Glide		0	0	
		Non- FA	Side Slough	Pool	0	0	0
	I A	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
				Glide	0	0	
			Side Channel	Pool	0	0	
				Riffle		0	
				Riffle	0	0	
			Split Main Channel	Run	0	8.9	8
MR-7 (PRM	Susitna	FA		Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
				Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			0
		Non- FA	Clearwater Plume	Clearwater Plume			0
			Main Channel	Glide			0

### Table E91-Continued.

					WI	nitefish, round	t
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
	MR-7 Susitna (cont.) River		Side Slough	Pool	0	0	0
		Non- FA	Side Slough Beaver Complex	Beaver Pond	0	0	0
(cont.)	173	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		
			ividiri Cridiffiei	Run	0	0	0.9
			Side Channel	Glide			0
		FA		Pool	0	0	0
				Riffle	0	0	0
				Run	0	0	
			Side Slough	Glide	0		
MD 0			Side Slodyn	Riffle	0	0	
MR-8 (PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	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
			Side Slough	Pool	0	0	0
			Split Main Channel	Run	0	0	0
				Glide	0	0	0
			Upland Slough	Pool	0	0	0

<sup>1.</sup> 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	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watan	a Dam Location (PRM 187.1)	)		
MR-1	FA	Main Channel	Run	0	0	10.7
(PRM 184.6-	N FA	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-	N FA	Main Channel	Run	0	23.8	0
184.6)	Non-FA	Side Channel	Run	0		34.9
		Split Main Channel	Run	0	0	0
	•	Devils Can	yon (PRM 153.9-166.1)	•	•	
	ГА	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	22.5
		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
(PRM 122.7- 148.4)	Non-FA	Backwater	Backwater Pool	15.0		0
140.4)		Main Channel	Run	0	0	13.8
		Tributary Mouth	Run	0	0	18.7
	Ī_,	Main Channel	Run		0	10.7
MR-7	FA	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
		M ! Ol I	Glide	0		
		Main Channel	Run	0	0	2.2
	FA	Cide Observed	Riffle			41.5
		Side Channel	Run	0	0	
MR-8		Main Channel	Run	0	0	0
(PRM 102.4- 107.8)			Glide	0		9.3
	N	Side Channel	Pool	0	0	0
	Non-FA		Run		0	
		Split Main Channel	Run	0	0	0
		Upland Slough	Pool	0	0	0

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

				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 (PRM 184.6-187.1)	FA	Cide Channel	Riffle	0		
(FIXW 104.0-107.1)		Side Channel	Run	0	0	0
		Backwater	Backwater Pool		1.9	
		Clearwater Plume	Clearwater Plume	0	31.3	
MR-2 (PRM 169.6-184.6)	FA	Side Channel	Glide	0		
(FRIVI 109.0-104.0)			Glide		5.7	
		Side Slough	Run		0.8	
		Devils Can	yon (PRM 153.9-166.1)		<u>.</u>	
		Clearwater Plume	Clearwater Plume	0	0	0
MR-5	FA		Glide	0		
(PRM 148.1-153.9)		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	
			Riffle		0	
		Multiple Split Main Channel	Run	0	0	1.5
		Side Channel	Backwater Pool	0	9.2	
			Glide	1.3	1.7	0
			Riffle	0	0	
			Run		0	0
	ГА		Backwater Pool	0		
	FA		Beaver Pond		1.7	0
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0
(FRIVI 122.1-140.4)			Pool		0	
		Split Main Channel	Run			5.0
		Tullerateur	Glide		2.8	0
		Tributary	Pool	0		
		Tributory Mouth	Pool	0		
		Tributary Mouth	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	FA	Clearwater Plume	Clearwater Plume	0	0	0
(PRM 107.8-122.7)		Main Channel	Run	1	0	

### Table E93-Continued.

				V	Vhitefish, 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	
		Calit Main Channal	Riffle	0	0	
		Split Main Channel	Run	0	1.0	
140.7	FA		Backwater Pool			0
MR-7 (cont.)		Tributary	Pool	0		
(COIII.)			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
		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		

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

Geo-					V	Vhitefish, round	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	n 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		
			Tulbudan Mandb	Cascade			0
			Tributary Mouth	Riffle	0	0	
MR-2 (PRM 169.6-			Backwater	Backwater Pool	0		
184.6)		No. TA	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	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	Non EA	FA 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
	J	l	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	1.7	0	0
MR-6				Backwater Pool	0		
(PRM 122.7-	Susitna River	FA	Side Channel	Run			0
148.4)				Backwater Pool	0		0
			Side Slough Beaver	Beaver Pond	0	0	0
			Complex	Glide	0	0	0

# TableE94-Continued

Geo-					V	Vhitefish, round	
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
				Pool	0	0	0
			Side Slough Beaver Complex	Riffle	0	0	0
			Complex	Run	0		0
				Glide	0	0	0
			Tributon	Pool	0		0
			Tributary	Riffle	0		0
		FA		Run	0		0
MR-6 (cont.)	6 "		Tributany Mouth	Glide	0	0	0
	Susitna River			Pool	0		
			Tributary Mouth	Riffle	0	0	0
				Run		0	0
			Upland Slough Beaver Complex	Beaver Pond	0	0	0
		Non-FA	Side Slough	Pool	0	0	0
			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	
MR-7				Riffle	0	0	0
(PRM 107.8-	Susitna River	FA		Run			0
122.7)			Tributary Mouth	Cascade	0		
			Tributary 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 E94-Continued**

Coo					V	Vhitefish, round	
Geo- morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Side Channel	Backwater Pool	0		0
				Glide		0	0
			Riffle	0	0	0	
		· FA	Side Slough	Glide	0	0	0
				Pool			0
MD 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

<sup>1.</sup> 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 E95. Average CPUE (fish per trap) for round whitefish using fyke netting in the Middle River, 2013.

				W	hitefish, round	
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dam	Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	16.0	0	
(PRM 169.6- FA 184.6)	FA	Clearwater Plume	Clearwater Plume			1.0
		Devils Canyon (P	RM 153.9-166.1)			
	FA	Backwater	Backwater Pool		0	
		Side Channel	Glide	0	0.5	0
MR-6		Side Channel	Riffle	0	0	
(PRM 122.7-		Side Slough Beaver Complex	Beaver Pond	0		
148.4)			Glide		0	
148.4)			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0		2.5
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			
		Side Channel	Glide		5.0	4.0
		Cide Clause	Glide		2.0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			2.0
•	Non-FA	Upland Slough	Pool	4.0	0	0

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

			W	/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)	Cide Channel	Glide			0
(FIXW 104.0-107.1)	Side Channel	Run			0
MR-2 (PRM 169.6-184.6)	Main Channel	Run	0	0	0
	Devils Canyon (Pl	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	0.1
(FIXIVI 107.0-122.7)	Upland Slough Beaver Complex	Beaver Pond		0	
	Main Channal	Glide	0		
	Main Channel	Run	0	0	0.1
MR-8 (PRM 102.4-107.8)	Side Channel	Pool	0	0	
(FIXIVI 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 \	Watana Dam Location (PRM 1	87.1)		
MR-1		Glide			0
(PRM 184.6-187.1)	Side Channel	Riffle			0
(		Run	0		
	Backwater	Backwater Pool	0	0	
MR-2 (PRM 169.6-184.6)	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
		Backwater Pool	0	0	
	Side Slough	Glide		0	0
		Pool	0.05		
	Tributary Mouth	Riffle	0	0	
	-	ls Canyon (PRM 153.9-166.1)	•	<u> </u>	
	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
		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
(* * * * * * * * * * * * * * * * * * *		Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
		Rapid		<del> </del>	0
	Tributary Mouth	Riffle	0	0	0
		Run	0	0	0
	Upland Slough	Glide		0	0
	Upland Slough Beaver Complex	Beaver Pond	0	0	0.06
			0	0.05	0.00
	Backwater Pluma	Backwater Pool	U	0.00	0
	Clearwater Plume	Clearwater Plume			0
MR-7		Backwater Pool	0	0	U
(PRM 107.8-122.7)	Side Channel	Glide	U	0	
		Pool			
	T. II	Riffle		0	
	Tributary	Backwater Pool	1		0

Table E97. Continued.

				Whitefish, round	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tributany (cont.)	Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributany Mouth	Cascade	0		
(cont.)	Tributary Mouth	Riffle	0		
		Beaver Pond	0	0	0
	Unland Claugh Decuer Compley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0.25		0
		Backwater Pool			0
		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	1		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	
			Proposed Watana Dam Location	(PRM 187.1)				
			Main Channel	Run	0	0	0	
		FA		Glide			0	
MR-1		TA	Side Channel	Riffle	0	0	0	
(PRM 184.6-	Susitna River			Run	0	0	0	
187.1)	141701		Main Channel	Run	0	0	0	
		Non- FA	Side Channel	Riffle			0	
			Side Charlier	Run	0	0		
			Main Channel	Run	0	0		
			Side Channel	Glide	0	0	0	
		ГЛ	Side Slough	Backwater Pool	33.6	0		
		FA	Side Slough	Glide		0	0	
			Tributory Mouth	Cascade			0	
			Tributary Mouth	Riffle		0		
			Backwater	Backwater Pool	0	0	0	
			Clearwater Plume	Clearwater Plume	2.3	0	0	
	Susitna River		Main Channel	Run	0	0	0	
	Rivei				Glide			0
				Riffle	0	0		
MD 0		Non- FA		Run	0	0	0	
MR-2 (PRM		IA		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	
		'^		Run	0	0	0	
				Boulder Riffle	0		0	
	Fog Creek	Non-		Pool	0	0	0	
	Tributary <sup>1</sup>	Non- FA	Tributary	Rapid	0			
				Riffle	0	0	0	

# Table E98-Continued.

					Whitefis	sh, undifferen	tiated
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
MR-2	Fog Creek	Non- FA	Tributary	Run			0
(cont.)	Tributary <sup>1</sup>	FA	Devils Canyon Upper Exte	nt (PRM 166.1)			
MR-4			7 11	Boulder Riffle	0	0	0
(PRM 153.9- 166.1)	Chinook Creek <sup>1</sup>	Non- FA	Tributary	Riffle			0
			Devils Canyon Lower Exte	nt (PRM 153.9)			
			Clearwater Plume	Clearwater Plume			0
				Glide	0		
		FA	Main Channel	Riffle	0	0	0
MR-5 (PRM	Susitna			Run			0
148.1-	River		Main Channel	Run	0	0	0
153.9)		Non-	Cide Clevel	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	10.8		
			Side Channel	Glide	0	0	0
			Side Charliner	Riffle	0	0	0
				Run	0		0
MR-6				Beaver Pond			0
(PRM 122.7-	Susitna River	FA		Glide	0		0
148.4)	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
			T.1	Glide	0		0
			Tributary	Pool	0		

# Table E98-Continued.

					Whitefis	sh, undifferer	tiated
Geo- morphic Reach	Stream	FA or Non- FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Tributary	Riffle	0		
		FA	Tributal y	Run	0		
			Upland Slough	Glide			0
			Upland Slough Beaver Complex	Beaver Pond	0		0
			Backwater	Backwater Pool	0	0	
			Clearwater Plume	Clearwater Plume	0	0	0
			Cido Channal	Pool	0	0	0
MR-6 (cont.)	Susitna River		Side Channel Riffle		0	0	
(cont.)	TAIVOI		Cido Cloudh	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  Pool  Riffle		11.2	0	
					5.5	0	
						0	
				Riffle	0	0	
			Split Main Channel	Run	0	0	3.7
MR-7 (PRM	Susitna	FA	Tolley days a Mary dis	Cascade	0		
107.8-	River		Tributary Mouth	Riffle	0		
122.7)				Glide		0	
			T. 1	Pool		0	
			Tributary	Riffle	0		
				Run			0
				Pool			0
			Upland Slough Beaver Complex	Run			0
		Non-	Clearwater Plume	Clearwater Plume			0
		FA	Main Channel	Glide			0

#### Table E98-Continued.

					Whitefis	sh, undifferen	tiated
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
(oonii)	111701	''	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
		FA	Main Channel	Glide	0		
			ividiri Cridiffiei	Run	0	0	0
			Side Channel	Glide			0
				Pool	0	0	0
				Riffle	0	0	0
				Run	4.2	0	
			Side Slough	Glide	0		
MR-8			Side Slodgii	Riffle	0	0	
(PRM	Susitna		Tributary	Riffle	0		
102.4- 107.8)	River		Main Channel	Run	0	0	0
107.0)				Glide	0		0
			Side Channel	Pool	0	0	0
		l		Run		0	0
		Non- FA	Side Slough	Glide			0
			Side Slough	Pool	0	0	0
			Split Main Channel	Run	0	0	0
			Upland Slough	Glide	0	0	0
			Opiana Slough	Pool	0	0	0

<sup>1.</sup> 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.

				White	Whitefish, undifferentiated			
Geomorphic Reach	FA or Non-FA	Macrohabitat Type Mesohabitat Type Sumn		Early Summer	Late Summer	Fall		
		Proposed Watan	a Dam Location (PRM 187.1)	)				
MR-1	FA	Main Channel	Run	0	0	8.2		
(PRM 184.6-	N. FA	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-	N 54	Main Channel	Run	0	0	0		
184.6)	Non-FA	Side Channel	Run	0		0		
		Split Main Channel	Run	0	0	0		
	•	Devils Can	yon (PRM 153.9-166.1)	•				
	ГА	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		
155.7)		Split Main Channel	Run	0	0	0		
	FA	Main Channel	Run		0			
		Multiple Split Main Channel	Run		0	0		
MR-6		Split Main Channel	Run			0		
(PRM 122.7- 148.4)	Non-FA	Backwater	Backwater Pool	0		0		
140.4)		Main Channel	Run	0	0	0		
		Tributary Mouth	Run	0	0	0		
		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		
		-	Glide	0				
		Main Channel	Run	0	0	0		
	FA	C' L OL L	Riffle			0		
		Side Channel	Run	0	0			
MR-8		Main Channel	Run	0	0	0		
(PRM 102.4- 107.8)			Glide	0		0		
,	N A	Side Channel	Pool	0	0	0		
	Non-FA		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.

					fish, undifferentia	sh, undifferentiated		
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
	•		a Dam Location (PRM 187.1)	•				
		Main Channel	Run	0				
MR-1 (PRM 184.6-187.1)	FA		Riffle	0				
(FIXIVI 104.0-107.1)		Side Channel	Run	0	0	0		
		Backwater	Backwater Pool		0			
		Clearwater Plume	Clearwater Plume	0	15.6			
MR-2 (PRM 169.6-184.6)	FA	Side Channel	Glide	0				
(PRIVI 109.0-104.0)		Cido Claumb	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	2.9	4.8			
		Clearwater Plume	Clearwater Plume	0	1.6			
		Main Channel	Run	0	0			
		MARIE L. C. PLAN I. OL I	Riffle		0			
		Multiple Split Main Channel	Run	0	0	0		
			Backwater Pool	0	0			
		Side Channel	Glide	6.5	0	0		
			Riffle	0	0			
			Run	0	0			
	ГА		Backwater Pool	0				
	FA	Cide Clevels Description	Beaver Pond		0	0		
MR-6 (PRM 122.7-148.4)		Side Slough Beaver Complex	Glide	0		0		
(FIXIVI 122.7-140.4)			Pool		0			
		Split Main Channel	Run			0		
		Tributany	Glide		0	0		
		Tributary	Pool	0				
		Tributany Mayth	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	16.8				
MR-7	FA	Clearwater Plume	Clearwater Plume	0	0	0		
(PRM 107.8-122.7)	' ' '	Main Channel	Run		0			

### Table E100-Continued.

				White	Whitefish, 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			
		Calit Main Channal	Riffle	0	0			
		Split Main Channel	Run	0	0			
145.7	FA		Backwater Pool			0		
MR-7 (cont.)		Tributary	Pool	0				
(COIII.)			Riffle			0		
l			Beaver Pond	0	0	0		
		Upland Slough Beaver Complex	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.

Geo-					White	fish, undifferentia	nted
morphic Reach	Stream	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
			Proposed Watana Dar	n Location (PRM 187.1)			
			Clearwater Plume	Clearwater Plume	0	0	0
			C' L OL L	Glide			0
			Side Channel	Pool			0
		FA		Backwater Pool	4.5	0	
			Side Slough	Glide		0	0
Susitna Rive	Susitna River			Pool	0		
				Cascade			0
			Tributary Mouth Riffle 0		0		
MR-2 (PRM 169.6- 184.6)			Backwater	Backwater Pool	0		
			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
	O. CON	Non-FA	Tributary	Pool	0	0	0
	Fog Creek <sup>1</sup>			Riffle	0	0	0
				Run	0	0	0
	Fog Creek	Non-FA	Pool	Pool	0		0
	Tributary <sup>1</sup>		Tributary	Riffle	0		0
		1	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 (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

0					Whitefish, undiffe		
Geo- 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
		FA	Tributary	Riffle	0		0
				Run	0		0
MR-6	Susitna			Glide 0 0		0	
(cont.)	River		Tributon, Mouth	Pool	0		
			Tributary Mouth	Riffle	0	4.1	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 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)			T. 1	Cascade	0		
			Tributary 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 E101-Continued

Coo					White	ish, undifferenti	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	
			Riffle	0	0	0	
			Glide	0.3	0	0	
		FA	Cido Clouab	Pool		0	0
MD 0			Side Slough	Riffle	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

<sup>1.</sup> 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. Average CPUE (fish per trap) for undifferentiated whitefish species using fyke netting in the Middle River, 2013.

				Whitefi	sh, undifferent	iated
Geomorphic Reach	FA or Non-FA	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Proposed Watana Dan	n Location (PRM 187.1)			
MR-2		Backwater	Backwater Pool	1.0	0	
(PRM 169.6- FA 184.6)	FA	Clearwater Plume	Clearwater Plume			0
		Devils Canyon (F	PRM 153.9-166.1)			
		Backwater	Backwater Pool		0	
		Cide Channel	Glide	0.5	0	0
MR-6 (PRM 122.7-		Side Channel	Riffle	0	0	
	FA		Beaver Pond	0		
148.4)		Side Slough Beaver Complex	Glide		0	
			Pool	0	0	
		Upland Slough Beaver Complex	Beaver Pond	0	Summer   Fall   Summer   Summer   Fall   Summer   Fall   Summer   Summer   Fall   Summer   Summer   Fall   Fall   Summer   Fall   Summer   Fall   Fall   Summer   Fall   Fall   Summer   Fall   F	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	1.0	0	
		Side Channel	Glide		0	1.0
		C. I. C. I.	Glide		0	0
MR-8	FA	Side Slough	Pool			0
(PRM 102.4- 107.8)		Tributary	Pool			0
	Reach Non-FA Macrohabitat Type Proposed Wata  2	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	itefish, undifferentia	ited
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
·		Watana Dam Location (PRM 1	87.1)		
		Glide			0
MR-1 (PRM 184.6-187.1)	Side Channel	Riffle			0
(FIXIVI 104.0-107.1)		Run	0		
	Backwater	Backwater Pool	0	0	
	Clearwater Plume	Clearwater Plume	0	0	0
	Side Channel	Glide			0
MR-2		Backwater Pool	0.04	0	
(PRM 169.6-184.6)	Side Slough	Glide		0	0
		Pool	0		
	Tributary Mouth	Riffle	0	0	
	·	s Canyon (PRM 153.9-166.1)		ı L	
	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	0	0
	T	Pool	0		0
	Tributary	Riffle	0		0
		Run	0		0
		Glide		0	0
	Talkastana Marath	Rapid			0
	Tributary Mouth	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
MR-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	Side Channel	Pool		0	
		Riffle		0	
	Tributary	Backwater Pool			0

Table E103. Continued.

			Whi	tefish, undifferentia	ated
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Glide	0	0	
	Tulle dam (and )	Pool	0	0	
	Tributary (cont.)	Riffle	0		0
		Run			0
MR-7	Tributany Mouth	Cascade	0		
(cont.)	Tributary Mouth	Riffle	0		
		Beaver Pond	0	0	0
	Unland Claugh Decuer Compley	Glide	0	0	
	Upland Slough Beaver Complex	Pool			0
		Run	0		0
		Backwater Pool			0
	Side Channel	Glide		0	0
		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 C	hannel					01	ff-Chanr	el						Tributary	/			All
	Life		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)	Seine (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)	<b>Minnow Trap</b> (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)
Species	Stage	O/ ODUE O	2 <u>8</u>	ĕΖ	٠, ٠	•			2 <u>8</u>	ŭΖ	)	)				ž Z	ŭΖ	<u> </u>	٠, ٠	_			
Salmon, Chinook	adult	% CPUE=0 Max CPUE			100%	100%	100%	96% 1			100%	100%	100%	100%	100%			2.5	100%	100%	100%	100%	98%
CHILIOOK	juvenile	%CPUE=0	89%	100%	100%	85%	85%	89%	92%	89%	100%	50%	63%	33%	91%	100%	100%	100%	100%	58%	0%	63%	74%
Calman ahum	adult	Max CPUE =0	43.7		83%	17 96%	0.1	1.5 93%	2.4	5.9	100%	20 88%	0.5	11 100%	2.5 91%			89%	100%	0.4	100%	100%	94%
Salmon, chum	auuii	Max CPUE			25	2.2	100%	0.5			100%	4.7	100%	100%	0.3			0.3	100%	100%	100%	100%	9470
	juvenile	%CPUE=0	98%	100%	100%	98%	100%	100%	92%	100%	100%	75%	88%	67%	91%	100%	100%	100%	100%	83%	100%	100%	92%
	,	Max CPUE	2			2.1			4.8			16	0.1	1	0.3					0.1			
Salmon, coho	adult	%CPUE=0			83%	96%	100%	100%			100%	75%	100%	100%	100%			100%	100%	100%	50%	100%	95%
		Max CPUE			62.5	1.7						5									2		
	juvenile	% CPUE=0	98%	100%	100%	91%	89%	89%	62%	100%	100%	88%	50%	100%	82%	100%	100%	100%	75%	50%	0%	38%	76%
Calana aiali	- 4. 4	Max CPUE = 0	8		100%	18.9 98%	0.2 100%	1.5 93%	21.1		100%	5.6 100%	0.5 100%	45 67%	45 91%			89%	100%	0.5 100%	100%	100%	94%
Salmon, pink	adult	Max CPUE=0			100%	1.4	100%	0.8			100%	100%	100%	1	0.3			15	100%	100%	100%	100%	94%
	juvenile	%CPUE=0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	javonno	Max CPUE	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070	10070
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	0001	10001	6.7	0.1	4000/	69.2	0001	40001	280	0.5	10	1.5	3.6	40001	10001	3.1	0.3	201	40001	0.704
Arctic grayling		% CPUE=0 Max CPUE	96%	89%	100%	89%	96%	100%	100%	89% 5.9	100%	75% 1.2	100%	67%	100%	100%	100%	100%	75% 1	92%	0%	100%	87%
Burbot		%CPUE=0	7.8 91%	8.6 86%	100%	3.5 85%	0.1 81%	54%	85%	78%	100%	88%	56%	67%	18%	75%	100%	100%	100%	<0.1 92%	100%	50%	64%
Burbot		Max CPUE	4.5	19.7	10070	2.1	0.1	2	10.6	47.6	10070	0.5	0.5	9	2	7.1	10070	10070	10070	<0.1	10070	1	0470
Dolly Varden		%CPUE=0	96%	100%	100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	100%	96%
,		Max CPUE	5.2			1.7															2		
Lamprey		%CPUE=0	91%	96%	100%	100%	96%	64%	100%	78%	100%	100%	94%	33%	82%	75%	100%	100%	100%	67%	100%	100%	81%
		Max CPUE	28.6	8.9			0.1	9		8.7			<0.1	1	0.5	2.8				0.2			
Longnose		% CPUE=0	51%	75%	100%	30%	70%	82%	77%	56%	100%	75%	44%	33%	36%	100%	100%	100%	75%	67%	0%	63%	37%
sucker Northern pike		Max CPUE = 0	34.2 100%	59.2 93%	100%	100%	0.9 100%	100%	23.6 100%	52.9 100%	100%	50 88%	2.9	188 100%	23 100%	75%	100%	89%	100%	92%	5 100%	0.3	97%
Not the fit pixe		Max CPUE	10076	29.6	10076	10070	10070	10070	10076	10070	10076	0.5	10076	10070	10076	15.7	10070	40	10076	0.5	10076	10076	71/0
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				34	1.5		17.7				0.1	1	0.3					<0.1	2	0.3	
Stickleback,		% CPUE=0	91%	100%	100%	91%	56%	96%	38%	100%	100%	50%	25%	33%	82%	50%	100%	78%	75%	67%	100%	63%	66%
threespine Trout rainbow		Max CPUE = 0	34.1 98%	100%	100%	38 96%	43.3 100%	1000/	158.6	100%	100%	152.8 100%	22.4 94%	175 100%	495 100%	8.3 75%	100%	1.3	4.8	14.5 92%	0%	17	93%
Trout, rainbow		Max CPUE	5.2	100%	100%	1	100%	100%	85% 74	100%	100%	100%	1.3	100%	100%	5.7	100%	100%	100%	0.1	7	100%	93%
Whitefish, Bering	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	,	Max CPUE	3.1							8.7													
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%
144.71.6.7		Max CPUE	12.9	6	10001	12.5	1.2	1	0001	0001	10001	1 750/	10001	3	0.5	10001	10001	10001	3.1	40001	1	10	0001
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 Percent of Site	s with No	Max CPUE	13.7 4%	21%	83%	37.5 11%	0.1 19%	18%	6.5 15%	8.7 0%	100%	10 0%	6%	0%	1.5 0%	0%	67%	67%	25%	0%	0%	0%	
reiteill oi Sile	owin wo	LISH	470	Z 170	0370	1170	1970	1070	1376	U70	100%	U70	070	U70	U70	U70	0770	0770	Z370	U70	U70	U70	

Table E105. Sample sizes and total effort used for calculating average CPUE for backpack electrofishing in the Lower River, 2013.

Geo-			Sa	ample Size ( <i>N</i>	)		Total Effort uration in sec	onds)
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Par Island Compley	Riffle	1			1847		
	Bar Island Complex	Run		1	1		858	2011
	Clearwater Plume	Clearwater Plume	1			279		
LR-1	Side Channel Complex	Riffle	1	1	1	1028	841	2205
(PRM	Side Chariner Complex	Run	1	1	1	667	933	90
87.9- 102.4)		Backwater Pool	1			1509		
. 02,	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	
	Cido Chonnol	Glide	1	1		1006	614	
LR-3	Side Channel	Run	1			347		
(PRM 44.6-65.6)	Side Channel Complex	Glide			1			446
11.0 00.0)	Split Main Channel	Run			1			712
	Tuller de m	Glide		1			1007	
	Tributary	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.

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

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

Geo-	Macro-		,	Sample Size ( <i>N</i>		(pulse	Total Effort duration in sec	conds)
morphic Reach	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- 102.4)		Run		1			81	
102.4)	Split Main Channel	Run	1	1	1	24	168	245
	Main	Riffle	1			113		
10.0	Channel	Run		1	1		75	600
LR-2 (PRM 65.6- 87.9)	Multiple Split Main Channel	Run	1		2	173		688
	Split Main Channel	Run	1	2		19	212	
LR-3	Multiple Split Main Channel	Run		1			46	
(PRM 44.6- 65.6)	Side Channel Complex	Glide		1			620	
	Split Main Channel	Run	1			345		
	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
	Side Slough	Glide	1			23		
	· ·	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 E107. Sample sizes and total effort used for calculating average CPUE for seining in the Lower River, 2013.

Geo-			S	ample Size (/	V)		fort (area san quare meters	
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Par Island Compley	Riffle	1			900		
	Bar Island Complex	Run			1			400
	Clearwater Plume	Clearwater Plume	2	1	1	1120	960	1260
LR-1	Side Channel	Riffle	1	1		270	150	
(PRM 87.9-	Complex	Run	1		1	600		800
102.4)		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 Channel	Riffle	1			2000		
		Run		1	1		600	800
10.0	Multiple Split Main Channel	Run	1		1	1200		600
LR-2 (PRM	Side Channel	Riffle		1			600	
65.6-	Side Charlinei	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	
		Backwater Pool	1			840		
	Bar Island Complex	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
	Complex	Riffle			1			2000
	Split Main Channel	Run	1		1	2000		1200
	Tributon	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 Channel	Glide	4	1		100	640	
		Run	1	1		400	600	

### Table E107. Continued.

Geo- Ma	lacrohabitat Type	Mesohabitat Type	Sample Size (N)	Total Effort (area sampled in
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morphic						square meters)			
Reach			Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
LR-4	Side Channel Complex	Run			1			480	
(cont.)	Side Slough	Run	1			2000			

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

Geo-			S	ample Size (N	)	Total Effort	(area sampled meters)	d in square
morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		1			800	
104		Backwater Pool	1			840		
LR-1 (PRM	Side Slough	Pool		1			1600	
87.9-	Side Slough	Riffle		1			560	
102.4)		Run	1			480		
	Tributon	Glide	1	1		800	1600	
	Tributary	Run			1			4000
LR-2	Clearwater Plume	Clearwater Plume	1		1	1200		1000
(PRM	Tallerateur	Glide	1			2000		
65.6-87.9)	Tributary	Run			1			1000
LR-3	Clearwater Plume	Clearwater Plume		1			120	
(PRM	Tallerateur	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 E109. Sample sizes and total effort used for calculating average CPUE for fyke netting in the Lower River, 2013.

Geo-		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		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		

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

Geo-			S	ample Size (/	V)	(# of ı	Total Effort nets set overr	night)
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		
LR-1	Side Slough	Pool			1			2
(PRM 87.9-	Side Slough	Riffle			1			4
102.4)		Run		1			4	
	Split Main Channel	Run			1			2
	Tributany	Glide		1			3	
	Tributary	Run			2			4
	Tributary Mouth	Run			1			5
	Clearwater Plume	Clearwater Plume		1			1	
	Side Channel	Pool			1			2
LR-2		Glide			1			3
(PRM 65.6-	Side Channel Complex	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
	Cide Observat	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
	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
(PRM 32.3- 44.6)	Cide Obe	Glide		1			2	
,	Side Channel	Run		1	1		3	2
	Side Channel Complex	Run			1			4

#### Table E110. Continued.

Con			S	ample Size (/	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 River, 2013.

Geo-			San	nple Size ( <i>N</i> )			otal Effort os set overnigl	nt)
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-	6:1.61	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
	Clearwater Plume	Clearwater Plume		1			20	
LR-2	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
LR-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		
17.0)	Side Channel	Glide	1			8		
	Tributary	Glide	1	1		20	20	

#### Table E111. Continued.

Con			Sample Size (N)			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	Unland Cloudh	Backwater Pool	1			10		
(cont.)	Upland Slough	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.

			Salm	on, Chinook (juveni	le)
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
	Dai Isiana Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	12.9		
1.0.4	Side Channel Complex	Riffle	3.5	0	4.9
LR-1 (PRM	Side Grianner Complex	Run	0	0	0
87.9-		Backwater Pool	2.4		
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
		Pool			0
LR-2	Side Channel	Riffle		0	
(PRM 65.6-87.9)		Run	0		
00.0 07.77		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	
	C' L OL L	Glide	7.2	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	
	Tributary	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	
	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 E113. Average CPUE (fish per hour of shocking time) for Chinook salmon using boat electrofishing in the Lower River, 2013.

			Salm	on, Chinook (juver	nile)
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	
(FRIVI 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 Charinei	Run	0	0	0
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0
(1 KW 32.3-44.0)	Sido Clough	Glide	0		
	Side Slough	Run	0	0	2.9
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

			Salm	on, Chinook (juven	ile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Cida Channal Camplay	Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	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
	Main Observat	Riffle	0		
	Main Channel	Run		0	2.5
	Multiple Split Main Channel	Run	0		0
	C: 1 Ol 1	Riffle		5.0	
LR-2 (PRM 65.6- 87.9)	Side Channel	Run	0		
07.9)	Cide Channel Canada	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)	Cido Channal Complay	Glide		0	0
	Side Channel Complex	Riffle			0.5
	Split Main Channel	Run	0		0
	Tributany	Riffle	0		
	Tributary	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-	Side Channel	Glide		0	
44.6)	Side Charliner	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

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

			Sal	mon, Chinook (adı	ult)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
	Side Slough	Backwater Pool	0		
		Pool		0	
LR-1 (PRM 87.9-102.4)		Riffle		0	
(1 KW 07.7 102.4)		Run	0		
	Tributory	Glide	2.5	0	
	Tributary	Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributany	Glide	0		
(1 TAW 00.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44.6-65.6)	Tributory	Glide		0	
(1 1301 44.0-00.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

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

			Salmon, Chinook (juvenile)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
LR-1 Tributary	Alcove	2.0				
(PRM 87.9-102.4)	Tributary	Glide		2.0		
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0	
LR-4	Unland Claugh	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.

Geo-			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			
LR-1	Cido Cloudh	Pool			0			0	
(PRM 87.9-	Side Slough	Riffle			0			0	
102.4)		Run		0			0		
	Split Main Channel	Run			0			0	
	Tributon	Glide		0			6.7		
	Tributary	Run			0			0	
	Tributary Mouth	Run			0			0	
	Clearwater Plume	Clearwater Plume		1.0			1.0		
	Side Channel	Pool			0			0	
LR-2	Side Channel Complex	Glide			0			0	
(PRM 65.6-		Riffle		0			0		
87.9)		Run		0			0		
	Split Main Channel	Run		0			0		
	Tributary	Glide		0			8.0		
	Clearwater Plume	Clearwater Plume		0	0		0	0	
	Side Channel	Glide			0			0	
	Side Charmer	Run		0			0		
10.2	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	
. 1.0,	Side Channel	Glide		0			0		
	Orac Orial III Ci	Run		0	0		0	0	

#### Table E117. Continued.

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

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

			Salmo	Salmon, Chinook (juvenile)			
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			
	Side Channel	Pool			0		
LR-2		Glide			0		
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0			
,		Run	0	0			
	Tributary	Glide	0.44	0.20			
	Additional Open Water	Pool	0.05	0	0		
	Par Island Compley	Pool		0			
	Bar Island Complex	Run	0	0			
	Clearwater Plume	Clearwater Plume			0.06		
	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	0.21				
		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				
10.4	Side Channel	Glide	0				
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0			
(1 INW 32.3 TT.U)		Backwater Pool	0.10				
	Upland Slough	Glide		0.26			
		Run	0	Π	0.03		

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

			Sal	mon, chum (juvenile	e)
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		
LR-1	Side Channel Complex	Riffle	0	0	0
(PRM	Side Chariner Complex	Run	0	0	0
87.9-		Backwater Pool	4.8		
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
		Pool			2.0
LR-2	Side Channel	Riffle		0	
(PRM 65.6-87.9)		Run	0		
00.0 07.77	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
11.0 00.0)	Split Main Channel	Run			0
		Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E119. Continued.

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

			Salm	on, chum (ad	ult)	Salmo	n, chum (juve	enile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0			0		
	Dai Isianu Complex	Run			0			0
	Clearwater Plume	Clearwater Plume	0	0	8.0	0	0	0
	Side Channel Complex	Riffle	0	0		0	0	
LR-1 (PRM 87.9-102.4)	Side Chariner Complex	Run	0		0	0		0
07.7 102.4)		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
	Main Channal	Riffle	0			0		
	Main Channel	Run		0	0		0	0
	Multiple Split Main Channel	Run	0		0	0		0
	Side Channel	Riffle		0			0	
LR-2 (PRM 65.6-87.9)		Run	0			0		
03.0-07.9)	Cide Channel Commission	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)	Cide Channel Canadau	Glide		0	0		0	0
	Side Channel Complex	Riffle			0			0
	Split Main Channel	Run	0		0	0		0
	Telbutan	Riffle	0			0		
	Tributary	Run			0			0
	Tributary Mouth	Run			0			0
	Upland Slough	Glide		0	0		0	0

#### 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	011 01	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		

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

			Sa	almon, chum (adult)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		25.0	
		Backwater Pool	0		
	Cido Clouah	Pool		0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle		0	
(1 KW 07.7-102.4)		Run	0		
	Tributory	Glide	0	0	
	Tributary	Run			0.3
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributany	Glide	0		
(1 TAW 00.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44.6-65.6)	Telbuton	Glide		0	
(1 IXW 44.0-03.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

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

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

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

Geo-			Salr	non, chum (ad	dult)	Salm	on, chum (juve	enile)
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		
LR-1	Cido Cloudh	Pool			0			0
(PRM 87.9-	Side Slough	Riffle			0			0
102.4)		Run		0			0	
	Split Main Channel	Run			0			0
	Talkadana	Glide		0			0	
	Tributary	Run			0			0
	Tributary Mouth	Run			0			0
	Clearwater Plume	Clearwater Plume		0			0	
	Side Channel	Pool			0			0
LR-2	Side Channel Complex	Glide			0			0
(PRM 65.6-		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 Chamilei	Run		0			0	
1.0.0	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
<del>14</del> .0)	Side Channel	Glide		0			0	
	Side Chaillei	Run		0	0		0	0

#### Table E123. Continued.

Can			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	
LR-4 (cont.)	Side Slough	Run	0	0	0	0	0	0	
	Tributary Mouth	Glide			0			0	

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

			Saln	non, chum (juver	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		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
		Run	0	0	
	Tributary	Glide	0	0.05	
	Additional Open Water	Pool	0	0	0
	Den Jelend Consuler	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Cida Channal	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	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(F IXIVI 32.3-44.0)		Backwater Pool	0.10		
	Upland Slough	Glide		0	
		Run	0		0

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

			Sa	lmon, coho (juvenile	e)
Geo- morphic		M 1 1 2 1 7			5 H
Reach	Macrohabitat Type	Mesohabitat Type Riffle	Early Summer 0	Late Summer	Fall
	Bar Island Complex	Run	0	0	0
	Clearwater Plume	Clearwater Plume	0		
	ologi wator i famo	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	0
	Side Slough	Run	0	0	0
	Split Main Channel	Run	0		
	Tributary Mouth	Run	0		0
	Clearwater Plume	Clearwater Plume			0
	Main Channel	Run		0	0
-	Multiple Split Main Channel Run				0
	Waltiple Spik Walif Sharifor	Pool			8.0
LR-2	Side Channel	Riffle		0	0.0
(PRM	Side Ondrine	Run	0		
65.6-87.9)		Glide			0
	Side Channel Complex	Riffle		0	
	oldo chamior complex	Run	0	0	
	Split Main Channel	Run		0	
	Spirt Wain Chariter	Backwater Pool	0	9	
	Bar Island Complex	Pool		0	
	Sur Island Complex	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
44.0-00.0)	Split Main Channel	Run			0
		Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		2.6
	Upland Slough Beaver Complex	Beaver Pond	0	6.7	

#### Table E125. Continued.

			Sa	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

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

			Salm	on, coho (ad	ult)	Salmo	n, coho (juve	nile)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0			0		
	Dai Isianu Complex	Run			0			0
	Clearwater Plume	Clearwater Plume	0	0	8.0	4.7	0	0
	Side Channel Complex	Riffle	0	0		0	0	
LR-1 (PRM 87.9-102.4)	Side Chariner Complex	Run	0		0	0		0
07.7-102.4)		Pool		0	0		0	0
	Side Slough	Riffle		0	1.0		0	0
	v	Run	0			0		
	Split Main Channel	Run	0	0	0	0	0	0
	Main Channal	Riffle	0			0		
	Main Channel	Run		1.7	0		0	1.3
	Multiple Split Main Channel	Run	0		0	0		0
	Side Channel	Riffle		0			0	
LR-2 (PRM 65.6-87.9)		Run	0			0		
03.0-07.9)	Cide Channel Commission	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)	Cido Channal Campley	Glide		0	0		0	0
	Side Channel Complex	Riffle			0	_		0
	Split Main Channel	Run	0		0	0		0
	Tributan	Riffle	0			0		
	Tributary	Run			0			0
	Tributary Mouth	Run			0			1.0
	Upland Slough	Glide		5.0	0		0	5.6

#### 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	011 01 1	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		

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

			S	almon, coho (adult)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		62.5	
		Backwater Pool	0		
	Cida Claumh	Pool		0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle		0	
(1 KW 07.7-102.4)		Run	0		
	Telleridami	Glide	0	0	
	Tributary	Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributan	Glide	0		
(1 TAW 03.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44.6-65.6)	T	Glide		0	
(F IXIVI 44.0-03.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

Table E128. Average CPUE (fish per trap) for coho salmon using fyke netting in the Lower River, 2013.

Geo-			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- 102.4)	Tributary	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)			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
,	Clearwater Plume	Clearwater Plume		0.3	0	
		Riffle			0	
	Side Channel Complex	Run		0		
		Glide	0			
		Pool			0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0	
(PKIVI 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	
		Glide			0	
LR-2 (PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
	,	Run		0		
	Split Main Channel	Run		0		
	Tributary	Glide		3.0		
	Clearwater Plume	Clearwater Plume		0	0	
		Glide			0	
	Side Channel	Run		0		
		Glide		0		
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
(FIXIVI 44.0-03.0)	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	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	

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

			Salr	non, coho (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	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
	Der Island Compley	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Side Channel	Glide			0
LR-3	Side Charmer	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 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(1 IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0.03	
		Run	0.10		0.28

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

			S	almon, pink (adult)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
rtodori		Riffle	0	Lute Guilline	
	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
		Riffle	1	0	
	Side Channel	Run	0		
87.9)		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	0.7	0	0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)		Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributory	Riffle	0		
	Tributary	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-	Sido Channol	Glide		0	
44.6)	Side Channel	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

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

			S	almon, pink (adult)	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
LR-1 (PRM 87.9-102.4)		Backwater Pool	0		
	Cida Clauah	Pool		0	
	Side Slough	Riffle		0	
		Run	0		
	Tributary	Glide	15.0	0	
		Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributany	Glide	0		
(1 KW 03.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3	Telleridami	Glide		0	
(PRM 44.6-65.6)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

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

			Salmon, pink (adult)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributon	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4	Unland Claugh	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.

			Salmon, pink (adult)			
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	0.3			
		Pool			0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0	
(FIXIVI 07.7-102.4)		Run		0		
	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	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	Run		0		
		Glide		0		
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
(F KW 44.0-05.0)	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	Cide Cheminal	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.

			Salm	non, sockeye (juver	nile)
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		
LR-1	Side Channel Complex	Riffle	0	0	0
(PRM	Cido Gildinioi Gompiox	Run	0	0	0
87.9-		Backwater Pool	69.2		
102.4)	87.9- 102.4) 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
	Side Channel	Pool			0
LR-2		Riffle		0	
(PRM 65.6-87.9)		Run	0		
00.0 07.77		Glide			0
	Side Channel Complex	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	
	Cido Channal	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		3.6	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E135. Continued.

			Salmon, sockeye (juveni			
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	

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

			Salmo	n, sockeye (a	ıdult)	Salmon	Salmon, sockeye (juvenile)		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	Early Summer	Late Summer	Fall	
	Dar Island Campley	Riffle	0			0			
	Bar Island Complex	Run			0			0	
	Clearwater Plume	Clearwater Plume	0	0	0	0.6	0	0	
	Side Channel Complex	Riffle	0	0		0	6.7		
LR-1 (PRM 87.9-102.4)	Side Chariner Complex	Run	1.7		0	0		0	
07.7 102.4)		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	
	Main Channal	Riffle	0			0			
	Main Channel	Run		0	0		0	0	
Multiple Split Main Cha LR-2 (PRM 65.6-87.9)  Multiple Split Main Cha	Multiple Split Main Channel	Run	0		0	0		0	
	Cide Channel	Riffle		0			1.7		
	Side Channel	Run	0			0			
03.0-07.9)	Cide Chemical Commission	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)	Side Channel Compley	Glide		0	0		0	0	
	Side Channel Complex	Riffle			0			1.0	
	Split Main Channel	Run	0		0	0.5		0	
	Tributory	Riffle	0			1.2			
	Tributary	Run			0			0	
	Tributary Mouth	Run			0			3.1	
	Upland Slough	Glide		0	0		5.0	0	

# Table E136-Continued.

		Salmo	n, sockeye (a	idult)	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		

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

			Sal	mon, sockeye (adul	t)
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		1.3	
LR-1 (PRM 87.9-102.4)		Backwater Pool	0		
	Side Slough	Pool		0	
		Riffle		0	
		Run	0		
	Tributary	Glide	1.3	0	
		Run			0
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributary	Glide	0		
(1 KW 00.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44.6-65.6)	Telbuton	Glide		0	
(F IXIVI 44.0-05.0)	Tributary	Riffle	0		
LR-4	Additional Open Water	Pool	0	0	
(PRM 32.3-44.6)	Tributary	Glide	0		

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

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

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

Geo-			Salm	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			
LR-1	Cido Cloudh	Pool			0			1.5	
(PRM 87.9-	Side Slough	Riffle			0			0	
102.4)		Run		0			0		
	Split Main Channel	Run			0			0	
	Telbutan	Glide		0			0		
	Tributary	Run			0			0	
	Tributary Mouth	Run			0			0	
	Clearwater Plume	Clearwater Plume		0			0		
	Side Channel	Pool			0			0	
LR-2	Side Channel Complex	Glide			0			0	
(PRM 65.6-		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 Charmer	Run		0			0		
10.0	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	
77.0)	Side Channel	Glide		0			0		
	Side Challiel	Run		0	0		0	0	

# Table E139. Continued.

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

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

			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		
LR-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
	Par Island Compley	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Cide 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		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(1 1/1VI JZ.J-74.U)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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	Riffle	0		
	Dai Isianu Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
104	Side Channel Complex	Riffle	0	0	0
LR-1 (PRM	Side Chaillei Complex	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		
,		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	
	Cida Channal	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
55.0)	Split Main Channel	Run			0
	Talle de la companya	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	Side Charlie	Run			7.8
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		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
		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		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	
(FIXIVI 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		6.6	
	Side Charinei	Run	0	0	8.6
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0
(1 KW 52.5-44.0)	Side Slough	Glide	0		
	Side Slough	Run	0	0	2.9
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

				Arctic grayling	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
		Riffle	0	0	
_R-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
		Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0.8		
87.9)		Glide			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	0	0	2.6
	Multiple Split Main Channel	Run		0	
_R-3 (PRM 44.6-	Side Channel	Glide	1.9	1.4	
65.6)		Glide		0	0
	Side Channel Complex	Riffle			3.5
	Split Main Channel	Run	0		0
	Teleuton	Riffle	0		
	Tributary	Run			0
	Tributary Mouth	Run			1.0
	Upland Slough	Glide		0	0
	Main Channel	Run		0	1.6
	Multiple Split Main Channel	Run	0		
_R-4 (PRM 32.3-	Cida Channal	Glide		0	
14.6)	Side Channel	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

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	Tributon	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	Unland Claush	Glide		0		
(PRM 32.3-44.6)	Upland Slough	Run			0	

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

				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
	Per Island Compley	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Cide Channel	Glide			0
LR-3	Side Channel	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	
(F IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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	Riffle	0		
		Run		0	1.8
	Clearwater Plume	Clearwater Plume	0		
LR-1	Side Channel Complex	Riffle	3.5	0	0
(PRM	Side Gridinier Complex	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		
00.0 07.77		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
11.0 00.0)	Split Main Channel	Run			0
		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		

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
		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	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	
(FIXIVI 44.0-03.0)	Split Main Channel	Run	0		
	Clearwater Plume	Clearwater Plume	0	19.7	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
	Side Channel	Run	0	7.4	0
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0
(FIXIVI 32.3-44.0)	Cida Clauah	Glide	0		
	Side Slough	Run	12.1	23.8	0
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

				Burbot	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	Macrohabital Type				
LR-1 (PRM 87.9- 102.4)	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 Channal	Riffle	0		
LR-2 (PRM 65.6- 87.9)	Main Channel	Run		1.7	0
	Multiple Split Main Channel	Mesohabitat Type	0		
	Cido Channal	Riffle		1.7	
	Side Channel	Run	0.8		
07.7)	Cido Channol Complay	Glide			0
	Side Charinei Complex	Run	0		
	Split Main Channel	Run	0	Late Summer  0 0 0 0 0 1.7 1.7 1.7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Tributary	Run		Cate Summer    O	0
	Additional Open Water	Pool	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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 Compley	Glide		0	0
	Side Charlinei Complex	Riffle			0
	Split Main Channel	Run	0.5		0
	Tributary	Riffle	0		
	Tributary	Run			0
	Tributary Mouth	Run		T Late Summer  0 0 0 0 0 1.7 1.7 1.7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0
		Glide			0
_R-4 (PRM 32.3-		Run		0.5	1.6
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide			
44.6)	Side Orialine	Run	0	0	
	Side Channel Complex	Run		Color   Colo	2.1
	Side Slough	Run	0.5		

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	Tributoru	Alcove	0			
(PRM 87.9-102.4)	Tributary	Glide		0		
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0	
LR-4	Unland Clause	Glide		0		
(PRM 32.3-44.6)	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
Coomorphio Rodon	Clearwater Plume	Clearwater Plume	Cummor	0.2	0
		Riffle			0
	Side Channel Complex	Run		0.8	
		Glide	0.8		
		Pool			0
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			1.8
(FRIVI 07.9-102.4)		Run		0.3	
	Split Main Channel	Run			0
LR-2 (PRM 65.6-87.9)		Glide		0.3	
	Tributary	Run			0.3
	Tributary Mouth	Run			1.0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0.3
		Riffle		0	
		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0.3	0
		Glide			0
	Side Channel	Run		0.5	
		Glide		1.3	
LR-3	Side Channel Complex	Riffle			0
(FIXIVI 44.0-05.0)	Tributary	Run			0
	Tributary Mouth	Run			0
PRM 87.9-102.4)  .R-2 PRM 65.6-87.9)  .R-3 PRM 44.6-65.6)	Upland Slough	Glide		0.8	
	Upland Slough Beaver Complex	Beaver Pond	Early Summer	0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		1.8	
	Main Channel	Run		1.0	1.3
LR-4	Cido Channal	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

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

				Burbot			
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	0.02		
		Alcove	0				
	Tributary	Glide		0			
		Run			0		
	Clearwater Plume	Clearwater Plume		0			
	Side Channel	Pool			0		
LR-2		Glide			0		
LR-2 (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		
	Cida Channal	Glide			0		
LR-3	Side Channel	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				
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0			
(1 IXIVI 32.3-44.0)		Backwater Pool	0				
	Upland Slough	Glide		0.05			
		Run	0.50		0.18		

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
	Bar Island Complex	Riffle	0		
	Dai Islana Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
101	Side Channel Complex	Riffle	0	4.3	0
LR-1 (PRM	Side chariner complex	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
102	Multiple Split Main Channel	Run			2.6
	Side Channel	Pool			0
LR-2 (PRM 65.6-87.9)		Riffle		0	
		Run	0		
00.0 07.77		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	
	Cide Channel	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
55.6)	Split Main Channel	Run	O	0	
	T.9. 1	Glide		0	
	Tributary	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	
	Cide Channel	Glide	0	0	
LR-4	Side Channel	Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

Table E153. Average CPUE (fish per 1,000 square meters) for Dolly Varden using seining in the Lower River, 2013.

			Dolly Varden		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
		Riffle	0	0	
	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		
_R-2 (PRM 65.6- 87.9)	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
		Riffle		0	
	Side Channel	Run	0		
87.9)	611 01 10 1	Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	Late Summer  0 0 0 0 0 0 0 0	
	Tributary	Run		Late Summer	0
	Additional Open Water	Pool	0	0	
		Backwater Pool	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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	0	
65.6) `	Cide Charrel Carrelan	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributany	Riffle	0		
	Tributary	Run			0
	Tributary Mouth	Run	Riffle 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	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	
R-3 (PRM 44.6- 6.6)	Side Channel	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.

Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributory	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		2.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Unland Claush	Glide		0	
(PRM 32.3-44.6)	Upland Slough	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
		Riffle	0		
	Bar Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel Compley	Riffle	0	0	0
LR-1 (PRM	Side Chariner Complex	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			2.8
	Clearwater Plume	Clearwater Plume			14.6
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         Clearwater Plume       0         Riffle       0       0         Run       0       0         Riffle       0       0         Run       0       0         Run       0       0         Run       0       0         Run       0       0         Riffle       0       0         Run       0       0         Glide       0       0         Run       0       0         Pool       0       0         Run       0       0         Pool       0       0         Run       0       0         Clearwater Pool       0       0         Run       0       0         Run       0       0         Run       0       0         Run       0       0         Glide       28.6       0         Run       0       0         Glide       Run       0			
00.0 07.77		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	21.8	11.4	
		Glide	28.6	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
11.0 00.0)	Split Main Channel	Riffle		0	
		Glide		0	
	Tributary		0		
	Upland Slough		_		0
	Upland Slough Beaver Complex			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	
	Cide Channel	Glide	0	0	
LR-4	Side Channel	Run			0
(PRM 32.3-44.6)	Tributary	Glide	0		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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

				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	Early Late Summer 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Multiple Split Main Channel	Run		0	
LR-2 (PRM 65.6-87.9) LR-3 (PRM 44.6-65.6)	Side Channel Complex	Glide		0	
(FRIVI 44.0-05.0)	Split Main Channel	Run	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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			8.9
(I IXIVI 32.3-44.0)	Cido Clough	Glide	0		
	Side Slough	Run	0	0	7.3
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

			Lamprey		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Telbuton	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			1.0
LR-4	Unland Claush	Glide		1.0	
(PRM 32.3-44.6)	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
Comorphic Readin	Clearwater Plume	Clearwater Plume	Juniner	0.5	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1	Side Slough	Riffle			0
(PRM 87.9-102.4)		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
	Side Channel Complex	Glide			0
LR-2 (PRM 65.6-87.9)		Riffle		0	
(PRIVI 05.0-07.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0.5
		Glide			0.5
	Side Channel	Run		0	
		Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0.5
(1 KW 44.0-03.0)	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		5.0	1.8
LR-4	Cida Channal	Glide		1.0	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			1.5
	Side Slough	Run	0	0.3	0
	Tributary Mouth	Glide			0

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

				Lamprey	
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	
	Side Channel	Pool			0
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0	
(11111 00:0 07:7)		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
	Cido Channal	Glide			0
LR-3	Side Channel	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		
15.4	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(1 IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0.02	
		Run	0		0

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	Riffle	9.7		
LR-1	Bai Island Complex	Run		16.8	3.6
	Clearwater Plume	Clearwater Plume	0		
	Sido Channol Compley	Riffle	24.5	30.0	0
	Side Channel Complex	Run	0	0	0
87.9-		Backwater Pool	0		
102.4)	Side Slough	Riffle		0	9.6
		Run	0		
	Split Main Channel	Run	34.2		
	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	
		Run	2.4		
(PRM 65.6-87.9)		Glide			3.9
	Side Channel Complex	Riffle		11.2	
		Run	26.0	5.9	
(PRM 87.9- 102.4)  LR-2 (PRM 65.6-87.9)  LR-3 (PRM 44.6-65.6)	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	
	Side Channel	Run	0		
(PRM 44 6-65 6)	Side Channel Complex	Glide			16.1
11.0 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.

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		23.6	
		Run	0		12.5

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

				Longnose sucker	
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	24.0
(PRM 65.6-87.9)	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	
(1 KW 44.0-05.0)	Split Main Channel	Run	0	0 0 0	
	Clearwater Plume	Clearwater Plume	44.9	59.2	
	Main Channel	Run		0	13.2
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
15.4	Side Charlier	Run	0	22.2	25.9
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0
(I KW 32.3-44.0)	Side Slough	Glide	0		
	Side Slough	Run	6.0	21.5	30.8
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

			Longnose sucker			
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
		Riffle	1.1		-	
LR-1 (PRM 87.9- 102.4)	Bar Island Complex	Run	1		100.0	
	Clearwater Plume	Clearwater Plume	2.5	7.3	0	
		Riffle	3.7	6.7		
	Side Channel Complex	Run	1.7		3.8	
		Pool		0	0	
	Side Slough	Riffle		0	1.0	
		Run	0			
	Split Main Channel	Run	7.5	0	0	
	M : 01	Riffle	2.5			
	Main Channel	Run		1.7	0	
	Multiple Split Main Channel	Run	0		0	
	C' L OL L	Riffle		25.0		
LR-2 (PRM 65.6- 87.9)	Side Channel	Run	3.7			
07.9)	Side Channel Complex	Glide			15.5	
		Run	13.3			
	Split Main Channel	Run	1.3	26.7		
	Tributary	Run		26.7	0	
	Additional Open Water	Pool	0	0		
	,	Backwater Pool	7.1			
	Bar Island Complex	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)	Cido Channal Complay	Glide		3.0	13.9	
	Side Channel Complex	Riffle			0.5	
	Split Main Channel	Run	5.0		0	
	Tributany	Riffle	0			
	Tributary	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-	Side Channel	Glide		1.6		
44.6)	Side Charliner	Run	2.5	5.0		
	Side Channel Complex	Run			25.0	
	Side Slough	Run	50.0			

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
I.R.1	Alcove	1.0			
(PRM 87.9-102.4)	Tributary	Glide		5.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
I P-/I	Unland 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.

			Longnose Sucker		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0.5	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0.5		
		Pool			0
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0
(FRIVI 67.9-102.4)		Run		0.5	
	Split Main Channel	Run			0
		Glide		0.3	
	Tributary	Run			0
	Tributary Mouth	Run			0.2
	Clearwater Plume	Clearwater Plume		4.0	
	Side Channel	Pool			0
		Glide			0
LR-2 (PRM 65.6-87.9)	Side Channel Complex	Riffle		6.0	
(PRIVI 05.0-87.9)		Run		1.3	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0.7	0
		Glide			0
	Side Channel	Run		0	
		Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0
(1 KW 44.0-03.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	Upland Slough	Glide		3.8	
	Upland Slough Beaver Complex	Beaver Pond		3.0	
	Additional Open Water	Pool			0
	Clearwater Plume	Clearwater Plume		0	
	Main Channel	Run		0	0
LR-4	Cido Chonnol	Glide		0	
(PRM 32.3-44.6)	Side Channel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	23.0	0	0.5
	Tributary Mouth	Glide			0.3

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

			L	ongnose sucke	
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
	Cida Channal	Glide			0
LR-3	Side Channel	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		-
15.4	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0.05	
(1 IXIVI 32.3-44.0)		Backwater Pool	0.30		
	Upland Slough	Glide		1.52	
		Run	0.20		0.82

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	Riffle	0		
I R-1	Dai Island Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel Complex	Riffle	0	0	0
	Side Chariner Complex	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	
		Run	0		
LR-2 (PRM 65.6-87.9)		Glide			0
	Side Channel Complex	Riffle		0	
		Run	0	0	
LR-1 (PRM 87.9-102.4)  LR-2 (PRM 65.6-87.9)  LR-3 (PRM 44.6-65.6)	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	
	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	
	Tributary	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		
,		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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

				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	
	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 (PRM 44.6-65.6)	Side Channel Complex	Glide		0		
(1 KW 44.0-05.0)	Split Main Channel	Run	0	0		
	Clearwater Plume	Clearwater Plume	5.6	29.6		
	Main Channel	Run		0	0	
	Multiple Split Main Channel	Run	0			
	Side Channel	Glide		0		
15.4	Side Challiel	Run	0	0	0	
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0	
(1 KW 52.5-44.0)	Side Slough	Glide	0			
	Side Siduyii	Run	0	0	0	
	Split Main Channel	Run	0		· · · · · · · · · · · · · · · · · · ·	
	Tributary	Glide		0	0	
	Tributary Mouth	Glide			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		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
	611 01 10 1	Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	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
	M : 01	Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
	C' L OL L	Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)	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)	Cida Channal Camplay	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Telbuton	Riffle	0		
	Tributary	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-	Cida Channal	Glide		0	
44.6)	Side Channel	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0.5		

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	
	Clearwater Plume	Clearwater Plume		0		
		Backwater Pool	0			
	Cido Cloumb	Pool		0		
LR-1 (PPM 87 9-102 4)	Side Slough	Riffle		0		
(PRM 87.9-102.4)		Run	0			
	Tributory	Glide	0	0		
	Tributary	Run			0	
	Clearwater Plume	Clearwater Plume	0		0	
LR-2 (PRM 65.6-87.9)	Tributory	Glide	0			
(1 TAW 03.0 07.7)	Tributary	Run			0	
	Clearwater Plume	Clearwater Plume		0		
LR-3 (PRM 44.6-65.6)	Telhuston	Glide		0		
(F IXIVI 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 E170. Average CPUE (fish per trap) for northern pike using minnow trapping in the Lower River, 2013.

				Northern pike	
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	
(1 KW 00.0 07.7)		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
	C' L OL L	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	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0.50	0	
(F IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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

			Scı	ılpin, undifferentiate	ed
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
		Run		29.4	84.1
	Clearwater Plume	Clearwater Plume	25.8		
LR-1	Side Channel Complex	Riffle	35.0	47.1	18.0
(PRM	Side Gridinier Complex	Run	16.2	11.6	0
87.9-		Backwater Pool	2.4		
102.4)	Side Slough	Riffle		20.2	4.8
		Run	25.5		
	Split Main Channel	Run	27.4		
	Tributary Mouth	Run			16.7
	Clearwater Plume	Clearwater Plume			1009.8
	Main Channel	Run		0	4.9
	Multiple Split Main Channel	Run			15.7
LR-2 (PRM 65.6-87.9)	Side Channel	Pool			56.0
		Riffle		89.1	
		Run	14.5		
00.0 07.77		Glide			30.1
	Side Channel Complex	Riffle		40.3	
		Run	11.2	11.7	
	Split Main Channel	Run		57.8	
		Backwater Pool	8.3		
	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		
(PRM 44 6-65 6)	Side Channel Complex	Glide			72.6
17.0 00.0)	Split Main Channel	Run			10.1
		Glide		125.1	
	Tributary	Pool	5.7		
(PRM 65.6-87.9)	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

Table E171. Continued.

			Sculpin, undifferentiated		
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	Side Charlier	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

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

				Sculpin	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
rtodon		Riffle	1.1	Lute Guilline	- i un
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0.6	0	0
		Riffle	7.4	13.3	
LR-1 (PRM 87.9-	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		1.4	1.0
		Run	1.7		
	Split Main Channel	Run	0	0	0
		Riffle	0		
	Main Channel	Run		0	1.3
	Multiple Split Main Channel	Run	0.8		0
		Riffle	1	0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)	Side Channel Complex	Glide	1		0.5
		Run	16.7		
	Split Main Channel	Run	0.6	1.7	
	Tributary	Run			8.7
	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	
65.6)	Cide Channel Compley	Glide		3.0	13.9
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		8.0
	Tributon	Riffle	4.8		
	Tributary	Run			0
	Tributary Mouth	Run			2.0
	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)	Side Charmer	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	2.5		

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		Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
I.P./I		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
Coomorpino Rodon	Clearwater Plume	Clearwater Plume	Cummor	0.2	0
		Riffle			0
	Side Channel Complex	Run		0	
		Glide	0		
		Pool			0
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle			0
(FRIVI 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
	Side Channel Complex	Glide			0
LR-2 (PRM 65.6-87.9)		Riffle		1.0	
(PRIVI 05.0-07.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		8.0	
	Clearwater Plume	Clearwater Plume		0	0
	C' 1 O 1	Glide			0
	Side Channel	Run		0	
	Cide Chemical Consular	Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0
(1 KW 44.0 00.0)	Tributary	Run			0
	Tributary Mouth	Run			0
	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	Sido Channol	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

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

				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		
(PRM 87.9-102.4)		Pool		0.06	0.21
		Alcove	0.13		
	Tributary	Glide		0.03	
		Run			0.08
	Clearwater Plume	Clearwater Plume		0.10	
	Side Channel	Pool			0.08
LR-2		Glide			0
(PRM 65.6-87.9)	Side Channel Complex	Riffle		0.15	
(		Run	0	0	
	Tributary	Glide	0.33	0.65	
	Additional Open Water	Pool	0	0	0
	Bar Island Complex	Pool		0.20	
		Run	0.15	0.25	
	Clearwater Plume	Clearwater Plume			0
	C' L OL L	Glide			0
LR-3	Side Channel	Run	0	0	
(PRM 44.6-65.6)	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 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(F IXIVI 32.3-44.0)		Backwater Pool	0.50		
	Upland Slough	Glide		0.15	
		Run	0.20		0

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

			St	ickleback, ninespine	9
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
	Dai Isianu Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
1.0.1	Side Channel Complex	Riffle	0	0	0
LR-1 (PRM	Side Chariner Complex	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 (PRM 65.6-87.9)		Riffle		0	
		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	
	Cida Channal	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
55.6)	Split Main Channel	Run			0
	T.9. 1	Glide		0	
LR-2 (PRM 65.6-87.9)	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

# Table E176. Continued.

			Stickleback, ninespine		
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	0		
	Upland Slough	Glide		17.7	
		Run	0		0

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

			Sti	ckleback, ninespine	<u>;</u>
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
		Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	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		0	0
	Multiple Split Main Channel	Run	0		0
		Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)	Side Channel Complex	Glide			0
		Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run	0 0		0
	Additional Open Water	Pool	34.0	28.9	
	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	1.4	
65.6)	Cida Channal Camplay	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributory	Riffle	0		
	Tributary	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-	Sido Channol	Glide		0	
44.6)	Side Channel	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, nine		espine	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall	
LR-1	Tributon	Alcove	2.0			
(PRM 87.9-102.4)	Tributary	Glide		0		
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0	
LR-4 (PRM 32.3-44.6) Upland Slo	Unland Claugh	Glide		1.0		
	Upland Slough	Run			1.0	

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

			Stick	leback, Ninesp	ine
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 (PRM 87.9-102.4)	Side Slough	Riffle			0
(FIXIVI 07.7-102.4)		Run		0	
	Split Main Channel	Run			0
	T	Glide		0	
	Tributary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0
LR-2 (PRM 65.6-87.9)		Riffle		0	
(FIXIVI 05.0-07.7)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0
	Cido Chonnol	Glide			0
	Side Channel	Run		0	
	Cida Channal Camalay	Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0
(1144111.000.0)	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 Challiel	Run		0	0
	Side Channel Complex	Run			0
	Side Slough	Run	0	0	0
	Tributary Mouth	Glide			0

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

			Stic	kleback, ninesp	ine
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		0.01	
		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
	B 11 10 1	Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	C' L OL L	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	
(F NIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0.06	
	-	Run	0.10		0.03

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

			Sti	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				
LR-1	Side Channel Complex	Riffle	0	0	0		
(PRM	Side Ghanner Complex	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			
(PRM 65.6-87.9)		Run	0				
00.0 07.77		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		
11.0 00.0)	Split Main Channel	Run			0		
		Glide		3.6			
	Tributary	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 1,000 square meters) for threespine stickleback using seining in the Lower River, 2013.

			Sti	ckleback, threespin	е
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	1.6	0	0
		Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	Side Channel Complex	Run	0		0
102.4)		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
	011 01 1	Riffle		1.7	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)	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)	Cide Channel Compley	Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributany	Riffle	0		
	Tributary	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-	Sido Channol	Glide		0	
44.6)	Side Channel	Run	0	0	
	Side Channel Complex	Run			2.1
	Side Slough	Run	1.5		

Table E183. Average CPUE (fish per 1,000 square meters) for threespine stickleback using snorkeling in the Lower River, 2013.

			Stickleback, threespine		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Clearwater Plume	Clearwater Plume		0	
		Backwater Pool	0		
	Cido Claumb	Pool		0	
LR-1 (PRM 87.9-102.4)	Side Slough	Riffle		0	
(1 KW 07.7 102.4)		Run	0		
	Tributary	Glide	1.3	0	
		Run			0.3
	Clearwater Plume	Clearwater Plume	0		0
LR-2 (PRM 65.6-87.9)	Tributany	Glide	0		
(1 TKW 00.0 07.7)	Tributary	Run			0
	Clearwater Plume	Clearwater Plume		0	
LR-3 (PRM 44.6-65.6)	Telleutoni	Glide		0	
(1 1301 44.0-00.0)	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	Tullerstein	Alcove	0		
(PRM 87.9-102.4)	Tributary	Glide		0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4 (PRM 32.3-44.6)	Unland Claugh	Glide		175.0	
	Upland Slough	Run			14.0

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

			Stick	Stickleback, Threespine		
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 (PRM 87.9-102.4)	Side Slough	Riffle			0	
(1 KW 07.7-102.4)		Run		0		
	Split Main Channel	Run			0	
	T.1	Glide		17.0		
	Tributary	Run			3.5	
	Tributary Mouth	Run			12.0	
	Clearwater Plume	Clearwater Plume		2.0		
	Side Channel	Pool			0	
		Glide			0	
LR-2 (PRM 65.6-87.9)	Side Channel Complex	Riffle		0		
(FIXIVI 03.0-07.7)		Run		0		
	Split Main Channel	Run		0		
	Tributary	Glide		0		
	Clearwater Plume	Clearwater Plume		0	0	
	Cido Channal	Glide			0	
	Side Channel	Run		0		
	Side Channel Compley	Glide		0		
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0	
(i i i i i i i i i i i i i i i i i i i	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 Charliel	Run		0	0	
	Side Channel Complex	Run			0	
	Side Slough	Run	0	0	0	
	Tributary Mouth	Glide			0	

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

			Stic	kleback, threesp	ine
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	0.04
		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
	Cido Channal	Glide			0.05
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	0.28	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		-
15.4	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(1 IXIVI 32.3-44.0)		Backwater Pool	1.90		
	Upland Slough	Glide		8.17	
		Run	11.10		1.02

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	Riffle	0		
		Run		0	0
	Clearwater Plume	Clearwater Plume	0		
LD 1	Side Channel Complex	Riffle	0	0	0
LR-1 (PRM	Side Chariner Complex	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			2.6
	Side Channel	Pool			0
LR-2		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	
	Cide Channel	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
55.6)	Split Main Channel	Run			0
	T.9. 1	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
	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	25.9		
	Upland Slough	Glide		0	
		Run	74.0		0

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

				Trout, rainbow	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
rtodon		Riffle	0	Lute Guilline	
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	1.0	0
LR-1 (PRM 87.9- 102.4)		Riffle	0	0	
	Side Channel Complex	Run	0		0
102.4)		Pool	1	0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	0	0	0
		Riffle	0		
	Main Channel	Run	1	0	0
	Multiple Split Main Channel	Run	0		0
		Riffle	1	0	
LR-2 (PRM 65.6- 87.9)	Side Channel	Run	0		
		Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0	
	Tributary	Run		0 0	0
	Additional Open Water	Pool	1.0		
		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
	Side Chariner Complex	Riffle			0
	Split Main Channel	Run	0		0
	Tributory	Riffle	0		
	Tributary	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-	Cido Channol	Glide		0	
44.6)	Side Channel	Run	0	0	
	Side Channel Complex	Run			0
	Side Slough	Run	0		

Table E189. Average CPUE (fish per trap) for rainbow trout using fyke netting in the Lower River, 2013.

Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributory	Alcove	5.0		
(PRM 87.9-102.4)	Tributary	Glide		7.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			0
LR-4	Unland Claugh	Glide		0	
(PRM 32.3-44.6)	Upland Slough	Run			0

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

				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
	Bar Island Complex	Pool		0	
		Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	Cide 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	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	
(I INVI JZ.J-77.U)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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

			Wh	Whitefish, Bering cisco			
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall		
		Riffle	0		*		
	Bar Island Complex	Run		0	0		
	Clearwater Plume	Clearwater Plume	0				
	Side Channel Compley	Riffle	0	0	0		
LR-1 (PRM 87.9- 102.4)	Side Channel Complex	Run	0	0	0		
		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			
LR-2 (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			
(PRM 65.6-87.9)	Side Channel	Glide	0	0			
LR-3	Side Channel	Run	0				
(PRM 44.6-65.6)	Side Channel Complex	Glide			0		
	Split Main Channel	Run			0		
	Talle de la companya	Glide		0			
	Tributary	Pool	0				
	Upland Slough	Glide	0		0		
	Upland Slough Beaver Complex	Beaver Pond	0	0			

Table E191. Continued.

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

			Wh	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 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	Side Channel Complex	Glide		0		
(FRIVI 44.0-05.0)	Split Main Channel	Run	0	0		
	Clearwater Plume	Clearwater Plume	0	0		
	Main Channel	Run		0	0	
	Multiple Split Main Channel	Run	0			
	Side Channel	Glide		0		
LR-3 (PRM 44.6-65.6) LR-4 (PRM 32.3-44.6)	Side Channel	Run	0	0	0	
	Side Channel Complex	Run			0	
(I IXIVI 32.3-44.0)	Cido Cloumb	Glide	0			
	Side Slough	Run	0	0	4.3	
	Split Main Channel	Run	0			
	Tributary	Glide		0	0	
	Tributary Mouth	Glide			0	

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

			W	hitefish, humpback	
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	
(F IXIVI 44.0-05.0)	Split Main Channel	Run	0	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 KW 32.3-44.0)	Cido Clough	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.

			Whitefish, humpback		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	0	0	0
.R-1 (PRM 87.9-		Riffle	0	0	
	Side Channel Complex	Run	0		0
102.4)		Pool		0	0
	Side Slough	Riffle		0	0
		Run	0		
	Split Main Channel	Run	Early Summer	0	
		Riffle	0		
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		0
		Riffle		rly   Late Summer	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)		Glide			0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Tributary	Run			0
	Additional Open Water	Pool	0		
	·	Backwater Pool	0		
	Bar Island Complex	Pool		0	
	·	Run	0	0	0
	Clearwater Plume	Clearwater Plume	0		0
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	
65.6)		Glide		0	0
	Side Channel Complex	Riffle			0
	Split Main Channel	Run	0		0
		Riffle	0	Early ummer         Late Summer           0         0           0	
	Tributary	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-		Glide		0	
44.6)	Side Channel	Run	0		
	Side Channel Complex	Run			2.1
	Side Slough	Run	0	1	

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

			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		
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
	Bar Island Complex	Pool		0	
		Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	C' L OL L	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	0.01
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(F IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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
		Riffle	0		
	Bar Island Complex	Run		0	1.8
LR-1 (PRM 87.9- 102.4) LR-2 (PRM 65.6-87.9)	Clearwater Plume	Clearwater Plume	12.9		
	Side Channel Complex	Riffle	0	0	0
	Side Charinei Complex	Run	0	3.9	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
(PRM	Main Channel	Run		0	0
	Multiple Split Main Channel	Run			0
	Side Channel	Pool			0
		Riffle		0	
		Run	0		
00.0 07.77		Glide			1.6
	Side Channel Complex	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	
	Cide Channel	Glide	0	0	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	T.9. 1	Glide		0	
(PRM 65.6-87.9)	Tributary	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 round whitefish using boat electrofishing in the Lower River, 2013.

	Macrohabitat Type			Whitefish, round	
Geomorphic Reach		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	6.0
(PRM 65.6-87.9)	Multiple Split Main Channel	Run	0		0
,	Split Main Channel	Run	0	0	
LR-3 (PRM 44.6-65.6)	Multiple Split Main Channel	Run		0	
	Side Channel Complex	Glide		0	
(FIXIVI 44.0-05.0)	Split Main Channel	Run	0	0	
	Clearwater Plume	Clearwater Plume	0	0	
	Main Channel	Run		0	0
	Multiple Split Main Channel	Run	0		
	Side Channel	Glide		0	
	Side Charinei	Run	0	0	0
LR-4 (PRM 32.3-44.6)	Side Channel Complex	Run			0
(1 IXIVI 32.3-44.0)	Cido Clough	Glide	0		
	Side Slough	Run	0	0	0
	Split Main Channel	Run	0		
	Tributary	Glide		0	0
	Tributary Mouth	Glide			0

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

			Whitefish, round		
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		-
	Bar Island Complex	Run			12.5
	Clearwater Plume	Clearwater Plume	1.6	3.1	0
	611 01 10 1	Riffle	0	0	
LR-1 (PRM 87.9- 102.4)	Side Channel Complex	Run	0		1.3
102.4)		Pool		0	0
	Side Slough	Riffle		0	1.0
		Run	0		
	Split Main Channel	Run	0	0	0
	M : 01	Riffle	0		
	Main Channel	Run		1.7	5.0
	Multiple Split Main Channel	Run	0		0
	C' L OL L	Riffle		1.7	
LR-2 (PRM 65.6-	Side Channel	Run	0.8		
87.9)	611 01 10 1	Glide			3.0
	Side Channel Complex	Run	0		
	Split Main Channel	Run	0	3.3	
	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	2.9	0	0.9
	Multiple Split Main Channel	Run		0	
LR-3 (PRM 44.6-	Side Channel	Glide	0	0	
65.6)	Cida Channal Camplay	Glide		0	0
	Side Channel Complex	Riffle			0.5
	Split Main Channel	Run			0
	Telbuton	Riffle	2.4		
	Tributary	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)	Side Channel	Run	0	3.3	
	Side Channel Complex	Run			4.2
	Side Slough	Run	0		

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

			V	/hitefish, round	
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
LR-1	Tributory	Alcove	1.0		
(PRM 87.9-102.4)	Tributary	Glide		1.0	
LR-3 (PRM 44.6-65.6)	Upland Slough	Glide			3.0
LR-4	Unland Claush	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	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 (PRM 87.9-102.4)	Side Slough	Riffle			0.5
(FIXIVI 07.7-102.4)		Run		0	
	Split Main Channel	Run			0
	T.1. 1	Glide		0	
	Tributary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0.3
LR-2 (PRM 65.6-87.9)		Riffle		0	
(FRIVI 05.0-67.9)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		10.0	
	Clearwater Plume	Clearwater Plume		0	0
		Glide			0
	Side Channel	Run		0	
		Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle			0
(1 100 44.0 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

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

			١	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
		Pool		0	
	Bar Island Complex	Run	0	0	
	Clearwater Plume	Clearwater Plume			0
	C' L OL L	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	
(F IXIVI 32.3-44.0)		Backwater Pool	0		
	Upland Slough	Glide		0	
		Run	0		0

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

			Whit	efish, undifferential	ed
Geo- morphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
	Bar Island Complex	Riffle	0		
	Dai Isiana Complex	Run		0	0
	Clearwater Plume	Clearwater Plume	0		
101	Side Channel Complex	Riffle	0	0	0
LR-1 (PRM	Side Chaillei Complex	Run	0	0	0
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
		Pool			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	3.6	0	
	Cida Channal	Glide	0	11.7	
LR-3	Side Channel	Run	0		
(PRM 44.6-65.6)	Side Channel Complex	Glide			0
	Split Main Channel	Run			0
	Talle de la companya	Glide		0	
	Tributary	Pool	0		
	Upland Slough	Glide	0		0
	Upland Slough Beaver Complex	Beaver Pond	0	0	

## Table E202. Continued.

			Whitefish, undifferentiated		ated
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	Side Charliei	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 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 (PRM 44.6-65.6)	Side Channel Complex	Glide		0		
(F IXIVI 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	
(i ixivi 32.3-44.0)	Sido 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.

			Whit	efish, undifferentiat	ed
Geomorphic Reach	Macrohabitat Type	Mesohabitat Type	Early Summer	Late Summer	Fall
		Riffle	0		
	Bar Island Complex	Run			0
	Clearwater Plume	Clearwater Plume	3.1	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	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
		Riffle		0	
LR-2 (PRM 65.6-	Side Channel	Run	0		
87.9)		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	
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
	Talkadan	Riffle	0		
	Tributary	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-		Glide		0	
44.6)	Side Channel	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 River, 2013.

			Whitefish, undifferentiated		iated
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 (PRM 87.9-102.4)	Side Slough	Riffle			0
(PRIVI 07.9-102.4)		Run		0	
	Split Main Channel	Run			0
		Glide		0	
	Tributary	Run			0
	Tributary Mouth	Run			0
	Clearwater Plume	Clearwater Plume		0	
	Side Channel	Pool			0
	Side Channel Complex	Glide			0
LR-2 (PRM 65.6-87.9)		Riffle		0	
(FIXIVI 03.0-07.7)		Run		0	
	Split Main Channel	Run		0	
	Tributary	Glide		0	
	Clearwater Plume	Clearwater Plume		0	0
	Side Channel	Glide			0
	Side Charmer	Run			
	Side Channel Compley	Glide		0	
LR-3 (PRM 44.6-65.6)	Side Channel Complex	Riffle		0	0
(1 T(W 11.0 00.0)	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	Side Channel	Glide		0	
(PRM 32.3-44.6)	Side Charliel	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) for undifferentiated whitefish species using minnow trapping in the Lower River, 2013.

			Whitefish, undifferentiated		
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	Side Channel Complex	Glide			0
(PRM 65.6-87.9)		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
	C' L OL L	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	0.03	0	0
	Clearwater Plume	Clearwater Plume	0		
	Side Channel	Glide	0		
LR-4 (PRM 32.3-44.6)	Tributary	Glide	0	0	
(F IXIVI 32.3-44.0)		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)

# Appendix F Habitat Association Tables

# **Initial Study Report**

Prepared for

Alaska Energy Authority



Prepared by

R2 Resource Consultants Inc.

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February 2014 Draft

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## **MIDDLE RIVER**

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

#### Middle River Focus Areas

							wiidai	CINI	CIII	ocus A	icas															
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 (juvenile)	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	.ocatior	PRN															
MR-1 / 184.6-187.1	Susitna River	GRTS												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
109.0-104.0	Tributary	GRTS												24	1	2				67						94
						Ирр	er Exte	nt De	ils C	anyon F	PRM 1	66.1														
						Low	er Exte	nt Dei	ils Ca	anyon I	PRM 1	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
MR-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
MR-8	Susitna River	GRTS	117		14	3	284			6		134	_	12	_	8	3	93		333	22	9		25	18	
102.4-107.8	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
	Tributary	ELH, GRTS	161		9	4	156	66	1	2	3		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

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

#### Middle River Non-Focus Areas

							Middle	CIVIVE	NOI	-1 00	us A	ıeas															
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, undifferentiated	Stickleback, threespine	Stickleback, undifferentiated	Trout, rainbow	Whitefish, humpback	Whitefish, round	Whitefish, undifferentiated	Grand Total
		, , , , , , , , , , , , , , , , , , ,				Prop	osed V	Vatana	Dam I	ocat	ion P	RM 18	37.1											-			
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					$\Box$	1	61
169.6-184.6	Fog Creek	ELH, Direct														315				95							410
107.0-104.0	Fog Creek Tributary	ELH, Direct														5				25							30
	Fog Creek: Off-Channel	Direct														3				4							7
	Tsusena Creek	Direct	1											74		4				25					3		107
						Uį	per Ex	tent De	vils C	anyo	n PRI	VI 166	.1														
MR-4 / 153.9-166.1	Chinook Creek	Direct														63				13							76
	-					Lo	wer 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	
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
122.7-140.4	Tributary	GRTS		13	26		1	25	229			4		7	3	1		4	15	102			18		2	1	451
MR-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

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

# Salmon, Chinook (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	<b>Grand Total</b>
	Prop	osed Watana Dam Lo	ocation PRM 187.1		
	Up	per Extent Devils Ca	nyon PRM 166.1		
	Loi	wer Extent Devils Ca	nyon 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
MR-6 122.7-148.1	Tributary	Tributary	Riffle	1	1
IVIK-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

# Salmon, Chinook (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Fall	<b>Grand Total</b>
	Pro	oposed Watana Dam	Location PRM 187.1			
MR-2 169.6-184.6	Susitna River	Clearwater Plume	Clearwater Plume	1		1
WIK-2 107.0-104.0	Tsusena Creek		Boulder Riffle	1		1
	ι	Jpper Extent Devils C	anyon PRM 166.1			
	ı	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

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

Salmon, Chinook, (juvenile)

Geomorphic Reach	Habitat	Salmon, Chinool 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			
		Upper Extent Devils Ca	anyon PRM 166.1					
		Lower Extent Devils Ca	anyon PRM 153.9					
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		2		1	
WR-3 146.1-133.9		Main Channel	Riffle			2		
	Susitna River	Multi Split Main Channel	Run				2	
		Side Channel	Glide	7			2	
			Run	2				
		Split Main Channel	Run				1	
	Susitna River: Off-Channel	Backwater	Backwater		22	7		2
		Side Slough	Glide	1				
		Side Slough Beaver Complex	Backwater Pool		1		9	1
			Beaver Pond	2	3	1	2	
			Glide				5	
			Pool	14	9	11	6	4
MD 4 122 7 140 4			Run	3				
MR-6 122.7-148.1		Upland Slough	Backwater Pool	2				
		Upland Slough Beaver Complex	Beaver Pond	28	161	107	26	32
	Tributary	Tributary	Backwater Pool	22				2.
	-	-	Glide	4		1	1	
			Pool	7				
			Riffle	1			2	
			Run	2			1	
		Tributary Mouth	Glide				1	
		,	Rapid				3	
			Riffle		1			
			Run				7	
	Susitna River	Backwater	Backwater		1			
		Clearwater Plume	Clearwater Plume				2	
		Side Channel	Glide	26	1			2
	Susitna River: Off-Channel	Upland Slough	Backwater Pool	7				
	Sustitia Kiver. On-Chainlei	Opiana Sibagn	Pool	6				
MR-7 107.8-122.7		Upland Slough Beaver Complex	Beaver Pond	1	29	41	ρ	7'
		opiana sioagn beaver complex	Glide	<u> </u>	1	71	0	,
			Run		1			
	Tributary	Tributary	Backwater Pool				21	2
	Tributary	Tibulary	Glide			2		
			Run				5	
	Susitna River	Side Channel	Backwater Pool		11			1
	Sustilia Kivoi	Oldo Orialino	Glide		- 11	67	_	9
			Riffle			1	1	7
	Susitna River: Off-Channel	Side Slough	Glide	78	2	61	0	15
	Sustaina Kivor. Oli-Oliailliel	olac olougii	Pool	2		01		13
			Run	2		1		
		Upland Slough Beaver Complex	Backwater Pool	1		16		1
		opiana siough Beaver Complex	Dackwalet P001	<del>                                     </del>		16		
MR-8 102.4-107.8			Popuer Dond		10		17	2
			Beaver Pond	-	10	77		8
			Glide	5	0	77	3	7
			Pool	70		20	_	
	T. 11 .	T " .	Run		. =	30	- 8	3
	Tributary	Tributary	Glide	14	15	33		6
			Pool	10	20	37	11 2 2 1 1 9 2 2 5 6 6 1 1 1 1 3 3 7 7 1 2 2 3 2 4 4 9 9 2 2 3 2 4 4 9 9 2 2 3 2 4 5 1 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	8
			Riffle			4	Ш	
			Run	13			Ш	1
Grand Total				330	290	499	198	1,31

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

## Salmon, Chinook (juvenile)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		Proposed Watana Dam Location	PRM 187.1				
		Upper Extent Devils Canyon F	PRM 166.1				
		Lower Extent Devils Canyon F	PRM 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
MR-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 F7. Adult chum salmon observations in Middle River Focus Areas by habitat, 2013.

Salmon, chum (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Loca	ntion 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
WIK-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
107.0 122.7			Run	1	1		2
	Susitna River	Main Channel	Run	1			1
MR-8 102.4-107.8		Side Channel	Pool		2		2
WIN 0 102.4-107.0	Tributary	Tributary	Glide		2		2
			Pool		2		2
Grand Total				229	192	11	432

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

#### Salmon, chum (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Locati	on PRM 187.1				
		Upper Extent Devils Canyor	1 PRM 166.1				
		Lower Extent Devils Canyor	PRM 153.9				
	Susitna River	Main Channel	Run		5		5
MR-5 148.1-153.9		Split Main Channel	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
		Tributary Mouth	Run	1	13		14
	Susitna River	Clearwater Plume	Clearwater Plume	3			3
MR-7 107.8-122.7		Side Channel	Run		2		2
WIK-/ 107.8-122./		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
IVIR-8 1U2.4-1U/.8		Split Main Channel	Run		2		2
	Susitna River: Off-Channel	Side Slough	Glide			1	1
Grand Total				33	271	6	310

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

Salmon, chum (juvenile)

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
		Tributary Mouth	Glide		6		6
MR-7 107.8-122.7	Susitna River	Side Channel	Glide	19			19
WR-7 107.8-122.7			Riffle			1	1
	Susitna River	Side Channel	Backwater Pool		10		10
			Pool			1	1
MR-8 102.4-107.8			Riffle		1	2	3
WR-8 102.4-107.8	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

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	Mesohabitat	Early Summer	<b>Grand Total</b>
	Propose	ed Watana Dam Location PRM 187.1			
	<b>Upp</b> e	r Extent Devils Canyon PRM 166.1			
	Lowe	r 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

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

#### Salmon, coho (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
	F	Proposed Watana Dam	Location PRM 187.1	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
MR-7 107.8-122.7	Susitna River	Main Channel	Run		2		2
WIK-1 101.0-122.1		Split Main Channel	Run	1			1
	Susitna River: Off-Channel	Side Slough	Glide		37	5	42
MR-8 102.4-107.8			Run		4		4
WIK-8 102.4-107.8	Tributary	Tributary	Glide		31		31
			Pool		26	9	35
Grand Total				11	117	43	171

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.

## Salmon, coho (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	<b>Grand Total</b>		
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		

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

Salmon	coho	(juvenile)	١

	Salmon, coho (juvenile)								
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total	
		Proposed Watana Dam L							
		Upper Extent Devils C	,						
	•	Lower Extent Devils C				ı			
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	
			Glide	7		8	1	16	
	Susitna River: Off-Channel	Backwater	Backwater		12	5	41	58	
		Side Slough Beaver Complex	Beaver Pond		18	11	15		
			Glide	1		7	30		
			Pool	2	10	33	49	94	
			Riffle				1	1	
			Run	1	11		1	13	
MR-6 122.7-148.1		Upland Slough	Backwater Pool	1				1	
		Upland Slough Beaver Complex	Beaver Pond	1	10	85	76	172	
	Tributary	Tributary	Backwater Pool	4				4	
			Glide	2	12		7	21	
			Pool	2	85			87	
			Riffle	3	3			6	
			Run	4	10		4		
		Tributary Mouth	Glide		12		27	39	
			Riffle		89	16	3	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				44	
			Pool	12				12	
		Upland Slough Beaver Complex	Beaver Pond	33	55	826	574	1,488	
MR-7 107.8-122.7			Glide		15	37		52	
WIK-1 107.0-122.1			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		
		Tributary Mouth	Cascade		29			29	
			Riffle		11			11	
MR-8 102.4-107.8	Susitna River	Side Channel	Backwater Pool		54			54	
			Glide			103	114	217	
			Pool		5			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		
			Run			142	25		
	Tributary	Tributary	Glide	3	19			61	
	-	-	Pool	2	17	50	11		
			Riffle		1	3	1	5	
			Run	10				10	
Grand Total				141	1,395	1.572	1,329		

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

Salmon, coho (juvenile)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>		
·		Proposed Watana Dam Locati	on 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		
MR-7 107.8-122.7			Run		1	15	16		
WIK-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		
	Susitna River	Side Channel	Pool	3	6	2	11		
	Susitna River: Off-Channel	Side Slough	Glide			1	1		
MR-8 102.4-107.8			Pool	8	4		12		
		Upland Slough	Glide		15	2	17		
			Pool	20	55	8	83		
Grand Total				228	167	758	1,153		

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

### Salmon, pink (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	<b>Grand Total</b>			
		Proposed Watana Da	am Location PRM 187	.1					
	Upper Extent Devils 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			
WIK 5 140.1 155.7		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			
MR-6 122.7-148.1			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			
MR-8 102.4-107.8		Side Channel	Run		1	1			
WIK-0 1UZ.4-1U/.0	Tributary	Tributary	Glide		1	1			
			Pool		1	1			
Grand Total				3,125	45	3,170			

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

#### Salmon, pink (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	<b>Grand Total</b>
		Proposed Watana Dam Location	PRM 187.1			
		Upper Extent Devils Canyon PF	RM 166.1			
		Lower Extent Devils Canyon Pl	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
		Tributary 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
MR-8 102.4-107.8	Susitna River	Main Channel	Run	6	2	8
IVIR-0 1UZ.4-1U7.8		Side Channel	Pool		1	1
Grand Total				329	182	511

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.

### Salmon, pink (juvenile)

		amon, print gavenne,						
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	<b>Grand Total</b>			
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 F18. Juvenile pink salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Salmon, pink (juvenile)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	<b>Grand Total</b>			
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	<b>Grand Total</b>
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	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
MR-8 102.4-107.8	Tributary	Tributary	Glide		1		1
WIK-0 1UZ.4-1U7.8			Pool		2		2
Grand Total				9	48	7	64

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

### Salmon, sockeye (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	<b>Grand Total</b>		
Proposed Watana Dam Location PRM 187.1								
	Upj	oer Extent Devils Canyon PRM 166.1	r					
	Lov	ver Extent Devils Canyon PRM 153.9	)					
MR-5 148.1-153.9	Susitna River: Off-Channel	Side Slough	Glide	5		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 F21. Juvenile sockeye salmon observations in Middle River Focus Areas by habitat, 2013.

Salmon, 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 Canyon PRM 166.1								
Lower Extent Devils Canyon 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
MR-6 122.7-148.1			Pool	14	111	10	1	136
WIK-0 122.7-140.1			Riffle		2			2
		Upland Slough	Glide				1	1
		Upland Slough Beaver Complex	Beaver Pond			7	1	8
	Tributary	Tributary	Pool		11			11
		Tributary 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
MR-7 107.8-122.7		Upland Slough Beaver Complex	Beaver Pond			4	1	5
WR-/ 107.8-122./			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 F22. Juvenile sockeye salmon observations outside of Focus Areas in the Middle River by habitat, 2013.

Salmon, sockeye (juvenile)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
Proposed Watana Dam Location 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
	Susitna River: Off-Channel	Backwater	Backwater	6			6
MR-6 122.7-148.1		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 0 100 4 107 0	Susitna River: Off-Channel	Side Slough	Pool	10			10
MR-8 102.4-107.8		Upland Slough	Glide	3			3
			Pool		1	1	2
Grand Total				35	25	10	70

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

Salmon, undifferentiated (juvenile)

0 1: 0 :	III 1911	Salmon, undifferenti		١. ١	E 1 0	I		L 17
Geomorphic Reach	Habitat		Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam Lo						
		Upper Extent Devils Ca						
	Cualtus Diver	Lower Extent Devils Ca			-		_	<del>-</del>
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume		5	0		5
	Constant Discon	Main Channel	Run		2			1
	Susitna River	Clearwater Plume Main Channel	Clearwater Plume		3	1		3
			Run		1	1		1
		Multi Split Main Channel	Run		0			1
		Side Channel	Backwater Pool		8	1		č
			Glide			1		1
	0 '1 D' 0" 0	D 1 1	Run	1				1
	Susitna River: Off-Channel		Backwater		1			
		Side Slough Beaver Complex	Backwater Pool		2			4
MD / 400 7 440 4			Beaver Pond		1	3	_	4
MR-6 122.7-148.1			Glide		6		1	7
			Pool		4			10
			Run		3			3
		Upland Slough Beaver Complex	Beaver Pond		14	5	1	20
	Tributary	Tributary	Glide	4				4
			Pool		1			1
			Riffle	3				3
			Run		2	1		2
		Tributary Mouth	Riffle		3			3
			Run				7	7
	Susitna River	Main Channel	Run			1		1
		Split Main Channel	Riffle		3			3
			Run		4	1		5
	Susitna River: Off-Channel	Backwater	Backwater		4			4
MR-7 107.8-122.7		Upland Slough	Backwater Pool	7				7
		Upland Slough Beaver Complex	Beaver Pond	8	375	1	46	430°
			Glide		2	4		6
	Tributary	Tributary	Pool		2			2
		Tributary Mouth	Cascade		1			1
	Susitna River	Main Channel	Run		1	1		2
		Side Channel	Backwater Pool		24		2	26
			Glide			4	1	5
			Pool			1		1
	Susitna River: Off-Channel	Side Slough	Glide		2	32	2	36
MR-8 102.4-107.8			Pool				80	80
WIN-0 102.4-107.0			Riffle		2			2
		Upland Slough Beaver Complex	Backwater Pool		20			22
			Glide		2	17	2	21
			Run		_	1	1	2
	Tributary	Tributary	Glide			1		1
	·	•	Pool		1	1		2
Grand Total				23	497	84	143	747

<sup>&</sup>lt;sup>a</sup>: 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 (juvenile)

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	Susitna River: Off-Channel	Side Slough	Pool		1	1		
WIK-7 107.0-122.7		Upland Slough Beaver Complex	Beaver Pond	2		2		
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Pool		20	20		
WIK-0 102.4-107.0		Upland Slough	Pool	1		1		
Grand Total				3	21	24		

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

Arctic	arav	dina
AICUC	gray	ming

			grayling	T				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		·	am Location PRM 18	7.1				
	Susitna River	Main Channel	Run			19	10	
MR-1 184.6-187.1		Side Channel	Glide				12	
WICT 104.0 107.1			Riffle			2	10	
			Run		3	5	2	
	Susitna River	Backwater	Backwater		40	14		54
		Clearwater Plume	Clearwater Plume		85	84	4	173
		Main Channel	Run		2	9	2	13
		Side Channel	Glide		12	17	29	58
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool		119	95		214
			Glide			252	115	367
			Pool		70			70
			Run			9		9
	Tributary	Tributary Mouth	Riffle		12	12		24
	<b>,</b>		Is Canyon PRM 166.	1				
			ls Canyon PRM 153.					
	Susitna River	Clearwater Plume	Clearwater Plume		5			5
MR-5 148.1-153.9	ouoima miroi	Main Channel	Riffle			11	10	
		indin ondinio	Run				1	1
	Susitna River	Clearwater Plume	Clearwater Plume		17	4	4	25
	ouditina titvoi	Multi Split Main Channel	Riffle			1	1	
		Main Opin Main Orianner	Run				1	1
		Side Channel	Backwater Pool			2		2
		olde chamier	Glide		1	1		2
	Susitna River: Off-Channel	Backwater	Backwater		17			21
MR-6 122.7-148.1	Sustaina Kiver. On-Ghainnei	Side Slough Beaver Complex	Pool		17	4		1
WIK-0 122.7-140.1		Side Slough beaver Complex	Run	1	1			2
	T-16	T-!h.ukam.		'	1			1
	Tributary	Tributary	Glide		1			
			Pool		5			8
		Taile salam s NA a sala	Run		7			5
		Tributary Mouth	Glide					
	Cardina Diagram	Mada Ohaasa I	Riffle		31			32
	Susitna River	Main Channel	Run			-		2 2
		Side Channel	Pool			- 1		
		Split Main Channel	Riffle		1	l l		1
MR-7 107.8-122.7			Run		!			1
	Susitna River: Off-Channel	Upland Slough Beaver Complex	Run		1			1
	Tributary	Tributary	Riffle		5			5
		Tributary Mouth	Cascade		1			1
			Riffle		6			6
	Susitna River	Main Channel	Run				4	4
		Side Channel	Backwater Pool		2			2
			Glide				1	1
			Riffle			1	4	5
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide		2	2	23	
			Pool				3	3
		Upland Slough Beaver Complex	Glide				1	1
	Tributary	Tributary	Glide			1		1
			Pool				77	
Grand Total				1	455	547	317	1,320

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

# Arctic grayling

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	~	roposed Watana Dam					
	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 F27. Juvenile Arctic grayling observations in Middle River Focus Areas by habitat, 2013.

			juvenile (<190mm					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		Proposed Watana D	am Location PRM 18	7.1				
	Susitna River	Main Channel	Run			17	9	26
MR-1 184.6-187.1		Side Channel	Glide				9	9
WIK-1 104.0-107.1			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	Tributary Mouth	Riffle		12	11		23
	, <b>,</b>		ils Canyon PRM 166.	1			1	
			ils Canyon PRM 153.					
	Susitna River	Clearwater Plume	Clearwater Plume		3			3
MR-5 148.1-153.9		Main Channel	Riffle			11	7	18
		Wall Olalilo	Run				1	1
	Susitna River	Clearwater Plume	Clearwater Plume		13		<u>'</u>	13
	Justina Kivei	olearwater Fluine	Run		13	2		2
		Multi Split Main Channel	Riffle			1	1	2
		Multi Spilt Main Charinei	Run				1	1
		Side Channel	Backwater Pool			2		2
		Side Charinei	Glide		1	1		2
	Susitna River: Off-Channel	Backwater	Backwater		16	1		20
MR-6 122.7-148.1	Sustilia River. Ott-Citatiliei	Side Slough Beaver Complex	Pool		10	4		1
		Side Slough Beaver Complex	Run	1	1			1
	Tributary	Tributory	Glide	'	1			1
	Tributary	Tributary			8			1
			Pool		8			8
		T 25 M 1b	Run		4			4
		Tributary Mouth	Glide		7		_	7
	0 11 01		Riffle		28		1	29
	Susitna River	Main Channel	Run			-		1
		Side Channel	Pool					1
MD 7 107 0 100 7	C - 'l B' Off Ol I	Split Main Channel	Riffle			I		1
MR-7 107.8-122.7		Upland Slough Beaver Complex	Run		0			0
	Tributary	Tributary	Riffle		5			5
		Tributary Mouth	Cascade		1			1
			Riffle		6			6
	Susitna River	Main Channel	Run				3	
		Side Channel	Backwater Pool		2			2
			Glide				1	1
			Riffle			1	3	
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide		2	2	23	
			Pool				3	3
		Upland Slough Beaver Complex	Glide				1	1
	Tributary	Tributary	Glide			1		1
			Pool				76	76
Grand Total				1	427	527	268	1,223

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

Arctic grayling, juvenile (<190mm)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam		, ,			
	Susitna River	Main Channel	Run	1	5	16	22
MR-1 184.6-187.1		Side Channel	Riffle			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					
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
MR-6 122.7-148.1	Susitna River: Off-Channel	Side Slough	Pool	1		13	14
WIK 0 122.7 140.1		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 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	<b>Grand Total</b>
		Proposed Watana Dam Loca	tion PRM 187.1				
MR-1 184.6-187.1	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 Cany	on PRM 153.9				
MR-5 148.1-153.9	Susitna River	Clearwater Plume	Clearwater Plume	2			2
WIK-3 140.1-133.9		Main Channel	Riffle			3	3
MR-6 122.7-148.1	Susitna River	Clearwater Plume	Clearwater Plume	4	1		5
WK-0 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater	1			1
MR-7 107.8-122.7	Susitna River	Split Main Channel	Run	1			1
WIK-/ 107.8-122./	Susitna River: Off-Channel	Upland Slough Beaver Complex	Run	1			1
MD 0 102 4 107 0	Susitna River	Main Channel	Run			1	1
MR-8 102.4-107.8	Tributary	Tributary	Pool			1	1
Grand Total	-			13	13	41	67

Table F30. Juvenile or adult 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
	P	roposed Watana Dam	Location PRM 187.1				
MR-1 184.6-187.1	Susitna River	Main Channel	Run	1		5	6
WIK-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
MR-2 169.6-184.6		Split Main Channel	Run		14	2	16
WIK-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-5 148.1-153.9	Susitna River	Main Channel	Run			1	1
WIK-5 140.1-155.9		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

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, adult (>328mm)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Da	am Location 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 Devi	Is Canyon PRM 166.1				
		Lower Extent Devi	Is Canyon PRM 153.9				
MR-6 122.7-148.1	Susitna River	Clearwater Plume	Clearwater Plume		1	4	5
	Tributary	Tributary	Run	1			1
		Tributary 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

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

# Arctic grayling, adult (>328m)

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			3	3
WIK-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
MR-6 122.7-148.1	Tributary	Tributary	Boulder Riffle		1		1
IVIK-U 122.7-140.1		Tributary Mouth	Run			1	1
Grand Total				12	30	32	74

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

#### Burbot

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		Proposed Watana Dam L	ocation PRM 187.1					1
MR-1 184.6-187.1	Susitna River	Main Channel	Run		2	2	3	7
WITC 1 10 1.0 107.1		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	<u>,                                      </u>					
		Lower Extent Devils Ca	·					
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				1	1
			Run			1		1
	Tributary	Tributary	Glide			2		2
			Pool	1			2	3
Grand Total				47	70	68	90	275

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

#### Burbot

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	1	Proposed Watana Dam Locati		T	T		
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
MR-2 169.6-184.6		Side Channel	Run	1	2	1	4
WIK-2 107.0-104.0	Susitna River: Off-Channel	Side Slough	Pool	3		2	5
			Riffle		1		1
	Tributary	Tributary Mouth	Riffle		2	1	3
		Upper Extent Devils Canyor	PRM 166.1				
		PRM 153.9					
MD F 4404 452 0	Susitna River	Main Channel	Run		1	3	4
MR-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 / 100 7 140 1	Susitna River: Off-Channel	Side Slough	Glide		1	3	4
MR-6 122.7-148.1			Pool	3	6	6	15
		Upland Slough Beaver Complex	Beaver Pond	1			1
	Tributary	Tributary Mouth	Run	1		2	3
	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 74070 400 7		Side Slough	Pool		1		1
MR-7 107.8-122.7			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
	,	Tributary 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	
	Susitna River: Off-Channel	Side Slough	Pool	1	3	1	5
		Upland Slough	Glide	1	1		2
		, ,	Pool	4	3	8	
Grand Total				59		54	

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	<b>Grand Total</b>
		Proposed Watana Dam Loc	ation PRM 187.1					
	Susitna River	Backwater	Backwater		1			1
MR-2 169.6-184.6		Main Channel	Run				1	1
WIK-2 107.0-104.0	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			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
MR-7 107.8-122.7		Upland Slough Beaver Complex	Glide			1		1
WIK-/ 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
MR-8 102.4-107.8			Riffle				2	2
WIN-0 1UZ.4-1U/.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 F36. Dolly Varden 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 Location PRM 1		<b>,</b>			
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		_		
MR-4 153.9-166.1	Chinook Creek		Boulder Riffle		30	10	9	49
WK-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

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.

Lamprev

			Lampicy					
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana	a Dam Location Pl	RM 187.1				
		Upper Extent D	evils Canyon PRN	1 166.1				
		Lower Extent D	evils Canyon PRN	1 153.9				
	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 0 102 4 107 0			Riffle		9			9
MR-8 102.4-107.8			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	<b>Grand Total</b>			
	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. Longnose sucker observations in Middle River Focus Areas by habitat, 2013.

i	Long	ınn	ca	cu	ck	۸ı
Į	LUIIU	JIIO	26	Su	CK	۲ı

Coomornhia Daa-h	Habitat	Longnose s		Cnring	Early Commer	Lata Cumma-	Eall	Crand Tat-1
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
1	Considera Dione	Proposed Watana Dam Lo			i		- 1	-
MD 1 104 / 107 1	Susitna River	Main Channel	Run				1	
MR-1 184.6-187.1		Side Channel	Riffle			2	2	4
	a 11 B1	B	Run			3		4
	Susitna River	Backwater	Backwater		16	17		33
		Clearwater Plume	Clearwater Plume		1			1
		Main Channel	Run		5	1		6
MR-2 169.6-184.6		Side Channel	Glide			5	11	16
	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	nyon PRM 166.1					
		Lower Extent Devils Ca	nyon PRM 153.9					
MD F 140 1 153 0	Susitna River	Clearwater Plume	Clearwater Plume		4			4
MR-5 148.1-153.9		Main Channel	Run			2		2
	Susitna River	Clearwater Plume	Clearwater Plume		1	6		7
		Main Channel	Run		1	4		5
		Multi Split Main Channel	Run		1		1	2
		Side Channel	Backwater Pool	6	<u>'</u>	18	<del>-</del>	24
			Glide	60	5	12	4	81
			Pool	39				39
			Riffle	37	1	1		2
			Run	1		2	2	5
	Susitna River: Off-Channel	Rackwator	Backwater	'	8	8		16
MR-6 122.7-148.1	Sustilla River. Oll-Chaille			2	1	0		3
WIK-0 122.7-140.1		Side Slough Beaver Complex	Backwater Pool		<u>'</u>	2	10	
			Beaver Pond	- '			12	15
			Glide				14	14
			Pool				2	2
			Run	1	1			2
		Upland Slough	Backwater Pool	2				2
		Upland Slough Beaver Complex		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		2	8	1	11
	Susitna River: Off-Channel	Backwater	Backwater		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		2			2
	Susitna River	Main Channel	Run			5	4	9
		Side Channel	Backwater Pool		6		Ħ	6
			Glide			36	19	55
			Pool	l -	9	30	<u>''</u>	12
			Riffle		9	11		11
	Cucitna Divor: Off Char	Cido Clouab		۲٦		34	4	105
MR-8 102.4-107.8	Susitna River: Off-Channel	Side Slough	Glide	67		34	_	
		Haland Claush Decree Occurs	Pool	<u> </u>	_		39	40
		Upland Slough Beaver Complex	Backwater Pool		2		<u> </u>	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

Table F40. Longnose sucker observations outside of Focus Areas in the Middle River by habitat, 2013.

### Longnose sucker

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		roposed Watana Dam					
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
MD / 100 7 140 1			Riffle		14		14
MR-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
		Ŭ	Pool		84	18	102
		Upland Slough	Pool		17	2	8
Grand Total				146	266	76	

Table F41. Sculpin observations in Middle River Focus Areas by habitat, 2013.

Geomorphic Boach	Habitat	Sculpir Macrobabitat		Spring	Farly Summer	I ata Summo-	F <sub>2</sub> II	Grand Total
eomorphic Reach	Habitat	Macrohabitat  Proposed Watana Dam Lo	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Lotal
	Susitna River	Main Channel	Run		25	56	46	127
MR-1 184.6-187.1		Side Channel	Glide				11	11
MIK-1 104.0-107.1			Riffle		27	15	28	70
	C 'I D'	D. J.	Run Backwater		6	11	21	38
	Susitna River	Backwater Clearwater Plume	Clearwater Plume		7	13	3	11
		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
2 107.0 101.0			Glide			67	24	91
			Pool		93	2		93
	Tributary	Tributary Mouth	Run Cascade			2	1	1
	Tributary	i iibulai yivioulii	Riffle		40	26	_	66
	I	Upper Extent Devils Ca				2.0		
		Lower Extent Devils Ca	nyon PRM 153.9					
	Susitna River	Clearwater Plume	Clearwater Plume		1			1
MR-5 148.1-153.9		Main Channel	Glide		2			2
			Riffle		1	3	16	20
	Susitna River	Main Channel	Run Run			20	- 5	20
	ousitiu itivoi	Multi Split Main Channel	Riffle		1	5	18	24
			Run		10	16	39	65
		Side Channel	Backwater Pool	4	11	13		28
			Glide	27	28	8	54	117
			Pool Riffle	1		40	11	40
			Riffle	3	13	13	11 26	37
		Split Main Channel	Run	,	°		12	12
	Susitna River: Off-Channel	Backwater	Backwater		51	4		55
		Side Slough	Backwater Pool	1				1
			Glide	1				1
		Side Slough Beaver Complex	Backwater Pool	33	17		10	60 44
			Beaver Pond Glide	32 34	4 81	3	5 60	178
MR-6 122.7-148.1			Pool	55	5	2	11	73
			Riffle	5	3		2	10
			Run	19	43			62
		Upland Slough	Backwater Pool	7				7
		Heland Claush Deauer Compley	Glide	16 9	13		10	26 25
	Tributary	Upland Slough Beaver Complex Tributary	Beaver Pond Backwater Pool	2	13		3	20
	moduly	Thousay	Glide	24	8		17	49
			Pool	2	71			73
			Riffle	1	79			80
			Run	2	21		1	24
		Tributary Mouth	Glide		1		14	14
			Pool Riffle		45	7	11	63
			Run		73	2	11	13
	Susitna River	Clearwater Plume	Clearwater Plume		3	5		4
		Main Channel	Run		20	2	13	35
		Side Channel	Backwater Pool				17	17
			Glide	25	4	9		38
			Pool Riffle	1	12	7 23	Н	20
		Split Main Channel	Riffle		2	1		3
			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	Щ	1
			Glide	<b>_</b>	1	2	5	3
			Pool Run		13		17	30
	Tributary	Tributary	Glide		5	10	17	15
		,	Pool		1	1		2
			Riffle		35			35
			Run				1	1
		Tributary Mouth	Cascade		14		Н	14
	Susitna River	Main Channel	Riffle Run		19	13	28	19 45
	Sustilla Rivei	Side Channel	Run Backwater Pool		48	13	26 1	45
			Glide		10	5	121	126
			Pool		8		12	20
			Riffle		21	29	30	80
	Sucitor Divor: Off Char1	Sido Slough	Run	/-	4	9	22	13
	Susitna River: Off-Channel	Side Slough	Glide Pool	61 31	164	26	32 58	283 89
MR-8 102.4-107.8			Riffle	31	84	23	58	115
			Run	3	04	17	- 3	20
		Upland Slough Beaver Complex	Backwater Pool	11				11
			Glide	7	14	5	8	34
			Run			1	3	4
	Tributary	Tributary	Glide	1	2	4	Н	7
			Pool	20	3	8	4	35
	-		Riffle Run	12	29	3	H	32 12

Table F42. Sculpin observations outside of Focus Areas in the Middle River by habitat, 2013.

		Sculpii						
Geomorphic Reach	Habitat	Macrohabitat  Proposed Watana Dam L	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
	Susitna River	Main Channel	Run		30	27	24	81
MR-1 184.6-187.1	ouditaid ita voi	Side Channel	Riffle				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	T ributary Mouth	Riffle			21	15	36
	Tsusena Creek		Boulder Riffle		8	6	11	25
		Upper Extent Devils Ca	nyon PRM 166.1					
MR-4 153.9-166.1	Chinook Creek		Boulder Riffle		4	1	3	8
WIK-4 133.9-100.1			Riffle				5	5
		Lower Extent Devils Ca	nyon PRM 153.9					
	Susitna River	Main Channel	Run		14	25	12	51
MR-5 148.1-153.9		Split Main Channel	Run		7	2	15	24
	Susitna River: Off-Channel	Side Slough	Glide		125	26	10	161
			Pool				1	1
	Susitna River	Clearwater Plume	Clearwater Plume		19	3	11	
		Main Channel	Run			6	_	7
		Side Channel	Pool		9	11	17	37
			Riffle		31	89		120
	Susitna River: Off-Channel	Backwater	Backwater		9	_	_	14
MR-6 122.7-148.1		Side Slough	Glide			13	_	
			Pool		55	22	40	
		Upland Slough	Pool		34	30		64
		Upland Slough Beaver Complex	Beaver Pond		9		13	22
	Tributary	Tributary	Boulder Riffle		57	10		74
		Tributary Mouth	Run		9	7	12	28
	Susitna River	Main Channel	Glide	<u> </u>			11	11
		Cida Channal	Run	<del>                                     </del>	4		4.	4
		Side Channel	Glide	<del>                                     </del>			14	
			Riffle	1	100	2	3	
MR-7 107.8-122.7		Culit Main Chan!	Run	1	102	40	_	
	Sucitna Divor: Off Char!	Split Main Channel	Run	<del>                                     </del>	2		18	
	Susitna River: Off-Channel	Backwater Side Slough	Backwater	-	/1	1/	_	
	Tributary	Tributary	Pool	1	61 12	16 46		
	Tributary	Tributary Mouth	Run Riffle	<del>                                     </del>	12	46	2	
	Susitna River	Main Channel	Run	1	10	16		26
	Jusillia Kivci	Side Channel	Glide		25	10	11	
		Side Chariner	Pool		23	2	<del>                                     </del>	4
			Run	<del>                                     </del>		14	1	15
MR-8 102.4-107.8		Split Main Channel	Run	<del>                                     </del>		14	22	
	Susitna River: Off-Channel	Side Slough	Pool	<del>                                     </del>	7	4	22	
	Sasima Kivor. On Ghaille	Upland Slough	Glide		24		_	
		Opiana Slough	Pool		18		7	32
Grand Total			1 301	33	978		<u> </u>	

Table F43. Threespine stickleback observations in Middle River Focus Areas by habitat, 2013.

Stickleback, threespine

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total			
		Proposed Watana Dam Loc	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			
MR-7 107.8-122.7			Pool	7				7			
WIK-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			
MR-8 102.4-107.8			Riffle			1		1			
WIK-0 102.4-107.0		Upland Slough Beaver Complex	Backwater Pool	5		2		7			
		<u> </u>	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			
Ī			Run	2				2			
Grand Total				77	3,260	1,404	734	5,475			

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 F	PRM 166.1				
		Lower Extent Devils Canyon F	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
MR-7 107.8-122.7		Upland Slough	Pool	900	150	319	1,369
WIK-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

Table F45. Rainbow trout observations in Middle River Focus Areas by habitat, 2013.

#### Trout, rainbow

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	Grand Total
		Proposed Watana Dam L	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			
WIK-5 140.1-155.7		Main Channel	Riffle				1	
	Susitna River	Clearwater Plume	Clearwater Plume			2	3	!
		Multi Split Main Channel	Riffle			1		,
			Run				1	
		Side Channel	Glide	1	1			
			Riffle	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			,
WIK-0 122.7-140.1			Pool		1			•
			Riffle	1				,
			Run	5				Ĺ
		Upland Slough	Glide	1				,
		Upland Slough Beaver Complex	Beaver Pond	2	1	2	2	7
	Tributary	Tributary	Glide		4			1
			Riffle		4			1
			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-7 107.8-122.7	Susitna River: Off-Channel	Upland Slough Beaver Complex	Beaver Pond		6	1		-
	Tributary	Tributary	Pool		55			55
		-	Riffle		5			Ę
		Tributary Mouth	Cascade		5			Ę
	Susitna River	Main Channel	Run			1	5	6
		Side Channel	Backwater Pool		2			
			Riffle			1		1
	Susitna River: Off-Channel	Side Slough	Glide	4		11		15
MD 0 100 4 107 0		Upland Slough Beaver Complex	Backwater Pool		1			1
MR-8 102.4-107.8		,	Beaver Pond		2			2
			Glide		1			-
	Tributary	Tributary	Glide		2			2
	·	•	Pool		3	1	38	42
			Riffle				1	-
Grand Total				21	112	24	56	213

Table F46. Rainbow trout observations outside of Focus Areas in the Middle River by habitat, 2013.

#### Trout, rainbow

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		Proposed Watana Dam Locati	on PRM 187.1	-			
		Upper Extent Devils Canyor	PRM 166.1				
		Lower Extent Devils Canyor	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

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.

Whitefish, humpback

		wintensii, nump	Duon				
Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	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		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
MR-7 107.8-122.7	Susitna River	Side Channel	Run	1			1
WIK-/ 107.0-122./	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	<b>Grand Total</b>
	Proposed Watana	a Dam Location P	PRM 187.1		
	Upper Extent D	evils Canyon PR	M 166.1		
	Lower Extent D	evils Canyon PR	M 153.9		
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	5	5	
MR-7 107.8-122.7	Susitna River: Off-Channel	Backwater	Backwater	4	4
Grand Total				9	9

Table F49. Round whitefish observations in Middle River Focus Areas by habitat, 2013.

#### Whitefish, round

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Tota</b>
	1	Proposed Watana Dam L				1		Т
	Susitna River	Main Channel	Run		2		3	
MR-1 184.6-187.1		Side Channel	Glide				3	
			Riffle				1	
			Run		1		1	
	Susitna River	Backwater	Backwater		16			1
		Clearwater Plume	Clearwater Plume			10	1	
		Main Channel	Run		4	1	1	
MR-2 169.6-184.6	Susitna River: Off-Channel	Side Slough	Backwater Pool			1		
			Glide			8		
			Pool		2			
			Run			4		
		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			
	Susitna River	Clearwater Plume	Clearwater Plume		3	4		
		Main Channel	Run			1		
		Multi Split Main Channel	Riffle			3		
			Run				1	
		Side Channel	Backwater Pool			14		1-
			Glide	3	11	5		1
MD (400 7 440 4			Riffle		1	1		
MR-6 122.7-148.1		Split Main Channel	Run				1	
	Susitna River: Off-Channel	Backwater	Backwater		7	2		
		Side Slough Beaver Complex	Beaver Pond			6		
		,	Run	5				
		Upland Slough Beaver Complex	Beaver Pond			5	9	1.
	Tributary	Tributary	Glide			1		
			Pool		1			
	Susitna River	Main Channel	Run				3	3
		Side Channel	Backwater Pool				2	
		Split Main Channel	Run			2	4	
MR-7 107.8-122.7	Susitna River: Off-Channel	Backwater	Backwater		18	1		1
	The second secon	Upland Slough Beaver Complex	Glide		1	<u> </u>		<del>                                     </del>
		Spising Glough Bouver Complex	Run		2			<del>                                     </del>
	Susitna River	Main Channel	Run		<del>                                     </del>	<del>                                     </del>	4	
	ousina nivoi	Side Channel	Glide			5	7	1
		Oldo Olidililoi	Pool		2	-	<u> </u>	
MR-8 102.4-107.8			Riffle				7	+
	Susitna River: Off-Channel	Sido Slough	Glide	8		2		1
		Tributary	Pool	٥		3	2	
Grand Total	Tributary	i iibulai y	FUUI	16	73	80		

Table F50. Round whitefish observations outside of Focus Areas in the Middle River by habitat, 2013.

### Whitefish, round

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	P	roposed Watana Dam		•			
MR-1 184.6-187.1	Susitna River	Main Channel	Run			17	17
WIK 1 104.0 107.1		Side Channel	Riffle			4	4
	Susitna River	Clearwater Plume	Clearwater Plume	4	3	3	10
		Main Channel	Run	1	4		5
MR-2 169.6-184.6		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
MR-7 107.8-122.7			Run		16		16
WIK-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 0 100 4 107 0		Side Channel	Glide			1	1
MR-8 102.4-107.8			Run		1		1
	Susitna River: Off-Channel	Upland Slough	Pool	4			4
Grand Total				25	38	98	161

Table F51. Whitefish (species undifferentiated) observations in Middle River Focus Areas by habitat, 2013.

#### Whitefish, undifferentiated

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
		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
MR-2 169.6-184.6		Clearwater Plume	Clearwater Plume			5		5
WIK-2 107.0-104.0		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
MR-6 122.7-148.1	Susitna River: Off-Channel	Backwater	Backwater		3	1		4
WIK-0 122.7-140.1		Side Slough Beaver Complex	Glide		30			30
			Run	2				2
		Upland Slough Beaver Complex	Beaver Pond	5				5
	Tributary	Tributary Mouth	Riffle			1		1
	Susitna River	Side Channel	Glide	4	2			6
MR-7 107.8-122.7			Pool		1			1
WIK-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 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	<b>Grand Total</b>
		Proposed Watana	Dam Location PRM	187.1		
MR-2 169.6-184.6	Susitna River	Clearwater Plume	Clearwater Plume	1		1
WIK-2 107.0-104.0	Tributary	Tributary Mouth	Riffle		1	1
		Upper Extent De	evils Canyon PRM 16	6.1		
		Lower Extent De	evils Canyon PRM 15	3.9		
MR-5 148.1-153.9	Susitna River	Main Channel	Run		1	1
WIK-5 140.1-155.9		Split Main Channel	Run		1	1
MR-6 122.7-148.1	Susitna River	Main Channel	Run		1	1
WIK-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

#### **LOWER RIVER**

Table F53. Lower River fish observations, 2013.

									Lowe	er Riv	/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
LD 1	Susitna River	Transect		14	55	1	55	6	4	2	2	2		6	1	8	92		112		8		1			13	22	404
LR-1	Susitna River: Off-Channel	Transect		7	160	18	1	7	1	1	279	3	2	12		1	7		31		8					3	1	542
87.9-102.4	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
LR-3	Susitna River	Transect	1	60				1	2		13	2	14	13	1	23	133		141	1	10					6	7	428
44.6-65.6	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
44.0-00.0	Tributary	ELH, Transect		35		7	1	14			5		1	3		14	7		94	2	8		4			5		200
LR-4	Susitna River	Transect, RT		9	1	1		1	1	1	2	5	4	36		46	144	6	8		11				1	9	2	288
32.3-44.6	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
32.3-44.0	Tributary	ELH, Transect, RT										10		4			5	50	3		6				1		$ldsymbol{f eta}$	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.

# Salmon, Chinook (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	<b>Grand Total</b>
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

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.

Salmon, Chinook (juvenile)

Geomorphic Reach	Habitat	Saimon, Chinook 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

Table F56. Adult chum salmon observations in the Lower River by habitat, 2013.

#### Salmon, chum (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume		21	33	54
		Split Main Channel	Run		1		1
LR-1 87.9-102.4	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

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.

#### Salmon, chum (juvenile)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	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
LR-2 65.6-87.9	Tributary	Tributary	Glide			1		1
LR-2 00.0-01.9			Run	4				4
		Tributary Mouth	Riffle	13				13
LR-3 44.6-65.6	Susitna River: Off-Channel	Upland Slough	Glide		1	1		2
LK-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

Table F58. Adult coho salmon observations in the Lower River by habitat, 2013.

# Salmon, coho (adult)

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Late Summer	Fall	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume	51	3	54
LR-1 87.9-102.4		Split Main Channel	Run		1	1
LK-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
LR-3 44.6-65.6	Susitna River: Off-Channel	Upland Slough	Glide	1		1
LK-3 44.0-00.0	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

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	<b>Grand Total</b>
·	Susitna River	Clearwater Plume	Clearwater Plume		4	2		6
	Susitna River: Off-Channel	Side Slough	Pool				7	7
LD 1 07 0 100 4	Tributary	Tributary	Alcove		10			10
LR-1 87.9-102.4  S S S S S S S S S S S S S S S S S S			Glide	9		13		22
			Run	66			16	82
		Tributary Mouth	Run				2	2
	Susitna River	Clearwater Plume	Clearwater Plume			1		1
		Main Channel	Run				1	1
LD 245 4 07 0		Side Channel	Pool				11	11
LR-2 05.0-07.9	Tributary	Tributary	Glide		1	12		13
			Run	5				5
		Tributary 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
I P-3 // 6-65 6			Glide		4	10	52	
LK-3 44.0-03.0		Upland Slough Beaver Complex	Beaver Pond	11		59		70
	Tributary	Tributary	Glide			7		7
			Run	4				4
		Tributary Mouth	Run	2			1	3
	Susitna River	Clearwater Plume	Clearwater Plume	1				1
	Susitna River: Off-Channel	Additional Open Water	Pool		1			1
L		Upland Slough	Backwater Pool		2			2
			Glide			5		5
			Run		5		17	
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
LR-1 87.9-102.4		Side Channel Complex	Run		3		3
LK-1 07.9-102.4	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
LR-3 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)

Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	Grand Total
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
Susitna River	Clearwater Plume	Clearwater Plume		1		1
			3	2	2	7
	Susitna River Susitna River: Off-Channel	Susitna River Clearwater Plume Side Channel Complex Susitna River: Off-Channel Side Slough Tributary Tributary	Susitna River     Clearwater Plume     Clearwater Plume       Side Channel Complex     Run       Susitna River: Off-Channel     Side Slough     Glide       Tributary     Tributary     Glide       Run	Susitna River     Clearwater Plume     Clearwater Plume       Side Channel Complex     Run     1       Susitna River: Off-Channel     Side Slough     Glide     1       Tributary     Tributary     Glide     1       Run	Susitna River         Clearwater Plume         Clearwater Plume         1           Side Channel Complex         Run         1           Susitna River: Off-Channel         Side Slough         Glide         1           Tributary         Tributary         Glide         1           Run         Run         1	Susitna River     Clearwater Plume     Clearwater Plume     1       Side Channel Complex     Run     1       Susitna River: Off-Channel     Side Slough     Glide     1       Tributary     Tributary     Glide     1       Run     2

Table F62. Juvenile sockeye salmon observations in the Lower River by habitat, 2013.

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
LR-2 65.6-87.9		Side Channel Complex	Run		1			1
LR-2 00.0-07.9		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
LR-3 44.6-65.6	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
		Tributary 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
LR-4 32.3-44.6			Glide			11		11
			Run		2			2
Grand Total				91	245	92	16	444

Table F63. Juvenile salmon (species undifferentiated) 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
		Split Main Channel	Run		1		1
LR-1 87.9-102.4	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
LR-2 65.6-87.9		Side Channel	Run	1			1
LR-2 00.0-07.9		Side Channel Complex	Run	2			2
		Split Main Channel	Run	1	2		3
	Tributary	Tributary	Glide	1			1
LR-3 44.6-65.6	Susitna River	Multi Split Main Channel	Run		1		1
LK-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
<u> </u>			Run		2		2
Ī	Tributary	Tributary	Glide		10		10
Grand Total				11	22	25	58

Table F64. Arctic grayling (all life stages) observations in the Lower River by habitat, 2013.

Arctic grayling

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	Susitna River: Off-Channel	Side Slough	Pool		1		1
LR-1 87.9-102.4			Riffle			1	1
LR-1 07.9-102.4	Tributary	Tributary	Alcove	4			4
			Glide		2		2
	Susitna River	Clearwater Plume	Clearwater Plume			3	3
LR-2 65.6-87.9		Multi Split Main Channel	Run			1	1
LK-2 00.0-07.9		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	Tributary Mouth	Run			1	1
	Susitna River	Main Channel	Run			1	1
LR-4 32.3-44.6		Side Channel	Glide		1		1
LR-4 32.3-44.0			Run			2	2
	Susitna River: Off-Channel	Side Slough	Run			1	1
Grand Total				7	5	24	36

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
LR-2 03.0-07.9		Side Channel Complex	Glide			1	1
	Susitna River	Clearwater Plume	Clearwater Plume			3	3
LR-3 44.6-65.6		Side Channel	Glide	2	1		3
LK-3 44.0-03.0		Side Channel Complex	Riffle			7	7
	Tributary	Tributary 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.

Arctic grayling, juvenile or adult (190-328mm)

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
LR-3 44.6-65.6	Susitna River	Side Channel Complex	Riffle			1	1
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	Glide		1		1
Grand Total				1	1	6	8

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 habitat, 2013.

#### Burbot

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	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	Tributary 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

Table F69. Dolly Varden observations in the Lower River by habitat, 2013.

#### **Dolly Varder**

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Summer	Fall	<b>Grand Total</b>
LR-1 87.9-102.4	Susitna River	Side Channel Complex	Riffle		1		1
LK-1 07.7-102.4	Tributary	Tributary	Glide		2		2
LR-2 65.6-87.9	Susitna River	Multi Split Main Channel	Run			1	1
LK-2 05.0-07.7		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

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	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume	5		3		8
LR-1 87.9-102.4	Susitna River: Off-Channel	Side Slough	Run			1		1
LK-1 07.9-102.4	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
LR-3 44.6-65.6	Susitna River: Off-Channel	Upland Slough	Backwater Pool	5				5
LK-3 44.0-00.0			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
LD 4 22 2 44 4		Side Channel	Glide			2		2
LR-4 32.3-44.6		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

Table F71. Longnose sucker observations in the Lower River by habitat, 2013.

Longnose sucker

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
, , , , , , , , , , , , , , , , , , ,	Susitna River	Bar Island Complex	Riffle	1 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
LD 1 07 0 100 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
		Tributary 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	TributaryMouth	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
LR-3 44.6-65.6		Side Channel Complex	Glide			3	1	10
		Collinato Observal	Riffle		10		1	1
	Construe Diversion Off Observed	Split Main Channel	Run		10	15	1	11
	Susitna River: Off-Channel	Upland Slough	Glide	10	3	15	_	19
	T. 11 1	Upland Slough Beaver Complex	Beaver Pond	13		9		22
	Tributary	Tributary	Glide			2	_	2
		Tuibustoma Manuth	Run	2			2	3
	Cuaitna Divar	Tributary Mouth	Run		14		-	
	Susitna River	Clearwater Plume Main Channel	Clearwater Plume Run	10	14	6 40	-	30 64
		Multi Split Main Channel	Run		26	40	24	26
		Side Channel	Glide		20	1		1
		T.E. Gildinio	Run		1	6	4	11
		Side Channel Complex	Run		· ·		12	
LR-4 32.3-44.6	Susitna River: Off-Channel	Additional Open Water	Pool		36	3	_	39
		Side Slough	Run		147	3	_	
		Upland Slough	Backwater Pool		3			3
		. ,	Glide			112		112
			Run		2		224	226
	Tributary	Tributary	Glide	3		1		4
		Tributary Mouth	Glide				1	1
Grand Total				30	338	363	384	1,115

# 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	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume	2	1	3		6
LR-4 32.3-44.6	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.

Sculpin

Geomorphic Reach	Habitat		Mesohabitat	Spring	Early Summer	II ate Summer	II all	Grand Total
	Susitna River	Macrohabitat Bar Island Complex	Riffle	Spring	1	Late Summer	ı an	Orana rotar
i I	ousitiiu itivoi	but island complex	Run			7	47	54
<b> </b>		Clearwater Plume	Clearwater Plume	5	3	1	<u>''</u>	g
		Side Channel Complex	Riffle		12	13	11	36
<b> </b>			Run		5	3		8
		Split Main Channel	Run		4	-		4
	Susitna River: Off-Channel	Side Slough	Backwater Pool		6			6
LR-1 87.9-102.4		oldo olougii	Pool		, ,	1	8	9
			Riffle			. 8	2	10
			Run		5	1	-	6
	Tributary	Tributary	Alcove		4	•		4
			Glide	7	-	2		ç
			Run	21			4	25
		Tributary Mouth	Run				6	6
	Susitna River	Clearwater Plume	Clearwater Plume			2	69	71
ľ		Main Channel	Run				2	2
Ī		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
		Tributary 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 Split Main Channel	Run			5		5
		Side Channel	Glide		15	13		28
			Run		1			1
		Side Channel Complex	Glide			3	14	17
LR-3 44.6-65.6		Split Main Channel	Run				3	3
	Susitna River: Off-Channel	Upland Slough	Backwater Pool	3				3
			Glide		3	5	0	8
		Upland Slough Beaver Complex	Beaver Pond	1				1
	Tributary	Tributary	Glide			41		41
			Pool		1			1
			Riffle	22	12		^	12
		Tributary Mouth	Run Run	32 4			2	
	Susitna River	Tributary Mouth Clearwater Plume	Clearwater Plume	2			1	2
	Sustilla Kivei	Main Channel	Run			2	1	3
		Side Channel	Glide		1	1	<u> </u>	2
		Side Chariner	Run		'	'	1	1
LR-4 32.3-44.6	Susitna River: Off-Channel	Side Slough	Run		5		┝	5
LIX-7 32.3-44.0	Justina Kiver. On-Chaillel	Upland Slough	Backwater Pool		17			17
<b> </b>		opiana sibagn	Glide		17	9	-	9
<b> </b>			Run		10	7	1	11
<b> </b>	Tributary	Tributary	Glide	2	10		<del>-</del>	3
	i i i batai y	i indutary	Ondo	149	170	264		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	<b>Grand Total</b>
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

Table F75. Threespine stickleback observations in the Lower River by habitat, 2013.

### Stickleback, threespine

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
		Tributary Mouth	Run				63	63
	Susitna River	Clearwater Plume	Clearwater Plume			5	1	6
		Side Channel	Pool				2	2
			Riffle			1		1
LR-2 65.6-87.9		Side Channel Complex	Glide				1	1
LK-2 03.0-07.7			Riffle			2		2
	Tributary	Tributary	Glide			11		11
			Run				5	5
		Tributary 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
		Tributary 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
LR-4 32.3-44.6		Side Slough	Run		3			3
LR-4 32.3-44.6		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 F76. Rainbow trout observations in the Lower River by habitat, 2013.

#### Trout, rainbow

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume			1		1
	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
LR-3 44.6-65.6		Upland Slough Beaver Complex	Beaver Pond		13			13
LK-3 44.0-03.0	Tributary	Tributary	Pool		1			1
			Run	2			1	3
LR-4 32.3-44.6	Susitna River: Off-Channel	Upland Slough	Backwater Pool		4			4
LR-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	<b>Grand Total</b>
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	<b>Grand Total</b>
LR-4 32.3-44.6	Susitna River	Side Channel Complex	Run	1	1
	Susitna River: Off-Channel	Additional Open Water	Pool	1	1
LR-4 32.3-44.0		Side Slough	Run	5	5
	Tributary	Tributary	Glide	1	1
Grand Total				8	8

Table F79. Round whitefish observations in the Lower River by habitat, 2013.

### Whitefish, round

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Spring	Early Summer	Late Summer	Fall	<b>Grand Total</b>
	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
		Side Channel	Riffle			1		1
LR-2 65.6-87.9			Run		1			1
LK-2 65.6-87.9		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 F80. Whitefish (species undifferentiated) observations in the Lower River by habitat, 2013.

# Whitefish, undifferentiated

Geomorphic Reach	Habitat	Macrohabitat	Mesohabitat	Early Summer	Late Sumr	Fall	<b>Grand Total</b>
	Susitna River	Clearwater Plume	Clearwater Plume	3			3
LR-1 87.9-102.4		Side Channel Complex	Run	2			2
LR-1 07.9-102.4		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
LR-2 05.0-01.9		Multi Split Main Channel	Run	2			2
	Susitna River	Clearwater Plume	Clearwater Plume	1			1
LR-3 44.6-65.6		Side Channel	Glide	1	3		4
LK-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
LR-4 32.3-44.6	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