



Energizing Life in Our Communities

June 23, 2020

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

**Re: Jackson Hydroelectric Project, FERC No. 2157
Fish and Habitat Monitoring Plan – 2019 Annual Report
License Article 410**

Dear Secretary Bose:

Enclosed is Public Utility District No. 1 of Snohomish County's Fish and Habitat Monitoring Plan Annual Report for 2019 pursuant to License Article 410 for the Jackson Hydroelectric Project. The draft report was provided to the Aquatic Resource Committee for a 30-day review and comment period. Consultation documentation is included in the report's Appendix E.

If you have any questions on the Fisheries and Habitat Monitoring Plan Annual Report for 2019, please contact Keith Binkley, Natural Resources Manager, at (425) 783-1769 or KMBinkley@snopud.com.

Sincerely,

/s/ Jason A. Zyskowski

Jason A. Zyskowski
Assistant General Manager of Facilities, Generation, Power, Rates and Transmission
Management
JAZyskowski@snopud.com
(425) 783-4332

Enclosed: Fish and Habitat Monitoring Plan Annual Report for 2019

cc: Aquatic Resource Committee

Henry M. Jackson Hydroelectric Project (FERC No. 2157)



License Article 410: Fisheries and Habitat Monitoring Plan 2019 Annual Report



Everett, WA
June 2020

Final – This document has been prepared for the District. It has been peer-reviewed by the District for accuracy and formatting based on information known at the time of its preparation and with that understanding is considered complete by the District. The document may be cited as:

Public Utility District No. 1 of Snohomish County (District), 2020. License Article 410: Fisheries and Habitat Monitoring Plan – DRAFT 2019 Annual Report for the Henry M. Jackson Hydroelectric Project, FERC No. 2157. June 2020.

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Acronyms and Abbreviations

7-DAD Max	seven-day average of the daily maximum water temperature
ARC	Aquatic Resource Committee
cfs	cubic feet per second
District	Public Utility District No. 1 of Snohomish County
FERC	Federal Energy Regulatory Commission
FHM Plan	Fisheries and Habitat Monitoring Plan
Project	Henry M. Jackson Hydroelectric Project, FERC No. 2157
RM	River Mile
SC	Side channel
USGS	United States Geological Survey
WDFW	Washington Department of Fish and Wildlife
WY	Water year

1. INTRODUCTION

Public Utility District No. 1 of Snohomish County (the District) received a license on September 2, 2011 (License) from the Federal Energy Regulatory Commission (FERC) for the Henry M. Jackson Hydroelectric Project (Project) (FERC 2011). License Article 410 approved the Fisheries and Habitat Monitoring Plan (FHM Plan) filed with the FERC on September 2, 2010, with modification. Per Section 4.1 of the FHM Plan, the District is to prepare a report by June 30 of each year detailing the monitoring efforts of the previous calendar year.

This FHM Plan Annual Report covers activities conducted in calendar year 2019. Appendices A, B, and C contain water temperature data. Appendix A contains mean daily temperature in graphical format and Appendix B contains the same data in tabular format. Appendix C contains seven-day average of the daily maximum water temperature (7-DAD Max) in tabular format. Appendix D contains the 2019 Smolt Trap Report. This Annual Report was provided to the Aquatic Resources Committee (ARC) [consisting of the City of Everett, City of Sultan, Snohomish County, Washington Department of Ecology, Washington Department of Fish and Wildlife (WDFW), Tulalip Tribes, U.S. Forest Service, National Marine Fisheries Service, U.S. Fish and Wildlife Service and American Whitewater] for a 30-day review and comment period; no comments were received. Consultation documentation will be included in Appendix E.

2. MONITORING OF FISH HABITAT IN THE SULTAN RIVER

2.1. Riverine Habitat Monitoring

As articulated in the FHM Plan and as prescribed in the Process Flow Plan, Marsh Creek Slide Modification Plan, Side Channel Enhancement/Large Woody Debris Plan, and the Side Channel Ramping Rate Evaluation Report, the District is required to conduct a habitat survey after a high flow event or other major event causing changes in habitat conditions. In response to the flow event of November 18, 2015, the District contracted for subsequent data collection during 2016. Stillwater Sciences conducted detailed quantitative monitoring of physical habitat to document high flow induced changes in the lower, alluvial portion of the Sultan River as well as habitat changes attributable to the large-scale side channel enhancement project and placement of engineered log jams. This work was in addition to prior surveys conducted by Stillwater Sciences in 2014 and prior to license issuance in 2007 and 2010. The most recent evaluation was provided in the FHM Annual Report for 2016. During 2019, there were no significant high flow events triggering the requirement for riverine habitat monitoring.

2.2. Water Temperature Monitoring

Water temperature was monitored at 12 locations (Figure 1). Nine of these locations were continuously monitored (twelve months/year) and three locations were seasonally monitored (April through October).

Monitoring locations, in order from upstream to downstream, include:

- South Fork Sultan River, upstream of Culmback Dam, near river mile (RM) 18.2;
- Sultan River, within the bypass reach immediately downstream of Culmback Dam, at RM 15.8;

- Sultan River, at the base of the Sultan River Canyon Trail, at RM 15.5 (April through October);
- Sultan River, within the bypass reach, near RM 14.3 (April through October);
- Sultan River, within the bypass reach, near RM 11.3 (April through October);
- Sultan River, within the bypass reach immediately upstream of the Diversion Dam, near RM 9.8;
- Sultan River, immediately downstream of the Diversion Dam, near RM 9.6;
- Sultan River, upstream of the Powerhouse, near RM 4.9;
- Sultan River, downstream of the Powerhouse, near RM 4.4,
- Sultan River, near the confluence with the Skykomish River, at RM 0.2;
- Skykomish River, upstream of the confluence with the Sultan River, at RM 14.1; and
- Skykomish River, downstream of the confluence with the Sultan River, at RM 13.2.

Water temperature monitoring at RM 14.3 and 11.3 in the Sultan River is part of the Water Temperature Conditioning Plan monitoring program; the other sites represent requirements under the original FHM Plan or subsequent revisions.

In general, water temperature in the Sultan Basin during 2019 was slightly warmer than 2018 and were consistent with those collected during 2008 and 2009 by CH2M Hill and presented in the Water Quality Final Technical Report (CH2M Hill 2009). Figures depicting water temperatures during 2019 are presented in Appendix A. A tabulation of all mean daily temperature data for 2019 is presented in Appendix B. The seven-day average of the daily maximum temperature (7-DAD Max) for 2019 is presented in Appendix C.

3. MONITORING OF FISH POPULATIONS IN THE SULTAN RIVER

3.1. Spawner Abundance, Distribution, and Timing in the Sultan River

In the Sultan River, steelhead and Chinook salmon escapement surveys are conducted during the spring and fall, respectively. These surveys are conducted, as conditions allow, within four index areas located downstream of the Diversion Dam (RM 9.7) and one index area located upstream of the Diversion Dam (Figure 2). During 2019, water visibility and flow conditions were generally favorable during both the spring and fall surveys. Spring surveys occurred from March through June and were used to develop an escapement estimate of 56 steelhead based on the direct observation of 34 redds.

Fall surveys occurred from August through October 2019. These surveys were used to generate an escapement estimate of 85 Chinook based on field observations of 34 redds. Both the steelhead and Chinook escapement estimates were developed cooperatively with WDFW.

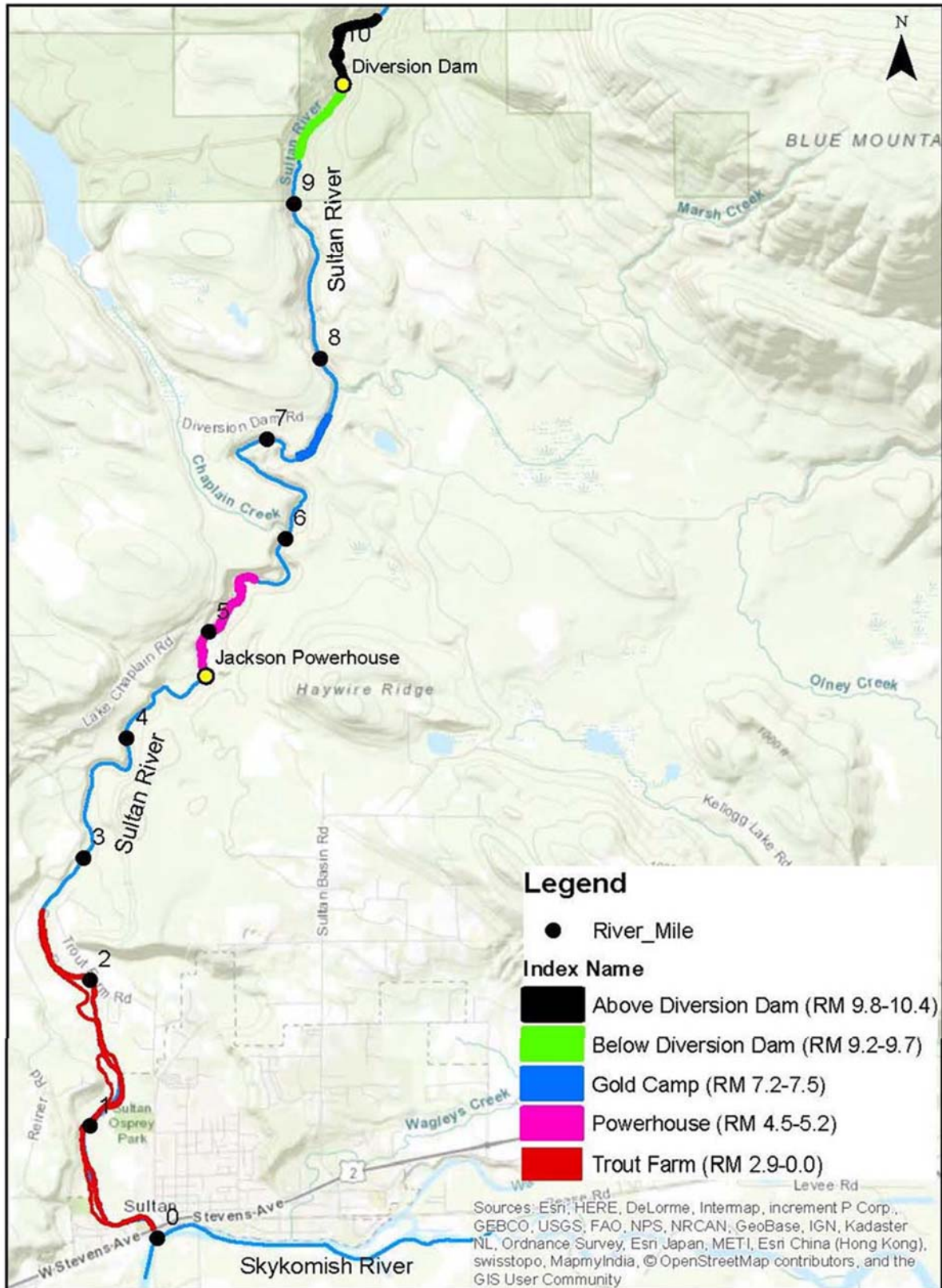


Figure 2. Locations of steelhead and salmon escapement surveys, Sultan River.

3.2. Flow Ceiling Implemented for Chinook Salmon

An operational flow ceiling of 550 cfs is implemented annually between September 15 and October 15 in Reach 1 of the Sultan River, located downstream of the Powerhouse (RM 4.5). This ceiling ensures that areas used by spawning Chinook salmon remain wetted through the incubation and emergence periods should flows from the Project approach the minimum instream flow of 300 cfs. During 2019, mean daily discharge downstream of the Powerhouse averaged 439 cfs during the ceiling period (Figure 3). During 2019, there were no deviations to the flow ceiling that were tied to Project operations. On September 23 and 24, heavy rainfall did result in a mean daily discharge above 550 cfs.

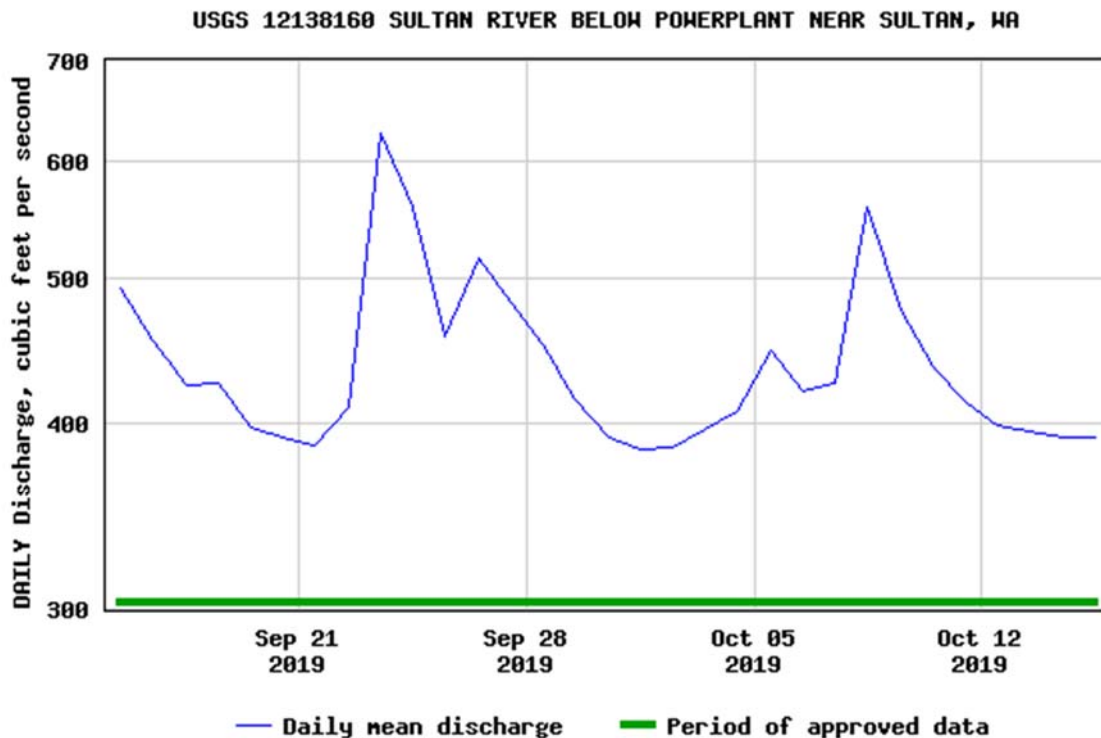


Figure 3. Mean Daily Discharge in the Sultan River downstream of the Powerhouse between September 15 and October 15, 2019.

3.3. Juvenile Production in the Sultan River

The seventh year of smolt trapping was completed on June 29, 2019 (see Appendix D). The smolt trap is required to operate for two years over the six-year period between 2018 and 2024; 2019 was the first of these two years.

4. SIDE CHANNEL MAINTENANCE AND MONITORING

The District has completed a series of detailed flow and aquatic habitat surveys in the constructed side channels in the lower Sultan River. These side channels (SC) – SC1, SC2, SC3, and SC4 – had each undergone varying degrees of construction during summer 2012 to restore and/or enhance salmonid habitat. The primary objective of the District's surveys was to assess flow behavior and distribution and to determine whether additional downramping rate restrictions were necessary to prevent juvenile fish stranding in these side channels.

In addition to the survey effort, qualitative monitoring to assess the performance of both constructed and modified side channels, as well as the engineered log jams, was initiated after construction was completed in 2012 and has been conducted annually. No maintenance of side channels was necessary during 2019.

5. FUTURE MONITORING

The 2019 calendar year marks the eighth calendar year under the License. Monitoring methodologies employed in 2019 were consistent with those identified in the FHM Plan. Monitoring of physical habitat and water quality conditions will continue in 2020. Monitoring of spawner abundance, distribution, and timing will take place per the FHM Plan. Future monitoring of juvenile outmigration will occur in January 2020.

6. REFERENCES

FERC. 2011. Order Issuing New License, Project No. 2157-188. 136 FERC ¶ 62,188. September 2, 2011. Available at:
<http://www.snopud.com/Site/Content/Documents/relicensing/License/20110902LICENSE.pdf>

APPENDIX A

2019 Water Temperature Figures

Figure A-1. Mean Daily Water Temperature in the South Fork Sultan (RM 18.2), and the mainstem Sultan River immediately downstream of Culmback Dam (RM 15.8) during 2019

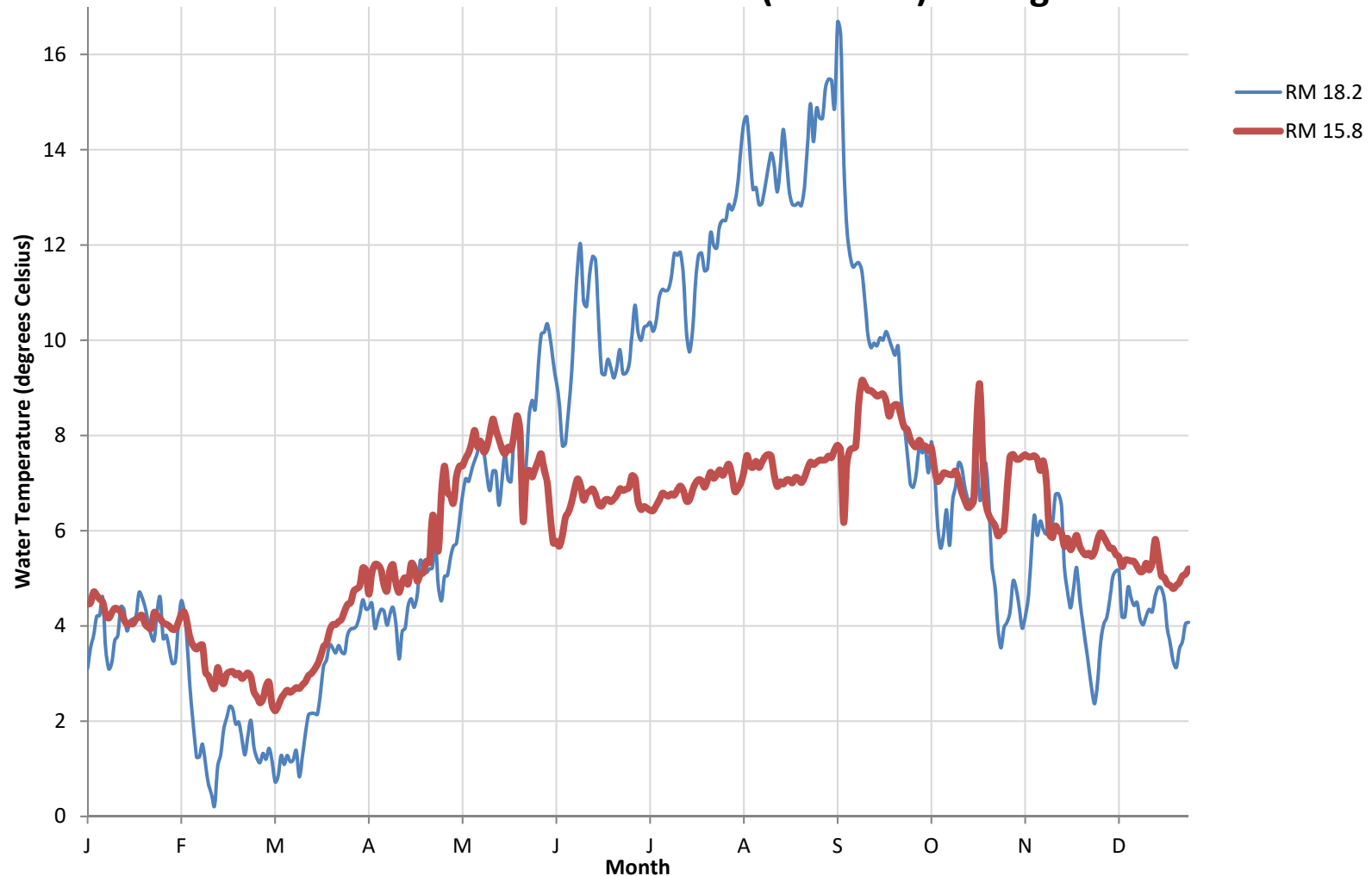
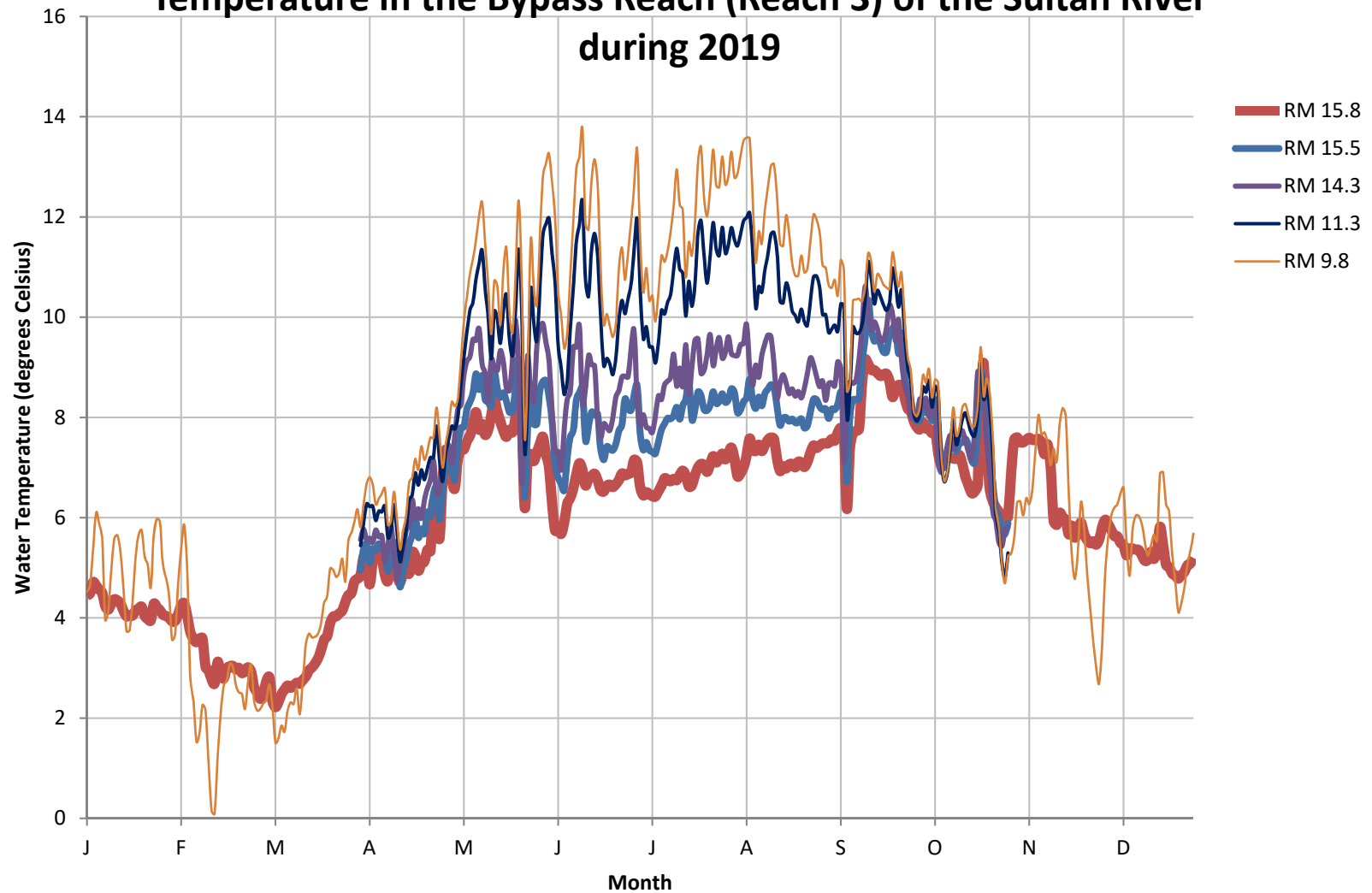
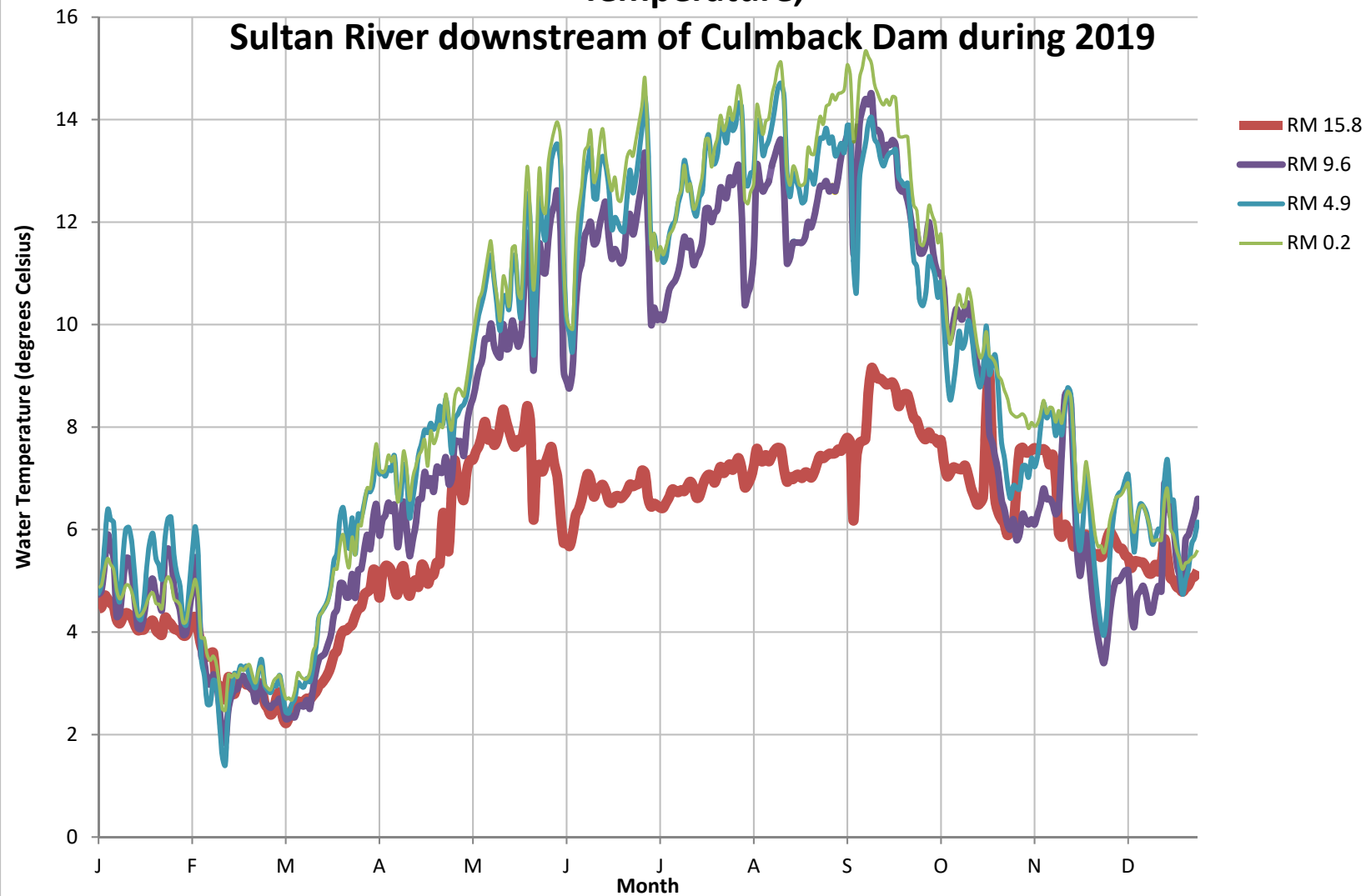


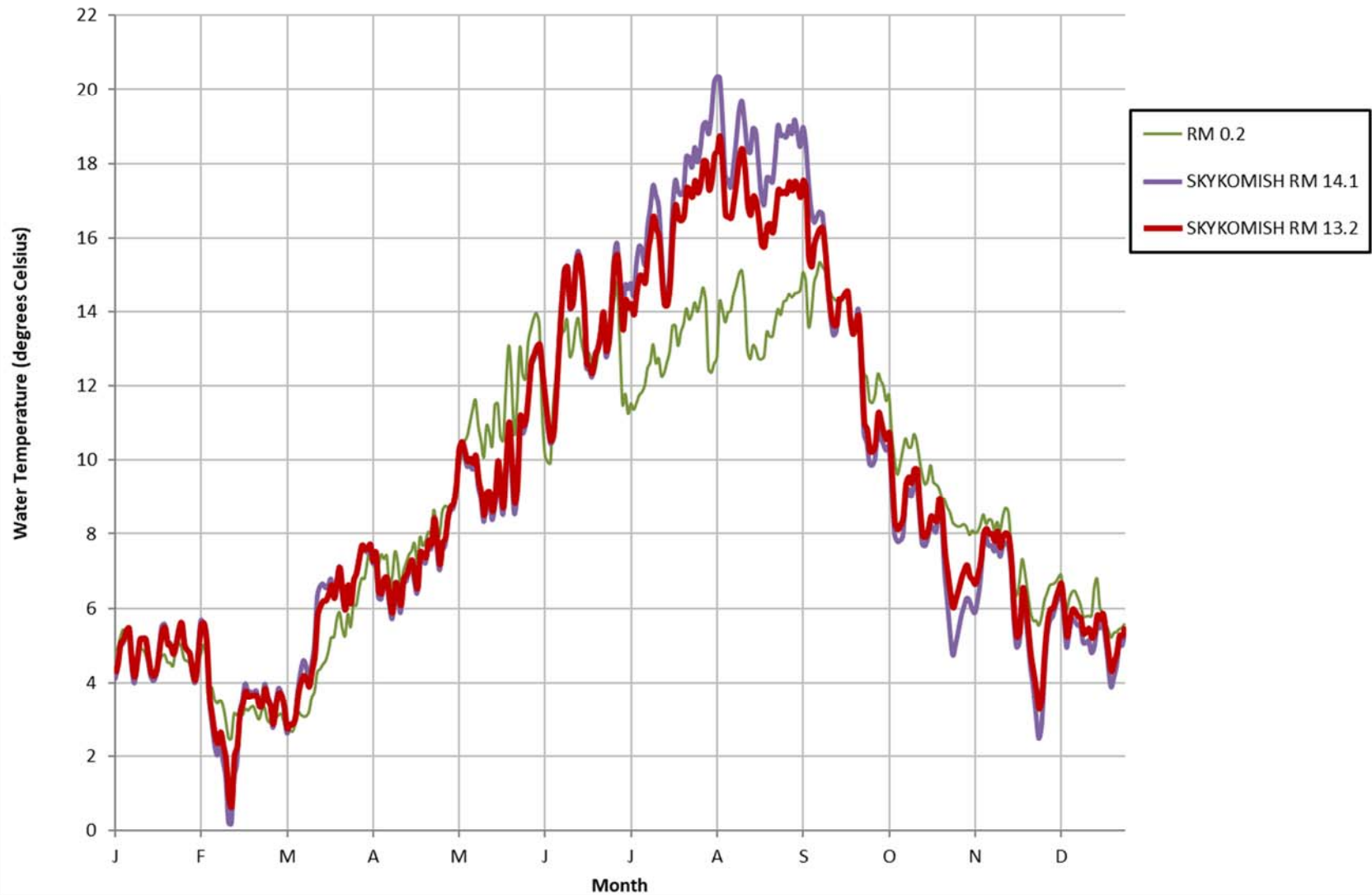
Figure A-2. Longitudinal Depiction of Mean Daily Water Temperature in the Bypass Reach (Reach 3) of the Sultan River during 2019



**Figure A-3. Longitudinal Depiction of Mean Daily Water Temperature,
Sultan River downstream of Culmback Dam during 2019**



**Figure A-4. Mean Daily Water Temperature
near confluence of Sultan and Skykomish rivers during 2019**



APPENDIX B

2019 Mean Daily Water Temperature Data in Tabular Format

	Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
1/1	3.1	4.5				4.5	4.7	4.8	4.8	4.9	4.1	4.2
1/2	3.6	4.5				4.6	4.8	4.9	4.8	4.9	4.4	4.5
1/3	3.8	4.7				5.4	5.3	5.7	5.1	5.2	5.0	5.1
1/4	4.2	4.6				6.1	5.9	6.4	5.4	5.4	5.1	5.2
1/5	4.2	4.6				5.9	5.6	6.2	5.2	5.3	5.3	5.4
1/6	4.6	4.5				5.6	5.4	6.1	5.1	5.2	5.4	5.5
1/7	3.5	4.2				4.0	4.3	4.9	4.7	4.8	4.5	4.6
1/8	3.1	4.2				4.1	4.4	4.6	4.5	4.7	4.0	4.2
1/9	3.2	4.3				5.0	4.9	5.4	4.6	4.7	4.5	4.6
1/10	3.7	4.4				5.6	5.4	6.0	4.8	4.9	5.1	5.2
1/11	3.8	4.3				5.7	5.4	6.0	4.8	4.9	5.2	5.2
1/12	4.4	4.3				5.3	5.2	5.8	4.6	4.8	5.2	5.2
1/13	4.4	4.1				4.6	4.6	5.1	4.4	4.5	4.7	4.7
1/14	3.9	4.0				3.7	4.1	4.3	4.3	4.3	4.2	4.3
1/15	4.1	4.0				3.7	4.1	4.2	4.2	4.3	4.1	4.2
1/16	4.2	4.0				4.3	4.3	4.6	4.2	4.4	4.3	4.3
1/17	4.2	4.1				5.2	4.7	5.3	4.4	4.6	5.0	4.9
1/18	4.7	4.2				5.7	4.9	5.8	4.6	4.7	5.5	5.4
1/19	4.6	4.2				5.7	5.0	5.9	4.7	4.8	5.6	5.5
1/20	4.4	4.0				5.2	4.7	5.4	4.5	4.6	5.1	5.0
1/21	4.1	4.0				5.1	4.6	5.3	4.5	4.5	5.1	5.0
1/22	3.8	3.9				4.6	4.4	5.0	4.4	4.5	4.8	4.8
1/23	3.7	4.3				5.7	5.5	5.8	5.0	4.9	5.0	5.0
1/24	4.3	4.2				6.0	5.6	6.2	5.3	5.1	5.4	5.4
1/25	4.6	4.2				5.9	5.5	6.2	5.1	5.0	5.6	5.6
1/26	3.7	4.1				5.1	4.9	5.5	4.7	4.6	5.0	5.0
1/27	3.8	4.0				4.8	4.6	5.1	4.6	4.6	4.9	4.9
1/28	3.5	4.0				4.5	4.4	4.9	4.5	4.5	4.8	4.8
1/29	3.2	3.9				3.6	4.0	4.2	4.2	4.2	4.2	4.3
1/30	3.2	3.9				3.7	4.0	4.1	4.1	4.2	4.0	4.1
1/31	4.0	4.1				4.7	4.4	4.9	4.3	4.5	4.9	4.8

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
2/1	4.5	4.2				5.4	4.8	5.5	4.4	4.8	5.7	5.6
2/2	4.3	4.3				5.9	5.5	6.1	4.7	5.0	5.6	5.6
2/3	3.6	4.0				4.9	4.7	5.5	4.5	4.7	5.1	5.1
2/4	2.6	3.7				2.8	3.5	3.5	4.0	3.9	3.6	3.7
2/5	1.9	3.6				2.4	3.4	3.2	3.9	3.9	2.9	3.1
2/6	1.3	3.5				1.5	3.0	2.6	3.5	3.6	2.3	2.6
2/7	1.3	3.6				1.7	3.0	2.6	3.4	3.4	2.0	2.4
2/8	1.5	3.6				2.3	3.2	3.1	3.5	3.5	2.4	2.7
2/9	1.1	3.0				2.2	3.0	3.0	3.3	3.4	1.9	2.3
2/10	0.7	3.0				1.1	2.6	2.3	3.0	3.0	1.4	1.9
2/11	0.5	2.8				0.2	1.9	1.6	2.5	2.5	0.2	0.9
2/12	0.2	2.7				0.1	1.8	1.4	2.4	2.5	0.2	0.7
2/13	1.0	3.1				1.2	2.5	2.6	3.0	3.2	1.4	2.0
2/14	1.3	2.9				2.1	2.7	2.8	3.0	3.1	1.8	2.3
2/15	1.8	2.8				2.7	2.9	3.2	3.0	3.2	3.1	3.2
2/16	2.1	3.0				2.8	2.9	3.1	3.0	3.1	3.5	3.4
2/17	2.3	3.0				3.1	3.1	3.3	3.2	3.3	4.0	3.8
2/18	2.3	3.0				3.0	3.1	3.3	3.2	3.3	3.8	3.6
2/19	1.9	3.0				2.7	3.0	3.3	3.2	3.3	3.8	3.7
2/20	2.0	3.0				2.5	2.9	3.1	3.2	3.4	3.7	3.7
2/21	1.6	2.9				2.5	2.9	3.0	3.0	3.2	3.8	3.7
2/22	1.3	3.0				2.2	2.6	2.9	2.9	3.0	3.4	3.3
2/23	1.7	3.0				2.7	2.9	3.2	3.1	3.2	3.3	3.4
2/24	2.0	2.9				3.1	3.0	3.5	3.1	3.3	4.0	3.8
2/25	1.5	2.6				2.3	2.7	3.0	2.9	3.0	3.7	3.5
2/26	1.2	2.5				2.2	2.6	2.9	2.8	2.9	3.4	3.4
2/27	1.1	2.4				2.2	2.5	2.8	2.7	2.9	2.8	2.9
2/28	1.3	2.5				2.3	2.6	3.0	2.9	3.0	3.4	3.4

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
3/1	1.2	2.7				2.4	2.6	3.0	3.0	3.1	3.9	3.7
3/2	1.4	2.8				2.7	2.7	3.2	3.0	3.2	3.7	3.7
3/3	1.2	2.3				2.2	2.5	2.8	2.9	2.9	3.3	3.3
3/4	0.7	2.2				1.5	2.3	2.4	2.7	2.7	2.6	2.8
3/5	0.8	2.3				1.6	2.3	2.4	2.7	2.7	2.8	2.9
3/6	1.3	2.5				1.9	2.4	2.6	2.7	2.7	2.8	2.9
3/7	1.1	2.6				1.7	2.3	2.7	2.8	2.9	3.0	3.1
3/8	1.3	2.6				2.1	2.5	3.0	3.0	3.2	3.8	3.7
3/9	1.2	2.6				2.3	2.6	3.0	3.0	3.1	4.3	4.0
3/10	1.2	2.7				2.3	2.6	2.9	2.9	3.1	4.6	4.2
3/11	1.4	2.7				2.6	2.7	3.1	3.0	3.1	4.4	4.1
3/12	0.8	2.7				2.1	2.5	3.0	3.1	3.2	4.0	3.9
3/13	1.2	2.8				2.7	2.9	3.3	3.3	3.6	4.5	4.3
3/14	1.7	2.8				3.5	3.2	3.7	3.5	3.8	5.1	4.7
3/15	2.1	3.0				3.7	3.5	4.3	3.9	4.3	6.3	5.8
3/16	2.2	3.0				3.6	3.5	4.4	4.1	4.4	6.6	6.1
3/17	2.2	3.1				3.6	3.6	4.5	4.2	4.5	6.7	6.2
3/18	2.1	3.2				3.7	3.8	4.6	4.2	4.6	6.6	6.2
3/19	2.6	3.3				3.9	4.0	4.9	4.5	4.9	6.7	6.4
3/20	3.1	3.6				4.3	4.3	5.4	4.8	5.2	6.8	6.6
3/21	3.3	3.6				4.4	4.5	5.6	5.0	5.2	6.3	6.3
3/22	3.6	3.9				5.0	4.9	6.3	5.4	5.7	6.7	6.7
3/23	3.5	4.0				5.0	4.9	6.4	5.5	5.9	7.1	7.1
3/24	3.4	4.0				4.8	4.7	6.0	5.2	5.5	6.4	6.4
3/25	3.6	4.1				4.9	4.7	5.6	5.1	5.3	6.0	6.0
3/26	3.5	4.1				5.2	5.1	6.2	5.6	5.9	6.6	6.6
3/27	3.4	4.3				4.7	4.7	5.5	5.3	5.5	6.1	6.1
3/28	3.8	4.5				5.5	5.2	6.3	5.8	6.1	6.7	6.8
3/29	3.9	4.5				5.7	5.2	6.2	5.8	6.1	6.9	6.9
3/30	3.9	4.7				5.9	5.6	6.5	6.1	6.5	7.3	7.3
3/31	4.0	4.8				6.2	5.9	6.8	6.4	6.8	7.7	7.7

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
4/1	4.4	4.8	5.0	5.6	5.4	5.8	5.6	6.7	6.4	6.8	7.6	7.6
4/2	4.5	5.2	5.4	5.8	5.9	6.3	6.2	6.9	6.8	7.2	7.5	7.6
4/3	4.4	5.2	5.5	5.6	6.3	6.7	6.5	7.6	7.1	7.7	7.6	7.7
4/4	4.4	4.7	5.1	5.6	6.2	6.8	5.9	7.1	6.5	7.2	7.2	7.3
4/5	4.5	5.1	5.4	5.5	6.2	6.7	6.2	7.1	6.8	7.1	7.4	7.5
4/6	4.0	5.3	5.3	5.8	5.9	6.3	6.3	7.0	6.8	7.2	6.3	6.4
4/7	4.2	5.3	5.5	5.6	6.1	6.4	6.5	7.2	7.0	7.5	6.3	6.4
4/8	4.3	5.2	5.4	5.6	6.1	6.5	6.4	7.2	6.9	7.3	6.7	6.8
4/9	4.3	4.9	5.3	5.1	6.2	6.6	6.5	7.4	7.0	7.4	6.7	6.8
4/10	4.0	4.7	4.9	5.4	5.6	5.9	5.7	6.7	6.3	6.6	6.1	6.2
4/11	4.3	5.2	5.3	5.8	5.7	5.9	6.0	6.6	6.5	6.9	5.7	5.9
4/12	4.4	5.3	5.5	5.3	6.3	6.5	6.5	7.3	7.1	7.5	6.5	6.7
4/13	4.0	4.9	5.0	4.8	5.7	6.0	6.1	7.0	6.9	7.2	6.4	6.6
4/14	3.3	4.7	4.6	5.1	5.1	5.4	5.5	6.2	6.1	6.6	5.9	6.1
4/15	3.9	4.9	4.9	5.3	5.4	5.7	5.8	6.6	6.5	7.0	6.7	6.8
4/16	4.0	5.0	5.2	5.7	5.8	6.0	6.1	7.0	6.8	7.2	6.7	6.9
4/17	4.4	4.9	5.5	5.8	6.3	6.7	6.6	7.5	7.0	7.4	7.0	7.1
4/18	4.6	5.3	5.7	6.4	6.5	6.8	6.6	7.7	7.3	7.5	7.2	7.3
4/19	4.4	5.2	6.0	6.0	6.9	7.2	7.1	7.9	7.5	7.8	6.7	6.9
4/20	4.7	4.9	5.6	6.2	6.6	7.0	6.9	7.9	7.2	7.2	6.4	6.5
4/21	5.4	5.1	5.8	6.0	7.0	7.4	7.0	8.1	7.5	7.9	7.4	7.5
4/22	5.2	5.1	5.7	6.3	6.8	7.2	6.7	8.0	7.4	7.7	7.3	7.4
4/23	5.1	5.4	6.1	6.6	7.0	7.3	7.2	8.1	7.6	7.8	7.2	7.4
4/24	5.2	5.3	6.0	6.8	7.2	7.6	7.1	8.4	7.6	8.1	7.8	7.8
4/25	5.2	6.3	6.5	7.1	7.2	7.6	7.1	8.1	7.6	8.0	7.6	7.7
4/26	5.7	6.1	6.6	6.5	7.8	8.2	7.4	8.6	8.0	8.6	8.3	8.4
4/27	4.8	5.6	6.0	6.5	7.1	7.6	6.9	8.1	7.5	8.2	7.7	7.9
4/28	4.5	6.8	6.6	7.2	6.7	7.0	7.0	7.5	7.4	8.0	7.0	7.2
4/29	5.0	7.4	7.1	7.4	7.3	7.5	7.7	8.2	8.1	8.6	7.6	7.7
4/30	5.1	6.8	6.9	7.5	7.6	7.8	7.7	8.3	8.0	8.7	7.7	7.9

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
5/1	5.4	6.7	7.0	7.1	7.8	8.3	7.7	8.4	8.1	8.7	8.4	8.5
5/2	5.7	6.6	6.7	7.6	7.8	8.2	7.4	8.4	7.9	8.6	8.6	8.7
5/3	5.7	7.2	7.4	8.2	8.0	8.4	8.0	8.6	8.3	8.9	8.7	8.8
5/4	6.3	7.4	7.8	8.3	8.6	9.1	8.4	9.0	8.7	9.4	9.2	9.3
5/5	6.7	7.4	7.8	8.8	9.2	9.9	8.6	9.5	9.0	9.8	10.2	10.3
5/6	7.1	7.5	8.2	9.1	9.7	10.4	8.8	9.9	9.3	10.1	10.4	10.5
5/7	7.0	7.6	8.3	9.2	10.1	10.9	9.1	10.2	9.6	10.5	10.1	10.2
5/8	7.3	7.9	8.5	9.6	10.3	11.2	9.3	10.4	9.8	10.6	9.8	10.0
5/9	7.5	8.1	8.9	9.5	10.8	11.6	9.7	10.7	10.2	11.0	9.9	10.0
5/10	7.7	7.8	8.6	9.8	11.1	12.0	9.7	11.1	10.3	11.4	9.8	9.9
5/11	7.9	7.9	8.8	9.1	11.3	12.3	10.0	11.4	10.6	11.6	10.0	10.1
5/12	7.7	7.7	8.4	8.9	10.6	11.5	9.6	10.9	10.2	10.9	9.3	9.4
5/13	7.2	7.8	8.3	8.3	10.0	10.6	9.4	10.3	9.9	10.5	8.9	9.1
5/14	6.8	8.0	8.2	9.2	9.2	9.7	9.4	9.9	9.6	10.1	8.3	8.5
5/15	7.2	8.3	8.9	9.0	10.1	10.7	10.0	10.5	10.3	10.9	9.0	9.1
5/16	7.2	8.1	8.6	8.9	10.0	10.6	9.5	10.6	10.0	10.7	9.0	9.1
5/17	6.5	7.9	8.4	9.3	9.5	9.8	9.5	10.3	9.9	10.4	8.4	8.6
5/18	7.0	7.7	8.5	9.1	10.1	10.9	10.1	11.2	10.6	11.5	8.8	9.0
5/19	7.6	7.6	8.3	8.6	10.4	11.4	9.8	11.4	10.6	11.5	9.8	10.0
5/20	7.1	7.8	8.1	8.5	9.5	10.1	9.6	10.6	10.1	10.6	9.0	9.2
5/21	7.0	7.7	8.1	9.2	9.2	9.7	9.8	10.2	10.0	10.5	8.6	8.7
5/22	8.0	8.0	8.6	9.9	10.1	10.9	10.8	11.5	11.3	12.0	9.8	10.0
5/23	8.4	8.4	9.2	9.0	11.4	12.3	11.8	12.6	12.2	13.1	10.8	11.0
5/24	7.5	8.1	8.5	6.7	10.2	10.8	11.1	11.9	11.7	12.1	9.7	10.0
5/25	7.0	6.2	6.4	8.1	7.3	7.6	9.1	9.4	10.0	10.7	8.5	8.8
5/26	7.4	7.2	7.8	9.2	8.5	9.1	10.5	10.6	10.9	11.6	9.1	9.3
5/27	8.4	7.3	8.3	8.4	10.6	11.6	11.6	12.4	12.1	13.0	11.0	11.2
5/28	8.7	7.1	7.9	8.3	9.9	10.6	11.1	12.0	11.6	12.3	10.7	10.9
5/29	8.5	7.3	7.9	9.4	9.5	10.2	11.0	11.7	11.5	12.2	10.9	11.1
5/30	9.4	7.5	8.5	9.8	10.6	11.6	11.7	12.6	12.2	13.2	11.7	11.8
5/31	10.1	7.6	8.7	9.9	11.6	12.8	12.1	13.2	12.7	13.5	12.5	12.6

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
6/1	10.2	7.3	8.7	9.5	11.9	13.1	12.3	13.4	12.9	13.8	12.7	12.8
6/2	10.3	7.0	8.4	9.1	12.0	13.3	12.6	13.5	13.1	13.9	12.9	13.1
6/3	10.0	6.3	7.9	8.1	11.3	12.7	11.9	13.2	12.4	13.6	13.0	13.1
6/4	9.5	5.7	7.1	7.3	10.7	12.0	9.1	11.2	10.2	11.3	12.4	12.4
6/5	9.1	5.8	6.8	7.3	9.4	10.5	8.9	10.1	9.4	10.2	11.7	11.7
6/6	8.7	5.7	6.7	7.0	9.0	10.0	8.8	9.8	9.3	10.0	11.0	11.0
6/7	7.8	5.9	6.6	7.8	8.5	9.4	9.1	9.5	9.4	9.9	10.5	10.5
6/8	7.8	6.3	7.2	8.4	8.7	9.7	10.3	10.9	10.8	11.5	10.6	10.7
6/9	8.5	6.4	7.6	8.5	9.8	10.8	11.0	11.7	11.4	12.2	11.7	11.8
6/10	9.3	6.6	7.7	9.4	10.6	11.9	11.2	12.2	11.8	12.7	13.1	13.1
6/11	10.5	6.9	8.4	9.4	11.5	13.0	11.7	12.9	12.3	13.4	14.3	14.2
6/12	11.5	7.1	8.5	9.8	11.8	13.2	11.9	13.1	12.5	13.5	15.2	15.1
6/13	12.0	7.0	8.6	8.3	12.3	13.8	12.0	13.4	12.7	13.8	15.2	15.2
6/14	10.8	6.6	7.5	8.6	10.7	11.9	11.6	12.5	12.1	12.8	14.1	14.1
6/15	10.7	6.8	7.8	9.2	10.4	11.7	11.6	12.5	12.1	12.9	14.3	14.2
6/16	11.4	6.8	8.1	9.1	11.3	12.7	12.0	13.1	12.6	13.5	15.3	15.2
6/17	11.8	6.9	8.0	9.0	11.7	13.1	12.2	13.3	12.8	13.8	15.7	15.5
6/18	11.7	6.7	8.1	8.0	11.2	12.7	12.4	13.1	12.6	13.3	15.3	15.1
6/19	10.4	6.6	7.4	7.6	10.0	11.0	11.7	12.7	12.4	12.9	14.2	14.2
6/20	9.3	6.5	7.2	7.9	9.0	9.9	11.3	11.9	11.9	12.6	12.5	12.6
6/21	9.3	6.6	7.4	7.8	9.2	10.1	11.5	12.1	12.1	12.9	12.4	12.5
6/22	9.6	6.7	7.4	7.7	9.1	9.8	11.3	12.0	12.0	12.4	12.3	12.3
6/23	9.4	6.6	7.3	8.0	8.9	9.6	11.2	11.8	11.9	12.4	12.9	12.8
6/24	9.2	6.7	7.5	8.4	9.2	9.9	11.3	11.8	11.9	12.8	13.0	13.0
6/25	9.4	6.7	7.7	8.5	9.9	11.0	12.0	12.4	12.4	13.3	13.4	13.4
6/26	9.8	6.9	7.9	8.8	10.3	11.4	12.2	13.0	12.8	13.4	14.0	14.0
6/27	9.3	6.8	8.4	8.8	10.1	10.7	11.8	12.6	12.6	13.3	12.8	12.9
6/28	9.3	6.9	8.2	8.8	10.4	11.3	12.0	12.9	12.7	13.6	13.1	13.2
6/29	9.5	6.9	8.1	9.4	10.7	11.9	12.4	13.3	13.0	13.9	14.3	14.2
6/30	10.1	7.2	8.5	9.7	11.3	12.6	12.8	13.9	13.4	14.3	15.5	15.4

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
7/1	10.7	7.1	8.6	8.3	12.0	13.4	13.3	14.4	13.8	14.8	15.9	15.5
7/2	10.2	6.6	7.7	7.8	10.5	11.5	11.9	13.5	12.6	13.3	14.9	14.8
7/3	10.0	6.4	7.4	8.1	9.6	10.5	10.0	11.6	10.7	11.5	13.8	13.5
7/4	10.3	6.5	7.5	7.8	9.8	11.0	10.3	11.7	10.9	11.8	14.8	14.3
7/5	10.3	6.5	7.3	7.8	9.4	10.3	10.1	11.4	10.7	11.3	14.6	14.1
7/6	10.4	6.4	7.3	7.7	9.4	10.4	10.2	11.5	10.8	11.5	14.8	14.2
7/7	10.2	6.4	7.3	8.0	9.1	9.9	10.1	11.2	10.6	11.4	14.4	13.9
7/8	10.4	6.5	7.5	8.4	9.5	10.5	10.4	11.3	10.8	11.5	15.3	14.5
7/9	10.9	6.6	7.8	8.4	10.1	11.2	10.7	11.7	10.9	11.7	15.8	15.0
7/10	11.1	6.8	7.9	8.7	10.1	11.1	10.8	11.9	11.1	11.8	15.7	15.0
7/11	11.0	6.8	8.0	8.7	10.3	11.3	10.9	12.0	11.2	12.0	15.3	14.8
7/12	11.1	6.7	8.0	8.8	10.5	11.7	11.0	12.4	11.3	12.5	16.3	15.6
7/13	11.3	6.8	8.0	9.3	10.9	12.2	11.4	12.6	11.6	12.6	16.8	16.1
7/14	11.8	6.7	8.2	8.6	11.4	12.9	11.7	13.2	11.9	13.1	17.4	16.6
7/15	11.8	6.9	8.0	9.0	11.0	12.2	11.5	12.9	11.9	12.6	17.2	16.3
7/16	11.8	6.9	8.2	8.6	10.9	12.1	11.6	12.7	11.8	12.7	16.9	16.0
7/17	11.4	6.8	8.4	9.4	10.0	10.8	11.2	12.3	11.7	12.3	15.7	15.0
7/18	10.2	6.6	8.7	8.5	10.7	11.5	11.3	12.1	11.6	12.3	14.4	14.2
7/19	9.8	6.6	8.0	9.0	10.2	11.2	11.4	12.5	11.9	12.6	14.4	14.2
7/20	10.2	6.8	8.2	9.5	10.6	11.9	11.6	12.6	12.0	12.9	15.1	14.8
7/21	11.2	7.0	8.5	9.6	11.7	13.1	12.2	13.4	12.5	13.6	16.7	16.2
7/22	11.8	7.1	8.4	8.9	11.9	13.4	12.3	13.7	12.6	13.6	17.5	16.9
7/23	11.8	7.0	8.2	8.9	11.2	12.4	12.0	13.2	12.4	13.1	17.3	16.5
7/24	11.5	6.9	8.1	9.2	10.7	12.0	12.2	13.1	12.6	13.4	17.2	16.5
7/25	11.5	7.1	8.2	9.7	11.2	12.6	12.3	13.3	12.7	13.7	17.3	16.6
7/26	12.3	7.2	8.5	9.0	11.9	13.3	12.7	13.9	13.0	14.1	18.2	17.3
7/27	12.0	7.1	8.3	9.4	11.4	12.6	12.5	13.7	13.0	13.8	18.2	17.3
7/28	11.9	7.2	8.3	9.6	11.2	12.6	12.5	13.6	12.9	13.9	17.9	17.1
7/29	12.4	7.3	8.5	9.2	11.8	13.2	12.9	14.0	13.3	14.2	18.4	17.5
7/30	12.5	7.2	8.3	9.3	11.3	12.6	12.7	13.8	13.1	14.0	18.0	17.2
7/31	12.5	7.3	8.4	9.6	11.4	12.8	12.9	13.9	13.4	14.3	18.4	17.4

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
8/1	12.8	7.4	8.6	9.3	11.8	13.3	13.1	14.3	13.6	14.7	19.0	18.0
8/2	12.7	7.2	8.5	9.2	11.5	12.8	12.2	14.2	13.0	14.3	19.1	18.0
8/3	12.9	6.8	8.1	9.2	11.4	12.9	10.4	12.7	11.2	12.4	18.8	17.3
8/4	13.3	6.9	8.2	9.5	11.7	13.2	10.6	12.7	11.2	12.4	19.3	17.5
8/5	14.0	7.0	8.3	9.5	11.9	13.5	10.8	13.0	11.4	12.6	20.2	18.2
8/6	14.6	7.2	8.4	9.9	12.0	13.6	11.4	13.0	11.9	12.8	20.4	18.3
8/7	14.7	7.6	8.8	9.0	12.1	13.6	13.1	14.0	13.4	14.3	20.3	18.7
8/8	13.9	7.4	8.3	8.6	11.3	12.4	12.8	14.0	13.4	14.0	19.2	17.8
8/9	13.2	7.3	8.2	9.0	10.2	11.1	12.6	13.3	13.1	13.7	17.7	16.6
8/10	13.2	7.5	8.4	8.8	10.6	11.7	12.7	13.5	13.2	14.0	17.6	16.6
8/11	12.9	7.3	8.2	9.2	10.5	11.5	12.8	13.6	13.3	14.0	17.4	16.5
8/12	12.9	7.4	8.5	9.5	10.9	12.1	13.1	13.9	13.6	14.5	17.9	17.0
8/13	13.2	7.6	8.6	9.6	11.2	12.6	13.3	14.2	13.8	14.7	18.7	17.5
8/14	13.6	7.6	8.7	9.6	11.6	13.0	13.5	14.6	14.1	15.0	19.4	18.2
8/15	13.9	7.6	8.6	9.1	11.7	13.1	13.6	14.7	14.2	15.1	19.7	18.4
8/16	13.7	7.2	8.2	8.4	11.3	12.4	12.7	14.5	13.5	14.4	19.1	17.8
8/17	13.1	6.9	7.8	8.7	10.3	11.5	11.2	13.0	12.0	13.0	18.4	16.9
8/18	13.6	7.0	8.0	8.9	10.3	11.4	11.3	12.5	11.8	12.7	18.3	16.6
8/19	14.4	7.0	8.0	8.7	10.7	12.0	11.6	12.9	12.1	13.1	18.9	17.1
8/20	13.8	7.1	7.9	8.5	10.5	11.7	11.6	12.8	12.1	13.0	18.9	17.0
8/21	13.1	7.1	8.0	8.6	10.1	11.1	11.6	12.6	12.1	12.7	18.0	16.5
8/22	12.9	7.0	7.9	8.4	10.0	10.8	11.6	12.4	12.1	12.7	17.1	15.8
8/23	12.8	7.1	7.9	8.5	9.9	10.8	11.7	12.4	12.2	12.8	16.9	15.8
8/24	12.9	7.1	8.0	8.4	10.2	11.2	12.0	13.0	12.6	13.5	17.6	16.3
8/25	12.8	7.0	7.8	8.6	9.9	10.9	11.9	12.9	12.5	13.3	17.6	16.4
8/26	13.2	7.1	7.8	8.9	9.8	11.0	12.1	12.7	12.6	13.3	17.5	16.1
8/27	14.1	7.3	8.1	9.2	10.3	11.5	12.4	13.2	12.9	13.7	18.2	16.6
8/28	15.0	7.4	8.4	9.1	10.8	12.0	12.7	13.6	13.2	14.1	19.0	17.3
8/29	14.2	7.4	8.4	8.8	10.8	11.9	12.7	13.6	13.2	13.9	18.8	17.2
8/30	14.9	7.4	8.2	8.6	10.6	11.7	12.8	13.8	13.4	14.3	18.8	17.2
8/31	14.7	7.5	8.2	8.7	10.1	11.0	12.6	13.5	13.5	14.3	18.7	17.2

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
9/1	14.7	7.5	8.2	8.3	10.1	11.0	12.7	13.7	13.6	14.5	19.0	17.5
9/2	15.3	7.5	8.0	8.7	9.7	10.6	12.6	13.3	13.5	14.4	18.8	17.3
9/3	15.5	7.6	8.2	8.7	9.8	10.6	12.9	13.4	13.7	14.5	19.2	17.5
9/4	15.5	7.5	8.2	8.6	9.8	10.7	13.3	13.5	13.8	14.5	18.8	17.4
9/5	14.9	7.7	8.3	9.1	9.7	10.4	13.5	13.4	14.0	14.6	18.5	17.1
9/6	16.7	7.8	8.5	9.0	10.3	11.1	13.7	13.9	14.2	15.1	19.0	17.5
9/7	16.4	7.7	8.4	7.1	10.2	10.9	13.8	13.9	14.3	14.9	18.5	17.3
9/8	13.8	6.2	6.7	8.2	8.0	8.5	11.4	11.2	12.7	13.6	17.5	15.5
9/9	12.4	7.4	8.0	8.7	8.6	8.7	12.5	10.6	13.4	13.9	16.8	15.2
9/10	11.8	7.7	8.4	8.7	9.8	10.3	13.9	12.8	14.0	14.8	16.4	15.8
9/11	11.5	7.7	8.4	8.7	9.7	10.4	14.2	13.2	14.2	15.0	16.6	16.1
9/12	11.6	7.8	8.4	9.2	9.7	10.4	14.4	13.5	14.5	15.3	16.7	16.2
9/13	11.6	8.7	9.1	9.8	9.8	10.3	14.3	13.9	14.6	15.2	16.6	16.3
9/14	11.5	9.1	9.6	10.6	10.3	10.6	14.5	14.0	14.5	15.1	15.8	15.6
9/15	10.8	9.1	10.3	10.1	11.1	11.3	13.8	13.6	14.1	14.7	14.7	14.6
9/16	10.1	9.0	9.8	9.7	10.8	11.1	13.8	13.5	14.0	14.5	13.8	13.9
9/17	9.8	8.9	9.5	9.9	10.3	10.5	13.7	13.2	13.9	14.4	13.4	13.6
9/18	9.9	8.9	9.6	9.8	10.5	10.9	13.3	13.1	13.6	14.3	13.5	13.6
9/19	9.9	8.8	9.5	9.6	10.4	10.8	13.5	13.3	13.7	14.4	14.3	14.3
9/20	10.0	8.9	9.3	9.5	10.3	10.7	13.5	13.3	13.7	14.3	14.3	14.4
9/21	10.0	8.9	9.3	9.8	10.1	10.6	13.6	13.4	13.8	14.5	14.5	14.5
9/22	10.2	8.7	9.6	10.2	10.3	10.6	13.5	13.4	13.8	14.4	14.5	14.6
9/23	10.0	8.4	9.8	10.1	11.0	11.3	12.7	12.9	13.1	13.7	13.9	13.7
9/24	9.8	8.6	9.8	9.5	10.7	10.9	12.6	12.8	13.1	13.7	13.4	13.4
9/25	9.7	8.6	9.3	10.0	10.2	10.6	12.6	12.7	13.0	13.7	13.7	13.7
9/26	9.9	8.6	9.7	9.1	10.5	10.9	12.4	12.8	13.0	13.7	14.0	13.9
9/27	8.8	8.4	8.9	8.6	9.7	10.0	12.1	12.0	12.4	12.9	12.5	12.6
9/28	8.2	8.2	8.5	8.5	9.0	9.2	11.7	11.3	11.8	12.3	10.7	11.0
9/29	7.7	8.1	8.3	8.0	8.7	8.9	11.8	11.1	11.8	12.2	10.5	10.8
9/30	7.0	7.9	8.0	8.0	8.1	8.1	11.4	10.5	11.2	11.6	9.9	10.2

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
10/1	6.9	7.8	7.9	8.0	7.9	8.0	11.4	10.4	11.2	11.5	9.9	10.2
10/2	7.2	7.8	8.0	8.4	8.1	8.2	11.6	10.6	11.3	11.8	10.1	10.4
10/3	7.8	7.9	8.2	8.2	8.6	8.8	12.0	11.3	11.9	12.3	10.8	11.3
10/4	7.6	7.8	8.1	8.4	8.5	8.7	11.6	11.2	11.7	12.1	10.6	11.1
10/5	7.7	7.8	8.2	8.0	8.7	9.0	11.2	11.0	11.5	12.0	10.4	10.7
10/6	7.2	7.7	7.9	8.4	8.2	8.4	11.0	10.5	11.1	11.6	10.3	10.5
10/7	7.9	7.7	8.4	8.1	8.6	8.8	11.0	10.8	11.3	11.8	10.4	10.7
10/8	7.3	7.3	7.8	7.1	8.5	8.7	10.7	10.0	10.4	10.7	9.3	9.6
10/9	6.2	7.0	7.0	6.9	7.2	7.3	9.7	9.1	9.7	10.1	8.0	8.3
10/10	5.6	7.1	7.0	7.1	6.7	6.7	9.7	8.5	9.3	9.6	7.8	8.1
10/11	5.9	7.2	7.2	7.4	6.9	6.9	10.0	8.8	9.5	9.9	7.8	8.2
10/12	6.4	7.2	7.4	7.6	7.4	7.5	10.3	9.3	9.9	10.3	7.9	8.4
10/13	5.7	7.2	7.5	7.4	8.0	8.2	10.2	9.9	10.1	10.6	8.9	9.3
10/14	6.6	7.2	7.3	7.5	7.5	7.6	10.1	9.5	10.0	10.4	9.2	9.5
10/15	6.9	7.3	7.5	7.6	7.7	7.8	10.3	9.7	10.0	10.4	9.0	9.4
10/16	7.4	7.1	7.5	7.7	8.0	8.2	10.4	10.1	10.4	10.7	9.3	9.8
10/17	7.3	6.8	7.6	7.5	8.1	8.3	10.0	9.9	10.1	10.5	9.4	9.7
10/18	6.9	6.6	7.4	7.3	7.9	8.0	9.6	9.3	9.6	10.0	8.5	8.8
10/19	6.7	6.5	7.1	7.2	7.7	7.8	9.2	9.0	9.3	9.6	7.7	7.9
10/20	6.6	6.5	7.1	7.7	7.6	7.8	9.0	8.8	9.1	9.3	7.7	7.9
10/21	6.8	6.6	7.7	8.9	8.0	8.2	8.9	9.1	9.2	9.5	7.9	8.1
10/22	7.5	8.3	8.9	8.5	9.2	9.4	9.5	10.0	9.8	9.9	8.2	8.5
10/23	6.6	9.1	8.6	8.4	8.4	8.4	7.9	9.0	9.2	9.4	8.1	8.4
10/24	7.0	7.5	8.1	7.5	8.6	8.8	7.7	9.2	9.2	9.3	8.1	8.3
10/25	7.4	6.6	7.2	6.8	8.1	8.5	7.4	9.4	9.1	9.2	8.7	9.0
10/26	6.6	6.3	6.7	6.1	7.3	7.6	7.1	8.7	8.9	9.0	8.4	8.6
10/27	5.3	6.2	6.2	5.9	6.1	6.2	6.6	7.7	8.8	8.9	7.0	7.6
10/28	4.9	6.1	6.0	5.5	5.8	5.8	6.4	7.4	8.6	8.7	6.2	7.0
10/29	3.9	5.9	5.7	5.4	5.1	5.1	6.1	6.9	8.5	8.6	5.4	6.4
10/30	3.5	6.0	5.7	5.8	4.8	4.7	6.0	6.6	8.2	8.3	4.8	6.0
10/31	4.0	6.0	5.9	5.8	5.3	5.2	6.2	6.9	8.1	8.2	5.0	6.3

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
11/1	4.1	6.9				5.3	5.8	6.8	8.1	8.2	5.4	6.5
11/2	4.3	7.6				5.6	5.9	6.8	8.1	8.2	5.8	6.8
11/3	4.9	7.6				6.3	6.3	7.2	8.2	8.3	6.1	7.0
11/4	4.8	7.5				6.3	6.2	7.2	8.1	8.2	6.3	7.2
11/5	4.4	7.5				6.0	6.1	7.0	7.8	8.0	6.2	6.9
11/6	4.0	7.6				6.4	6.2	7.4	7.9	8.1	6.0	6.8
11/7	4.2	7.6				6.3	6.1	7.2	7.9	8.0	5.9	6.7
11/8	4.6	7.6				6.6	6.3	7.4	7.9	8.1	6.2	6.9
11/9	5.5	7.6				7.3	6.5	8.0	8.0	8.3	6.8	7.3
11/10	6.3	7.6				8.0	6.8	8.5	8.2	8.5	7.7	8.0
11/11	5.9	7.5				7.7	6.6	8.2	8.1	8.3	7.9	8.1
11/12	6.2	7.3				7.7	6.6	8.3	8.2	8.4	7.7	8.0
11/13	6.0	7.5				7.5	6.5	8.3	8.1	8.4	7.7	8.0
11/14	5.9	7.0				7.0	6.3	7.8	7.9	8.1	7.5	7.8
11/15	6.2	5.9				7.4	6.4	8.2	8.1	8.3	7.8	8.1
11/16	6.2	5.9				7.1	7.5	7.8	7.8	8.1	7.4	7.6
11/17	6.8	6.1				7.9	8.6	8.4	8.3	8.5	7.7	7.9
11/18	6.8	6.0				8.2	8.7	8.8	8.6	8.7	7.8	8.0
11/19	6.5	6.0				8.0	8.5	8.6	8.4	8.6	7.7	7.9
11/20	5.2	5.7				6.5	7.1	7.5	7.5	7.7	7.1	7.3
11/21	4.7	5.8				5.2	5.7	6.1	6.6	6.7	5.7	5.9
11/22	4.4	5.6				4.8	5.1	5.6	6.3	6.3	5.0	5.2
11/23	4.8	5.7				5.4	5.5	6.1	6.6	6.7	5.1	5.4
11/24	5.2	5.9				6.3	5.9	7.1	7.1	7.3	6.3	6.5
11/25	4.6	5.7				5.8	5.4	6.7	6.8	7.0	6.0	6.2
11/26	4.1	5.6				4.9	4.8	5.9	6.3	6.4	5.3	5.5
11/27	3.6	5.5				4.2	4.3	5.2	5.8	5.9	4.4	4.7
11/28	3.2	5.5				3.6	3.9	4.6	5.9	5.7	3.9	4.3
11/29	2.7	5.5				3.0	3.6	4.1	6.0	5.7	3.1	3.8
11/30	2.4	5.6				2.7	3.4	3.9	5.9	5.5	2.5	3.3

	Sultan River										Skykomish River	
	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
12/1	2.9	5.8				3.5	3.8	4.5	5.9	5.8	2.8	3.6
12/2	3.7	6.0				4.9	4.4	5.5	6.1	6.2	4.2	4.8
12/3	4.0	5.9				5.6	4.8	6.2	6.2	6.4	5.3	5.6
12/4	4.2	5.7				6.1	5.0	6.6	6.4	6.6	5.7	6.0
12/5	4.6	5.6				6.2	5.0	6.7	6.5	6.7	5.8	6.0
12/6	5.0	5.6				6.3	5.1	6.8	6.5	6.7	6.1	6.3
12/7	5.2	5.5				6.5	5.2	7.0	6.7	6.8	6.3	6.5
12/8	5.2	5.5				6.6	5.2	7.1	6.8	6.9	6.5	6.7
12/9	4.2	5.2				5.5	4.4	6.3	6.2	6.3	5.8	6.0
12/10	4.2	5.4				4.8	4.1	5.6	5.7	5.9	5.0	5.2
12/11	4.8	5.4				5.8	4.7	6.2	6.1	6.3	5.4	5.7
12/12	4.6	5.4				6.0	4.8	6.5	6.3	6.4	5.7	6.0
12/13	4.4	5.4				6.0	4.9	6.5	6.3	6.5	5.7	5.9
12/14	4.5	5.3				5.9	4.7	6.3	6.2	6.3	5.5	5.8
12/15	4.1	5.1				5.5	4.4	6.1	6.0	6.1	5.5	5.7
12/16	4.0	5.2				5.2	4.4	5.7	5.7	5.8	5.1	5.3
12/17	4.2	5.3				5.4	4.7	5.8	5.7	5.8	5.1	5.4
12/18	4.3	5.2				5.7	4.9	6.0	5.7	5.8	5.1	5.5
12/19	4.3	5.3				5.5	4.8	6.0	5.7	5.8	4.8	5.2
12/20	4.6	5.8				6.9	6.9	6.9	6.7	6.6	5.0	5.4
12/21	4.8	5.5				6.9	6.8	7.4	7.0	6.8	5.5	5.8
12/22	4.8	5.1				6.3	6.3	6.6	5.9	6.0	5.5	5.7
12/23	4.6	5.0				6.1	6.1	6.6	5.8	5.9	5.7	5.9
12/24	3.9	4.9				5.3	5.4	5.8	5.5	5.6	5.2	5.4
12/25	3.6	4.8				4.7	5.1	5.3	5.4	5.4	4.5	4.8
12/26	3.2	4.8				4.1	4.8	4.7	5.2	5.2	3.9	4.3
12/27	3.1	4.9				4.3	5.8	5.0	5.2	5.3	4.1	4.6
12/28	3.5	4.9				4.6	5.9	5.2	5.2	5.4	4.5	4.8
12/29	3.7	5.0				5.1	6.1	5.7	5.3	5.5	5.0	5.3
12/30	4.0	5.1				5.3	6.3	5.8	5.4	5.5	5.0	5.3
12/31	4.1	5.2				5.7	6.6	6.1	5.5	5.6	5.4	5.5

APPENDIX C

2019 Seven-Day Average of the Daily Maximum (7-DAD Max) Water Temperature in Tabular Format

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
1/1	4.0	4.8	5.1	5.1	5.4	5.6	5.6	5.9	5.5	5.5	4.9	5.1
1/2	4.1	4.7	5.1	5.1	5.4	5.6	5.5	5.9	5.3	5.4	4.9	5.1
1/3	4.2	4.7	5.1	5.0	5.4	5.6	5.5	5.9	5.2	5.3	5.0	5.1
1/4	4.2	4.6	5.0	4.9	5.3	5.5	5.4	5.9	5.1	5.3	5.1	5.2
1/5	4.1	4.6	5.0	4.9	5.2	5.4	5.4	5.9	5.1	5.2	5.1	5.2
1/6	4.1	4.6	5.0	4.9	5.3	5.5	5.4	5.9	5.0	5.2	5.1	5.2
1/7	4.0	4.5	4.9	4.8	5.3	5.5	5.4	6.0	5.0	5.1	5.1	5.2
1/8	3.9	4.5	4.9	4.8	5.2	5.4	5.3	5.9	4.9	5.1	5.2	5.2
1/9	3.9	4.4	4.8	4.7	5.2	5.4	5.3	5.9	4.8	5.0	5.2	5.2
1/10	4.0	4.3	4.7	4.6	5.0	5.2	5.2	5.8	4.7	4.9	5.1	5.1
1/11	4.2	4.3	4.6	4.6	5.0	5.2	5.1	5.7	4.7	4.8	5.0	5.0
1/12	4.3	4.3	4.7	4.6	5.0	5.2	5.1	5.7	4.6	4.8	5.0	5.0
1/13	4.3	4.3	4.6	4.6	4.9	5.1	5.0	5.5	4.6	4.8	5.0	5.0
1/14	4.4	4.2	4.5	4.6	4.8	5.0	4.9	5.4	4.5	4.7	5.0	5.0
1/15	4.4	4.2	4.5	4.5	4.8	5.0	4.8	5.4	4.5	4.7	5.0	5.0
1/16	4.4	4.2	4.5	4.6	4.8	5.1	4.7	5.4	4.5	4.7	5.1	5.0
1/17	4.5	4.2	4.5	4.6	4.9	5.1	4.7	5.4	4.5	4.7	5.1	5.1
1/18	4.5	4.2	4.6	4.7	5.1	5.3	4.8	5.5	4.5	4.7	5.3	5.2
1/19	4.4	4.2	4.6	4.7	5.1	5.4	4.8	5.6	4.5	4.7	5.4	5.3
1/20	4.3	4.2	4.8	4.9	5.3	5.6	5.0	5.8	4.7	4.8	5.4	5.3
1/21	4.3	4.2	4.9	4.9	5.4	5.7	5.2	5.9	4.8	4.9	5.5	5.4
1/22	4.3	4.2	4.9	5.0	5.5	5.7	5.3	6.0	4.9	5.0	5.5	5.4
1/23	4.3	4.2	4.8	4.9	5.5	5.7	5.3	6.0	5.0	4.9	5.4	5.4
1/24	4.4	4.2	4.8	4.9	5.4	5.6	5.3	5.9	5.0	4.9	5.3	5.3
1/25	4.4	4.2	4.8	4.9	5.4	5.6	5.3	5.9	5.0	4.9	5.3	5.3
1/26	4.3	4.2	4.7	4.8	5.3	5.5	5.2	5.8	5.0	4.9	5.3	5.3
1/27	4.2	4.1	4.5	4.6	5.0	5.2	5.0	5.6	4.8	4.9	5.2	5.2
1/28	4.0	4.1	4.4	4.5	4.8	5.1	4.8	5.4	4.7	4.8	5.2	5.1
1/29	4.0	4.2	4.5	4.5	4.8	5.0	4.7	5.3	4.6	4.8	5.2	5.1
1/30	4.1	4.2	4.6	4.6	4.8	5.1	4.8	5.3	4.5	4.8	5.2	5.2
1/31	4.1	4.2	4.6	4.6	4.9	5.2	4.9	5.5	4.5	4.9	5.3	5.3

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
2/1	4.0	4.2	4.5	4.5	4.7	4.9	4.7	5.3	4.5	4.8	5.2	5.1
2/2	3.8	4.1	4.5	4.4	4.5	4.8	4.7	5.1	4.4	4.7	5.0	5.0
2/3	3.5	4.0	4.3	4.1	4.3	4.4	4.5	4.9	4.3	4.6	4.7	4.8
2/4	3.1	4.0	4.1	3.9	3.9	4.0	4.3	4.6	4.2	4.5	4.3	4.4
2/5	2.7	3.9	3.8	3.6	3.5	3.6	4.0	4.3	4.1	4.3	3.9	4.0
2/6	2.2	3.7	3.5	3.2	3.0	3.1	3.7	3.8	3.9	4.1	3.4	3.6
2/7	1.8	3.5	3.2	2.8	2.5	2.5	3.3	3.4	3.7	3.8	2.9	3.1
2/8	1.5	3.4	3.0	2.6	2.1	2.1	3.1	3.0	3.5	3.7	2.4	2.7
2/9	1.3	3.3	2.9	2.4	1.8	1.8	2.9	2.8	3.3	3.5	2.0	2.4
2/10	1.3	3.3	2.9	2.5	1.8	1.8	2.8	2.8	3.2	3.4	2.0	2.4
2/11	1.2	3.2	2.8	2.4	1.8	1.8	2.8	2.8	3.1	3.3	1.9	2.3
2/12	1.3	3.0	2.7	2.4	1.9	1.9	2.7	2.8	3.1	3.3	2.1	2.5
2/13	1.4	3.1	2.8	2.5	1.9	1.9	2.7	2.9	3.0	3.3	2.3	2.6
2/14	1.7	3.1	2.9	2.6	2.1	2.2	2.8	3.0	3.0	3.3	2.7	2.9
2/15	1.9	3.1	3.0	2.8	2.5	2.6	2.9	3.2	3.1	3.4	3.2	3.3
2/16	2.1	3.1	3.1	3.0	2.8	3.0	3.1	3.4	3.2	3.5	3.7	3.6
2/17	2.2	3.1	3.1	3.1	3.0	3.2	3.2	3.5	3.2	3.6	4.0	3.8
2/18	2.3	3.0	3.1	3.1	3.1	3.3	3.2	3.5	3.2	3.6	4.3	4.1
2/19	2.2	3.1	3.1	3.0	3.0	3.2	3.2	3.4	3.2	3.6	4.2	4.0
2/20	2.2	3.1	3.1	3.0	3.0	3.2	3.2	3.4	3.2	3.6	4.2	4.0
2/21	2.2	3.0	3.1	3.0	3.0	3.2	3.2	3.5	3.2	3.7	4.3	4.1
2/22	2.1	3.0	3.0	3.0	2.9	3.1	3.1	3.5	3.2	3.7	4.3	4.1
2/23	2.0	3.0	3.0	2.9	2.8	3.1	3.1	3.4	3.2	3.7	4.4	4.2
2/24	1.9	2.9	2.9	2.8	2.8	3.0	3.0	3.4	3.1	3.6	4.3	4.1
2/25	1.8	2.8	2.9	2.8	2.7	3.0	3.0	3.4	3.1	3.6	4.3	4.1
2/26	1.8	2.8	2.9	2.8	2.8	3.2	3.1	3.5	3.1	3.8	4.5	4.3
2/27	1.8	2.8	2.9	2.9	2.9	3.3	3.1	3.5	3.1	3.8	4.6	4.4
2/28	1.6	2.7	2.8	2.8	2.7	3.2	3.0	3.4	3.1	3.9	4.6	4.4

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
3/1	1.5	2.6	2.7	2.7	2.6	3.1	3.0	3.3	3.1	3.9	4.5	4.4
3/2	1.5	2.6	2.7	2.7	2.6	3.1	3.0	3.3	3.1	3.9	4.5	4.4
3/3	1.5	2.6	2.7	2.7	2.6	3.0	2.9	3.2	3.1	3.9	4.5	4.3
3/4	1.4	2.6	2.7	2.6	2.5	2.9	2.9	3.2	3.0	3.8	4.3	4.2
3/5	1.4	2.6	2.7	2.6	2.4	2.9	2.9	3.2	3.1	3.8	4.3	4.2
3/6	1.4	2.6	2.6	2.5	2.4	2.8	2.8	3.2	3.0	3.8	4.5	4.3
3/7	1.4	2.6	2.7	2.6	2.4	2.8	2.9	3.2	3.1	3.8	4.7	4.4
3/8	1.5	2.7	2.8	2.7	2.6	3.0	2.9	3.3	3.1	3.8	4.8	4.5
3/9	1.5	2.7	2.8	2.7	2.6	2.9	2.8	3.4	3.2	3.8	4.9	4.6
3/10	1.5	2.8	2.9	2.8	2.7	3.1	3.0	3.5	3.3	4.0	5.3	4.9
3/11	1.7	2.8	3.0	3.0	3.0	3.4	3.1	3.7	3.4	4.1	5.7	5.2
3/12	1.8	2.9	3.1	3.2	3.2	3.6	3.3	3.9	3.6	4.3	6.1	5.5
3/13	2.0	2.9	3.3	3.3	3.3	3.8	3.5	4.1	3.8	4.5	6.4	5.8
3/14	2.2	3.0	3.3	3.4	3.5	4.0	3.7	4.4	4.0	4.7	6.7	6.1
3/15	2.4	3.1	3.4	3.6	3.6	4.2	4.0	4.7	4.2	5.0	7.1	6.5
3/16	2.7	3.2	3.6	3.8	3.9	4.5	4.3	5.1	4.5	5.3	7.6	7.0
3/17	3.0	3.3	3.7	4.0	4.1	4.8	4.6	5.4	4.8	5.6	7.8	7.4
3/18	3.2	3.4	3.8	4.1	4.2	4.9	4.8	5.7	5.0	5.8	7.9	7.5
3/19	3.5	3.6	3.9	4.2	4.4	5.1	5.1	6.0	5.2	6.0	7.9	7.6
3/20	3.7	3.7	4.0	4.3	4.6	5.2	5.3	6.3	5.4	6.2	7.9	7.7
3/21	3.8	3.8	4.1	4.4	4.7	5.3	5.4	6.4	5.5	6.3	7.7	7.6
3/22	3.9	3.9	4.3	4.5	4.9	5.5	5.4	6.5	5.6	6.3	7.5	7.4
3/23	4.0	4.1	4.4	4.6	5.1	5.7	5.5	6.6	5.7	6.4	7.4	7.4
3/24	4.1	4.2	4.5	4.7	5.2	5.7	5.5	6.6	5.7	6.4	7.3	7.3
3/25	4.2	4.3	4.6	4.9	5.3	5.9	5.6	6.7	5.8	6.6	7.4	7.4
3/26	4.2	4.4	4.7	5.0	5.5	6.1	5.6	6.6	5.9	6.6	7.5	7.5
3/27	4.4	4.5	4.9	5.3	5.7	6.3	5.7	6.7	6.0	6.8	7.6	7.6
3/28	4.6	4.6	5.1	5.5	6.0	6.6	6.0	6.9	6.2	7.2	7.9	7.9
3/29	4.8	4.7	5.2	5.7	6.0	6.7	6.1	7.1	6.4	7.6	8.2	8.2
3/30	5.0	4.9	5.4	5.9	6.2	7.0	6.2	7.2	6.6	7.8	8.3	8.3
3/31	5.0	5.1	5.6	6.0	6.4	7.1	6.5	7.4	6.8	8.1	8.4	8.5

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
4/1	5.1	5.2	5.7	6.3	6.6	7.3	6.5	7.5	6.9	8.3	8.5	8.6
4/2	5.2	5.3	5.7	6.2	6.6	7.4	6.6	7.6	7.1	8.4	8.5	8.6
4/3	5.1	5.4	5.8	6.2	6.6	7.3	6.7	7.6	7.2	8.3	8.2	8.3
4/4	5.0	5.4	5.8	6.3	6.6	7.2	6.7	7.6	7.2	8.3	7.8	8.0
4/5	5.0	5.5	5.8	6.1	6.7	7.3	6.8	7.6	7.2	8.3	7.7	7.8
4/6	4.8	5.4	5.8	6.0	6.7	7.2	6.8	7.6	7.2	8.1	7.5	7.6
4/7	4.8	5.3	5.6	5.9	6.6	7.0	6.6	7.5	7.1	7.9	7.2	7.4
4/8	4.7	5.4	5.6	5.9	6.4	6.8	6.6	7.4	7.1	7.7	6.9	7.1
4/9	4.6	5.4	5.6	5.9	6.5	6.8	6.7	7.5	7.2	7.8	6.8	7.0
4/10	4.7	5.3	5.6	5.8	6.5	6.8	6.7	7.6	7.2	7.7	6.8	7.0
4/11	4.5	5.2	5.5	5.8	6.3	6.6	6.5	7.4	7.1	7.5	6.7	6.9
4/12	4.5	5.2	5.4	5.8	6.3	6.6	6.5	7.4	7.1	7.5	6.8	7.0
4/13	4.5	5.2	5.4	5.9	6.2	6.5	6.5	7.4	7.1	7.5	6.9	7.0
4/14	4.6	5.1	5.6	6.0	6.4	6.7	6.7	7.5	7.2	7.7	7.1	7.2
4/15	4.6	5.2	5.6	6.0	6.4	6.8	6.7	7.7	7.3	7.8	7.3	7.4
4/16	4.6	5.2	5.7	6.1	6.5	6.8	6.8	7.7	7.3	7.8	7.3	7.4
4/17	4.7	5.2	5.8	6.4	6.6	6.9	6.9	7.8	7.3	7.8	7.3	7.5
4/18	5.1	5.2	6.0	6.4	7.0	7.4	7.2	8.1	7.6	8.2	7.7	7.8
4/19	5.2	5.2	6.0	6.6	7.0	7.5	7.2	8.2	7.6	8.2	7.7	7.8
4/20	5.3	5.3	6.2	6.8	7.2	7.7	7.4	8.4	7.7	8.3	7.7	7.8
4/21	5.5	5.4	6.3	7.1	7.4	7.9	7.5	8.5	7.8	8.5	7.9	8.0
4/22	5.7	5.6	6.5	7.3	7.7	8.2	7.7	8.7	7.9	8.7	8.0	8.1
4/23	6.0	5.7	6.7	7.4	7.9	8.5	7.8	8.8	8.0	9.0	8.3	8.4
4/24	6.0	5.8	6.7	7.5	8.1	8.7	7.8	8.9	8.1	9.2	8.5	8.6
4/25	5.9	6.1	6.9	7.7	8.1	8.6	7.8	8.8	8.1	9.3	8.5	8.6
4/26	5.9	6.5	7.2	8.0	8.3	8.7	8.0	8.9	8.2	9.6	8.5	8.7
4/27	6.0	6.7	7.4	8.2	8.5	9.0	8.1	9.0	8.3	10.0	8.7	8.9
4/28	6.1	6.9	7.6	8.2	8.7	9.2	8.2	9.1	8.5	10.2	8.8	9.0
4/29	6.1	7.0	7.6	8.2	8.7	9.2	8.1	9.1	8.5	10.2	9.0	9.2
4/30	6.1	7.2	7.7	8.6	8.8	9.2	8.2	9.1	8.6	10.2	9.2	9.3

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
5/1	6.4	7.5	8.1	8.9	9.2	9.6	8.5	9.4	8.8	10.5	9.5	9.7
5/2	6.8	7.6	8.2	9.3	9.6	10.1	8.8	9.7	9.0	10.7	10.0	10.1
5/3	7.2	7.7	8.5	9.7	10.1	10.7	9.1	10.0	9.2	11.0	10.4	10.6
5/4	7.6	7.9	8.9	10.0	10.6	11.2	9.4	10.2	9.5	11.3	10.7	10.8
5/5	7.8	8.2	9.2	10.7	10.9	11.6	9.7	10.5	9.7	11.6	10.9	11.0
5/6	8.2	8.5	9.6	11.2	11.6	12.3	10.2	11.0	10.2	12.2	11.1	11.2
5/7	8.6	8.6	10.0	11.6	12.2	12.9	10.6	11.4	10.5	12.6	11.1	11.3
5/8	8.9	8.7	10.2	11.7	12.6	13.4	10.9	11.7	10.7	13.0	11.2	11.3
5/9	9.0	8.8	10.2	11.6	12.7	13.5	11.0	11.9	10.9	13.1	11.0	11.2
5/10	8.9	8.9	10.1	11.3	12.5	13.4	11.1	12.0	10.9	13.1	10.7	10.9
5/11	8.7	8.9	9.9	11.1	12.2	12.9	11.0	12.0	10.9	12.8	10.4	10.6
5/12	8.7	9.0	9.8	10.7	12.2	12.8	11.1	12.0	11.0	12.8	10.3	10.5
5/13	8.5	8.9	9.6	10.3	11.8	12.5	10.9	11.8	10.9	12.5	10.1	10.3
5/14	8.2	8.9	9.4	10.1	11.3	11.9	10.7	11.5	10.7	12.1	9.8	10.0
5/15	8.0	8.8	9.3	10.1	11.1	11.8	10.6	11.5	10.7	12.0	9.7	9.9
5/16	8.0	8.7	9.3	9.9	11.3	11.9	10.7	11.5	10.8	12.2	9.8	10.0
5/17	8.0	8.7	9.2	10.0	11.2	11.7	10.7	11.5	10.8	12.0	9.8	10.1
5/18	8.1	8.6	9.2	10.0	11.2	11.8	10.7	11.5	10.9	12.1	9.9	10.1
5/19	8.1	8.4	9.2	10.3	11.1	11.7	10.8	11.6	11.0	12.3	10.1	10.3
5/20	8.4	8.5	9.4	10.4	11.7	12.3	11.1	12.1	11.4	12.9	10.5	10.7
5/21	8.6	8.5	9.4	10.0	11.9	12.5	11.4	12.5	11.7	13.1	10.9	11.1
5/22	8.4	8.5	9.3	9.9	11.5	12.0	11.5	12.3	11.7	12.8	10.6	10.9
5/23	8.4	8.4	9.1	10.2	11.1	11.7	11.5	12.3	11.8	12.8	10.6	10.8
5/24	8.7	8.2	9.2	10.2	11.5	12.2	11.8	12.7	12.1	13.5	11.0	11.2
5/25	9.0	8.1	9.2	9.9	11.7	12.3	12.0	12.9	12.3	13.6	11.4	11.6
5/26	9.0	7.9	9.0	9.9	11.5	12.2	12.0	12.9	12.3	13.6	11.4	11.7
5/27	9.2	7.8	8.9	10.3	11.3	12.0	11.9	12.9	12.3	13.6	11.5	11.7
5/28	9.7	7.6	9.1	10.8	11.7	12.5	12.1	13.1	12.4	14.0	11.9	12.1
5/29	10.4	7.6	9.3	11.1	12.4	13.3	12.4	13.7	12.8	14.7	12.6	12.8
5/30	10.9	7.6	9.4	11.0	12.9	13.9	12.8	14.2	13.1	15.1	13.1	13.2
5/31	11.0	7.5	9.4	11.1	12.8	13.9	12.9	14.1	13.2	15.1	13.2	13.4

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
6/1	11.2	7.3	9.4	10.9	13.1	14.4	12.6	14.1	13.1	15.2	13.5	13.6
6/2	11.3	7.0	9.2	10.4	13.1	14.4	12.3	13.9	12.7	14.8	13.6	13.7
6/3	11.0	6.8	8.9	9.8	12.7	14.0	12.0	13.4	12.3	14.3	13.4	13.5
6/4	10.4	6.6	8.4	9.3	12.0	13.3	11.6	12.8	11.8	13.5	13.0	13.1
6/5	10.0	6.4	8.1	9.1	11.4	12.8	11.2	12.3	11.4	13.1	12.7	12.8
6/6	9.8	6.3	8.0	9.0	11.1	12.5	11.0	12.0	11.2	12.9	12.6	12.7
6/7	9.6	6.3	7.9	9.3	11.2	12.5	10.8	12.0	11.1	12.8	12.7	12.8
6/8	9.9	6.5	8.2	9.8	11.4	12.7	11.2	12.3	11.4	13.2	13.1	13.2
6/9	10.4	6.7	8.5	10.3	11.8	13.2	11.6	12.8	11.9	13.9	13.7	13.7
6/10	11.0	6.9	8.8	10.6	12.5	13.9	11.9	13.4	12.4	14.5	14.4	14.4
6/11	11.5	6.9	9.0	10.7	12.9	14.3	12.1	13.7	12.7	14.9	15.0	15.0
6/12	12.0	7.0	9.1	10.9	13.2	14.6	12.3	14.0	12.9	15.0	15.5	15.6
6/13	12.4	7.0	9.1	10.9	13.5	14.9	12.4	14.2	13.1	15.2	16.0	16.0
6/14	12.8	7.1	9.2	10.7	13.6	15.0	12.5	14.4	13.2	15.4	16.4	16.3
6/15	12.8	7.1	9.0	10.4	13.4	14.8	12.5	14.3	13.2	15.1	16.3	16.3
6/16	12.5	7.0	8.8	9.8	13.0	14.3	12.6	14.2	13.2	15.0	16.1	16.0
6/17	12.0	7.0	8.5	9.7	12.3	13.5	12.4	13.8	13.0	14.6	15.6	15.5
6/18	11.7	6.9	8.5	9.5	12.0	13.3	12.4	13.7	13.0	14.7	15.3	15.3
6/19	11.5	6.9	8.3	9.0	11.6	12.7	12.3	13.5	12.9	14.4	14.8	14.8
6/20	11.0	6.9	8.1	8.7	10.9	12.0	12.2	13.2	12.7	14.0	14.4	14.4
6/21	10.5	6.9	7.9	8.6	10.3	11.4	12.1	12.9	12.6	13.7	14.0	14.0
6/22	10.2	6.9	7.9	8.8	10.3	11.3	12.0	12.8	12.6	14.0	13.9	13.9
6/23	10.3	6.9	8.0	9.0	10.4	11.5	12.2	12.9	12.6	14.1	13.9	14.0
6/24	10.3	6.9	8.2	9.2	10.5	11.6	12.2	13.0	12.8	14.2	14.0	14.0
6/25	10.3	6.9	8.4	9.6	10.8	11.9	12.4	13.2	12.8	14.4	14.2	14.2
6/26	10.4	7.0	8.7	10.0	11.4	12.5	12.6	13.6	13.0	14.9	14.7	14.8
6/27	10.7	7.1	9.0	10.5	12.1	13.2	13.0	14.0	13.3	15.4	15.3	15.4
6/28	11.1	7.1	9.2	10.4	12.7	13.9	13.3	14.4	13.6	15.7	15.8	15.9
6/29	11.1	7.2	9.1	10.2	12.7	13.8	13.3	14.6	13.7	15.6	15.9	16.0
6/30	11.0	7.1	9.0	10.0	12.4	13.5	12.9	14.4	13.4	15.2	15.8	15.8

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
7/1	11.2	7.0	8.8	9.8	12.5	13.6	12.7	14.3	13.2	15.1	16.3	16.2
7/2	11.3	7.0	8.6	9.5	12.2	13.3	12.3	14.0	12.9	14.6	16.4	16.2
7/3	11.4	6.9	8.4	9.0	11.8	12.9	11.9	13.7	12.5	14.1	16.4	16.1
7/4	11.2	6.8	8.0	8.5	11.1	12.1	11.4	13.2	12.1	13.4	16.0	15.6
7/5	11.0	6.7	7.8	8.6	10.5	11.5	10.9	12.7	11.6	12.8	15.8	15.3
7/6	11.1	6.7	7.8	8.7	10.4	11.5	10.6	12.4	11.2	12.6	16.0	15.4
7/7	11.2	6.7	7.9	8.8	10.5	11.6	10.8	12.4	11.2	12.6	16.2	15.5
7/8	11.3	6.7	8.0	9.0	10.5	11.6	10.9	12.4	11.3	12.5	16.1	15.4
7/9	11.5	6.8	8.2	9.3	10.8	12.0	11.0	12.6	11.4	12.9	16.6	15.9
7/10	11.6	6.8	8.4	9.8	11.2	12.3	11.3	12.8	11.5	13.1	16.9	16.2
7/11	12.0	6.9	8.6	9.9	11.8	13.0	11.6	13.2	11.7	13.6	17.6	16.8
7/12	12.2	6.9	8.7	9.9	12.0	13.2	11.7	13.4	11.8	13.7	17.8	17.0
7/13	12.3	7.0	8.8	10.0	12.1	13.4	11.8	13.5	12.0	13.8	18.0	17.1
7/14	12.3	7.0	8.9	10.1	12.2	13.5	11.9	13.6	12.1	13.8	18.0	17.2
7/15	12.2	7.0	9.1	9.9	12.3	13.6	12.1	13.6	12.3	13.9	17.9	17.1
7/16	12.0	7.0	9.0	10.1	12.1	13.4	12.2	13.6	12.4	13.9	17.5	16.8
7/17	11.9	7.0	9.1	10.2	12.2	13.5	12.3	13.6	12.5	14.0	17.3	16.7
7/18	11.9	7.1	9.2	10.5	12.3	13.6	12.4	13.7	12.6	14.0	17.2	16.6
7/19	12.0	7.1	9.3	10.5	12.7	13.9	12.6	13.9	12.7	14.4	17.5	16.9
7/20	12.1	7.1	9.3	10.6	12.6	13.8	12.6	14.0	12.8	14.5	17.4	16.9
7/21	12.2	7.1	9.2	10.9	12.9	14.2	12.8	14.2	12.9	14.9	17.8	17.2
7/22	12.5	7.2	9.2	11.3	13.1	14.4	12.9	14.4	13.0	15.2	18.4	17.8
7/23	13.1	7.3	9.4	11.0	13.6	15.0	13.1	14.7	13.2	15.6	19.1	18.4
7/24	13.2	7.3	9.3	11.0	13.4	14.8	13.2	14.8	13.4	15.5	19.4	18.6
7/25	13.2	7.3	9.3	11.0	13.3	14.7	13.2	14.7	13.4	15.6	19.5	18.6
7/26	13.3	7.3	9.2	11.2	13.3	14.7	13.3	14.8	13.4	15.7	19.6	18.8
7/27	13.4	7.3	9.3	11.2	13.4	14.8	13.4	15.0	13.5	15.8	19.8	18.9
7/28	13.7	7.4	9.3	11.3	13.6	15.0	13.5	15.1	13.7	15.9	20.1	19.1
7/29	13.8	7.5	9.4	11.0	13.7	15.1	13.6	15.3	13.8	16.1	20.3	19.3
7/30	13.7	7.5	9.3	11.2	13.4	14.8	13.5	15.2	13.9	15.9	20.3	19.3
7/31	14.0	7.5	9.3	11.1	13.7	15.0	13.3	15.1	13.6	15.9	20.5	19.4

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
8/1	14.2	7.5	9.3	11.1	13.7	15.1	13.6	15.0	13.3	15.6	20.7	19.5
8/2	14.4	7.4	9.2	11.2	13.7	15.1	13.6	14.9	13.1	15.3	20.9	19.5
8/3	14.7	7.5	9.2	11.3	13.9	15.3	13.6	14.9	13.0	15.1	21.4	19.8
8/4	15.0	7.5	9.3	11.0	14.0	15.4	13.6	14.9	13.1	15.2	21.6	19.9
8/5	15.0	7.5	9.1	10.8	13.7	15.1	13.6	14.7	13.0	14.8	21.5	19.7
8/6	15.1	7.5	9.1	10.7	13.4	14.7	13.6	14.5	12.9	14.6	21.2	19.4
8/7	15.1	7.6	9.0	10.4	13.1	14.5	13.8	14.5	13.2	14.8	20.9	19.2
8/8	14.8	7.6	9.0	10.2	12.6	13.9	14.0	14.5	13.5	14.9	20.4	18.9
8/9	14.5	7.6	8.9	10.2	12.4	13.7	14.0	14.5	13.8	15.1	20.0	18.7
8/10	14.3	7.6	9.0	10.1	12.3	13.5	14.0	14.6	13.9	15.4	19.8	18.6
8/11	14.1	7.6	8.9	10.4	12.2	13.4	14.0	14.7	14.0	15.5	19.7	18.5
8/12	14.3	7.6	9.1	10.6	12.4	13.7	14.0	14.9	14.0	15.8	19.8	18.6
8/13	14.5	7.6	9.1	10.4	12.7	14.0	14.0	15.1	14.2	16.0	20.0	18.9
8/14	14.4	7.6	9.0	10.5	12.6	13.7	14.0	15.1	14.1	15.8	20.1	18.8
8/15	14.7	7.6	9.0	10.5	12.7	13.9	13.9	15.0	14.0	15.7	20.3	18.9
8/16	15.2	7.5	8.9	10.3	12.6	13.9	13.8	14.9	13.8	15.5	20.4	18.9
8/17	15.3	7.5	8.8	9.9	12.4	13.7	12.5	14.7	13.5	15.2	20.4	18.7
8/18	15.1	7.4	8.7	9.6	12.0	13.2	12.5	14.3	13.3	14.6	20.1	18.4
8/19	14.9	7.3	8.5	9.5	11.6	12.7	12.5	13.9	13.0	14.2	19.7	17.9
8/20	14.7	7.3	8.5	9.5	11.3	12.5	12.7	13.6	12.7	14.0	19.3	17.6
8/21	14.7	7.3	8.5	9.4	11.4	12.5	12.9	13.6	12.7	14.1	19.3	17.6
8/22	14.5	7.3	8.4	9.4	11.2	12.4	13.2	13.6	12.7	14.2	19.2	17.5
8/23	14.4	7.3	8.4	9.5	11.1	12.2	13.2	13.6	12.8	14.3	19.0	17.4
8/24	14.7	7.3	8.5	9.8	11.2	12.3	13.5	13.7	12.9	14.4	19.0	17.4
8/25	15.6	7.4	8.6	9.9	11.4	12.6	13.5	13.9	13.0	14.8	19.2	17.6
8/26	15.9	7.5	8.7	9.9	11.6	12.9	13.5	14.1	13.2	15.0	19.4	17.8
8/27	16.5	7.5	8.7	9.9	11.7	13.0	13.5	14.3	13.4	15.2	19.7	18.1
8/28	16.9	7.6	8.8	10.0	11.7	13.0	13.5	14.4	13.5	15.3	19.8	18.2
8/29	17.4	7.6	8.8	9.8	11.7	13.1	13.6	14.5	13.6	15.5	20.0	18.3
8/30	18.4	7.7	8.8	9.7	11.6	12.9	13.8	14.5	13.8	15.7	20.2	18.5
8/31	19.1	7.7	8.7	9.6	11.5	12.7	14.2	14.5	13.9	15.7	20.2	18.5

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
9/1	22.5	7.7	8.6	9.5	11.2	12.5	14.2	14.5	14.0	15.7	20.1	18.5
9/2	20.1	7.8	8.6	9.6	11.1	12.3	14.4	14.5	14.1	15.8	20.1	18.5
9/3	21.3	7.8	8.7	9.7	11.1	12.3	14.4	14.5	14.2	16.0	20.2	18.6
9/4	22.5	7.9	8.7	9.5	11.1	12.2	14.4	14.5	14.4	16.0	20.1	18.6
9/5	22.1	7.9	8.7	9.7	11.0	12.0	14.6	14.4	14.5	15.8	19.8	18.3
9/6	20.6	7.9	8.8	9.5	10.8	11.7	14.9	14.1	14.5	15.6	19.3	17.9
9/7	19.1	7.9	8.8	9.5	10.7	11.5	14.9	14.0	14.5	15.7	18.9	17.6
9/8	17.5	7.9	8.8	9.5	10.7	11.4	14.9	13.9	14.6	15.7	18.6	17.5
9/9	16.5	7.9	8.8	9.4	10.6	11.4	14.9	13.9	14.7	15.9	18.4	17.4
9/10	14.4	8.2	8.9	9.5	10.4	11.1	14.9	13.8	14.7	15.7	18.0	17.1
9/11	12.6	8.3	9.0	9.8	10.4	11.0	14.9	13.8	14.7	15.7	17.5	16.8
9/12	12.1	8.5	9.4	9.9	10.6	11.1	14.9	13.9	14.6	15.7	17.1	16.6
9/13	11.8	8.7	9.5	10.1	10.7	11.3	14.8	14.1	14.7	15.8	16.7	16.4
9/14	11.4	8.9	9.7	10.2	10.7	11.3	14.8	14.1	14.6	15.6	16.2	16.0
9/15	11.2	9.0	9.8	10.3	10.8	11.3	14.6	14.0	14.5	15.4	15.7	15.6
9/16	10.9	9.2	10.0	10.3	10.9	11.3	14.3	13.9	14.4	15.3	15.3	15.3
9/17	10.7	9.1	9.9	10.3	10.9	11.4	14.2	13.8	14.2	15.2	15.0	15.0
9/18	10.6	9.1	9.9	10.2	11.0	11.5	14.2	13.8	14.1	15.2	15.0	15.0
9/19	10.4	9.0	9.9	10.3	10.9	11.4	14.2	13.7	14.0	15.1	14.9	15.0
9/20	10.4	9.0	10.0	10.4	10.9	11.4	14.2	13.6	13.9	15.0	14.9	14.9
9/21	10.4	8.9	10.1	10.3	11.0	11.5	14.2	13.6	13.8	14.9	14.9	14.9
9/22	10.4	8.9	10.0	10.4	11.0	11.5	14.0	13.5	13.8	14.8	15.0	14.9
9/23	10.4	8.8	10.1	10.3	11.0	11.5	13.2	13.4	13.7	14.6	14.9	14.8
9/24	10.2	8.8	10.1	10.2	10.9	11.4	13.2	13.2	13.5	14.4	14.6	14.5
9/25	9.9	8.7	9.9	9.9	10.7	11.1	13.2	12.9	13.2	14.1	14.0	13.9
9/26	8.4	8.6	9.6	9.6	10.4	10.8	12.8	12.6	12.9	13.8	13.4	13.4
9/27	8.1	8.5	9.3	9.3	10.0	10.4	12.5	12.3	12.7	13.6	13.0	13.0
9/28	7.9	8.4	9.0	9.1	9.6	10.0	12.2	12.0	12.4	13.4	12.6	12.6
9/29	7.9	8.3	8.8	8.8	9.3	9.7	12.2	11.7	12.2	13.1	12.0	12.2
9/30	7.8	8.2	8.6	8.7	9.0	9.3	12.2	11.5	12.0	12.9	11.6	11.8

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
10/1	7.6	8.1	8.5	8.6	8.8	9.1	12.2	11.4	11.9	12.7	11.3	11.6
10/2	7.4	8.0	8.4	8.6	8.8	9.1	12.5	11.3	11.8	12.7	11.2	11.5
10/3	7.3	8.0	8.4	8.7	8.7	9.1	12.5	11.2	11.7	12.6	11.3	11.5
10/4	7.3	8.0	8.5	8.7	8.8	9.1	12.5	11.3	11.7	12.5	11.2	11.5
10/5	7.0	7.9	8.5	8.6	9.0	9.2	12.5	11.2	11.6	12.4	11.1	11.4
10/6	6.9	7.8	8.4	8.4	8.8	9.1	12.5	10.9	11.4	12.1	10.8	11.1
10/7	7.1	7.6	8.2	8.3	8.5	8.8	12.5	10.6	11.0	11.7	10.3	10.6
10/8	7.3	7.5	8.1	8.2	8.3	8.6	12.5	10.3	10.7	11.5	10.0	10.3
10/9	7.4	7.5	8.0	8.1	8.2	8.4	10.7	10.1	10.5	11.3	9.6	10.0
10/10	7.4	7.4	7.9	7.9	8.2	8.4	10.7	10.0	10.4	11.1	9.4	9.8
10/11	7.2	7.3	7.7	7.7	7.9	8.2	10.7	9.8	10.2	11.0	9.3	9.7
10/12	7.3	7.3	7.6	7.8	7.8	8.0	10.7	9.7	10.1	10.9	9.2	9.5
10/13	7.3	7.3	7.6	7.9	7.8	8.1	10.7	9.9	10.2	10.9	9.4	9.7
10/14	7.2	7.2	7.7	7.8	8.0	8.3	10.7	10.0	10.3	10.9	9.5	9.9
10/15	7.2	7.2	7.7	7.8	8.1	8.3	10.7	10.0	10.3	10.9	9.6	9.9
10/16	7.3	7.1	7.6	7.7	8.1	8.3	10.6	9.9	10.2	10.7	9.5	9.8
10/17	7.3	7.0	7.6	7.8	8.0	8.2	10.4	9.8	10.0	10.5	9.2	9.5
10/18	7.1	6.9	7.8	8.0	8.2	8.4	9.9	9.7	9.9	10.3	8.9	9.1
10/19	6.8	7.2	8.0	8.2	8.4	8.5	9.9	9.7	9.8	10.2	8.7	9.0
10/20	6.4	7.5	8.2	8.3	8.4	8.6	9.9	9.6	9.7	10.0	8.5	8.8
10/21	5.9	7.7	8.3	8.3	8.6	8.7	9.9	9.5	9.5	9.8	8.3	8.6
10/22	5.5	7.7	8.3	8.3	8.6	8.8	9.9	9.5	9.4	9.7	8.4	8.6
10/23	5.0	7.7	8.2	8.1	8.6	8.9	9.0	9.5	9.4	9.6	8.4	8.7
10/24	4.7	7.7	8.1	7.8	8.4	8.7	8.1	9.4	9.3	9.6	8.4	8.7
10/25	4.7	7.5	7.7	7.3	8.0	8.2	7.6	9.1	9.2	9.5	8.3	8.6
10/26	4.7	7.1	7.2	6.8	7.4	7.7	7.4	8.7	9.0	9.3	7.9	8.3
10/27	4.7	6.7	6.8	6.4	6.9	7.1	6.8	8.4	8.9	9.1	7.5	8.0
10/28	4.8	6.3	6.4	6.2	6.4	6.6	6.6	8.0	8.7	9.0	7.1	7.7
10/29	5.0	6.4	6.3	6.2	6.0	6.2	6.6	7.7	8.6	8.9	6.7	7.4
10/30	5.1	6.6	6.4	6.4	5.8	5.9	6.6	7.4	8.4	8.8	6.4	7.2
10/31	5.3	6.8	6.5	6.5	5.8	5.9	6.6	7.3	8.3	8.7	6.3	7.1

DATE	RM 18.2	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skykomish	Skykomish
	(SFK) 7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	7 Day Avg Max	Above 7 Day Avg Max	Below 7 Day Avg Max
11/1	4.7	7.0				6.0	6.6	7.3	8.3	8.6	6.3	7.2
11/2	4.7	7.2				6.1	6.6	7.3	8.2	8.5	6.4	7.2
11/3	4.8	7.4				6.3	6.7	7.4	8.1	8.5	6.5	7.3
11/4	5.0	7.6				6.5	7.0	7.4	8.1	8.5	6.7	7.4
11/5	5.1	7.6				6.7	7.0	7.6	8.1	8.5	6.8	7.4
11/6	5.3	7.6				6.9	7.0	7.7	8.1	8.5	6.9	7.5
11/7	5.5	7.6				7.1	7.0	7.8	8.1	8.6	7.1	7.6
11/8	5.7	7.6				7.3	7.0	8.0	8.1	8.6	7.2	7.7
11/9	5.9	7.6				7.6	7.0	8.1	8.2	8.6	7.4	7.9
11/10	5.9	7.6				7.7	8.4	8.3	8.2	8.7	7.7	8.0
11/11	6.2	7.6				7.8	9.0	8.3	8.2	8.7	7.9	8.2
11/12	5.7	7.4				7.9	9.0	8.4	8.2	8.7	8.0	8.3
11/13	6.5	7.2				7.8	9.0	8.4	8.2	8.7	8.1	8.4
11/14	6.5	7.0				7.8	9.0	8.4	8.3	8.6	8.0	8.3
11/15	6.6	6.7				7.9	9.0	8.5	8.3	8.7	8.0	8.3
11/16	6.6	6.5				7.9	9.0	8.5	8.4	8.7	8.0	8.2
11/17	6.7	6.3				7.9	9.0	8.6	8.4	8.6	7.9	8.1
11/18	6.6	6.2				7.6	8.9	8.3	8.2	8.4	7.6	7.9
11/19	6.4	6.1				7.2	8.7	8.0	8.0	8.1	7.2	7.5
11/20	6.0	6.1				7.0	8.2	7.8	7.8	8.0	6.9	7.2
11/21	5.9	6.1				6.8	6.2	7.6	7.6	7.8	6.8	7.0
11/22	5.7	6.0				6.5	6.2	7.3	7.3	7.6	6.5	6.8
11/23	5.4	6.0				6.1	6.2	6.9	7.1	7.3	6.2	6.5
11/24	5.1	5.9				5.6	6.2	6.5	6.8	7.0	5.8	6.1
11/25	4.8	5.8				5.4	5.6	6.2	6.7	6.8	5.5	5.8
11/26	4.6	5.7				5.1	5.3	6.0	6.6	6.7	5.3	5.6
11/27	4.3	5.7				4.7	4.9	5.7	6.5	6.5	4.9	5.3
11/28	4.0	5.7				4.3	5.1	5.4	6.3	6.3	4.4	4.9
11/29	3.6	5.7				4.2	5.2	5.2	6.2	6.2	4.2	4.7
11/30	3.5	5.8				4.3	5.2	5.2	6.1	6.2	4.2	4.7

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
12/1	3.4	5.8				4.5	5.3	5.4	6.2	6.3	4.3	4.9
12/2	3.5	5.8				4.9	5.4	5.7	6.2	6.4	4.6	5.1
12/3	3.7	5.8				5.4	5.4	6.0	6.3	6.5	5.0	5.4
12/4	4.1	5.8				5.9	5.4	6.4	6.4	6.7	5.5	5.8
12/5	4.4	5.7				6.3	5.4	6.7	6.5	6.8	6.0	6.2
12/6	4.8	5.6				6.4	5.4	6.9	6.6	6.9	6.2	6.4
12/7	4.9	5.6				6.3	5.4	6.8	6.6	6.8	6.1	6.4
12/8	4.9	5.6				6.3	5.4	6.8	6.5	6.7	6.1	6.4
12/9	5.0	5.5				6.3	5.1	6.8	6.5	6.7	6.1	6.3
12/10	5.0	5.5				6.2	5.1	6.7	6.5	6.6	6.0	6.2
12/11	4.9	5.5				6.1	5.1	6.6	6.4	6.6	5.9	6.2
12/12	4.7	5.4				6.0	5.1	6.5	6.3	6.5	5.8	6.0
12/13	4.7	5.4				5.9	5.4	6.4	6.2	6.3	5.6	5.9
12/14	4.6	5.4				5.9	7.3	6.4	6.2	6.3	5.6	5.8
12/15	4.5	5.3				5.9	7.3	6.3	6.1	6.2	5.5	5.8
12/16	4.5	5.4				5.8	7.3	6.2	6.0	6.1	5.4	5.7
12/17	4.5	5.4				6.0	7.3	6.4	6.1	6.2	5.3	5.6
12/18	4.6	5.5				6.2	7.3	6.5	6.3	6.3	5.3	5.6
12/19	4.6	5.5				6.3	7.3	6.6	6.3	6.3	5.3	5.6
12/20	4.8	5.4				6.4	7.3	6.7	6.3	6.3	5.4	5.7
12/21	4.8	5.4				6.4	7.3	6.8	6.3	6.3	5.5	5.7
12/22	4.8	5.3				6.3	6.5	6.7	6.3	6.3	5.4	5.7
12/23	4.7	5.2				6.1	6.3	6.5	6.2	6.2	5.3	5.5
12/24	4.4	5.1				5.7	6.5	6.2	5.9	5.9	5.2	5.4
12/25	4.1	5.0				5.3	7.2	5.9	5.6	5.7	5.1	5.3
12/26	3.9	5.0				5.1	7.4	5.8	5.5	5.6	5.0	5.3
12/27	3.7	5.0				5.0	7.4	5.7	5.4	5.6	4.9	5.2
12/28	3.7	5.1				5.1	7.4	5.7	5.4	5.6	4.9	5.2
12/29	3.8	5.1				5.4	7.4	5.9	5.5	5.6	5.0	5.3
12/30	4.0	5.2				5.6	7.4	6.2	5.6	5.7	5.2	5.4
12/31	4.2	5.2				5.9	7.4	6.4	5.7	5.8	5.4	5.5

APPENDIX D

2019 Smolt Trap Report

Smolt Out-Migration Report

Sultan River

Annual Monitoring Report 2019



Jackson Hydroelectric Project
FERC No. 2157



May 2020

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1. Introduction

In 2012, Public Utility District No. 1 of Snohomish County (the District) began monitoring the out-migration of juvenile salmonids (smolts) as a measure (index) of reproductive success in the Sultan River near Sultan, Washington. This monitoring is one component of the Fisheries and Habitat Monitoring Plan (FHMP) as outlined in Article 410 of the License issued by the Federal Energy Regulatory Commission (FERC) on September 2, 2011, for the continued operation of the Jackson Hydroelectric Project (Project). This report presents the results of the seventh year (Year 7) of operation of the rotary screw trap (smolt trap) located on the lower Sultan River.

The FHMP also stipulates that, subject to the results of monitoring, the District will commence operation of the smolt trap on February 1 and continue operations through June 30 of each sampling year. The District will operate the trap between 30 and 40 percent of the hours in any given week during the sampling year except during severe flow events and scheduled to fish for 4-day and 4-night periods per week with each fishing period lasting a minimum of 6 hours. During periods when few fish are emigrating, the frequency of trapping can be reduced to fewer days per week. The FHMP also stipulates that the trap will be located in the lower mile of the Sultan River and that the District will collect, compile, analyze and report the following trap data by species and life stage: number captured, size distribution, timing (diel and seasonal), fish population estimates, and trap efficiency.

2. Methods

2.1 Trap Description, Location, and Operation

The Sultan River smolt trap, manufactured by E.G. Solutions, is 5 feet in diameter and designed to sample out-migrating fish over a range of flow conditions (discharge, depth, and velocity). The trap is seasonally positioned in the Sultan River at a location approximately 0.2 miles upstream of the confluence with the Skykomish River (Figure 1).



Figure 1. Aerial photograph depicting the location of the Sultan River smolt trap.

During 2019, the trap was operated from January 7 to June 27, fishing 68 percent of the total hours during that time period (69 percent of the day hours and 67 percent of the night hours). Table 1 summarizes total hours and percentage of time fished, by statistical week.

Table 1. Number and percentage of hours operated by week, Sultan River smolt trap, 2019.

Statistical Week ¹	Sample Block Start Date	Hours Operated	Percent Hours Operated
2	7-Jan	29	17%
3	14-Jan	65	39%
4	21-Jan	100	60%
5	27-Jan	127	76%
6	3-Feb	119	71%
7	13-Feb	48	29%
8	18-Feb	98	58%
9	24-Feb	127	76%
10	3-Mar	124	74%
11	10-Mar	121	72%
12	17-Mar	121	72%
13	25-Mar	122	73%
14	31-Mar	120	71%
15	9-Apr	71	42%
16	14-Apr	125	74%
17	21-Apr	124	74%
18	28-Apr	120	71%
19	5-May	122	73%
20	12-May	126	75%
21	19-May	124	74%
22	27-May	94	56%
23	2-Jun	122	73%
24	10-Jun	96	57%
25	16-Jun	121	72%
26	23-Jun	56	33%

¹ Throughout this report, weekly data is presented by statistical week. A table of statistical weeks and the corresponding months is given in Appendix A.

During operation the trap was constantly monitored for cone revolutions and directly observed through video surveillance. Site visits occurred at a minimum of once per day and more frequently depending on operating conditions. The number of cone revolutions per minute was recorded at the beginning and end of each trapping period (set). Discharge information from upstream of the trapping site was obtained from the U.S. Geological Survey Gaging Station No. 12138160 (Sultan River below Powerplant; River Mile 4.5).

At the end of each set captured fish were enumerated and sorted by species and life history stage.

2.2 Estimating Total Migration

In order to estimate total out-migration, the capture efficiency (percentage of total out-migrating fish captured) of the trap was determined through a series of tests conducted over the range of operating conditions. Capture efficiency tests were performed by releasing marked groups of wild Chinook (1,967) and chum (20,767). These fish were marked with Bismarck Brown dye

prior to their release. Hatchery Chinook were not used because an adequate number of wild Chinook and chum were captured and used for efficiency trials. Wild Chinook and chum were released on 13 days. Catches of wild coho were low, which precluded their use for efficiency trials.

The release site for all efficiency tests was at Reese Park, approximately 0.2 miles upstream of the trap. This distance was sufficient to allow for mixing of fish across the stream channel and within the water column, but short enough to reduce the likelihood of predation before released fish arrive at the trap. In order to assure that marked and unmarked fish have the same probability of capture, the trap operated continuously for a minimum of 72 hours after each release to allow all marked fish to migrate past the trap.

A modified Peterson mark-recapture approach was used to estimate total migration for the season (Volkhardt et al., 2007).

The following 5 assumptions must be met in order to estimate total migration:

- 1) The population is closed;
- 2) All fish (marked and unmarked) have an equal opportunity of capture;
- 3) Marking does not affect catchability;
- 4) Marked fish mix at random with unmarked fish; and
- 5) All marks are detected and reported.

Peterson's equation is slightly biased. Therefore, we used Seber's adjustment (Seber, 1982) to Peterson's equation because it assumes that the second sampling is done without replacement. Because we did not sample all hours during the season, we modified Seber's equation to adjust for our sampling effort. Our modified Seber's estimator is:

$$U_{2019} = \left(\frac{u_{2019} + 1}{p_{2019}} \right) \left(\frac{M_{2019} + 1}{m_{2019} + 1} \right)$$

Where:

U_{2019} = Estimated number of fish migrating past the trap including hours not fished

u_{2019} = Number of fish captured at the trap

p_{2019} = Percent of hours fished

M_{2019} = Number of fish marked and released during efficiency trials

m_{2019} = Number of marked fish captured during efficiency trials

An approximate variance estimate of U_{2019} is:

$$\widehat{Var}(U_{2019}) = \frac{(u_{2019} + 1)(M_{2019} + 1)(u_{2019} - m_{2019})(M_{2019} - m_{2019})}{p_{2019}^2(m_{2019} + 1)^2(m_{2019} + 2)}$$

and the approximate 95 percent confidence interval is:

$$U_{2019} \pm 1.96\sqrt{\widehat{Var}(U_{2019})}$$

2.3 Egg-to-Migrant Survival

The 2019 Chinook egg-to-migrant survival was estimated using data collected during fall 2018 spawning surveys in conjunction with the juvenile migration estimate.

Egg-to-migrant survival is estimated by:

$$S_{2019} = \left(\frac{E_{2018}}{U_{2019}} \right)$$

Where:

S_{2019} = Chinook egg-to-migrant survival in 2019

U_{2019} = Estimate of 2019 Chinook juvenile migration

E_{2018} = Number of Chinook eggs deposited in gravel in 2018

The number of Chinook eggs deposited in the gravel is calculated by multiplying the number of redds estimated during fall spawner surveys by the average number of eggs per female from Wallace River Hatchery data (4,510 eggs/female). Spawner surveys for chum and coho did not occur in the Sultan River in 2018; therefore, it is not possible to generate egg-to-migrant survival for these species. Typically, the river is too turbid to get accurate fish counts during their respective spawning seasons.

3. Results and Discussion

3.1 Catch

A total of 72,093 fish were captured during the 2019 sampling year (Table 2).

Table 2. Total number of fish captured by species and life stage, Sultan River smolt trap, 2019.

Species	Total
Chinook Salmon (0+)	9,176
Chinook Salmon (1+)	30
Chum Salmon	60,700
Coho (0+) Salmon	1,067
Coho (1+) Salmon	601
Sockeye (0+) Salmon	63
Pink Salmon	39
Steelhead/Rainbow Trout	77
Cutthroat Trout	11
Dace unident	215
Lamprey unident	82
Sculpin unident	28
Sucker unident	2
3-Spine Stickleback	1
Mountain Whitefish	1

3.2 Out-Migration Timing

Out-migration timing was determined using weekly catch data (Table 3).

The first steelhead smolt was captured in week 17 (late April) and the last in week 22 (late May). The first young of the year steelhead was captured in week 26. Steelhead/rainbow lengths are listed in Appendix B.

Table 3. Number of salmon and trout caught by statistical week, Sultan River smolt trap, 2019.

Stat. Week	Sample Block Start Date	Hours Fished	Chinook (0+)	Chinook (1+)	Coho (0+)	Coho (1+)	Chum	Sockeye	Pink	Steelhead/Rainbow	Cutthroat
2	7-Jan	29	0	0	0	0	0	0	0	0	0
3	14-Jan	65	15	0	0	4	0	0	0	0	0
4	21-Jan	100	96	0	2	3	17	0	0	0	0
5	27-Jan	127	149	1	0	10	3	0	0	1	0
6	3-Feb	119	106	1	0	6	12	0	0	3	0
7	13-Feb	48	47	0	0	4	23	0	0	0	0
8	18-Feb	98	104	0	0	3	93	0	0	0	0
9	24-Feb	127	202	2	0	3	529	0	0	2	0
10	3-Mar	124	269	0	0	1	1,627	0	0	2	0
11	10-Mar	121	420	2	5	1	3,143	0	0	2	0
12	17-Mar	121	910	2	49	0	4,737	1	1	1	0
13	25-Mar	122	1056	2	95	1	10,318	14	19	3	0
14	31-Mar	120	1244	3	88	4	16,771	29	19	2	1
15	9-Apr	71	1468	3	163	15	12,089	6	0	8	0
16	14-Apr	125	487	1	75	7	6,318	13	0	2	1
17	21-Apr	124	702	7	78	26	4,325	0	0	3	1
18	28-Apr	120	620	0	40	76	548	0	0	4	4
19	5-May	122	554	2	133	138	116	0	0	3	0
20	12-May	126	127	4	103	129	22	0	0	9	0
21	19-May	124	47	0	110	124	3	0	0	7	0
22	27-May	94	61	0	63	26	6	0	0	3	2
23	2-Jun	122	323	0	16	20	0	0	0	3	0
24	10-Jun	96	86	0	12	0	0	0	0	1	2
25	16-Jun	121	53	0	22	0	0	0	0	1	0
26	23-Jun	56	30	0	13	0	0	0	0	17	0
Season Total		2,622	9,176	30	1,067	601	60,700	63	39	77	11

Data were converted to catch per unit effort (CPUE) for Chinook, yearling coho, and chum to evaluate timing throughout the season (Figure 2).

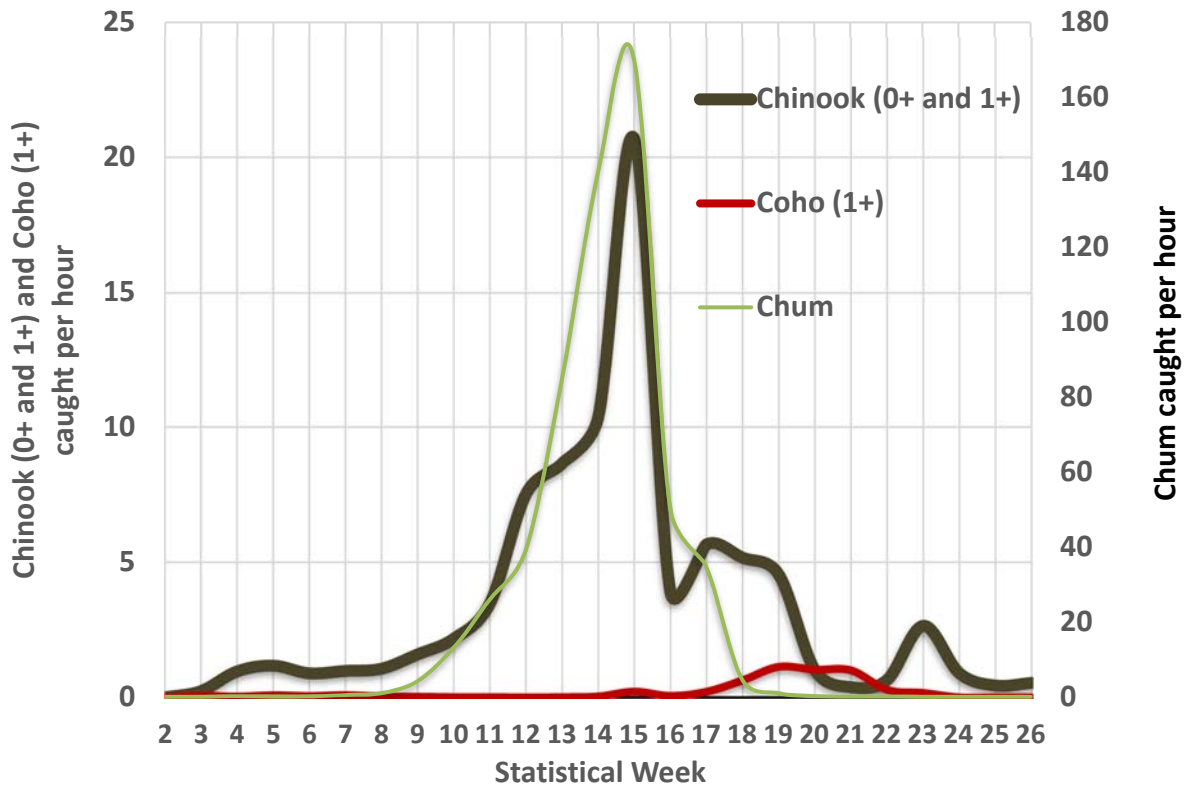


Figure 2. Chinook (0+and 1+), Coho (1+), and Chum caught per hour by statistical week, Sultan River Smolt Trap, 2019.

3.3 Total Out-Migration

In order to estimate total out-migration, groups of wild Chinook (0+) and chum salmon were used to assess capture efficiency throughout the season. Table 4 summarizes results of efficiency trials by species.

Table 4. Summary of mark-recapture tests of capture efficiency for wild Chinook and chum, and all combined species, Sultan River smolt trap, 2019.

Fish Used	Total Marked and Released	Total Recaptured	Percent Trap Efficiency
Wild Chinook	1,967	69	3.5
Chum	20,767	694	3.3
All Combined	22,734	763	3.4

A modified Peterson mark-recapture approach was used to determine capture efficiency and estimate total migration of Chinook, yearling coho, and chum salmon.

If possible, efficiency trials should be conducted for each species whose production is to be estimated (Volkhardt et al., 2007). Different species exhibit different migratory behavior (Groot and Margolis 1991), and estimates of trap efficiency generally vary between species (Seelbach et al., 1985) and among fish sizes within a species (Dambacher 1991).

The catch of wild Chinook and chum was sufficient to be used for efficiency estimates of these two species without using other species or hatchery Chinook as a surrogate (Table 5 and 6). However, the number of yearling coho caught was insufficient to be used for efficiency trials; therefore, the efficiency of all combined (3.4 percent) increased the sample size and was used to estimate the capture efficiency for yearling coho (Table 7).

Table 5. Chinook migration estimate, fish used for efficiency test with capture efficiency in parentheses, 95 percent confidence level, and variance, Sultan River smolt trap, 2019.

Chinook Migration Estimate	Fish Used for Efficiency Test and Capture Efficiency	95 Percent Confidence Level		Migration Variance
		High	Low	
381,672	Wild Chinook (3.5 percent)	464,240	292,107	1.93E+09

Table 6. Chum migration estimate, fish used for efficiency test with capture efficiency in parentheses, 95 percent confidence level, and variance, Sultan River smolt trap, 2019.

Chum Migration Estimate	Fish Used for Efficiency Test and Capture Efficiency	95 Percent Confidence Level		Migration Variance
		High	Low	
2,641,600	Chum (3.3 percent)	2,829,541	2,446,399	9.55E+09

Table 7. Yearling coho (1+) migration estimate, fish used for efficiency test with capture efficiency in parentheses, 95 percent confidence level, and variance, Sultan River smolt trap, 2019.

Yearling Coho Migration Estimate	Fish Used for Efficiency Test and Capture Efficiency	95 Percent Confidence Level		Migration Variance
		High	Low	
26,044	All Combined (3.4 percent)	26,127	25,960	1.81E+03

The Peterson mark-recapture approach is based on five assumptions. These assumptions must be met, or accommodated, in order to ensure an unbiased abundance estimate. A determination was made that all five assumptions were satisfied.

1. The population is closed with no immigration or emigration.

This assumption was satisfied because all fish that passed the trap were migrating from only the Sultan River. Because we were far enough upstream (0.2 miles) from the mouth, we do not believe any fish that passed the trap were emigrating from the Skykomish River.

2. All fish (marked and unmarked) have an equal opportunity of capture.

In order to be assured that marked fish and unmarked fish have the same probability of capture, the trap was fished continuously for a minimum of 48 hours after each release. All efficiency releases were at a site 0.2 miles upstream of the trap. This distance was great enough to allow for mixing of fish across the stream channel and within the water column, but short enough to reduce the likelihood of predation that would result in the loss of fish before they have an opportunity to arrive at the trap.

3. Marking does not affect catchability

After marking wild Chinook and chum with Bismarck Brown, the fish were held in aerated totes for a minimum of one hour prior to release. The fish showed no unusual behavior or stress as a result of marking. The Wallace Hatchery Chinook were adipose fin-clipped at the hatchery. These fish were held in aerated totes when being transferred from the hatchery to the release site. Water temperature was constantly monitored in the aerated totes.

4. The fish do not lose their marks.

The use of Bismarck Brown for Chinook and chum and the adipose fin-clip for hatchery Chinook satisfied this assumption.

5. All recovered marks are detected and reported.

Bismarck Brown marked Chinook and chum and adipose fin-clipped hatchery Chinook were easily detected and recorded immediately.

3.4 Egg-to-Migrant Survival (Sub-yearling Chinook)

During the fall of 2018, a total of 234 Chinook redds were estimated during spawner surveys in the Sultan River upstream of the trap site. Assuming an out-migrant estimate of 380,428 sub-yearling (0+) Chinook, the egg-to-migrant survival for brood year 2018 was 36.0 percent (Table 8).

Table 8. Estimated number of Chinook redds, salmon eggs deposited in gravel (based on fall spawning surveys), estimated total out-migration of sub-yearling (0+) Chinook, calculated percent egg-to-migrant survival, and recorded peak flow during incubation (August 1-March 31).

Year of Trap Operation	Chinook Redds (Year)	Number of Eggs Deposited in Gravel	Out-Migration of sub-yearling (0+) Chinook	Percent Egg - to- Migrant Survival	Peak Flow During Egg Incubation (cfs)
2019	234 (2018)	1,055,340	380,428	36.0	2,600
2017	275 (2016)	1,240,250	424,858	34.3	2,970
2016	156 (2015)	703,560	52,294	7.4	7,320
2015	146 (2014)	658,460	231,397	35.1	4,700
2014	184 (2013)	829,840	124,770	15.0	4,940
2013	390 (2012)	1,758,900	443,789	25.2	2,290
2012	53 (2011)	239,030	45,986	19.2	3,360

3.5 Catch per Unit Effort for 2012-2017, 19

The smolt trap has been in the same location during the first seven years of operation, and in all likelihood will continue to be operated in the same location in future years. Figure 3 summarizes CPUE (catch/hour) for Chinook, sub-yearling coho (0+), yearling coho (1+), and chum salmon for 2012-2019.

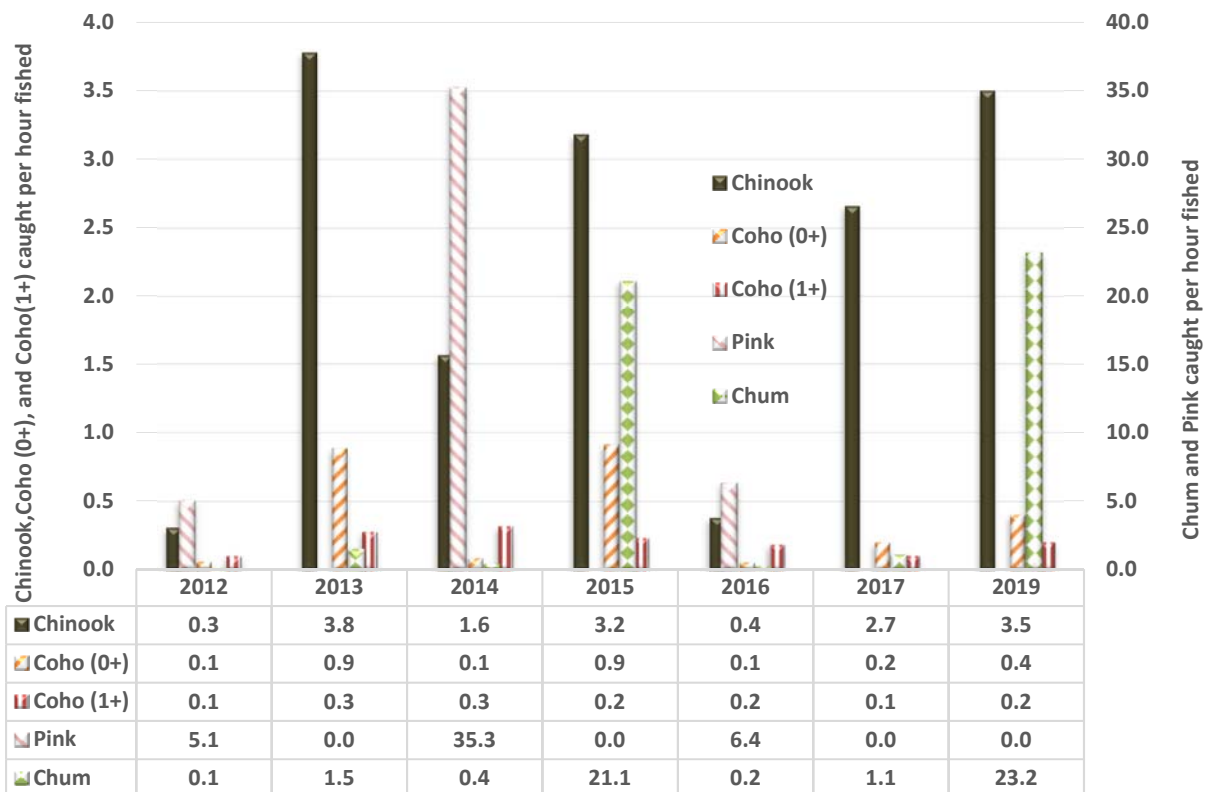


Figure 3. Catch per hour for season of Chinook, sub-yearling coho (0+), yearling coho (1+), and chum salmon during 2012-17, 19, Sultan River smolt trap.

4. Summary

This report presents the results of the seventh year of operation of the rotary screw trap located at River Mile 0.2 of the Sultan River. In 2019, the trap was operated from January 8 to June 29 and fished 66 percent of the total hours during that time period.

Chinook egg-to-migrant survival in 2019 was estimated at 36.0 percent. No high-water events occurred during incubation that would have resulted in scour.

Chinook, chum, and yearling coho salmon production estimates were calculated using a modified Peterson mark-recapture approach. An estimated 381,672 Chinook, 2,641,600 chum, and 26,044 yearling coho migrated during the trapping period.

5. Literature Cited

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Appendix A

Statistical Weeks and Corresponding Months

Statistical Weeks	Corresponding Months
1-5	January
6-9	February
10-13	March
14-19	April
18-22	May
23-26	June

Appendix B

Table B-1. Fork lengths (mm) of steelhead/rainbow trout smolt, parr, and YOY by statistical week, Sultan River smolt trap, 2019.

Statistical Week	Smolt fork length (mm)	Parr fork length (mm)	YOY fork length (mm)
5		70	
6		88,89,130	
7		70,73	
8			
9			
10		79,80	
11		86,125	
12		70	
13		68,75,80	
14		70,93	
15		72,73,82,82,85,90,130,132	
16		117,128	
17	170	75,150	
18		85,85,88,100,172,200,210	
19	165,180,200		
20	135,140,140, 160,175,185,190	90,125	
21	120,135,140,140,140,150,160		
22	145,160	80	
23		95,100,110	
24		80	
25		140	
26			25,25,25,25,25,26,27,28,28, 28,29,29,29,30,30,30,30

APPENDIX E

Consultation Documentation Regarding Draft Report

Presler, Dawn

From: Presler, Dawn
Sent: Friday, May 22, 2020 8:15 AM
To: 'rmiller@tulaliptribes-nsn.gov'; Andrew McDonnell; Anne Savery; Brock Applegate; Janet Curran; Jen Ford; Jim Miller; Jim Pacheco; Keith Binkley; Mike Rustay; Nate Morgan; Presler Dawn (E-mail); Tim Romanski; Tom O'Keefe
Cc: Lowe, Larry
Subject: JHP (FERC No. 2157) - draft Fish and Habitat Monitoring Plan 2019 Annual Report for your 30-day review
Attachments: DRAFT 2019 FHMP Annual Report_052020.docx; 2019 Sultan River Smolt Trap Report.pdf

Dear ARC,

Attached is the Jackson Hydro Project's draft Fish and Habitat Monitoring Plan 2019 Annual Report for your 30-day review. Please provide comments, if any, back to me with cc: to Keith by Monday June 22, 2020. Also attached as PDF is the 2019 Sultan River Smolt Trap Report that will be attached the Annual Report as Appendix D. Please do not hesitate to contact us if you have any questions regarding the attached reports.

Sincerely,

Dawn Presler

Sr. Environmental Coordinator
Generation – Natural Resources
Snohomish County PUD No. 1
Everett, WA

(425) 783-1709 (work)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served via e-mail a copy of the foregoing filing upon each person on the Project's Aquatic Resource Committee in accordance with ordering paragraph K of the Project license issued by the Federal Energy Regulatory Commission on September 2, 2011.

Dated at Everett, Washington, this 23rd day of June, 2020.



Dawn Presler, Sr. Environmental Coordinator
Public Utility District No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107
Phone: (425) 783-1709
E-mail: DJPresler@snopud.com

Presler, Dawn

From: Presler, Dawn
Sent: Tuesday, June 23, 2020 10:48 AM
To: Andrew McDonnell; Anne Savery; Brock Applegate; Janet Curran; Jen Ford; Jim Miller; Jim Pacheco; Keith Binkley; Mike Rustay; Nate Morgan; Presler Dawn (E-mail); Tim Romanski; Tom O'Keefe
Subject: JHP - cc FHMP Annual Report to FERC
Attachments: 20200623 FHMP Annual Rpt to FERC.pdf

Dear ARC,

Attached is your cc of the Fish and Habitat Monitoring Plan 2019 Annual Report that I will be e-filing with FERC shortly.

Hope you have a great day.

Dawn Presler

Sr. Environmental Coordinator
Generation – Natural Resources
Snohomish County PUD No. 1
Everett, WA

(425) 783-1709 (work)