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APPENDIX A: ADDITIONAL TABLES

Susitna-Watana Hydroelectric Project (FERC No. 14241)

River Productivity Study Study Plan Section 9.8

2014 Study Implementation Report

Appendix A Additional Tables

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

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October 2015

Table A5.1-1. Mean density and taxonomic richness values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Density (sq m)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Mayfly (E) Taxa Mean (Total)	Stonefly (P) Taxa Mean (Total)	Caddisfly (T) Taxa Mean (Total)	Chironomid Taxa Mean (Total)	H'	J'
Spr	RP-184-1	5	TM	5,725.94	24.2 (44)	5.2 (12)	3.4 (6)	1.4 (4)	0.4 (2)	15.2 (26)	2.35	0.74
Spr	RP-184-2	0	SC	—	—	—	—	—	—	—	—	—
Spr	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—
Sum	RP-184-1	2	TM	4,882.15	21 (30)	5 (7)	2.5 (4)	2.5 (3)	0 (0)	11 (17)	1.48	0.48
Sum	RP-184-2	1	SC	140.09	6 (6)	1 (1)	0 (0)	1 (1)	0 (0)	3 (3)	1.52	0.85
Sum	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—
Fall	RP-184-1	3	TM	3,275.79	25 (43)	6.33 (8)	1.67 (2)	4 (5)	0.67 (1)	15.33 (28)	1.73	0.54
Fall	RP-184-2	0	SC	—	—	—	—	—	—	—	—	—
Fall	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—

Table A5.1-2. Mean taxonomic composition metric values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Non-insect	EPT:Chiro Ratio	Percent Top Taxon	Percent Top 3 Taxa
Spr	RP-184-1	5	TM	6.13	1.72	0.28	81.59	7.59	0.00	2.68	0.09	30.89	58.05
Spr	RP-184-2	0	SC	—	—	—	—	—	—	—	—	—	—
Spr	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—	—
Sum	RP-184-1	2	TM	1.63	3.53	0.00	27.61	65.93	0.00	1.30	0.19	63.16	80.22
Sum	RP-184-2	1	SC	0.00	38.46	0.00	23.08	38.46	0.00	0.00	0.63	38.46	76.92
Sum	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—	—
Fall	RP-184-1	3	TM	0.94	55.17	0.22	23.72	18.71	0.00	1.25	0.71	52.32	75.33
Fall	RP-184-2	0	SC	—	—	—	—	—	—	—	—	—	—
Fall	RP-184-3	0	MC	—	—	—	—	—	—	—	—	—	—

Table A5.1-3. Mean functional feeding group composition metric values (LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Collector Gatherers	Percent Collector Filterers	Percent Scrapers	Percent Shredders	Percent Predators	Percent Parasites	Percent Other FFGs
Spr	RP-184-1	5	TM	82.83	10.05	0.79	2.44	3.90	0.00	0.00
Spr	RP-184-2	0	SC	—	—	—	—	—	—	—
Spr	RP-184-3	0	MC	—	—	—	—	—	—	—
Sum	RP-184-1	2	TM	25.46	67.72	0.17	3.96	2.68	0.00	0.00
Sum	RP-184-2	1	SC	23.08	38.46	0.00	38.46	0.00	0.00	0.00
Sum	RP-184-3	0	MC	—	—	—	—	—	—	—
Fall	RP-184-1	3	TM	18.84	20.31	0.72	59.26	0.69	0.09	0.09
Fall	RP-184-2	0	SC	—	—	—	—	—	—	—
Fall	RP-184-3	0	MC	—	—	—	—	—	—	—

Table A5.1-4. Mean density and taxonomic richness values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-173 (Stephan Lake Complex) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Density (sq m)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Mayfly (E) Taxa Mean (Total)	Stonefly (P) Taxa Mean (Total)	Caddisfly (T) Taxa Mean (Total)	Chironomid Taxa Mean (Total)	H'	J'
Spr	RP-173-1	2	TM	1,386.59	18 (26)	4 (5)	3 (3)	1 (2)	0 (0)	10.5 (15)	2.17	0.75
Spr	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—
Spr	RP-173-3	0	SC	—	—	—	—	—	—	—	—	—
Spr	RP-173-4	1	SS	523.50	13 (13)	1 (1)	1 (1)	0 (0)	0 (0)	8 (8)	2.01	0.79
Sum	RP-173-1	3	TM	192.08	6.67 (13)	0 (0)	0 (0)	0 (0)	0 (0)	4 (7)	1.64	0.88
Sum	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—
Sum	RP-173-3	3	SC	588.16	15.33 (29)	0.33 (1)	0 (0)	0.33 (1)	0 (0)	12 (21)	2.07	0.76
Sum	RP-173-4	2	SS	6,538.68	17 (25)	1 (2)	0.5 (1)	0.5 (1)	0 (0)	11.5 (16)	1.74	0.62
Fall	RP-173-1	1	TM	112.18	5 (5)	0 (0)	0 (0)	0 (0)	0 (0)	3 (3)	1.48	0.92
Fall	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—
Fall	RP-173-3	0	SC	—	—	—	—	—	—	—	—	—
Fall	RP-173-4	5	SS	1,583.41	14 (36)	1 (3)	0 (0)	0.8 (2)	0.2 (1)	11.2 (26)	1.75	0.67

Table A5.1-5. Mean taxonomic composition metric values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-173 (Stephan Lake Complex) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Non-insect	EPT:Chiro Ratio	Percent Top Taxon	Percent Top 3 Taxa
Spr	RP-173-1	2	TM	41.32	1.03	0.00	47.16	7.57	0.00	2.93	0.47	38.72	59.64
Spr	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—	—
Spr	RP-173-3	0	SC	—	—	—	—	—	—	—	—	—	—
Spr	RP-173-4	1	SS	2.04	0.00	0.00	83.67	0.00	0.00	14.29	0.02	42.86	61.22
Sum	RP-173-1	3	TM	0.00	0.00	0.00	51.65	20.22	0.00	28.13	0.00	32.28	68.10
Sum	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—	—
Sum	RP-173-3	3	SC	0.00	0.83	0.00	93.26	0.98	0.43	4.50	0.01	37.06	57.73
Sum	RP-173-4	2	SS	0.38	0.38	0.00	90.96	1.52	0.00	6.76	0.01	48.63	76.22
Fall	RP-173-1	1	TM	0.00	0.00	0.00	71.43	14.29	0.00	14.29	0.00	42.86	71.43
Fall	RP-173-2	0	MC	—	—	—	—	—	—	—	—	—	—
Fall	RP-173-3	0	SC	—	—	—	—	—	—	—	—	—	—
Fall	RP-173-4	5	SS	0.00	0.89	1.21	91.64	1.12	0.00	5.14	0.02	45.90	71.69

Table A5.1-6. Mean functional feeding group composition metric values (LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-173 (Stephan Lake Complex) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Collector Gatherers	Percent Collector Filterers	Percent Scrapers	Percent Shredders	Percent Predators	Percent Parasites	Percent Other FFGs
Spr	RP-173-1	2	TM	86.91	7.57	1.73	1.03	1.73	1.03	0.00
Spr	RP-173-2	0	MC	—	—	—	—	—	—	—
Spr	RP-173-3	0	SC	—	—	—	—	—	—	—
Spr	RP-173-4	1	SS	36.73	0.00	42.86	10.20	10.20	0.00	0.00
Sum	RP-173-1	3	TM	49.99	24.21	0.00	0.00	10.19	3.10	12.51
Sum	RP-173-2	0	MC	—	—	—	—	—	—	—
Sum	RP-173-3	3	SC	75.76	0.00	4.63	10.47	7.87	0.43	0.83
Sum	RP-173-4	2	SS	81.99	0.38	4.17	9.35	2.69	0.16	1.26
Fall	RP-173-1	1	TM	85.71	14.29	0.00	0.00	0.00	0.00	0.00
Fall	RP-173-2	0	MC	—	—	—	—	—	—	—
Fall	RP-173-3	0	SC	—	—	—	—	—	—	—
Fall	RP-173-4	5	SS	55.13	4.51	1.12	35.11	2.46	0.22	1.44

Table A5.1-7. Mean density and taxonomic richness values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Density (sq m)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Mayfly (E) Taxa Mean (Total)	Stonefly (P) Taxa Mean (Total)	Caddisfly (T) Taxa Mean (Total)	Chironomid Taxa Mean (Total)	H'	J'
Spr	RP-141-1	3	TM	11,748.28	20 (33)	3 (7)	2 (4)	0.33 (1)	0.67 (2)	13.67 (19)	2.13	0.72
Spr	RP-141-2	0	SC	—	—	—	—	—	—	—	—	—
Spr	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—
Spr	RP-141-4	3	US	486.57	19 (47)	2.67 (7)	1.33 (4)	0.67 (2)	0.67 (1)	12.33 (30)	2.39	0.83
Sum	RP-141-1	5	TM	10,029.31	19.2 (34)	4.8 (11)	3 (5)	1.2 (3)	0.6 (3)	9.8 (17)	1.97	0.67
Sum	RP-141-2	5	SC	891.39	14.8 (38)	3.4 (7)	0.8 (2)	1.6 (3)	1 (2)	7.8 (23)	2.04	0.82
Sum	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—
Sum	RP-141-4	4	US	1,487.65	13.5 (34)	2 (6)	0.5 (2)	1 (3)	0.5 (1)	8 (20)	1.93	0.74
Fall	RP-141-1	5	TM	1,831.63	18.6 (45)	4 (12)	1.6 (3)	1.2 (5)	1.2 (4)	11.4 (23)	2.04	0.75
Fall	RP-141-2	1	SC	898.76	17 (17)	2 (2)	0 (0)	1 (1)	1 (1)	12 (12)	1.90	0.67
Fall	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—
Fall	RP-141-4	5	US	1,956.29	16.2 (38)	0.8 (2)	0 (0)	0 (0)	0.8 (2)	11.4 (27)	1.79	0.67

Table A5.1-8. Mean taxonomic composition metric values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Non-insect	EPT:Chiro Ratio	Percent Top Taxon	Percent Top 3 Taxa
Spr	RP-141-1	3	TM	8.69	0.32	0.31	85.36	2.02	0.00	3.30	0.10	33.65	63.89
Spr	RP-141-2	0	SC	—	—	—	—	—	—	—	—	—	—
Spr	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—	—
Spr	RP-141-4	3	US	6.06	2.03	3.82	62.64	0.41	0.00	25.04	0.22	25.42	53.54
Sum	RP-141-1	5	TM	4.72	2.16	0.17	53.39	37.92	0.00	1.63	0.12	40.65	69.93
Sum	RP-141-2	5	SC	1.89	12.02	7.88	63.75	5.54	0.00	8.92	0.26	32.14	60.01
Sum	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—	—
Sum	RP-141-4	4	US	2.27	9.60	3.00	51.23	4.84	0.00	29.07	0.18	39.12	63.60
Fall	RP-141-1	5	TM	6.09	4.43	1.22	75.92	5.31	0.00	7.04	0.14	40.19	64.94
Fall	RP-141-2	1	SC	0.00	15.86	22.76	58.62	0.00	0.00	2.76	0.40	29.66	71.03
Fall	RP-141-3	0	MC	—	—	—	—	—	—	—	—	—	—
Fall	RP-141-4	5	US	0.00	0.00	0.61	73.21	0.19	0.19	25.79	0.01	41.29	73.07

Table A5.1-9. Mean functional feeding group composition metric values (LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Collector Gatherers	Percent Collector Filterers	Percent Scrapers	Percent Shredders	Percent Predators	Percent Parasites	Percent Other FFGs
Spr	RP-141-1	3	TM	91.95	1.91	0.32	0.41	5.30	0.11	0.00
Spr	RP-141-2	0	SC	—	—	—	—	—	—	—
Spr	RP-141-3	0	MC	—	—	—	—	—	—	—
Spr	RP-141-4	3	US	69.36	1.63	2.35	10.24	12.60	3.82	0.00
Sum	RP-141-1	5	TM	54.15	37.98	3.37	2.01	1.86	0.64	0.00
Sum	RP-141-2	5	SC	62.07	2.33	0.14	28.07	7.39	0.00	0.00
Sum	RP-141-3	0	MC	—	—	—	—	—	—	—
Sum	RP-141-4	4	US	68.36	0.54	3.94	17.78	8.82	0.54	0.00
Fall	RP-141-1	5	TM	48.14	7.28	1.28	36.40	6.90	0.00	0.00
Fall	RP-141-2	1	SC	8.97	0.00	0.00	87.59	3.45	0.00	0.00
Fall	RP-141-3	0	MC	—	—	—	—	—	—	—
Fall	RP-141-4	5	US	71.27	0.06	0.00	21.74	1.16	1.07	4.71

Table A5.1-10. Mean density and taxonomic richness values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Density (sq m)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Mayfly (E) Taxa Mean (Total)	Stonefly (P) Taxa Mean (Total)	Caddisfly (T) Taxa Mean (Total)	Chironomid Taxa Mean (Total)	H'	J'
Spr	RP-104-1	2	TM	789.83	27.5 (42)	4 (6)	0.5 (1)	1 (1)	2.5 (4)	17 (26)	2.55	0.77
Spr	RP-104-2	3	SS	480.75	11.67 (24)	2 (4)	1.33 (2)	0.67 (2)	0 (0)	7.33 (15)	1.52	0.54
Spr	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—
Spr	RP-104-4	5	US	2,300.60	30.4 (66)	3.8 (12)	1.6 (4)	0.8 (4)	1.4 (4)	21.4 (40)	2.69	0.79
Spr	RP-104-5	2	SC	2,621.75	24.5 (34)	5 (7)	3.5 (4)	1.5 (3)	0 (0)	16 (22)	2.11	0.66
Sum	RP-104-1	5	TM	4,457.97	23.4 (49)	1 (4)	0.4 (2)	0.2 (1)	0.4 (1)	17 (32)	2.30	0.73
Sum	RP-104-2	5	SS	1,700.85	13.4 (30)	0.2 (1)	0 (0)	0 (0)	0.2 (1)	10.8 (23)	1.82	0.71
Sum	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—
Sum	RP-104-4	5	US	760.66	13.6 (32)	0.8 (3)	0.4 (2)	0 (0)	0.4 (1)	7.8 (18)	1.82	0.72
Sum	RP-104-5	0	SC	—	—	—	—	—	—	—	—	—
Post-Storm	RP-104-2	5	SS	1,287.70	18.4 (40)	2.6 (5)	0.8 (2)	0.8 (1)	1 (2)	12.6 (25)	2.08	0.71
Fall	RP-104-1	5	TM	4,766.80	20.2 (49)	1.8 (6)	0.4 (2)	0.2 (1)	1.2 (3)	14.4 (31)	2.11	0.71
Fall	RP-104-2	5	SS	3,184.20	25.4 (50)	2 (4)	0.6 (2)	0.4 (1)	1 (1)	20 (35)	2.41	0.74
Fall	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—
Fall	RP-104-4	3	US	1,132.42	12.67 (29)	0.33 (1)	0 (0)	0.33 (1)	0 (0)	8.67 (19)	1.43	0.62
Fall	RP-104-5	5	SC	2,418.68	12 (26)	2.6 (5)	0.6 (2)	1 (2)	1 (1)	8.8 (18)	1.23	0.50

Table A5.1-11. Mean taxonomic composition metric values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Non-insect	EPT:Chiro Ratio	Percent Top Taxon	Percent Top 3 Taxa
Spr	RP-104-1	2	TM	0.15	1.36	4.86	84.25	0.30	0.00	9.07	0.07	25.69	52.22
Spr	RP-104-2	3	SS	22.76	1.28	0.00	39.53	0.00	0.00	36.43	0.25	54.06	67.84
Spr	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—	—
Spr	RP-104-4	5	US	2.42	0.34	3.28	68.69	1.08	0.06	24.12	0.08	22.03	48.17
Spr	RP-104-5	2	SC	20.60	0.44	0.00	50.78	27.60	0.00	0.59	0.29	34.58	64.41
Sum	RP-104-1	5	TM	0.14	0.07	0.35	90.16	1.12	0.00	8.17	0.01	33.82	54.80
Sum	RP-104-2	5	SS	0.00	0.00	0.43	63.35	0.43	0.00	35.78	0.01	36.20	75.06
Sum	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—	—
Sum	RP-104-4	5	US	0.42	0.00	0.81	34.91	32.35	0.07	31.45	0.05	36.90	72.59
Sum	RP-104-5	0	SC	—	—	—	—	—	—	—	—	—	—
Post-Storm	RP-104-2	5	SS	1.00	1.01	1.90	67.88	0.71	0.00	27.51	0.05	38.72	65.60
Fall	RP-104-1	5	TM	0.13	0.54	7.93	81.84	1.08	0.00	8.48	0.09	27.31	61.14
Fall	RP-104-2	5	SS	0.41	0.63	1.15	79.56	0.09	0.00	17.96	0.03	24.69	54.65
Fall	RP-104-3	0	MC	—	—	—	—	—	—	—	—	—	—
Fall	RP-104-4	3	US	0.00	4.17	0.00	41.46	5.05	0.00	49.33	0.05	55.74	73.54
Fall	RP-104-5	5	SC	1.18	1.68	5.48	90.76	0.06	0.00	0.85	0.08	57.45	88.57

Table A5.1-12. Mean functional feeding group composition metric values (LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Collector Gatherers	Percent Collector Filterers	Percent Scrapers	Percent Shredders	Percent Predators	Percent Parasites	Percent Other FFGs
Spr	RP-104-1	2	TM	36.08	27.65	3.09	7.27	18.36	0.00	7.55
Spr	RP-104-2	3	SS	90.17	0.00	0.00	7.91	1.50	0.43	0.00
Spr	RP-104-3	0	MC	—	—	—	—	—	—	—
Spr	RP-104-4	5	US	81.65	0.87	1.90	11.85	2.06	0.44	1.23
Spr	RP-104-5	2	SC	69.92	27.60	0.14	1.90	0.44	0.00	0.00
Sum	RP-104-1	5	TM	53.98	7.27	15.17	3.41	15.29	1.47	3.40
Sum	RP-104-2	5	SS	71.52	0.10	0.51	22.87	1.76	0.43	2.81
Sum	RP-104-3	0	MC	—	—	—	—	—	—	—
Sum	RP-104-4	5	US	92.92	2.41	3.79	0.34	0.55	0.00	0.00
Sum	RP-104-5	0	SC	—	—	—	—	—	—	—
Post-Storm	RP-104-2	5	SS	78.70	4.08	2.51	8.21	6.15	0.18	0.16
Fall	RP-104-1	5	TM	51.42	14.20	3.19	16.85	12.75	1.48	0.10
Fall	RP-104-2	5	SS	72.09	8.30	0.17	15.23	4.21	0.00	0.00
Fall	RP-104-3	0	MC	—	—	—	—	—	—	—
Fall	RP-104-4	3	US	82.92	0.47	0.21	10.32	1.40	0.52	4.17
Fall	RP-104-5	5	SC	9.35	0.80	0.41	88.74	0.69	0.00	0.00

Table A5.1-13. Mean density and taxonomic richness values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Density (sq m)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Mayfly (E) Taxa Mean (Total)	Stonefly (P) Taxa Mean (Total)	Caddisfly (T) Taxa Mean (Total)	Chironomid Taxa Mean (Total)	H'	J'
Spr	RP-81-1	5	US	1,253.92	19.8 (37)	0.2 (1)	0.2 (1)	0 (0)	0 (0)	16.2 (31)	2.37	0.79
Spr	RP-81-2	5	TM	5,034.90	22.8 (44)	4.8 (9)	4 (6)	0.4 (1)	0.4 (2)	14.6 (29)	2.26	0.73
Spr	RP-81-3	0	MC	—	—	—	—	—	—	—	—	—
Spr	RP-81-4	5	SC	1,025.63	20.2 (44)	4.2 (9)	2.6 (4)	1.2 (3)	0.4 (2)	12.4 (28)	2.22	0.76
Sum	RP-81-1	2	US	-	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0.00	0.00
Sum	RP-81-2	5	TM	5,561.30	19.75 (45)	3.5 (11)	2 (7)	1.25 (3)	0.25 (1)	13.25 (26)	1.95	0.66
Sum	RP-81-3	2	MC	123.97	5.5 (11)	2 (4)	0.5 (1)	1 (2)	0.5 (1)	3.5 (7)	1.34	0.88
Sum	RP-81-4	5	SC	2,249.63	13 (30)	4.8 (12)	3 (6)	1.6 (5)	0.2 (1)	7.2 (15)	1.97	0.82
Fall	RP-81-1	5	US	179.69	6.8 (20)	1.2 (5)	0.4 (2)	0.4 (2)	0.4 (1)	3.2 (10)	1.59	0.87
Fall	RP-81-2	5	TM	557.94	11.8 (30)	1.6 (5)	0.2 (1)	1 (3)	0.4 (1)	8 (18)	1.86	0.81
Fall	RP-81-3	2	MC	63.38	3 (5)	1.5 (2)	0 (0)	1.5 (2)	0 (0)	1.5 (3)	0.78	0.71
Fall	RP-81-4	5	SC	390.73	8.2 (22)	4.2 (8)	1 (2)	2.6 (5)	0.6 (1)	3.4 (12)	1.64	0.82

Table A5.1-14. Mean taxonomic composition metric values from LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Non-insect	EPT:Chiro Ratio	Percent Top Taxon	Percent Top 3 Taxa
Spr	RP-81-1	5	US	0.26	0.00	0.00	83.69	0.45	0.00	15.60	0.00	27.06	54.82
Spr	RP-81-2	5	TM	17.92	0.88	0.18	60.75	16.33	0.00	3.93	0.25	35.01	59.24
Spr	RP-81-3	0	MC	—	—	—	—	—	—	—	—	—	—
Spr	RP-81-4	5	SC	24.03	4.70	0.13	37.48	27.13	0.00	6.52	0.45	32.87	58.98
Sum	RP-81-1	2	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	RP-81-2	5	TM	2.26	1.06	0.08	64.28	22.34	0.00	9.98	0.06	43.85	67.84
Sum	RP-81-3	2	MC	1.52	4.55	4.55	89.39	0.00	0.00	0.00	0.11	39.39	89.39
Sum	RP-81-4	5	SC	21.36	28.56	0.29	45.15	4.48	0.00	0.16	0.53	33.92	64.77
Fall	RP-81-1	5	US	2.61	2.86	2.35	48.72	2.61	0.00	40.86	0.13	42.33	72.21
Fall	RP-81-2	5	TM	0.99	4.42	14.30	55.75	3.64	0.00	20.90	0.21	36.10	68.02
Fall	RP-81-3	2	MC	0.00	78.57	0.00	21.43	0.00	0.00	0.00	0.79	71.43	92.86
Fall	RP-81-4	5	SC	24.02	36.87	10.83	26.89	0.00	0.00	1.40	0.73	36.68	77.48

Table A5.1-15. Mean functional feeding group composition metric values (LWD (Snag) samples collected in 2013 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Event	Site	Number of Replicates	Macro-habitat Type	Percent Collector Gatherers	Percent Collector Filterers	Percent Scrapers	Percent Shredders	Percent Predators	Percent Parasites	Percent Other FFGs
Spr	RP-81-1	5	US	81.15	2.77	0.35	9.38	4.56	1.79	0.00
Spr	RP-81-2	5	TM	74.94	16.95	0.33	1.73	5.18	0.00	0.87
Spr	RP-81-3	0	MC	—	—	—	—	—	—	—
Spr	RP-81-4	5	SC	56.29	28.08	1.44	3.59	10.61	0.00	0.00
Sum	RP-81-1	2	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	RP-81-2	5	TM	68.38	23.55	0.64	4.88	1.66	0.53	0.35
Sum	RP-81-3	2	MC	75.76	0.00	0.00	19.70	4.55	0.00	0.00
Sum	RP-81-4	5	SC	55.42	4.18	3.31	13.62	23.47	0.00	0.00
Fall	RP-81-1	5	US	44.89	6.28	20.95	11.60	16.28	0.00	0.00
Fall	RP-81-2	5	TM	42.73	6.62	1.84	40.37	8.44	0.00	0.00
Fall	RP-81-3	2	MC	21.43	0.00	0.00	78.57	0.00	0.00	0.00
Fall	RP-81-4	5	SC	33.82	0.00	0.00	61.71	4.46	0.00	0.00

Table A5.2-1. Mean drift density and taxonomic richness values from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Drift Density (#/ft ³)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Chironomid Taxa Mean (Total)	Zooplankton Taxa Mean (Total)	Other Non-Insect Taxa Mean (Total)	Diversity (H')	Evenness (J')
Spr	RP-184-1	TM	Drift Net	2.242	55 (73)	6 (8)	33 (42)	1.5 (2)	4 (6)	3.35	0.84
Spr	RP-184-2	SC	Drift Net	1.089	33.5 (46)	3 (5)	23 (31)	0.5 (1)	2.5 (4)	2.98	0.85
Spr	RP-184-3	MC	Drift Net	0.122	29.5 (43)	2.5 (4)	20 (28)	1.5 (2)	2.5 (4)	2.89	0.86
Spr	RP-184-4	MC/TM	Drift Net	0.568	26 (35)	1.5 (3)	20 (25)	0.5 (1)	1.5 (2)	2.66	0.83
Sum	RP-184-1	TM	Drift Net	0.883	33 (45)	6.5 (8)	15.5 (19)	0 (0)	3.5 (5)	2.30	0.66
Sum	RP-184-2	SC	Drift Net	0.048	27.5 (39)	5.5 (8)	13 (17)	0.5 (1)	5 (7)	2.50	0.76
Sum	RP-184-3	MC	Drift Net	0.126	45 (62)	8 (11)	16.5 (24)	5.5 (7)	3.5 (6)	3.01	0.79
Sum	RP-184-4	MC/TM	Drift Net	0.219	42.5 (58)	7 (9)	13.5 (19)	6 (9)	6 (7)	3.03	0.81
Fall	RP-184-1	TM	Drift Net	1.840	18 (30)	4.5 (7)	6 (11)	2.5 (4)	2.5 (5)	1.17	0.42
Fall	RP-184-2	SC	Drift Net	1.318	29.5 (40)	6 (8)	6.5 (9)	11.5 (14)	3 (5)	2.26	0.67
Fall	RP-184-3	MC	Drift Net	0.642	33.5 (48)	4.5 (6)	12 (19)	10.5 (12)	3 (5)	2.59	0.74
Fall	RP-184-4	MC/TM	Drift Net	0.493	38.5 (55)	5 (6)	12.5 (20)	9 (11)	6.5 (9)	2.76	0.76

Table A5.2-2. Mean taxonomic composition metric values (n=5) from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within the FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other insects	Percent Zoo-plankton	Percent Other Non-insects	EPT:Chiro Ratio	Percent Top 3 Taxa
Spr	RP-184-1	TM	Drift Net	9.12	2.12	0.15	74.48	2.13	5.01	0.91	6.07	0.13	32.33
Spr	RP-184-2	SC	Drift Net	1.93	0.30	0.00	82.93	8.76	1.93	1.18	2.97	0.03	35.69
Spr	RP-184-3	MC	Drift Net	2.24	1.46	0.00	81.44	7.99	1.02	2.92	2.92	0.04	40.93
Spr	RP-184-4	MC/TM	Drift Net	0.66	1.64	0.00	84.85	9.59	0.81	0.33	2.12	0.03	47.76
Sum	RP-184-1	TM	Drift Net	2.44	5.68	0.15	83.88	2.31	1.16	0.00	4.37	0.09	60.07
Sum	RP-184-2	SC	Drift Net	4.14	7.65	1.36	64.88	1.60	3.71	1.83	14.84	0.17	54.38
Sum	RP-184-3	MC	Drift Net	3.27	10.77	0.77	50.58	6.35	5.58	10.19	12.50	0.23	43.55
Sum	RP-184-4	MC/TM	Drift Net	2.46	12.16	0.18	45.67	4.26	6.31	13.26	15.70	0.25	42.23
Fall	RP-184-1	TM	Drift Net	4.59	0.93	0.46	17.47	73.90	0.31	1.07	1.26	0.27	84.69
Fall	RP-184-2	SC	Drift Net	1.93	6.95	0.79	9.94	39.28	0.17	37.20	3.74	0.50	61.45
Fall	RP-184-3	MC	Drift Net	0.71	8.13	0.47	17.05	25.65	0.31	39.01	8.67	0.35	51.78
Fall	RP-184-4	MC/TM	Drift Net	1.20	5.69	0.63	18.16	28.48	0.44	32.76	12.64	0.29	47.93

Table A5.2-3. Mean drift density and taxonomic richness values from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-173 (Stephan Lake Complex) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Drift Density (#/ft ³)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Chironomid Taxa Mean (Total)	Zooplankton Taxa Mean (Total)	Other Non-Insect Taxa Mean (Total)	Diversity (H')	Evenness (J')
Spr	RP-173-1	TM	Drift Net	0.363	40.5 (53)	3 (5)	23 (27)	0 (0)	6 (8)	3.13	0.85
Spr	RP-173-2	MC	Drift Net	0.254	44.5 (62)	4.5 (7)	28.5 (37)	1 (1)	1.5 (3)	3.33	0.88
Spr	RP-173-3	SC	Drift Net	0.498	30 (40)	1.5 (2)	12 (17)	1 (1)	2.5 (3)	2.66	0.78
Spr	RP-173-4	SS	Plankton Tow	0.948	4.8 (12)	0 (0)	3.2 (7)	0.2 (1)	0.6 (2)	1.37	0.88
Spr	RP-173-5	US	Drift Net	0.877	29 (37)	0 (0)	12.5 (15)	3.5 (4)	3 (4)	2.57	0.76
Sum	RP-173-1	TM	Drift Net	0.143	49.5 (70)	6.5 (9)	18 (23)	1.5 (3)	6.5 (9)	3.24	0.83
Sum	RP-173-2	MC	Drift Net	0.138	47.5 (69)	7 (10)	19 (26)	6 (8)	5.5 (9)	3.14	0.82
Sum	RP-173-3	SC	Drift Net	0.297	44 (57)	9.5 (11)	14 (19)	0 (0)	3.5 (5)	3.01	0.79
Sum	RP-173-4	SS	Plankton Tow	0.793	3.8 (14)	0 (0)	3 (11)	0 (0)	0.2 (1)	0.98	0.83
Sum	RP-173-5	US	Drift Net	0.551	22 (31)	0.5 (1)	16 (21)	0 (0)	3 (5)	1.66	0.54
Fall	RP-173-1	TM	Drift Net	0.769	26.5 (36)	6 (7)	9.5 (13)	2 (3)	7 (10)	2.11	0.64
Fall	RP-173-2	MC	Drift Net	0.471	36.5 (46)	5 (6)	13.5 (17)	10.5 (13)	4.5 (6)	2.67	0.74
Fall	RP-173-3	SC	Plankton Tow	4.166	8 (17)	0.4 (1)	4.4 (10)	1.4 (3)	0 (0)	1.64	0.82
Fall	RP-173-4	SS	Plankton Tow	7.811	13.6 (26)	0.4 (2)	8 (15)	1.2 (2)	0.2 (1)	1.77	0.68
Fall	RP-173-5	US	Plankton Tow	78.30	16 (31)	0 (0)	9.8 (18)	1.8 (5)	1.6 (3)	2.08	0.76

Table A5.2-4. Mean taxonomic composition metric values (n=5) from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-173 (Stephan Lake Complex) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other insects	Percent Zoo-plankton	Percent Other Non-insects	EPT:Chiro Ratio	Percent Top 3 Taxa
Spr	RP-173-1	TM	Drift Net	4.53	0.14	0.00	73.01	7.50	3.69	0.00	11.13	0.06	33.18
Spr	RP-173-2	MC	Drift Net	3.02	1.14	0.35	78.64	10.98	3.81	1.27	0.79	0.05	28.20
Spr	RP-173-3	SC	Drift Net	10.14	0.00	0.00	59.24	13.61	5.17	10.11	1.73	0.14	42.82
Spr	RP-173-4	SS	Plankton Tow	0.00	0.00	0.00	73.71	11.05	0.00	1.43	13.81	0.00	82.18
Spr	RP-173-5	US	Drift Net	0.00	0.00	0.00	66.64	9.76	4.53	12.78	6.30	0.00	49.78
Sum	RP-173-1	TM	Drift Net	3.32	0.90	0.75	60.27	6.20	14.02	0.45	14.08	0.08	33.26
Sum	RP-173-2	MC	Drift Net	3.78	19.20	0.37	48.97	3.66	6.38	7.28	10.35	0.32	39.95
Sum	RP-173-3	SC	Drift Net	5.46	10.89	0.32	57.45	4.81	19.17	0.00	1.90	0.23	39.69
Sum	RP-173-4	SS	Plankton Tow	0.00	0.00	0.00	71.43	25.71	0.00	0.00	2.86	0.00	89.17
Sum	RP-173-5	US	Drift Net	0.37	0.00	0.00	96.43	0.76	0.61	0.00	1.83	0.00	78.32
Fall	RP-173-1	TM	Drift Net	37.34	3.05	1.07	28.18	11.89	0.00	3.06	15.41	0.60	67.46
Fall	RP-173-2	MC	Drift Net	2.64	11.08	2.00	14.89	27.78	0.47	34.04	7.10	0.51	49.63
Fall	RP-173-3	SC	Plankton Tow	0.00	0.54	0.00	56.57	4.57	25.67	12.65	0.00	0.01	76.16
Fall	RP-173-4	SS	Plankton Tow	0.31	0.00	0.50	34.90	49.73	10.95	3.31	0.31	0.02	70.71
Fall	RP-173-5	US	Plankton Tow	0.00	0.00	0.00	47.10	26.08	8.37	4.24	14.21	0.00	63.20

Table A5.2-5. Mean drift density and taxonomic richness values from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Drift Density (#/ft ³)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Chironomid Taxa Mean (Total)	Zooplankton Taxa Mean (Total)	Other Non-Insect Taxa Mean (Total)	Diversity (H')	Evenness (J')
Spr	RP-141-1	TM	Drift Net	0.159	46 (61)	4.5 (5)	31 (40)	0 (0)	3 (5)	3.06	0.80
Spr	RP-141-2	SC	Drift Net	0.281	18.5 (32)	1.5 (3)	12 (19)	0.5 (1)	0.5 (1)	2.73	0.94
Spr	RP-141-3	MC	Drift Net	0.006	19.5 (29)	1 (2)	13 (17)	0 (0)	2.5 (5)	2.79	0.94
Spr	RP-141-4	US	Plankton Tow	3.037	9.8 (26)	0.4 (2)	6.2 (16)	1.2 (4)	1.2 (3)	1.68	0.81
Spr	RP-141-5	MC/TM	Drift Net	0.150	32 (48)	4 (6)	19.5 (27)	0 (0)	2 (4)	2.97	0.86
Sum	RP-141-1	TM	Drift Net	0.193	53.5 (70)	10 (13)	23 (27)	2 (3)	7.5 (9)	3.26	0.82
Sum	RP-141-2	SC	Drift Net	1.094	36 (50)	4.5 (7)	15 (20)	2.5 (3)	4.5 (7)	3.10	0.87
Sum	RP-141-3	MC	Drift Net	0.081	41.5 (62)	7 (9)	16 (24)	3 (4)	5 (7)	2.93	0.79
Sum	RP-141-4	US	Plankton Tow	1.057	9.4 (26)	0.4 (1)	5 (13)	1 (4)	1 (2)	1.95	0.93
Sum	RP-141-5	MC/TM	Drift Net	0.073	34 (49)	6.5 (8)	14 (18)	1 (2)	3.5 (6)	2.52	0.72
Fall	RP-141-1	TM	Drift Net	0.147	47 (60)	8.5 (9)	17 (21)	6.5 (8)	7.5 (10)	3.13	0.81
Fall	RP-141-2	SC	Plankton Tow	0.662	5.2 (18)	0.4 (2)	3.6 (12)	0.8 (2)	0 (0)	1.38	0.79
Fall	RP-141-3	MC	Drift Net	0.219	38.5 (49)	5.5 (6)	17 (23)	8 (9)	5.5 (7)	2.79	0.77
Fall	RP-141-4	US	Plankton Tow	3.075	8.6 (17)	0 (0)	4.2 (9)	1.6 (3)	0.6 (2)	1.79	0.85
Fall	RP-141-5	MC/TM	Drift Net	0.371	33.5 (46)	5 (6)	13 (19)	9 (11)	3 (5)	2.35	0.67

Table A5.2-6. Mean taxonomic composition metric values (n=5) from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other insects	Percent Zoo-plankton	Percent Other Non-insects	EPT:Chiro Ratio	Percent Top 3 Taxa
Spr	RP-141-1	TM	Drift Net	11.42	0.75	1.05	75.72	5.28	3.99	0.00	1.80	0.15	37.21
Spr	RP-141-2	SC	Drift Net	4.36	0.00	0.00	76.52	8.71	6.25	2.08	2.08	0.05	38.51
Spr	RP-141-3	MC	Drift Net	1.52	1.52	0.00	75.72	9.95	1.52	0.00	9.79	0.04	35.72
Spr	RP-141-4	US	Plankton Tow	0.00	0.47	0.14	48.13	24.31	0.00	11.42	15.54	0.01	72.23
Spr	RP-141-5	MC/TM	Drift Net	1.80	8.15	0.00	77.32	5.81	4.97	0.00	1.95	0.11	37.49
Sum	RP-141-1	TM	Drift Net	4.66	3.76	2.82	66.19	4.80	7.93	1.58	8.27	0.15	37.48
Sum	RP-141-2	SC	Drift Net	1.79	6.75	3.78	56.62	3.16	8.95	3.86	15.09	0.17	35.33
Sum	RP-141-3	MC	Drift Net	2.14	9.03	1.82	59.76	7.07	5.80	3.66	10.73	0.17	45.29
Sum	RP-141-4	US	Plankton Tow	8.05	0.00	0.00	47.30	27.42	0.71	6.65	9.87	0.13	59.52
Sum	RP-141-5	MC/TM	Drift Net	1.73	2.87	3.74	75.92	3.95	7.47	0.58	3.74	0.10	59.16
Fall	RP-141-1	TM	Drift Net	15.22	6.70	18.12	23.90	10.50	4.56	5.78	15.22	0.63	38.81
Fall	RP-141-2	SC	Plankton Tow	1.33	1.33	0.00	72.36	3.26	5.71	16.00	0.00	0.04	70.61
Fall	RP-141-3	MC	Drift Net	0.99	9.52	0.66	37.78	16.91	0.16	22.00	11.99	0.24	45.99
Fall	RP-141-4	US	Plankton Tow	0.00	0.00	0.00	37.70	48.30	2.15	9.85	2.00	0.00	66.16
Fall	RP-141-5	MC/TM	Drift Net	1.12	6.00	3.50	36.73	30.52	0.31	17.12	4.70	0.22	63.23

Table A5.2-7. Mean drift density and taxonomic richness values from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Drift Density (#/ft ³)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Chironomid Taxa Mean (Total)	Zooplankton Taxa Mean (Total)	Other Non-Insect Taxa Mean (Total)	Diversity (H')	Evenness (J')
Spr	RP-104-1	TM	Drift Net	1.136	28 (38)	6 (8)	15.5 (20)	0 (0)	2 (3)	2.19	0.66
Spr	RP-104-2	SS	Plankton Tow	0.419	3.6 (12)	0 (0)	1.4 (6)	0.8 (3)	0.6 (2)	0.99	0.75
Spr	RP-104-2.1	SS/TM	Plankton Tow	1.881	8 (28)	0.6 (3)	3.6 (13)	1.4 (4)	0.8 (4)	1.48	0.67
Spr	RP-104-3	MC	Drift Net	0.048	26.5 (39)	1 (2)	20 (27)	1.5 (3)	1.5 (3)	2.88	0.89
Spr	RP-104-4 T	US	Plankton Tow	1.014	5.2 (17)	0.8 (3)	2.2 (8)	0.8 (2)	0.6 (3)	1.49	0.94
Spr	RP-104-5	SC	Drift Net	0.296	16.5 (28)	0.5 (1)	10.5 (17)	1 (2)	3 (6)	2.53	0.92
Sum	RP-104-1	TM	Plankton Tow	3.474	10.2 (28)	0.4 (2)	4.2 (12)	3.6 (7)	0.2 (1)	1.88	0.87
Sum	RP-104-2	SS	Plankton Tow	1.165	5.2 (17)	0 (0)	2.4 (8)	0.8 (4)	0.2 (1)	1.41	0.88
Sum	RP-104-2.1	SS/TM	Plankton Tow	0.392	3.2 (11)	0 (0)	1.2 (4)	0.2 (1)	0.4 (2)	0.91	0.71
Sum	RP-104-3	MC	Drift Net	0.038	30 (45)	5.5 (8)	11.5 (17)	1.5 (2)	5.5 (9)	2.85	0.84
Sum	RP-104-4 T	US	Plankton Tow	6.803	9.2 (29)	0 (0)	3.8 (14)	1.4 (5)	1.4 (5)	1.42	0.70
Sum	RP-104-5	SC	Drift Net	0.020	17.5 (27)	4 (6)	7 (11)	1 (1)	3 (5)	2.47	0.86
Fall	RP-104-1	TM	Drift Net	0.122	34 (50)	4 (6)	17.5 (25)	5.5 (7)	3 (5)	2.85	0.81
Fall	RP-104-2	SS	Plankton Tow	4.578	11.4 (36)	0.2 (1)	5.6 (17)	2 (7)	1.4 (5)	1.85	0.82
Fall	RP-104-2.1	SS/TM	Plankton Tow	—	—	—	—	—	—	—	—
Fall	RP-104-3	MC	Drift Net	0.149	26.5 (35)	5 (5)	11 (15)	6.5 (9)	1.5 (2)	1.84	0.56
Fall	RP-104-4 T	US	Plankton Tow	45.916	12.4 (29)	0.2 (1)	8.2 (18)	0.8 (2)	1 (4)	1.89	0.80
Fall	RP-104-5	SC	Drift Net	0.125	25.5 (34)	3.5 (4)	11.5 (16)	5.5 (7)	2.5 (4)	2.59	0.80

Table A5.2-8. Mean taxonomic composition metric values (n=5) from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other insects	Percent Zoo-plankton	Percent Other Non-insects	EPT:Chiro Ratio	Percent Top 3 Taxa
Spr	RP-104-1	TM	Drift Net	1.63	0.65	3.43	40.03	52.29	0.49	0.00	1.47	0.13	63.43
Spr	RP-104-2	SS	Plankton Tow	0.00	0.00	0.00	27.80	46.44	0.00	12.12	13.64	0.00	88.01
Spr	RP-104-2.1	SS/TM	Plankton Tow	1.11	1.11	0.65	20.17	51.66	1.11	16.89	7.30	0.08	74.88
Spr	RP-104-3	MC	Drift Net	1.20	0.00	0.00	80.55	10.04	3.50	2.41	2.30	0.01	40.53
Spr	RP-104-4 T	US	Plankton Tow	2.22	5.71	2.86	37.38	27.14	0.00	13.02	11.67	0.19	68.89
Spr	RP-104-5	SC	Drift Net	0.70	0.00	0.00	57.71	14.58	0.70	4.93	21.38	0.01	43.83
Sum	RP-104-1	TM	Plankton Tow	2.22	0.68	0.00	33.11	21.69	0.68	41.29	0.34	0.06	68.04
Sum	RP-104-2	SS	Plankton Tow	0.00	0.00	0.00	54.78	32.76	1.67	9.13	1.67	0.00	80.35
Sum	RP-104-2.1	SS/TM	Plankton Tow	0.00	0.00	0.00	45.39	36.83	7.22	3.33	7.22	0.00	88.06
Sum	RP-104-3	MC	Drift Net	2.61	5.42	1.31	54.11	2.11	8.53	5.42	20.48	0.15	44.87
Sum	RP-104-4 T	US	Plankton Tow	0.00	0.00	0.00	25.74	67.04	0.00	4.74	2.48	0.00	81.26
Sum	RP-104-5	SC	Drift Net	5.47	24.61	1.52	46.53	6.98	1.52	3.95	9.42	0.41	50.59
Fall	RP-104-1	TM	Drift Net	1.10	3.62	25.08	37.25	2.93	2.17	15.55	12.29	0.44	44.62
Fall	RP-104-2	SS	Plankton Tow	0.19	0.00	0.00	46.49	25.02	0.19	21.91	6.19	0.01	69.91
Fall	RP-104-2.1	SS/TM	Plankton Tow	—	—	—	—	—	—	—	—	—	—
Fall	RP-104-3	MC	Drift Net	0.97	11.41	1.60	64.93	3.03	0.17	6.20	11.69	0.18	73.70
Fall	RP-104-4 T	US	Plankton Tow	0.00	0.00	0.28	49.35	46.51	0.43	1.33	2.10	0.01	68.10
Fall	RP-104-5	SC	Drift Net	1.44	6.51	0.00	58.16	17.50	0.51	9.54	6.33	0.12	54.78

Table A5.2-9. Mean drift density and taxonomic richness values from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Drift Density (#/ft ³)	Taxa Richness Mean (Total)	EPT Taxa Mean (Total)	Chironomid Taxa Mean (Total)	Zooplankton Taxa Mean (Total)	Other Non-Insect Taxa Mean (Total)	Diversity (H')	Evenness (J')
Spr	RP-81-1	US	Plankton Tow	22.070	11.75 (26)	0 (0)	7.25 (18)	1 (2)	1.5 (3)	1.83	0.76
Spr	RP-81-2	TM	Drift Net	0.564	31.5 (44)	5.5 (8)	18 (22)	1 (2)	4 (6)	2.36	0.68
Spr	RP-81-3	MC	Drift Net	0.055	33 (49)	3.5 (5)	18 (26)	1.5 (3)	3.5 (5)	2.53	0.73
Spr	RP-81-4	SC	Drift Net	0.031	20.5 (29)	4.5 (5)	12 (18)	1 (1)	1.5 (3)	2.46	0.82
Spr	RP-81-5	SC/TM	Drift Net	0.130	33.5 (44)	3.5 (5)	16.5 (20)	2 (2)	2 (4)	1.66	0.47
Sum	RP-81-1	US	Plankton Tow	11.358	10.6 (28)	0.4 (2)	5 (12)	1.2 (3)	1.8 (6)	1.63	0.66
Sum	RP-81-2	TM	Drift Net	0.212	42.5 (58)	10 (13)	14.5 (19)	5 (6)	6 (7)	3.13	0.83
Sum	RP-81-3	MC	Drift Net	0.139	52 (74)	6.5 (8)	17.5 (24)	3 (4)	4.5 (7)	3.26	0.83
Sum	RP-81-4	SC	Drift Net	0.038	29.5 (41)	5 (7)	14 (19)	0.5 (1)	3 (4)	3.09	0.92
Sum	RP-81-5	SC/TM	Drift Net	0.020	23 (35)	5 (6)	11.5 (18)	2 (3)	2 (4)	2.79	0.89
Fall	RP-81-1	US	Plankton Tow	19.763	4.6 (16)	0 (0)	1.4 (5)	2.4 (7)	0.2 (1)	0.23	0.17
Fall	RP-81-2	TM	Drift Net	0.225	48 (68)	8 (11)	22.5 (33)	4 (5)	4.5 (6)	2.95	0.76
Fall	RP-81-3	MC	Drift Net	0.123	44 (65)	6 (8)	17 (25)	4.5 (7)	5.5 (8)	2.70	0.71
Fall	RP-81-4	SC	Drift Net	0.005	8 (14)	1 (2)	3.5 (5)	0.5 (1)	1.5 (3)	1.88	0.97
Fall	RP-81-5	SC/TM	Drift Net	0.099	33.5 (48)	2.5 (3)	14 (22)	7 (8)	2.5 (4)	2.97	0.85

Table A5.2-10. Mean taxonomic composition metric values (n=5) from drift net and plankton tow samples collected in 2014 during three sampling events (Spr= Spring, Sum=Summer, Fall) for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Event	Site	Macro-habitat Type	Sampling Device	Percent Mayflies	Percent Stoneflies	Percent Caddisflies	Percent Chironomids	Percent Other Diptera	Percent Other Insects	Percent Zooplankton	Percent Other Non-insects	EPT:Chiro Ratio	Percent Top 3 Taxa
Spr	RP-81-1	US	Plankton Tow	0.00	0.00	0.00	68.49	21.42	0.00	2.69	7.39	0.00	71.32
Spr	RP-81-2	TM	Drift Net	2.03	0.19	2.19	83.42	7.11	0.54	0.37	4.16	0.05	57.53
Spr	RP-81-3	MC	Drift Net	0.83	1.96	6.41	42.74	39.30	2.83	0.79	5.13	0.18	54.99
Spr	RP-81-4	SC	Drift Net	5.21	1.80	2.71	55.35	24.85	1.45	2.71	5.91	0.15	55.04
Spr	RP-81-5	SC/TM	Drift Net	3.07	0.33	0.33	22.96	66.48	3.34	2.54	0.96	0.14	77.18
Sum	RP-81-1	US	Plankton Tow	0.10	0.42	0.00	68.07	22.55	0.00	2.08	6.78	0.01	70.27
Sum	RP-81-2	TM	Drift Net	4.28	2.95	2.00	57.60	9.43	1.99	8.02	13.74	0.14	31.74
Sum	RP-81-3	MC	Drift Net	2.47	5.91	2.94	43.12	5.71	31.96	3.12	4.76	0.21	34.39
Sum	RP-81-4	SC	Drift Net	13.55	8.72	0.68	55.38	2.07	9.91	1.39	8.30	0.29	33.46
Sum	RP-81-5	SC/TM	Drift Net	19.22	8.33	1.11	55.56	2.11	3.22	5.11	5.33	0.34	41.78
Fall	RP-81-1	US	Plankton Tow	0.00	0.00	0.00	1.16	1.23	0.00	96.90	0.71	0.00	99.09
Fall	RP-81-2	TM	Drift Net	3.20	6.15	2.14	72.14	3.39	3.44	4.34	5.21	0.14	44.30
Fall	RP-81-3	MC	Drift Net	0.39	30.18	20.38	22.66	7.34	8.61	6.84	3.61	0.69	56.68
Fall	RP-81-4	SC	Drift Net	0.00	16.67	0.00	53.33	10.00	6.67	3.33	10.00	0.24	60.00
Fall	RP-81-5	SC/TM	Drift Net	0.47	7.41	18.57	36.05	3.94	9.36	15.06	9.13	0.42	38.14

Table A5.4-1. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during spring sampling for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Spring Focus Area 184		Tributary mouth (RP-184-1)			Main Channel (RP-184-2)			Side Channel (RP-184-3)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-25.5 $\pm$ 0.7	0.0 $\pm$ 1.1	3	-26.1 $\pm$ 0.2	1.4 $\pm$ 0.6	3	-25.2 $\pm$ 0.7	3.3 $\pm$ 0.4	3
	Organic matter - drift	-28.2 $\pm$ 0.0	-2.2 $\pm$ 0.3	2	-27.1 $\pm$ 0.1	-1.7 $\pm$ 0.1	2	-27.1 $\pm$ 0.1	-1.3 $\pm$ 0.3	2
	Organic matter - benthic	-28.6 $\pm$ 0.7	-1.8 $\pm$ 0.3	3	-27.4 $\pm$ 0.3	-2.1 $\pm$ 0.7	3	-26.9 $\pm$ 0.2	-2.7 $\pm$ 0.5	3
	Salmon carcass	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-26.4 $\pm$ 2.7	1.3 $\pm$ 1.6	18	-28.7 $\pm$ 1.7	2.5 $\pm$ 2.6	13	-29.0 $\pm$ 1.9	2.8 $\pm$ 1.0	7
	Benthic - collectors	-25.7 $\pm$ 2.6	0.7 $\pm$ 1.0	5	-28.1 $\pm$ 1.2	1.8 $\pm$ 0.4	5	-27.9 $\pm$ 1.4	2.4 $\pm$ 0.2	5
	Benthic - grazers	-26.5 $\pm$ 0.3	0.2 $\pm$ 0.9	5	-28.9 $\pm$ 1.6	3.6 $\pm$ 1.3	2	-	-	-
	Benthic - shredders	-24.0 $\pm$ 1.0	1.1 $\pm$ 0.6	3	-26.8 $\pm$ 0.6	4.6 $\pm$ 1.5	2	-29.1 $\pm$ 2.9	3.6 $\pm$ 1.4	2
	Benthic - predators	-28.5 $\pm$ 3.6	3.2 $\pm$ 1.5	5	-30.5 $\pm$ 1.4	1.8 $\pm$ 4.6	4	-	-	-
	Emergent	-28.4 $\pm$ 1.4	4.2 $\pm$ 0.6	2	-	-	-	-27.1 $\pm$ 3.9	1.7 $\pm$ 2.5	3
	Terrestrial	-24.7 $\pm$ 0.3	1.3 $\pm$ 3.5	2	-25.2	0.4	1	-	-	-
Fish	Juvenile Chinook Salmon	-	-	-	-	-	-	-26.6 $\pm$ 0.4	6.9 $\pm$ 0.4	3
	Juvenile Coho Salmon	-	-	-	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-28.4	6.9	1	-28.4 $\pm$ 0.1	6.8 $\pm$ 0.1	7
	Adult Arctic Grayling	-25.5	6	1	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-
Totals		44			31			30		

Table A5.4-2. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during summer sampling for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Summer Focus Area 184		Tributary mouth (RP-184-1)			Main Channel (RP-184-2)			Side Channel (RP-184-3)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-23.8 $\pm$ 1.0	0.8 $\pm$ 0.6	3	-20.3 $\pm$ 5.0	-0.1 $\pm$ 1.1	3	-20.5 $\pm$ 0.9	-0.3 $\pm$ 1.2	3
	Organic matter - drift	-26.2 $\pm$ 0.1	-1.0 $\pm$ 0.4	2	-26.5 $\pm$ 0.1	-0.3 $\pm$ 0.1	2	-26.2 $\pm$ 0.4	1.5 $\pm$ 3.1	2
	Organic matter - benthic	-26.7 $\pm$ 0.8	-1.0 $\pm$ 0.5	3	-26.9 $\pm$ 1.2	0.1 $\pm$ 0.6	3	-26.5 $\pm$ 0.4	-0.6 $\pm$ 0.3	3
	Salmon carcass	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-25.0 $\pm$ 1.5	0.8 $\pm$ 1.3	17	-26.7 $\pm$ 2.1	2.2 $\pm$ 0.8	12	-27.4 $\pm$ 1.5	2.1 $\pm$ 0.8	7
	Benthic - collectors	-23.6 $\pm$ 2.1	0.3 $\pm$ 0.6	5	-24.5 $\pm$ 2.1	2.0 $\pm$ 0.7	4	-26.2 $\pm$ 1.8	1.7 $\pm$ 0.3	4
	Benthic - grazers	-26.1 $\pm$ 0.2	-0.1 $\pm$ 0.7	5	-27.5 $\pm$ 0.3	2.2 $\pm$ 0.3	3	-27.7 $\pm$ 0.8	2.7 $\pm$ 0.9	3
	Benthic - shredders	-25.4 $\pm$ 0.2	-0.1 $\pm$ 0.7	2	-27.4 $\pm$ 1.0	3.0 $\pm$ 0.7	2	-	-	-
	Benthic - predators	-25.1 $\pm$ 0.8	2.5 $\pm$ 0.9	5	-28.6 $\pm$ 0.7	1.9 $\pm$ 1.4	3	-	-	-
	Emergent	-25.6 $\pm$ 1.4	2.3 $\pm$ 0.9	4	-	-	-	-28.7 $\pm$ 2.9	4.2 $\pm$ 2.4	2
	Terrestrial	-25.4 $\pm$ 0.2	1.5 $\pm$ 3.1	2	-25.8 $\pm$ 0.4	1.1 $\pm$ 0.6	2	-25.0 $\pm$ 0.1	0.2 $\pm$ 1.2	2
Fish	Juvenile Chinook Salmon	-	-	-	-	-	-	-	-	-
	Juvenile Coho Salmon	-	-	-	-	-	-	-	-	-
	Juvenile Arctic Grayling	-24.1 $\pm$ 0.4	3.5 $\pm$ 0.4	3	-26.9	6.3	1	-27.1 $\pm$ 0.1	6.8 $\pm$ 0.3	2
	Adult Arctic Grayling	-25.2 $\pm$ 1.4	5.9 $\pm$ 1.1	6	-26.7 $\pm$ 0.6	6.8 $\pm$ 0.3	5	-26.4 $\pm$ 0.4	6.3 $\pm$ 0.4	3
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-
Totals		45			35			25		

Table A5.4-3. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during fall sampling for sites within FA-184 (Watana Dam) in the Middle River Segment of the Susitna River for the River Productivity Study.

Fall Focus Area 184		Tributary mouth (RP-184-1)			Main Channel (RP-184-2)			Side Channel (RP-184-3)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-25.2 ± 1.2	-1.2 ± 0.4	3	-29.1 ± 1.1	1.9 ± 0.3	3	-25.8 ± 2.8	0.1 ± 0.4	3
	Organic matter - drift	-28.0 ± 0.1	-2.2 ± 0.1	2	-27.0 ± 0.1	-0.5 ± 0.3	2	-27.1 ± 0.1	-0.9 ± 0.1	2
	Organic matter - benthic	-27.9 ± 0.3	-2.1 ± 0.2	3	-27.0 ± 0.0	-1.0 ± 0.4	3	-27.8 ± 0.8	-1.1 ± 0.4	3
	Salmon carcass	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-25.2 ± 2.0	0.2 ± 0.7	17	-26.7 ± 1.4	2.9 ± 0.4	15	-26.3 ± 1.1	3 ± 0.4	12
	Benthic - collectors	-25.1 ± 1.4	0.1 ± 0.3	5	-27.6 ± 2.2	2.5 ± 0.2	5	-26.2 ± 1.4	2.8 ± 0.1	5
	Benthic - grazers	-23.4 ± 3.1	0.8 ± 0.4	3	-26.7 ± 0.2	3.0 ± 0.2	4	-	-	-
	Benthic - shredders	-26.5 ± 1.3	-0.5 ± 0.8	4	-27.3	3.2	1	-26.9 ± 1	2.6 ± 0.5	2
	Benthic - predators	-25.4 ± 2.1	0.7 ± 0.4	5	-25.7 ± 0.2	3.1 ± 0.3	5	-	-	-
	Emergent	-23.8 ± 3.8	0.2 ± 0.3	2	-	-	-	-	-	-
	Terrestrial	-25.3	4.1	1	-	-	-	-	-	-
Fish	Juvenile Chinook Salmon	-	-	-	-	-	-	-	-	-
	Juvenile Coho Salmon	-	-	-	-	-	-	-	-	-
	Juvenile Arctic Grayling	-25.1	4.4	1	-27.8 ± 4.4	6.8 ± 0.6	2	-25	5.8	1
	Adult Arctic Grayling	-25.4 ± 0.4	6.0 ± 0.8	5	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-
Totals		39			35			23		

Table A5.4-4. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during spring sampling for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Spring Focus Area 141		Tributary mouth (RP-141-1)			Side Channel (RP-141-2)			Main Channel (RP-141-3)			Upland slough (RP-141-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-28.2 $\pm$ 0.6	0.9 $\pm$ 0.1	3	-21.2 $\pm$ 0.9	0.1 $\pm$ 1.0	3	-25.6 $\pm$ 0.1	1.7 $\pm$ 0.1	3	-28.0 $\pm$ 2.5	0.0 $\pm$ 0.3	3
	Organic matter - drift	-29.2 $\pm$ 0.3	-1.3 $\pm$ 0.3	2	-27.3 $\pm$ 0.5	-1.5 $\pm$ 0.2	2	-27.5 $\pm$ 0.1	-1.4 $\pm$ 0.1	2	-28.8 $\pm$ 2.1	-2.5 $\pm$ 0.3	2
	Organic matter - benthic	-28.6 $\pm$ 0.4	-1.5 $\pm$ 0.5	3	-26.6 $\pm$ 0.1	-0.2 $\pm$ 0.2	3	-27.6 $\pm$ 0.2	-1.8 $\pm$ 1.0	3	-28.1 $\pm$ 0.5	-1.4 $\pm$ 0.3	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-28.0 $\pm$ 1.4	3.2 $\pm$ 2.0	15	-28.9 $\pm$ 1.7	2.1 $\pm$ 1.2	6	-28.7 $\pm$ 3.2	2.5 $\pm$ 1.3	6	-28.2 $\pm$ 1.1	2.6 $\pm$ 1.8	9
	Benthic - collectors	-28.7 $\pm$ 1.2	2.1 $\pm$ 1.7	5	-27.8 $\pm$ 1.1	1.5 $\pm$ 1.0	5	-28.8 $\pm$ 4.0	2.2 $\pm$ 1.5	5	-28.4 $\pm$ 0.5	2.8 $\pm$ 0.5	5
	Benthic - grazers	-29.2 $\pm$ 1.3	1.8 $\pm$ 0.3	5	-29.7	3.5	1	-26.4	2	1	-30	-1.1	1
	Benthic - shredders	-26.9 $\pm$ 0.4	4.2 $\pm$ 1.7	5	-	-	-	-	-	-	-27.1 $\pm$ 1.2	1.7 $\pm$ 1.0	3
	Benthic - predatorss	-27.1 $\pm$ 1.2	5.0 $\pm$ 2.2	5	-30.3 $\pm$ 1.8	2.5 $\pm$ 1.2	3	-29.8 $\pm$ 0.1	3.5 $\pm$ 0.6	2	-28.5 $\pm$ 1.0	3.9 $\pm$ 2.2	4
	Emergent	-28.8	2.4	1	-	-	-	-	-	-	-27.4 $\pm$ 1.9	4.5 $\pm$ 3.1	7
	Terrestrial	-25.4 $\pm$ 0.7	1.4 $\pm$ 0.3	2	-29.2 $\pm$ 2.9	2.8 $\pm$ 2.4	2	-28.2 $\pm$ 4.8	2.1 $\pm$ 1.4	2	-26.5 $\pm$ 1.1	2.4 $\pm$ 3.0	3
Fish	Juvenile Chinook Salmon	-26.3	8.6	1	-27.7 $\pm$ 0.3	6.6 $\pm$ 0.5	4	-27.0 $\pm$ 0.7	6.9 $\pm$ 0.8	8	-27.9	6	1
	Juvenile Coho Salmon	-26.1 $\pm$ 0.9	8.6 $\pm$ 0.9	7	-26.1	9.6	1	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-	-	-	-28.1 $\pm$ 1.1	7.3 $\pm$ 0.0	2	-	-	-
	Adult Arctic Grayling	-23.1	11	1	-	-	-	-27.8 $\pm$ 0.7	7.3 $\pm$ 0.3	3	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-22.1 $\pm$ 2.0	11.6 $\pm$ 2.3	6	-	-	-	-	-	-	-25.2 $\pm$ 0.4	9.2 $\pm$ 0.1	2
Totals		50			25			32			36		

Table A5.4-5. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during summer sampling for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Summer Focus Area 141		Tributary mouth (RP-141-1)			Side Channel (RP-141-2)			Main Channel (RP-141-3)			Upland slough (RP-141-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-31.0 $\pm$ 1.3	2.5 $\pm$ 0.1	2	-24.3 $\pm$ 0.6	0.6 $\pm$ 0.1	3	-26.9 $\pm$ 1.4	0.4 $\pm$ 0.1	3	-29.1 $\pm$ 2.1	0.9 $\pm$ 1.8	3
	Organic matter - drift	-28.3 $\pm$ 0.2	0.6 $\pm$ 0.2	2	-26.5 $\pm$ 0.1	0.0 $\pm$ 0.1	2	-26.6 $\pm$ 0.4	-0.3 $\pm$ 0.1	2	-27.0 $\pm$ 0.4	-0.8 $\pm$ 0.9	2
	Organic matter - benthic	-27.6 $\pm$ 0.3	-0.5 $\pm$ 0.7	3	-26.9 $\pm$ 0.5	0.0 $\pm$ 0.3	3	-27.0 $\pm$ 0.2	-1.1 $\pm$ 0.2	3	-27.7 $\pm$ 0.9	-0.5 $\pm$ 0.5	3
	Salmon carcass	-18.2	13.7	1	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-28.8 $\pm$ 1.2	2.5 $\pm$ 0.8	17	-28.5 $\pm$ 1.2	1.4 $\pm$ 1.2	9	-28.4 $\pm$ 1.2	1.8 $\pm$ 1.1	8	-29.9 $\pm$ 0.7	0.7 $\pm$ 3.0	10
	Benthic - collectors	-28.4 $\pm$ 0.5	2.2 $\pm$ 0.4	6	-27.5 $\pm$ 1.0	0.6 $\pm$ 0.3	5	-28.6 $\pm$ 1.7	1.1 $\pm$ 0.7	5	-29.7 $\pm$ 0.6	2.1 $\pm$ 0.8	5
	Benthic - grazers	-30.4 $\pm$ 0.5	2.8 $\pm$ 0.4	5	-30.0 $\pm$ 0.8	1.1 $\pm$ 0.6	3	-27.7 $\pm$ 1.1	1.4 $\pm$ 0.8	3	-30.0 $\pm$ 0.1	2.2 $\pm$ 0.1	1
	Benthic - shredders	-27.4 $\pm$ 0.5	1.0 $\pm$ 0.7	2	-28.4	-0.2	1	-	-	-	-30.2 $\pm$ 0.9	-1.3 $\pm$ 4.2	4
	Benthic - predators	-28.0 $\pm$ 0.2	3.3 $\pm$ 0.3	4	-28.6 $\pm$ 0.2	2.8 $\pm$ 0.9	4	-28.6 $\pm$ 0.2	3.3 $\pm$ 0.4	3	-	-	-
	Emergent	-	-	-	-	-	-	-	-	-	-	-	-
	Terrestrial	-18.2	13.7	1	-26.2 $\pm$ 0.4	2.6 $\pm$ 0.1	2	-26.8	-0.7	1	-28.9 $\pm$ 3.3	2.2 $\pm$ 2.8	2
Fish	Juvenile Chinook Salmon	-26.3 $\pm$ 0.5	6.1 $\pm$ 0.3	8	-25.7 $\pm$ 0.2	6.0 $\pm$ 0.4	8	-25.8 $\pm$ 0.3	6.7 $\pm$ 0.3	8	-25.6 $\pm$ 0.3	6.4 $\pm$ 1.3	5
	Juvenile Coho Salmon	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-23.2 $\pm$ 2.4	9.3 $\pm$ 2.3	3	-	-	-	-	-	-	-24.9	9.6	1
Totals		48			40			31			26		

Table A5.4-6. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during fall sampling for sites within FA-141 (Indian River) in the Middle River Segment of the Susitna River for the River Productivity Study.

Fall Focus Area 141		Tributary mouth (RP-141-1)			Side Channel (RP-141-2)			Main Channel (RP-141-3)			Upland slough (RP-141-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-28.5 $\pm$ 0.4	1.2 $\pm$ 0.6	3	-21.5 $\pm$ 1.2	1.7 $\pm$ 4.4	3	-27.7 $\pm$ 0.2	1.8 $\pm$ 0.6	3	-26.7 $\pm$ 2.8	0.0 $\pm$ 0.2	3
	Organic matter - drift	-28.8 $\pm$ 0.2	-0.1 $\pm$ 0.2	2	-24.5 $\pm$ 0.6	-0.3 $\pm$ 0.5	2	-27.5 $\pm$ 0.1	-1.1 $\pm$ 0.2	2	-27.9 $\pm$ 0	0.8 $\pm$ 0.1	2
	Organic matter - benthic	-28.5 $\pm$ 0.7	-0.3 $\pm$ 0.2	3	-27.2 $\pm$ 1.1	-0.6 $\pm$ 0.4	3	-28.3 $\pm$ 1.2	-1.4 $\pm$ 0.2	3	-28.8 $\pm$ 0.8	-0.9 $\pm$ 0.9	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-20.3 $\pm$ 0.6	11.4 $\pm$ 0.4	4
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-28.8 $\pm$ 1.2	3.0 $\pm$ 0.8	14	-21.9 $\pm$ 1.2	1.7 $\pm$ 0.5	3	-25.0 $\pm$ 1.4	2.1 $\pm$ 0.8	10	-27.9 $\pm$ 1.4	3.1 $\pm$ 1.4	6
	Benthic - collectors	-28.5 $\pm$ 1.3	2.5 $\pm$ 0.4	5	-20.9 $\pm$ 0.7	1.2 $\pm$ 0.2	3	-23.6 $\pm$ 0.7	1.8 $\pm$ 0.3	5	-26.6 $\pm$ 0.6	4.5 $\pm$ 0.4	3
	Benthic - grazers	-29.8 $\pm$ 0.3	3.6 $\pm$ 0.5	5	-	-	-	-25.7 $\pm$ 1.9	2.7 $\pm$ 0.3	3	-	-	-
	Benthic - shredders	-27.4 $\pm$ 0.4	2.4 $\pm$ 0.5	4	-	-	-	-26.2 $\pm$ 0.5	0.4 $\pm$ 0.1	2	-28.9 $\pm$ 1	2.2 $\pm$ 1.4	3
	Benthic - predators	-29.2 $\pm$ 0.5	3.9 $\pm$ 0.3	3	-23.0 $\pm$ 0.5	2.3 $\pm$ 0.1	3	-25.6 $\pm$ 0.9	2.7 $\pm$ 0.2	4	-28.2 $\pm$ 1.4	2.7 $\pm$ 1.5	3
	Emergent	-	-	-	-	-	-	-	-	-	-26	1	1
	Terrestrial	-26.4 $\pm$ 1.1	2.3 $\pm$ 0.1	2	-25.1	3.6	1	-25	5	1	-25.8	2.1	1
Fish	Juvenile Chinook Salmon	-25.0 $\pm$ 1.0	9.4 $\pm$ 1.1	7	-24.7 $\pm$ 0.6	6.2 $\pm$ 0.3	8	-24.9 $\pm$ 0.5	7.0 $\pm$ 0.8	8	-25.5 $\pm$ 0.6	7.7 $\pm$ 0.8	3
	Juvenile Coho Salmon	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-25.7	8.3	1	-	-	-
	Juvenile Rainbow Trout	-24.8	9.4	1	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-21.1	12.3	1	-	-	-	-	-	-	-	-	-
Totals		43			21			37			29		

Table A5.4-7. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during spring sampling for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Spring Focus Area 104		Tributary mouth (RP-104-1)			Side Slough (RP-104-2)			Main Channel (RP-104-3)			Upland Slough (RP-104-4)			Side Channel (RP-104-5)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-30.1 $\pm$ 0.2	3.3 $\pm$ 0.4	3	-32.6 $\pm$ 1.7	2.3 $\pm$ 0.3	3	-25.5 $\pm$ 0.3	-0.3 $\pm$ 0.3	3	-31.7 $\pm$ 1.9	0.8 $\pm$ 0.5	3	-24.9 $\pm$ 0.5	0.1 $\pm$ 0.6	3
	Organic matter - drift	-28.4 $\pm$ 0.2	1.2 $\pm$ 0.5	2	-28.0 $\pm$ 0.1	-1.8 $\pm$ 0.1	2	-27.2 $\pm$ 0.2	-1.1 $\pm$ 1.0	2	-30.1 $\pm$ 2.9	-1.0 $\pm$ 0.7	2	-27.0 $\pm$ 0.1	-2.1 $\pm$ 0.3	2
	Organic matter - benthic	-28.3 $\pm$ 0.3	-1.0 $\pm$ 0.1	3	-28.6 $\pm$ 0.6	-1.2 $\pm$ 1.1	3	-28.1 $\pm$ 0.2	-2.2 $\pm$ 0.9	3	-27.7 $\pm$ 0.3	-2.3 $\pm$ 0.1	3	-27.8 $\pm$ 0.4	-1.5 $\pm$ 0.6	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-32.2 $\pm$ 0.9	4.8 $\pm$ 0.9	5	-33.3 $\pm$ 2.9	3.1 $\pm$ 1.9	14	-27.9 $\pm$ 1.4	4.0 $\pm$ 1.5	7	-33.0 $\pm$ 3.1	2.6 $\pm$ 1.0	8	-28.7 $\pm$ 3.2	2.3 $\pm$ 0.7	8
	Benthic - collectors	-32.5 $\pm$ 1.1	4.3 $\pm$ 0.7	5	-35.0 $\pm$ 1.4	2.3 $\pm$ 0.9	5	-27.6 $\pm$ 1.5	3.4 $\pm$ 1.7	5	-34.5 $\pm$ 1.8	2.1 $\pm$ 0.5	5	-29.2 $\pm$ 4.3	2.4 $\pm$ 0.9	5
	Benthic - grazers	-	-	-	-39.7	3.2	1	-	-	-	-	-	-	-28.8 $\pm$ 0.5	2.5 $\pm$ 0.3	3
	Benthic - shredders	-	-	-	-32.0 $\pm$ 2.3	3.3 $\pm$ 2.3	8	-26.7 $\pm$ 1.1	5.5 $\pm$ 1.4	2	-34.7 $\pm$ 2.9	2.6 $\pm$ 1.2	3	-	-	-
	Benthic - predators	-31.9 $\pm$ 0.3	5.6 $\pm$ 0.5	3	-31.4 $\pm$ 2.3	3.6 $\pm$ 2.5	3	-29.1 $\pm$ 0.4	3.9 $\pm$ 0.2	3	-28.9 $\pm$ 0.5	3.6 $\pm$ 0.9	3	-28.8 $\pm$ 0.5	2.5 $\pm$ 0.3	3
	Emergent	-27.5 $\pm$ 4.8	4.1 $\pm$ 0.7	2	-	-	-	-	-	-	-31.8 $\pm$ 6.7	4.0 $\pm$ 0.9	4	-	-	-
	Terrestrial	-	-	-	-27.1 $\pm$ 1.6	1.1 $\pm$ 2.7	2	-24.4	-0.3	1	-25.5 $\pm$ 0.7	-0.7 $\pm$ 0.7	2	-24.1 $\pm$ 0.3	0.7 $\pm$ 0.1	2
Fish	Juvenile Chinook Salmon	-27.9 $\pm$ 1.0	8.4 $\pm$ 0.6	6	-	-	-	-26.8 $\pm$ 0.7	7.7 $\pm$ 0.7	2	-	-	-	-	-	-
	Juvenile Coho Salmon	-28.1 $\pm$ 1.4	8.1 $\pm$ 0.9	10	-29.1 $\pm$ 0.7	7.8 $\pm$ 1.0	6	-	-	-	-29.2 $\pm$ 1.1	8.4 $\pm$ 1.4	8	-27.6 $\pm$ 0.3	7.6 $\pm$ 0.2	2
	Juvenile Arctic Grayling	-	-	-	-	-	-	-27.3 $\pm$ 0.0	6.5 $\pm$ 1.0	2	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals		36			42			22			34			26		

Table A5.4-8. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during summer sampling for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Summer Focus Area 104		Tributary mouth (RP-104-1)			Side Slough (RP-104-2)			Main Channel (RP-104-3)			Upland Slough (RP-104-4)			Side Channel (RP-104-5)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-30.6 $\pm$ 0.6	2.5 $\pm$ 0.6	3	-28.2 $\pm$ 2.8	2.1 $\pm$ 1.7	3	-23.3 $\pm$ 1.8	1.5 $\pm$ 0.7	3	-33.5 $\pm$ 2.9	1.9 $\pm$ 0.6	3	-21.8 $\pm$ 0.9	1.2 $\pm$ 1.7	3
	Organic matter - drift	-27.8 $\pm$ 0.1	2.0 $\pm$ 1.0	2	-26.9 $\pm$ 0.1	-0.4 $\pm$ 0.6	2	-26.5 $\pm$ 0.1	-0.4 $\pm$ 0.1	2	-34.6 $\pm$ 0.1	1.7 $\pm$ 0.5	2	-26.5 $\pm$ 0	0.0 $\pm$ 0.2	2
	Organic matter - benthic	-27.8 $\pm$ 0.6	0.5 $\pm$ 1.6	3	-28.1 $\pm$ 0.8	-0.4 $\pm$ 0.3	3	-26.8 $\pm$ 0.6	-0.9 $\pm$ 0.1	3	-27.4 $\pm$ 0.8	-0.3 $\pm$ 0.3	3	-25.9 $\pm$ 0.4	0.0 $\pm$ 0.4	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-31.8 $\pm$ 0.9	4.3 $\pm$ 0.9	11	-33.5 $\pm$ 2.9	2.8 $\pm$ 1.0	10	-27.9 $\pm$ 0.9	2 $\pm$ 0.9	5	-36.4 $\pm$ 3	2.6 $\pm$ 1.2	9	-25.8 $\pm$ 1.6	1.4 $\pm$ 0.8	8
	Benthic - collectors	-32.0 $\pm$ 0.7	4.3 $\pm$ 0.3	5	-35.1 $\pm$ 1.2	2.0 $\pm$ 0.8	5	-28.4 $\pm$ 0.9	1.3 $\pm$ 0.6	3	-37.7 $\pm$ 3	2.1 $\pm$ 1.1	5	-24.3 $\pm$ 1.1	0.7 $\pm$ 0.5	5
	Benthic - grazers	-34.1	3.9	1	-38.1	2.6	1	-27.2 $\pm$ 1.3	3.2 $\pm$ 1.3	2	-	-	-	-26.9 $\pm$ 0.9	2.2 $\pm$ 0.1	3
	Benthic - shredders	-31.6 $\pm$ 0.6	3.6 $\pm$ 1.0	5	-31.7 $\pm$ 2.3	3.2 $\pm$ 0.6	4	-	-	-	-35.8 $\pm$ 0.8	2.3 $\pm$ 1.1	4	-	-	-
	Benthic - predators	-31.3 $\pm$ 1.1	5.6 $\pm$ 0.1	3	-31.0 $\pm$ 3.7	3.9 $\pm$ 0.8	2	-28.0 $\pm$ 0.3	2.0 $\pm$ 0.3	3	-34.9 $\pm$ 4.8	3.9 $\pm$ 1.2	3	-26.9 $\pm$ 0.9	1.7 $\pm$ 0.8	4
	Emergent	-31.0 $\pm$ 2.5	5.2 $\pm$ 0.9	4	-25.3 $\pm$ 1.1	5.0 $\pm$ 1.2	3	-	-	-	-	-	-	-	-	-
	Terrestrial	-25.1	6.9	1	-27.3 $\pm$ 0.8	4.5 $\pm$ 1.3	2	-24.1	1.4	1	-26.7 $\pm$ 1	3.6 $\pm$ 0.3	3	-22.8	0.4	1
Fish	Juvenile Chinook Salmon	-27.6 $\pm$ 0.1	7.0 $\pm$ 0.8	2	-27.2 $\pm$ 0.6	6.2 $\pm$ 0.4	3	-25.3 $\pm$ 0.3	6.2 $\pm$ 0.4	10	-32.3 $\pm$ 0.4	5.4 $\pm$ 0.2	6	-25.2 $\pm$ 0.2	5.5 $\pm$ 0.4	7
	Juvenile Coho Salmon	-27.8 $\pm$ 0.5	7.3 $\pm$ 0.4	6	-26.7 $\pm$ 0.8	7.6 $\pm$ 0.5	5	-	-	-	-31.3 $\pm$ 1.9	6.2 $\pm$ 0.8	7	-27.5 $\pm$ 2.6	7.9 $\pm$ 1.5	5
	Juvenile Arctic Grayling	-	-	-	-	-	-	-25.7	5.6	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-26.4	5.8	1	-	-	-	-25.7	5.7	1
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-27.6 $\pm$ 0.4	8.9 $\pm$ 0.8	2	-	-	-	-	-	-	-	-	-	-	-	-
Totals		46			38			28			42			42		

Table A5.4-9. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during fall sampling for sites within FA-104 (Whiskers Slough) in the Middle River Segment of the Susitna River for the River Productivity Study.

Fall Focus Area 104		Tributary mouth (RP-104-1)			Side Slough (RP-104-2)			Main Channel (RP-104-3)			Upland Slough (RP-104-4)			Side Channel (RP-104-5)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-28.4 $\pm$ 0.2	3.6 $\pm$ 1.4	3	-33.8 $\pm$ 1.1	2.1 $\pm$ 2.0	3	-24.2 $\pm$ 2.0	-0.3 $\pm$ 3.0	3	-33.3 $\pm$ 2.0	2.1 $\pm$ 0.2	3	-23.1 $\pm$ 2.4	0.3 $\pm$ 1.0	3
	Organic matter - drift	-28.6 $\pm$ 0.7	-0.1 $\pm$ 0.1	2	-27.9 $\pm$ 0.6	1.1 $\pm$ 0.5	2	-27.4 $\pm$ 0.1	-0.7 $\pm$ 0.5	2	-28.5 $\pm$ 0.1	0.5 $\pm$ 0.1	2	-27.1 $\pm$ 1.1	0.2 $\pm$ 0.4	2
	Organic matter - benthic	-29.0 $\pm$ 0.4	1.6 $\pm$ 1.1	3	-29.1 $\pm$ 0.8	-0.4 $\pm$ 1.1	3	-28.1 $\pm$ 1.0	-1.1 $\pm$ 0.3	3	-28.3 $\pm$ 0.8	-1.1 $\pm$ 0.6	3	-28.0 $\pm$ 0.7	-0.7 $\pm$ 0.4	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-	-20.8	10.6	1
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-30.7 $\pm$ 1.5	4.7 $\pm$ 1.3	8	-35.3 $\pm$ 3.5	3.4 $\pm$ 0.8	7	-24.4 $\pm$ 1.8	2.0 $\pm$ 1.0	7	-35.8 $\pm$ 3.7	3.0 $\pm$ 1.9	15	-23.4 $\pm$ 0.9	1.6 $\pm$ 1.5	7
	Benthic - collectors	-30.1 $\pm$ 1.9	4.9 $\pm$ 1.4	3	-37.2 $\pm$ 1.9	3.4 $\pm$ 0.6	5	-23.7 $\pm$ 0.8	1.1 $\pm$ 0.6	5	-36.2 $\pm$ 2.6	2.6 $\pm$ 0.7	5	-23.5 $\pm$ 1.2	0.7 $\pm$ 1.7	5
	Benthic - grazers	-	-	-	-30.4 $\pm$ 4.0	4.1 $\pm$ 1.4	2	-24.9	4.2	1	-	-	-	-	-	-
	Benthic - shredders	-30.9 $\pm$ 1.6	3.9 $\pm$ 1.5	5	-	-	-	-29.4	2.5	1	-36.1 $\pm$ 2.5	2.9 $\pm$ 0.9	5	-24.3 $\pm$ 0.5	2.7 $\pm$ 2.1	2
	Benthic - predators	-31.0 $\pm$ 1.6	5.5 $\pm$ 0.2	4	-30.4 $\pm$ 4.0	4.1 $\pm$ 1.4	2	-36.3 $\pm$ 5.8	3.5 $\pm$ 0.6	5	-36.3 $\pm$ 5.8	3.5 $\pm$ 0.6	5	-22.9 $\pm$ 0.2	2.2 $\pm$ 0.3	4
	Emergent	-28.1 $\pm$ 2.9	5.2 $\pm$ 1.0	3	-	-	-	-	-	-	-	-	-	-	-	-
	Terrestrial	-	-	-	-26.3	4.8	1	-	-	-	-26.7 $\pm$ 1.2	2.2 $\pm$ 0.4	2	-	-	-
Fish	Juvenile Chinook Salmon	-27.8 $\pm$ 1.2	8.2 $\pm$ 1.0	8	-	-	-	-24.2 $\pm$ 1.0	7.0 $\pm$ 0.2	4	-34	6.3	1	-25.8 $\pm$ 2.2	6.5 $\pm$ 0.7	7
	Juvenile Coho Salmon	-27.4 $\pm$ 0.8	8.2 $\pm$ 0.6	8	-27.8 $\pm$ 2.5	8.7 $\pm$ 1.2	10	-	-	-	-31.1 $\pm$ 1.5	7.1 $\pm$ 0.8	8	-26.0 $\pm$ 0.3	6.7 $\pm$ 1.0	5
	Juvenile Arctic Grayling	-27.8	8.6	1	-	-	-	-28.5 $\pm$ 2.5	7.3 $\pm$ 0.3	6	-	-	-	-27.3 $\pm$ 0.7	8.1 $\pm$ 0.8	3
	Adult Arctic Grayling	-	-	-	-	-	-	-23.7 $\pm$ 1.6	8.0 $\pm$ 3.3	3	-	-	-	-23.4	8.7	1
	Juvenile Rainbow Trout	-26.6	10.1	1	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals		46			32			32			46			40		

Table A5.4-10. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during spring sampling for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Spring Focus Area 81		Upland Slough (RP-81-1)			Tributary Mouth (RP-81-2)			Main Channel (RP-81-3)			Side Channel (RP-81-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-31.9 $\pm$ 0.5	1.1 $\pm$ 1.0	3	-30.0 $\pm$ 0.2	2.0 $\pm$ 0.4	3	-25.1 $\pm$ 0.1	0.0 $\pm$ 0.3	3	-25.4 $\pm$ 0.5	2.2 $\pm$ 0.4	3
	Organic matter - drift	-29.0 $\pm$ 0.8	3.0 $\pm$ 1.2	2	-28.4 $\pm$ 0.1	-1.4 $\pm$ 0.6	2	-28.2 $\pm$ 0.1	-2.8 $\pm$ 0.6	2	-27.7 $\pm$ 0.1	-1.3 $\pm$ 0.4	2
	Organic matter - benthic	-30.3 $\pm$ 1.1	0.2 $\pm$ 1.5	3	-27.7 $\pm$ 1.5	-1.5 $\pm$ 0.9	3	-27.5 $\pm$ 0.1	-1.4 $\pm$ 0.2	3	-27.6 $\pm$ 0.3	-2.2 $\pm$ 0.3	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-33.0 $\pm$ 4.3	2.7 $\pm$ 1.2	6	-27.2 $\pm$ 1.2	4.3 $\pm$ 1.7	9	-27.5 $\pm$ 1.2	2.5 $\pm$ 1.3	11	-26.9 $\pm$ 1.6	1.5 $\pm$ 1.4	11
	Benthic - collectors	-35.7 $\pm$ 1.7	3.4 $\pm$ 0.3	3	-27.8 $\pm$ 0.1	4.0 $\pm$ 0.6	3	-27.3 $\pm$ 0.5	1.9 $\pm$ 0.9	5	-27.0 $\pm$ 1.7	1.9 $\pm$ 1.0	5
	Benthic - grazers	-33.4	2.1	1	-28.6 $\pm$ 0.1	2.8 $\pm$ 0.6	2	-26.4 $\pm$ 0.3	2.5 $\pm$ 0.6	3	-25.6 $\pm$ 0.5	0.6 $\pm$ 1.4	4
	Benthic - shredders	-26.3 $\pm$ 0.1	1.0 $\pm$ 0.6	2	-26.8	2.1	1	-27.5 $\pm$ 1.0	1.5 $\pm$ 1.8	3	-25.8 $\pm$ 1.0	-0.2 $\pm$ 0.8	2
	Benthic - predatorss	-35.4 $\pm$ 1.6	3.8 $\pm$ 1.0	2	-25.8 $\pm$ 0.7	6.3 $\pm$ 0.7	3	-28.3 $\pm$ 1.6	3.7 $\pm$ 0.9	5	-28.7 $\pm$ 0.4	2.8 $\pm$ 0.3	4
	Emergent	-28.32 $\pm$ 2.7	4.3 $\pm$ 1.2	5	-26.5 $\pm$ 1.2	2.8 $\pm$ 2.9	5	-	-	-	-	-	-
	Terrestrial	-29.5	6.8	1	-26.9 $\pm$ 0.3	3.3 $\pm$ 0.6	3	-25.1 $\pm$ 1.2	3.6 $\pm$ 3.3	2	-26.5 $\pm$ 0.6	-0.8 $\pm$ 0.6	2
Fish	Juvenile Chinook Salmon	-32.7	6.7	1	-	-	-	-26.8 $\pm$ 0.3	7.6 $\pm$ 1.5	3	-26.6 $\pm$ 1.1	8.3 $\pm$ 0.6	5
	Juvenile Coho Salmon	-27.4 $\pm$ 2.3	9.7 $\pm$ 1.5	8	-25.5 $\pm$ 1.7	10.0 $\pm$ 2.2	6	-26.6 $\pm$ 1.9	8.7 $\pm$ 2.3	7	-31.2	6.7	1
	Juvenile Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
Totals		37			35			42			33		

Table A5.4-11. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during summer sampling for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Summer Focus Area 81		Upland Slough (RP-81-1)			Tributary Mouth (RP-81-2)			Main Channel (RP-81-3)			Side Channel (RP-81-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-32.8 ± 0.4	1.3 ± 0.1	3	-28.1 ± 1.2	4.4 ± 1.3	3	-22.6 ± 1	-0.3 ± 0.3	3	-24.5 ± 1.4	2.0 ± 0.9	2
	Organic matter - drift	-27.9 ± 0.5	-0.3 ± 2.1	2	-28.1 ± 0.1	1.8 ± 0.1	2	-27.1 ± 0.1	-0.5 ± 0.1	2	-27.1 ± 0.1	-0.5 ± 0.1	2
	Organic matter - benthic	-28.1 ± 0.3	1.3 ± 0.1	3	-28.2 ± 0.8	0.2 ± 0.5	3	-27.2 ± 0.1	-1.2 ± 0.1	3	-27.2 ± 0.1	-1.2 ± 0.1	3
	Salmon carcass	-19.9	12.6	1	-20.4 ± 0.1	11.6 ± 0.9	2	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-33.7 ± 4.5	3.9 ± 3.1	9	-28.2 ± 1.7	5.0 ± 1.0	14	-26.2 ± 0.9	1.7 ± 1.3	8	-26.2 ± 0.4	2.3 ± 1.3	6
	Benthic - collectors	-38.1 ± 1.4	4.5 ± 0.9	5	-28.3 ± 1.6	4.9 ± 0.5	5	-25.5 ± 0.8	1.5 ± 0.7	5	-26.3 ± 0.5	1.8 ± 1.0	5
	Benthic - grazers	-	-	-	-29.8 ± 0.5	4.3 ± 0.4	5	-26.3 ± 0.3	-0.4 ± 0.1	2	-26.3	5.2	1
	Benthic - shredders	-30.8 ± 3.9	0.8 ± 4.1	4	-26.9 ± 1.2	5.0 ± 0.6	4	-27.6	1.5	1	-	-	-
	Benthic - predatorss	-30.9 ± 2.9	6.1 ± 1.0	4	-27.5 ± 1.8	5.9 ± 1.6	5	-26.7 ± 0.9	2.9 ± 0.6	5	-26.1 ± 0.3	2.2 ± 0.9	4
	Emergent	-29.6	4.2	1	-27.0 ± 1.9	4.1 ± 1.4	6	-	-	-	-	-	-
	Terrestrial	-25.8 ± 0.8	2.3 ± 3.8	3	-26.1	4	1	-24.2 ± 2.0	-1.7 ± 0.8	2	-26.1	1.2	1
Fish	Juvenile Chinook Salmon	-25.2 ± 0.7	8.4 ± 0.7	4	-25.6 ± 0.2	8.2 ± 0.3	7	-25.3 ± 0.4	5.5 ± 0.5	8	-25.5 ± 0.5	6.5 ± 0.4	3
	Juvenile Coho Salmon	-27.2 ± 1.9	8.0 ± 0.5	8	-26.3 ± 1.0	8.5 ± 0.4	7	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
Totals		45			64			27			22		

Table A5.4-12. Mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N} \pm \text{SD}$ for all sample types collected during fall sampling for sites within RP-81 (Montana Creek) in the Lower River Segment of the Susitna River for the River Productivity Study.

Fall Focus Area 81		Upland Slough (RP-81-1)			Tributary Mouth (RP-81-2)			Main Channel (RP-81-3)			Side Channel (RP-81-4)		
Category	Sample Type	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	<i>n</i>
Endmembers	Benthic algae	-31.5 $\pm$ 0.6	1.7 $\pm$ 0.9	3	-23.4 $\pm$ 0.6	2.4 $\pm$ 1.3	3	-21.5 $\pm$ 0.2	1.5 $\pm$ 1.7	3	-23.1 $\pm$ 0.7	4.9 $\pm$ 0.6	3
	Organic matter - drift	-28.3 $\pm$ 0.7	2.9 $\pm$ 0.5	2	-28.7 $\pm$ 0.3	-0.8 $\pm$ 0.1	2	-28.4 $\pm$ 0.8	-0.6 $\pm$ 0.1	2	-27.5 $\pm$ 0.1	-0.6 $\pm$ 0.1	2
	Organic matter - benthic	-28.7 $\pm$ 1.0	0.0 $\pm$ 1.2	3	-27.7 $\pm$ 0.2	-0.2 $\pm$ 0.3	3	-28 $\pm$ 0.6	-1.6 $\pm$ 0.3	3	-27.5 $\pm$ 0.6	-1.5 $\pm$ 0.4	3
	Salmon carcass	-	-	-	-	-	-	-	-	-	-	-	-
	Salmon eggs	-	-	-	-	-	-	-	-	-	-	-	-
Invertebrates	Aquatic Invertebrates	-32.0 $\pm$ 3.5	4.6 $\pm$ 1.1	5	-26.7 $\pm$ 1.0	4.8 $\pm$ 1.0	11	-25.1 $\pm$ 1.5	2.7 $\pm$ 0.8	7	-24.9 $\pm$ 2.3	3.8 $\pm$ 0.5	5
	Benthic - collectors	-33.4 $\pm$ 3.6	4.3 $\pm$ 1.1	4	-26.5 $\pm$ 1.5	4.6 $\pm$ 1.2	5	-24.3 $\pm$ 1.4	2.7 $\pm$ 1.2	3	-26.1 $\pm$ 3.2	3.6 $\pm$ 0.6	4
	Benthic - grazers	-	-	-	-26	4.5	1	-24.4	2.1	1	-24.9	3.2	1
	Benthic - shredders	-29.2	4.4	1	-27.2 $\pm$ 0.8	4.6 $\pm$ 1.1	5	-26.2 $\pm$ 1.2	2.6 $\pm$ 0.9	3	-	-	-
	Benthic - predatorss	-29.1	5.9	1	-26.4 $\pm$ 0.4	5.8 $\pm$ 0.2	3	-25.2 $\pm$ 1.9	3.1 $\pm$ 0.3	3	-23.7 $\pm$ 0.7	4.1 $\pm$ 0.3	4
	Emergent	-25.6 $\pm$ 0.9	3.2 $\pm$ 3.0	3	-27.6 $\pm$ 1.7	3.1 $\pm$ 3.1	3	-25.9 $\pm$ 0.1	-0.4 $\pm$ 1.2	2	-	-	-
	Terrestrial	-27.8 $\pm$ 1.0	2.7 $\pm$ 4.2	3	-24.6 $\pm$ 1.1	5.8 $\pm$ 2.5	2	-	-	-	-	-	-
Fish	Juvenile Chinook Salmon	-	-	-	-	-	-	-24.6 $\pm$ 0.6	7.9 $\pm$ 1.7	6	-25.6 $\pm$ 1.1	6.3 $\pm$ 0.6	6
	Juvenile Coho Salmon	-26.4 $\pm$ 1.6	9.3 $\pm$ 1.5	13	-28.4 $\pm$ 1.2	7.2 $\pm$ 0.5	2	-	-	-	-	-	-
	Juvenile Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Arctic Grayling	-	-	-	-	-	-	-	-	-	-	-	-
	Juvenile Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
	Adult Rainbow Trout	-	-	-	-	-	-	-	-	-	-	-	-
Totals		38			35			26			23		

Table A5.5-1. Diet composition of Arctic Grayling (GRA) sampled during 2014 in the Susitna River. Size classes defined as small (SM; ≤ 120 mm fork length [FL]) and large (LG; > 120 mm FL). Prey items were categorized as aquatic life-stages of freshwater invertebrates (FW inv. [Aqu LS]), terrestrial life-stages of freshwater invertebrates (FW inv. [Ter LS]), terrestrial invertebrates (Ter. inv.), fish and non-salmonid fish eggs (Fish & non-sm. eggs), or salmon eggs.

Species	Size Class	Year	Season	Site	Macro-habitat	N Total	N Non-empty	Diet Mass (mg)	Diet Proportions (by mass)				
									FW inv. (Aqu. LS)	FW inv. (Ter. LS)	Ter. Inv.	Fish & Non-Salmon Eggs	Salmon Eggs
GRA	SM	2014	Spring	RP-184-2	SC	7	7	331.8	0.21	0.16	0.06	0.58	-
GRA	SM	2014	Spring	RP-184-3	MC	1	1	30.5	0.72	0.15	0.14	-	-
GRA	SM	2014	Spring	RP-173-1	TM	1	1	28.0	0.90	0.07	0.03	-	-
GRA	SM	2014	Spring	RP-173-2	MC	5	5	93.3	0.17	0.59	0.24	-	-
GRA	SM	2014	Spring	RP-104-3	MC	2	2	21.0	0.73	0.18	0.09	-	-
GRA	SM	2014	Spring	RP-81-4	SC	2	2	35.3	0.63	-	0.31	0.06	-
GRA	SM	2014	Summer	RP-184-1	TM	3	3	42.0	0.54	0.31	0.14	-	-
GRA	SM	2014	Summer	RP-184-2	SC	2	2	24.8	0.37	0.09	0.54	-	-
GRA	SM	2014	Summer	RP-184-3	MC	1	1	55.7	0.29	0.48	0.23	-	-
GRA	SM	2014	Summer	RP-173-4	SS	7	7	173.7	0.07	0.87	0.07	-	-
GRA	SM	2014	Summer	RP-104-3	MC	1	1	42.7	0.01	0.98	0.01	-	-
GRA	SM	2014	Summer	RP-81-4	SC	1	1	43.6	0.95	-	0.05	-	-
GRA	SM	2014	Fall	RP-184-1	TM	1	1	20.3	0.01	0.92	0.07	-	-
GRA	SM	2014	Fall	RP-184-2	SC	1	1	0.4	1.00	-	-	-	-
GRA	SM	2014	Fall	RP-184-3	MC	2	2	16.2	1.00	-	-	-	-
GRA	SM	2014	Fall	RP-173-3	SC	4	4	66.2	0.41	0.57	0.01	-	-
GRA	SM	2014	Fall	RP-173-4	SS	1	1	15.3	0.92	0.08	-	-	-
GRA	SM	2014	Fall	RP-104-3	MC	6	6	193.4	0.95	0.02	0.03	-	-
GRA	SM	2014	Fall	RP-104-5	SC	3	3	168.4	0.23	0.31	0.46	-	-
GRA	LG	2014	Spring	RP-184-1	TM	1	1	513.2	0.74	0.17	0.02	0.06	-
GRA	LG	2014	Spring	RP-173-1	TM	3	3	1707.8	0.86	0.03	0.11	-	-
GRA	LG	2014	Spring	RP-173-2	MC	2	2	137.0	0.82	0.10	0.08	-	-
GRA	LG	2014	Spring	RP-141-1	TM	1	1	862.5	0.95	0.01	0.04	-	-
GRA	LG	2014	Spring	RP-141-3	MC	3	3	176.3	0.88	0.05	0.08	-	-
GRA	LG	2014	Summer	RP-184-1	TM	6	6	3711.9	0.95	0.03	0.02	-	-
GRA	LG	2014	Summer	RP-184-2	SC	3	3	425.7	0.01	0.88	0.11	-	-
GRA	LG	2014	Summer	RP-184-3	MC	5	5	847.6	0.95	0.03	0.02	-	-
GRA	LG	2014	Summer	RP-173-1	TM	14	14	3185.0	0.12	0.26	0.61	-	-
GRA	LG	2014	Summer	RP-173-2	MC	6	6	140.0	0.19	0.66	0.15	-	-
GRA	LG	2014	Summer	RP-104-3	MC	1	1	18.9	-	0.98	0.02	-	-
GRA	LG	2014	Summer	RP-104-5	SC	1	1	38.9	0.27	0.41	0.33	-	-
GRA	LG	2014	Summer	RP-81-2	TM	1	1	9.9	0.14	0.86	-	-	-
GRA	LG	2014	Fall	RP-184-1	TM	5	5	484.4	0.39	0.16	0.46	-	-
GRA	LG	2014	Fall	RP-173-2	MC	2	2	557.5	1.00	-	-	-	-
GRA	LG	2014	Fall	RP-141-3	MC	1	1	68.7	0.96	-	0.04	-	-
GRA	LG	2014	Fall	RP-104-3	MC	3	3	149.7	0.98	0.01	0.00	-	-
GRA	LG	2014	Fall	RP-104-5	SC	1	1	94.3	0.29	-	0.71	-	-

Table A5.5-2. Diet composition of juvenile Chinook Salmon (SCK) sampled during 2013 and 2014 in the Susitna River. Size classes defined as small (SM; ≤ 120 mm fork length [FL]) and large (LG; > 120 mm FL). Prey items were categorized as aquatic life-stages of freshwater invertebrates (FW inv. [Aqu LS]), terrestrial life-stages of freshwater invertebrates (FW inv. [Ter LS]), terrestrial invertebrates (Ter. inv.), fish and non-salmonid fish eggs (Fish & non-sm. eggs), or salmon eggs.

Species	Size Class	Year	Season	Site	Macro-habitat	N Total	N Non-empty	Diet Mass (mg)	Diet Proportions (by mass)				
									FW inv. (Aqu. LS)	FW inv. (Ter. LS)	Ter. Inv.	Fish & Non-Salmon Eggs	Salmon Eggs
SCK	SM	2013	Spring	RP-141-1	TM	3	1	1.0	1.00	-	-	-	-
SCK	SM	2013	Spring	RP-104-2	SS	8	4	27.9	0.96	0.04	0.00	-	-
SCK	SM	2013	Spring	RP-81-1	US	7	6	7.0	0.46	0.27	0.27	-	-
SCK	SM	2013	Spring	RP-81-2	TM	8	7	17.4	0.33	0.54	0.13	-	-
SCK	SM	2013	Summer	RP-141-1	TM	3	3	527.6	0.06	0.00	0.00	-	0.94
SCK	SM	2013	Summer	RP-141-4	US	8	7	64.4	0.04	0.91	0.05	-	-
SCK	SM	2013	Summer	RP-104-2	SS	1	1	0.1	0.40	-	0.60	-	-
SCK	SM	2013	Summer	RP-104-4	US	1	1	1.5	0.53	0.47	-	-	-
SCK	SM	2013	Summer	RP-81-2	TM	1	1	0.4	-	1.00	-	-	-
SCK	SM	2013	Fall	RP-141-1	TM	6	6	327.6	0.16	-	-	-	0.84
SCK	SM	2014	Spring	RP-184-2	SC	3	3	83.5	0.64	0.33	0.03	-	-
SCK	SM	2014	Spring	RP-173-2	MC	1	1	18.5	0.68	0.30	0.01	-	-
SCK	SM	2014	Spring	RP-141-1	TM	1	1	6.1	0.95	0.02	0.02	-	-
SCK	SM	2014	Spring	RP-141-2	SC	4	4	30.2	0.25	0.48	0.28	-	-
SCK	SM	2014	Spring	RP-141-3	MC	8	8	65.4	0.78	0.14	0.08	-	-
SCK	SM	2014	Spring	RP-104-1	TM	6	6	22.4	0.36	0.29	0.35	-	-
SCK	SM	2014	Spring	RP-104-3	MC	2	1	11.7	0.01	0.99	-	-	-
SCK	SM	2014	Spring	RP-81-3	MC	3	3	24.2	0.84	0.03	0.13	-	-
SCK	SM	2014	Spring	RP-81-4	SC	5	5	371.2	0.16	0.16	0.06	0.62	-
SCK	SM	2014	Summer	RP-141-1	TM	8	8	71.7	0.48	0.06	0.06	-	0.40
SCK	SM	2014	Summer	RP-141-2	SC	8	8	123.4	0.63	0.26	0.11	-	-
SCK	SM	2014	Summer	RP-141-3	MC	8	8	48.2	0.27	0.24	0.49	-	-
SCK	SM	2014	Summer	RP-141-4	US	5	5	59.3	0.31	0.17	0.01	0.51	-
SCK	SM	2014	Summer	RP-104-1	TM	2	2	37.1	0.05	0.95	0.01	-	-
SCK	SM	2014	Summer	RP-104-2	SS	3	2	64.3	0.00	0.92	0.08	-	-
SCK	SM	2014	Summer	RP-104-3	MC	10	10	134.7	0.24	0.64	0.12	-	-
SCK	SM	2014	Summer	RP-104-4	US	6	5	8.6	0.90	0.10	-	-	-
SCK	SM	2014	Summer	RP-104-5	SC	8	8	292.5	0.05	0.11	0.84	-	-
SCK	SM	2014	Summer	RP-81-1	US	4	4	29.8	0.17	0.74	0.09	-	-
SCK	SM	2014	Summer	RP-81-2	TM	7	6	19.6	0.16	0.71	0.13	-	-
SCK	SM	2014	Summer	RP-81-3	MC	8	8	186.2	0.03	0.69	0.29	-	-
SCK	SM	2014	Summer	RP-81-4	SC	3	3	25.8	0.00	0.62	0.38	-	-
SCK	SM	2014	Fall	RP-141-1	TM	7	7	27.8	0.96	0.04	0.00	-	-
SCK	SM	2014	Fall	RP-141-2	SC	8	8	370.8	0.99	0.01	0.00	-	-
SCK	SM	2014	Fall	RP-141-3	MC	8	8	288.8	0.98	0.01	0.01	-	-
SCK	SM	2014	Fall	RP-141-4	US	3	3	129.5	0.12	0.01	0.05	-	0.82
SCK	SM	2014	Fall	RP-104-1	TM	8	8	273.1	0.06	0.41	0.11	-	0.42
SCK	SM	2014	Fall	RP-104-3	MC	4	4	226.5	0.97	0.00	0.02	-	-
SCK	SM	2014	Fall	RP-104-4	US	1	1	68.3	-	1.00	0.00	-	-
SCK	SM	2014	Fall	RP-104-5	SC	8	8	131.1	0.47	0.10	0.43	-	-
SCK	SM	2014	Fall	RP-81-3	MC	6	2	5.1	0.97	-	0.03	-	-
SCK	SM	2014	Fall	RP-81-4	SC	7	3	1.1	0.87	-	0.13	-	-

Table A5.5-3. Diet composition of juvenile Coho Salmon (SCO) sampled during 2013 and 2014 in the Susitna River. Size classes defined as small (SM; ≤ 120 mm fork length [FL]) and large (LG; > 120 mm FL). Prey items were categorized as aquatic life-stages of freshwater invertebrates (FW inv. [Aqu LS]), terrestrial life-stages of freshwater invertebrates (FW inv. [Ter LS]), terrestrial invertebrates (Ter. inv.), fish and non-salmonid fish eggs (Fish & non-sm. eggs), or salmon eggs.

Species	Size Class	Year	Season	Site	Macro-habitat	N Total	N Non-empty	Diet Mass (mg)	Diet Proportions (by mass)				
									FW inv. (Aqu. LS)	FW inv. (Ter. LS)	Ter. Inv.	Fish & Non-Salmon Eggs	Salmon Eggs
SCO	SM	2013	Spring	RP-141-1	TM	13	6	45.5	0.14	0.09	0.77	-	-
SCO	SM	2013	Spring	RP-81-1	US	9	7	12.5	0.47	0.22	0.31	-	-
SCO	SM	2013	Spring	RP-81-2	TM	8	8	70.8	0.04	0.19	0.04	0.74	-
SCO	SM	2013	Summer	RP-141-1	TM	10	10	3307.4	0.03	0.01	0.00	-	0.96
SCO	SM	2013	Summer	RP-141-4	US	3	3	6.3	0.08	0.73	0.19	-	-
SCO	SM	2013	Summer	RP-104-1	TM	16	8	126.8	0.07	0.02	0.01	0.02	0.87
SCO	SM	2013	Summer	RP-104-2	SS	16	10	666.0	0.00	0.01	0.01	0.03	0.95
SCO	SM	2013	Summer	RP-104-4	US	15	13	38.3	0.82	0.12	0.06	-	-
SCO	SM	2013	Summer	RP-104-5	SC	16	8	90.9	0.06	-	0.42	-	0.52
SCO	SM	2013	Summer	RP-81-2	TM	4	4	33.6	0.12	0.22	0.66	-	-
SCO	SM	2013	Fall	RP-141-1	TM	8	6	1235.5	0.01	0.00	0.01	-	0.98
SCO	SM	2013	Fall	RP-141-4	US	1	1	5.8	0.07	0.28	0.65	-	-
SCO	SM	2013	Fall	RP-104-1	TM	16	14	6023.8	0.00	0.01	0.01	-	0.98
SCO	SM	2013	Fall	RP-104-2	SS	10	9	1508.8	0.03	0.02	0.02	-	0.93
SCO	SM	2013	Fall	RP-104-4	US	6	5	72.3	0.17	0.24	0.08	-	0.52
SCO	SM	2013	Fall	RP-104-5	SC	12	11	702.0	0.02	0.05	0.15	-	0.78
SCO	SM	2013	Fall	RP-81-1	US	5	3	48.5	0.04	-	0.96	-	-
SCO	SM	2013	Fall	RP-81-2	TM	2	2	152.8	0.03	0.01	0.00	-	0.96
SCO	SM	2014	Spring	RP-141-1	TM	7	5	58.7	0.70	0.07	0.23	-	-
SCO	SM	2014	Spring	RP-141-2	SC	1	1	78.7	0.01	0.99	0.00	-	-
SCO	SM	2014	Spring	RP-104-1	TM	10	10	122.7	0.06	0.76	0.18	-	-
SCO	SM	2014	Spring	RP-104-2	SS	6	5	54.3	0.83	0.08	0.09	-	-
SCO	SM	2014	Spring	RP-104-4	US	8	4	8.8	0.83	0.14	0.03	-	-
SCO	SM	2014	Spring	RP-104-5	SC	2	1	40.3	0.01	0.99	-	-	-
SCO	SM	2014	Spring	RP-81-1	US	8	7	42.9	0.03	0.02	0.95	-	-
SCO	SM	2014	Spring	RP-81-2	TM	6	4	45.8	0.60	0.00	0.07	0.33	-
SCO	SM	2014	Spring	RP-81-3	MC	7	6	307.3	0.09	0.14	0.07	0.70	-
SCO	SM	2014	Spring	RP-81-4	SC	1	1	13.3	0.01	-	-	0.99	-
SCO	SM	2014	Summer	RP-104-1	TM	6	6	45.5	0.11	0.71	0.18	-	-
SCO	SM	2014	Summer	RP-104-2	SS	5	2	19.0	0.00	-	0.20	0.80	-
SCO	SM	2014	Summer	RP-104-4	US	8	8	67.9	0.27	0.72	0.01	-	-
SCO	SM	2014	Summer	RP-104-5	SC	5	4	21.1	0.96	0.04	0.00	-	-
SCO	SM	2014	Summer	RP-81-1	US	8	8	78.5	0.15	0.43	0.03	0.39	-
SCO	SM	2014	Summer	RP-81-2	TM	7	6	69.5	0.06	0.02	0.04	0.87	-
SCO	SM	2014	Fall	RP-104-1	TM	8	8	29.1	0.14	0.75	0.11	-	-
SCO	SM	2014	Fall	RP-104-2	SS	10	8	1469.2	0.02	0.01	0.01	-	0.96
SCO	SM	2014	Fall	RP-104-4	US	8	8	24.8	0.42	0.52	0.06	-	-
SCO	SM	2014	Fall	RP-104-5	SC	5	4	119.0	0.71	0.06	0.23	-	-
SCO	SM	2014	Fall	RP-81-1	US	13	12	439.4	0.05	0.05	0.07	0.31	0.53
SCO	SM	2014	Fall	RP-81-2	TM	2	2	28.1	0.53	0.09	0.38	-	-

Table A5.5-4. Diet composition of two size classes of Rainbow Trout (TRB) sampled during 2013 and 2014 in the Susitna River. Size classes defined as small (SM; ≤ 120 mm fork length [FL]) and large (LG; > 120 mm FL). Prey items were categorized as aquatic life-stages of freshwater invertebrates (FW inv. [Aqu LS]), terrestrial life-stages of freshwater invertebrates (FW inv. [Ter LS]), terrestrial invertebrates (Ter. inv.), fish and non-salmonid fish eggs (Fish & non-sm. eggs), or salmon eggs.

Species	Size Class	Year	Season	Site	Macro-habitat	N Total	N Non-empty	Diet Mass (mg)	Diet Proportions (by mass)				
									FW inv. (Aqu. LS)	FW inv. (Ter. LS)	Ter. Inv.	Fish & Non-Salmon Eggs	Salmon Eggs
TRB	SM	2013	Spring	RP-81-2	TM	9	4	1.7	0.21	0.40	0.40	-	-
TRB	SM	2014	Fall	RP-141-1	TM	1	1	14.7	1.00	-	-	-	-
TRB	SM	2014	Fall	RP-104-1	TM	1	1	44.7	-	0.36	-	-	0.64
TRB	SM	2014	Fall	RP-81-1	US	1	1	37.3	0.51	0.06	0.42	-	-
TRB	LG	2013	Spring	RP-141-1	TM	1	1	17.1	-	0.11	0.89	-	-
TRB	LG	2013	Spring	RP-104-2	SS	3	2	32.9	0.43	-	0.57	-	-
TRB	LG	2013	Summer	RP-141-1	TM	8	8	22124.4	0.00	0.00	0.00	-	1.00
TRB	LG	2013	Summer	RP-104-2	SS	9	6	77.5	0.37	0.00	0.54	0.08	-
TRB	LG	2013	Fall	RP-141-1	TM	2	2	5557.8	0.00	0.00	-	-	1.00
TRB	LG	2013	Fall	RP-104-1	TM	8	7	32813.8	0.00	-	-	-	1.00
TRB	LG	2014	Spring	RP-141-1	TM	6	6	1812.6	0.72	0.00	0.13	0.14	-
TRB	LG	2014	Spring	RP-141-4	US	2	2	54.5	0.70	-	0.30	-	-
TRB	LG	2014	Summer	RP-141-1	TM	3	3	1170.9	0.03	0.00	-	-	0.96
TRB	LG	2014	Summer	RP-141-4	US	1	1	15.4	0.01	0.01	0.01	0.98	-
TRB	LG	2014	Summer	RP-104-1	TM	2	2	52.7	1.00	-	-	-	-
TRB	LG	2014	Summer	RP-81-2	TM	1	1	35.6	0.15	-	-	0.85	-
TRB	LG	2014	Fall	RP-141-1	TM	1	1	3395.8	-	-	0.00	0.05	0.95

APPENDIX B: SITE-SPECIFIC SAMPLE COLLECTION LOCATIONS

Susitna-Watana Hydroelectric Project (FERC No. 14241)

River Productivity Study Study Plan Section 9.8

2014 Study Implementation Report

Appendix B Site-Specific Sample Collection Locations

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants, Inc.
Alaska Cooperative Fish and Wildlife Research Unit,
University of Alaska Fairbanks

October 2015

The twenty-eight figures in this appendix depict the approximate locations of samples at the 21 sites established on the Susitna River by the River Productivity Study in 2014, as recorded by GPS units at the time of collection during the three sampling events, as well as the approximate locations of samples at the nine tributaries sampled in the Upper Susitna River basin in July 2014. Higher resolution imagery was not available for Devil Creek (RP-DEV-1), Kosina Creek (RP-KOS-1), and Tyone River (RP-TYO-1) sites. As a substitute, available aerial digital images taken above the Devil Creek site (Figure B-22) and Kosina Creek site (Figure B-25) have been used with approximate placements of sample locations. For the Tyone River site (Figure B-27), online map imagery was used, with approximate placements of sample locations.



Figure B-1. Locations for samples taken at RP-81-1, an upland slough, near Montana Creek during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.



Figure B-2. Locations for samples taken at RP-81-2, at the mouth of Montana Creek, and RP-81-5, a side channel site immediately above the tributary mouth site (upper 3 drift sample locations), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.

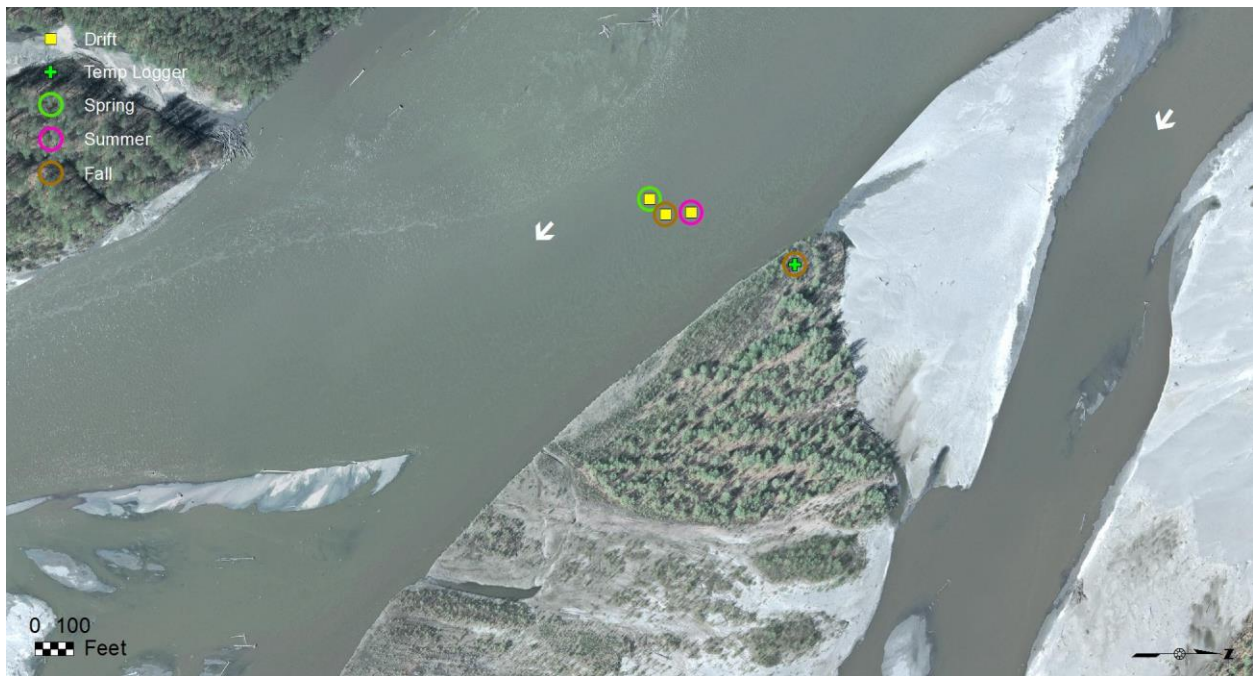


Figure B-3. Locations for samples taken at RP-81-3, a main channel macrohabitat site near Montana Creek, during the three 2014 seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-4. Locations for samples taken at RP-81-4, a side channel macrohabitat site near Montana Creek, during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-5. Locations for samples taken at RP-104-1, a side slough macrohabitat site below the mouth of Whiskers Creek in FA-104 (Whiskers Slough) , during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-6. Locations for samples taken at RP-104-2, a side slough macrohabitat site above the mouth of Whiskers Creek in FA-104 (Whiskers Slough), during the three seasonal sampling events (Spring, Summer/Pre-Storm, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.



Figure B-7. Locations for samples taken at RP-104-3, a main channel macrohabitat site in FA-104 (Whiskers Slough), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-8. Locations for samples taken at RP-104-4, an upland slough macrohabitat site in FA-104 (Whiskers Slough), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.

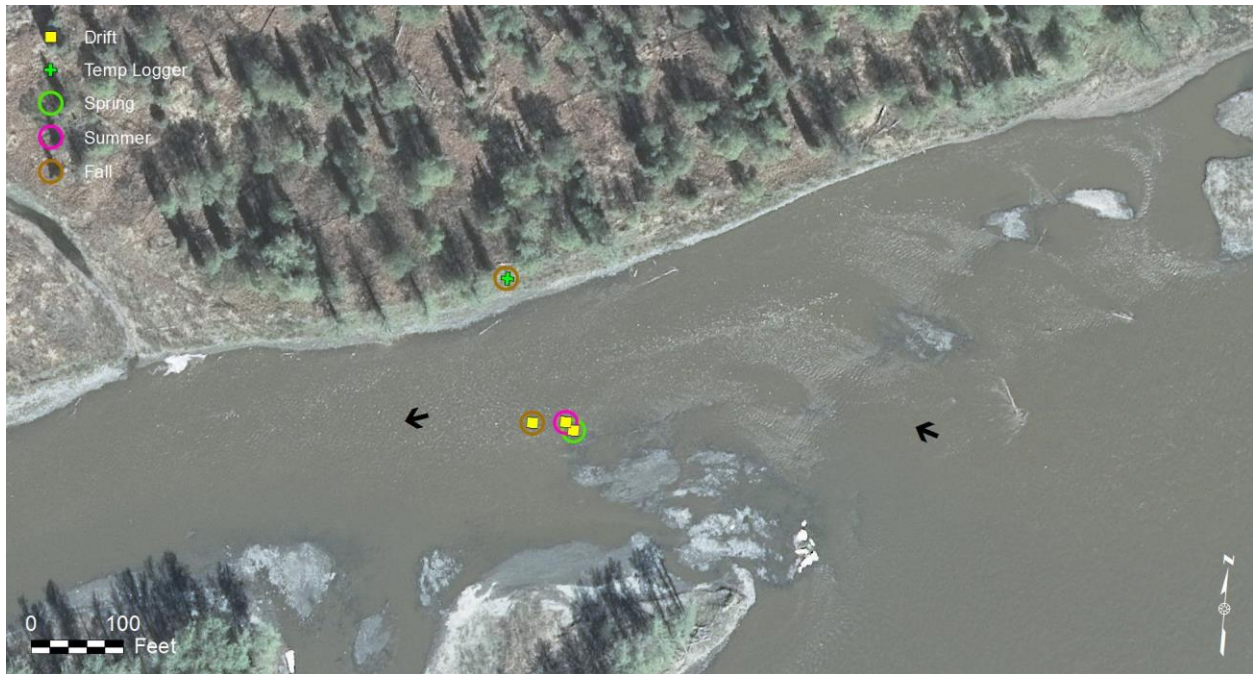


Figure B-9. Locations for samples taken at RP-104-5, a side channel macrohabitat site in FA-104 (Whiskers Slough), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-10. Locations for samples taken at RP-141-1, a tributary mouth macrohabitat site at Indian River in FA-141 (Indian River), and RP-141-5, a main channel site immediately above the tributary mouth site, during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-11. Locations for samples taken at RP-141-2, a side channel macrohabitat site in FA-141 (Indian River), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.



Figure B-12. Locations for samples taken at RP-141-3, a split main channel macrohabitat site in FA-141 (Indian River), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-13. Locations for samples taken at RP-141-4, an upland slough macrohabitat site in FA-141 (Indian River), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.



Figure B-14. Locations for samples taken at RP-173-1, a tributary mouth macrohabitat site at an unmarked tributary in FA-173 (Stephan Lake Complex), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.

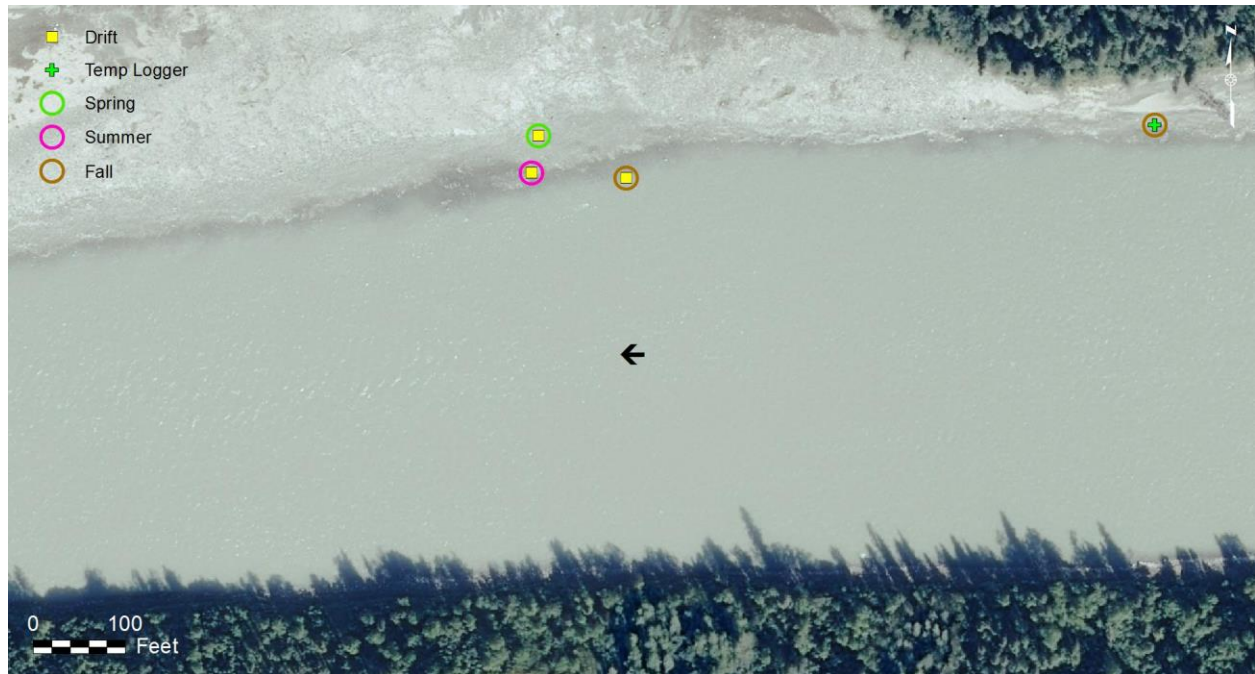


Figure B-15. Locations for samples taken at RP-173-2, a main channel macrohabitat site in FA-173 (Stephan Lake Complex), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.

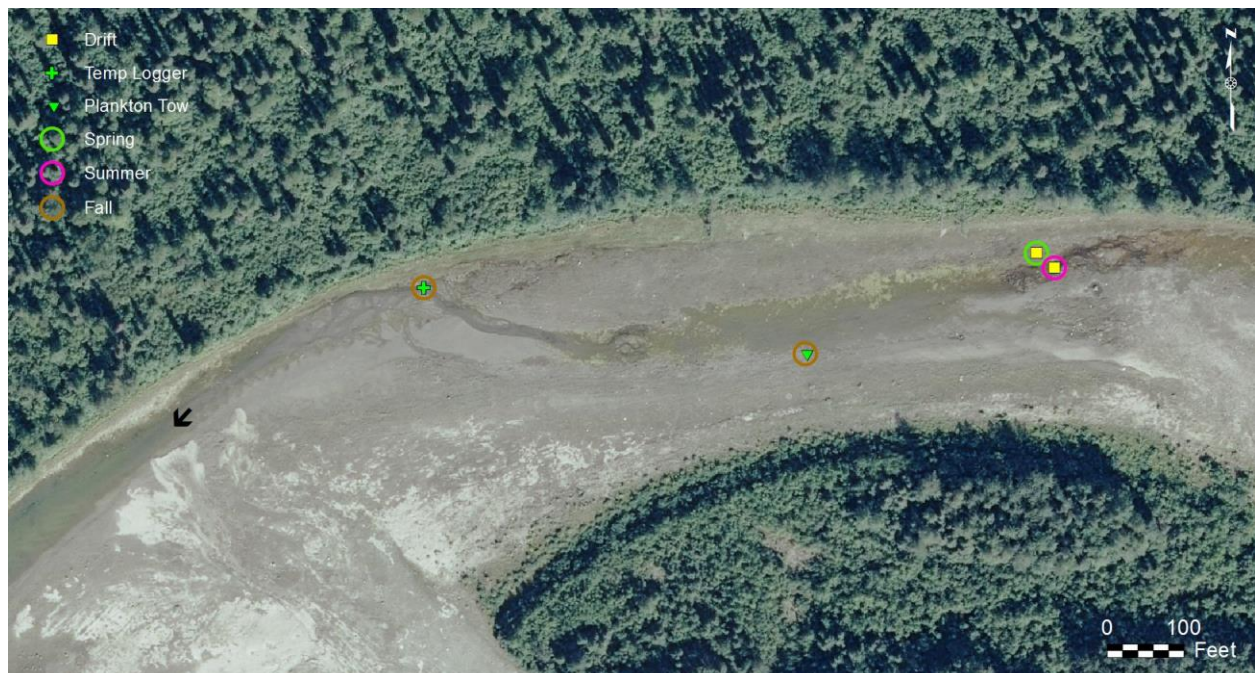


Figure B-16. Locations for samples taken at RP-173-3, a side channel macrohabitat site in FA-173 (Stephan Lake Complex), during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. Drift markers are representative of duplicate samples.



Figure B-17. Locations for samples taken at RP-173-4, a side slough macrohabitat site (lower sample group), and RP-173-5, an upland slough macrohabitat site (upper sample group), in FA-173 (Stephan Lake Complex) during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Grab and plankton tow markers are the representative location of 5 replicate samples. RP-173-5 was located on CIRWG lands.

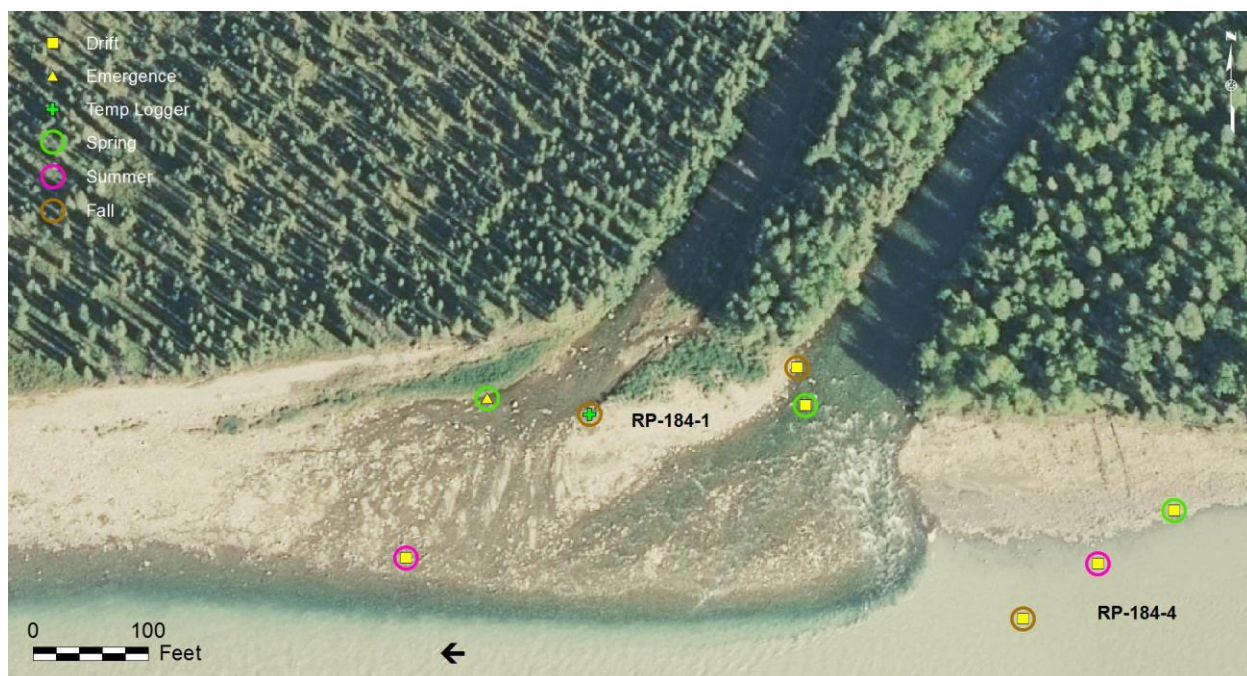


Figure B-18. Locations for samples taken at RP-184-1, a tributary mouth macrohabitat site at Tsusena Creek, just downstream of FA-184 (Watana Dam), and RP-184-4, a main channel site immediately above the tributary mouth site, during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.

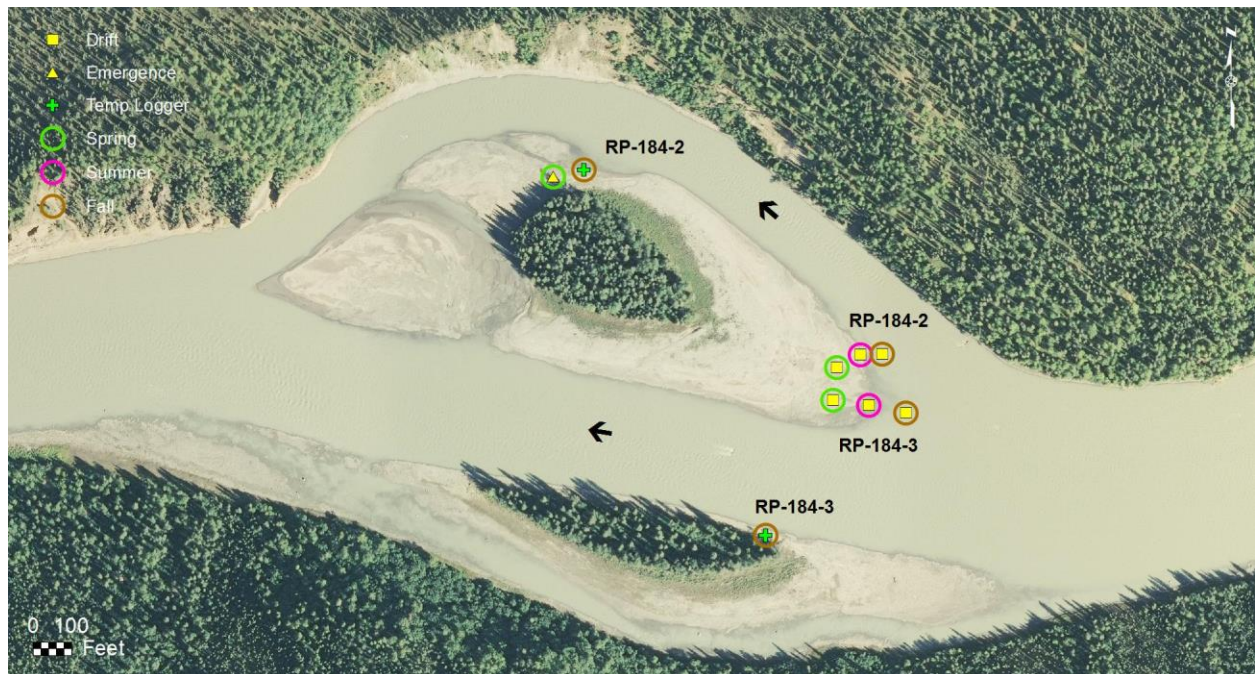


Figure B-19. Locations for samples taken at RP-184-2, a side channel macrohabitat site (top sample group) and RP-184-3, a main channel macrohabitat (bottom sample group), in FA-184 (Watana Dam) during the three seasonal sampling events (Spring, Summer, Fall) in 2014. Drift markers are representative of duplicate samples.



Figure B-20. Locations for samples taken at RP-BUT-1, Butte Creek, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.



Figure B-21. Locations for samples taken at RP-DED-1, Deadman Creek, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.

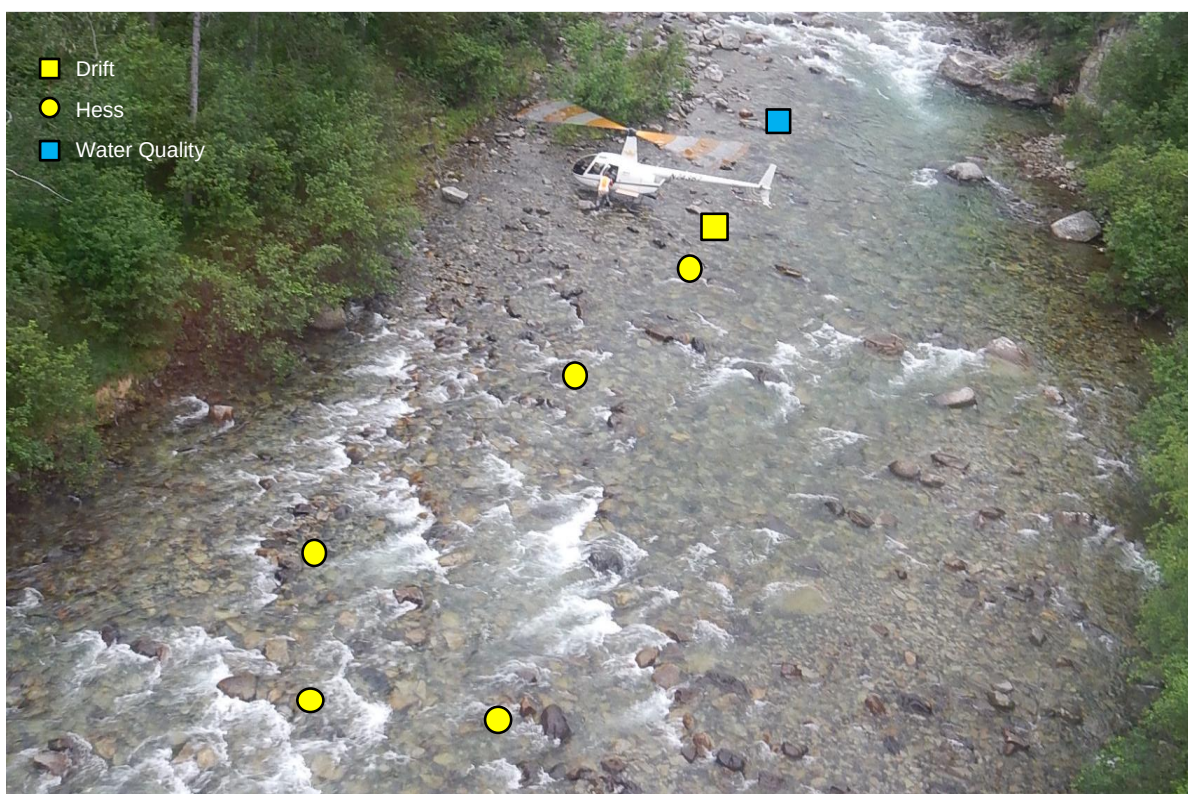


Figure B-22. Approximate locations for samples taken at RP-DEV-1, Devil Creek, a tributary in the Middle Susitna River basin above Devils Canyon, during July 2014. Drift markers are representative of duplicate samples. This site is located on CIRWG lands.



Figure B-23. Locations for samples taken at RP-FOG-1, Fog Creek, a tributary in the Middle Susitna River basin above Devils Canyon during July 2014. Drift markers are representative of duplicate samples.



Figure B-24. Locations for samples taken at RP-JAY-1, Jay Creek, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.

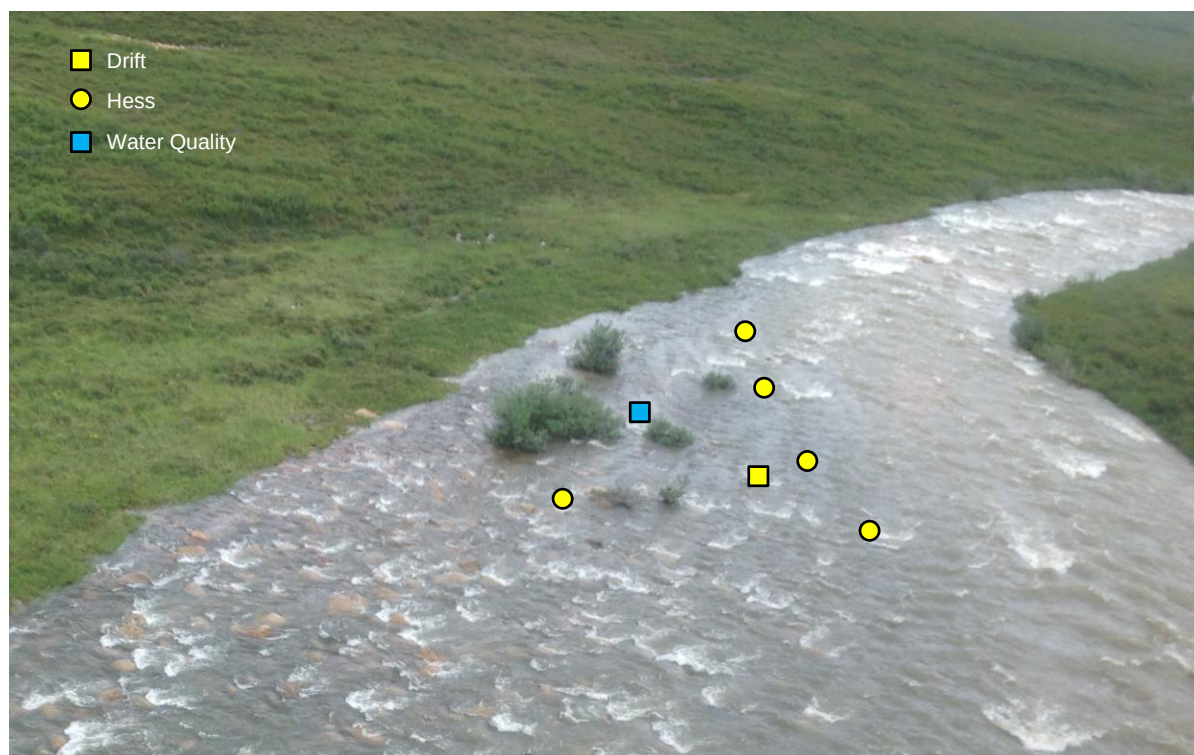


Figure B-25. Approximate locations for samples taken at RP-KOS-1, Kosina Creek, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.



Figure B-26. Locations for samples taken at RP-OSH-1, Oshetna River, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.



Figure B-27. Approximate locations for samples taken at RP-TYO-1, Tyone River, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.



Figure B-28. Locations for samples taken at RP-WAT-1, Watana Creek, a tributary in the Upper Susitna River basin during July 2014. Drift markers are representative of duplicate samples.