

APPENDIX B16: TROUT CREEK

Discharge Records

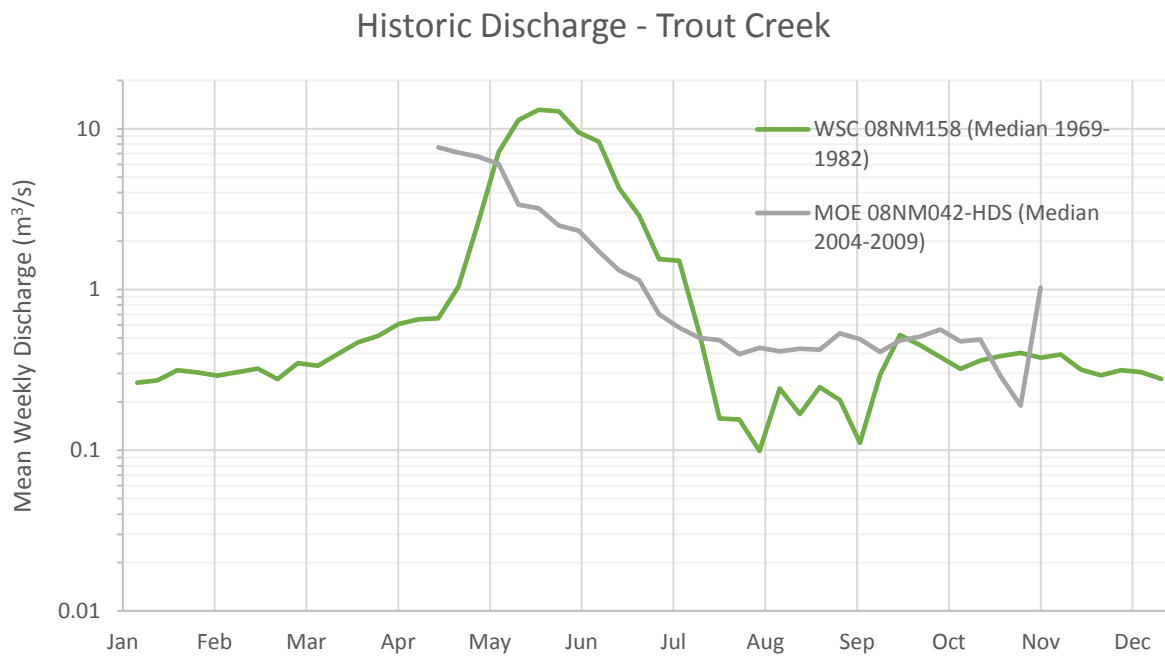


Figure B16-1: Historic weekly discharge recorded at WSC station 08NM158 (Trout Creek at the Mouth) from 1969 – 1982, and MOE station 08NM042-HDS from 2004-2009

Flow standards and periodicity – Okanagan Tennant analysis for Trout Creek

Week Ending	Life Stage/ Week	Rainbow						Kokanee				Ecological Flows	
		Adult migration	Spawning	Incubation	Rearing	Juvenile migration	Over-wintering	Adult migration	Spawning	Incubation	Juvenile migration	Wetland, side channel linkage, flushing and channel maintenance flow	Cottonwood ecosystems
Jan							20%			20%			
Feb							20%			20%			
Mar							20%			20%			
1-Apr	13				20%						50%	☑	
8-Apr	14				20%						50%	☑	
15-Apr	15	112%			20%						50%	☑	
22-Apr	16	112%			20%						50%	☑	
29-Apr	17	112%			20%						50%	☑	
6-May	18	112%			20%	50%					50%	☑	
13-May	19	112%			20%	50%					50%	☑	
20-May	20	112%	40%		20%	50%					50%	620%	
27-May	21	112%	40%	20%	20%	50%					50%	620%	
3-Jun	22	112%	40%	20%	20%	50%						☑	100%
10-Jun	23	112%	40%	20%	20%	50%						☑	100%
17-Jun	24	112%	40%	20%	20%	50%						☑	100%
24-Jun	25	112%	40%	20%	20%	50%							100%
1-Jul	26	112%	40%	20%	20%	50%							100%
8-Jul	27	112%	40%	20%	20%	50%							100%
15-Jul	28			20%	20%	50%							100%
22-Jul	29			20%	20%								100%
29-Jul	30			20%	20%								100%
5-Aug	31				20%								
12-Aug	32				20%								
19-Aug	33				20%								
26-Aug	34				20%								
2-Sep	35				20%								
9-Sep	36				20%			20%	20%	20%			
16-Sep	37				20%			20%	20%	20%			
23-Sep	38				20%			20%	20%	20%			
30-Sep	39				20%			20%	20%	20%			
7-Oct	40				20%			20%	20%	20%			
14-Oct	41				20%				20%	20%			
21-Oct	42				20%					20%			
28-Oct	43				20%					20%			
Nov							20%			20%			
Dec							20%			20%			

EFNs and critical flows for Trout Creek

	Okanagan Tennant EFN					FINAL EFN		CRITICAL FLOWS (m³/s)			
Week Ending	EFN - all factors (%LT MAD)	EFN based on flow standards (m³/s)	Nat. median weekly Q (m³/s)	Discharge m³/s	%LT MAD	Value (m³/s)	Dominant Species / Life Stage	Rainbow trout rearing & over wintering	Kokanee spawning	Rainbow trout migration & spawning	FINAL
Jan	20%	0.435	0.458	0.435	20%	0.435	overwintering egg incubation	0.109			0.109
Feb	20%	0.435	0.420	0.420	19%	0.420	overwintering egg incubation	0.109			0.109
Mar	20%	0.435	0.441	0.441	20%	0.441	overwintering egg incubation	0.109			0.109
1-Apr	50%	1.087	0.746	0.746	34%	0.746	KO juvenile migration	0.109			0.109
8-Apr	50%	1.087	0.789	0.789	36%	0.789	KO juvenile migration	0.109			0.109
15-Apr	112%	2.435	1.276	1.276	59%	1.276	RB adult migration	0.109		1.087	1.087
22-Apr	112%	2.435	2.723	2.435	112%	2.435	RB adult migration	0.109		1.087	1.087
29-Apr	112%	2.435	6.333	2.435	112%	2.435	RB adult migration	0.109		1.087	1.087
6-May	112%	2.435	6.713	2.435	112%	2.435	RB adult migration	0.109		1.087	1.087
13-May	112%	2.435	6.477	2.435	112%	2.435	RB adult migration	0.109		1.087	1.087
20-May	620%	13.480	9.064	9.064	417%	9.064	Ecosystem	0.109		1.087	1.087
27-May	620%	13.480	9.738	9.738	448%	9.738	Ecosystem	0.109		1.087	1.087
3-Jun	112%	2.435	7.339	2.435	112%	2.435	RB Spawning	0.109		1.087	1.087
10-Jun	112%	2.435	4.525	2.435	112%	2.435	RB Spawning	0.109		1.087	1.087
17-Jun	112%	2.435	4.736	2.435	112%	2.435	RB Spawning	0.109		1.087	1.087
24-Jun	112%	2.435	3.538	2.435	112%	2.435	RB Spawning	0.109		1.087	1.087
1-Jul	112%	2.435	2.533	2.435	112%	2.435	RB Spawning	0.109		1.087	1.087
8-Jul	112%	2.435	1.884	1.884	87%	1.884	RB Spawning	0.109		1.087	1.087
15-Jul	100%	2.174	1.568	1.568	72%	1.568	RB incubation	0.109			0.109
22-Jul	100%	2.174	1.268	1.268	58%	1.268	RB incubation	0.109			0.109
29-Jul	100%	2.174	1.090	1.090	50%	1.090	RB incubation	0.109			0.109
5-Aug	20%	0.435	0.858	0.435	20%	0.435	RB parr rearing	0.109			0.109
12-Aug	20%	0.435	0.750	0.435	20%	0.435	RB parr rearing	0.109			0.109
19-Aug	20%	0.435	0.688	0.435	20%	0.435	RB parr rearing	0.109			0.109
26-Aug	20%	0.435	0.607	0.435	20%	0.435	RB parr rearing	0.109			0.109
2-Sep	20%	0.435	0.577	0.435	20%	0.435	RB parr rearing	0.109			0.109
9-Sep	20%	0.435	0.531	0.520	24%	0.520	KO Spawning	0.109	0.217		0.217
16-Sep	20%	0.435	0.520	0.520	24%	0.520	KO Spawning	0.109	0.217		0.217
23-Sep	20%	0.435	0.546	0.520	24%	0.520	KO Spawning	0.109	0.217		0.217
30-Sep	20%	0.435	0.500	0.520	24%	0.520	KO Spawning	0.109	0.217		0.217
7-Oct	20%	0.435	0.520	0.520	24%	0.520	KO Spawning	0.109	0.217		0.217
14-Oct	20%	0.435	0.513	0.435	20%	0.435	RB incubation	0.109			0.109
21-Oct	20%	0.435	0.565	0.435	20%	0.435	RB incubation	0.109			0.109
28-Oct	20%	0.435	0.552	0.435	20%	0.435	RB incubation	0.109			0.109
Nov	20%	0.435	0.547	0.547	25%	0.547	overwintering egg incubation	0.109			0.109
Dec	20%	0.435	0.463	0.463	21%	0.463	overwintering egg incubation	0.109			0.109

Percentile Flows

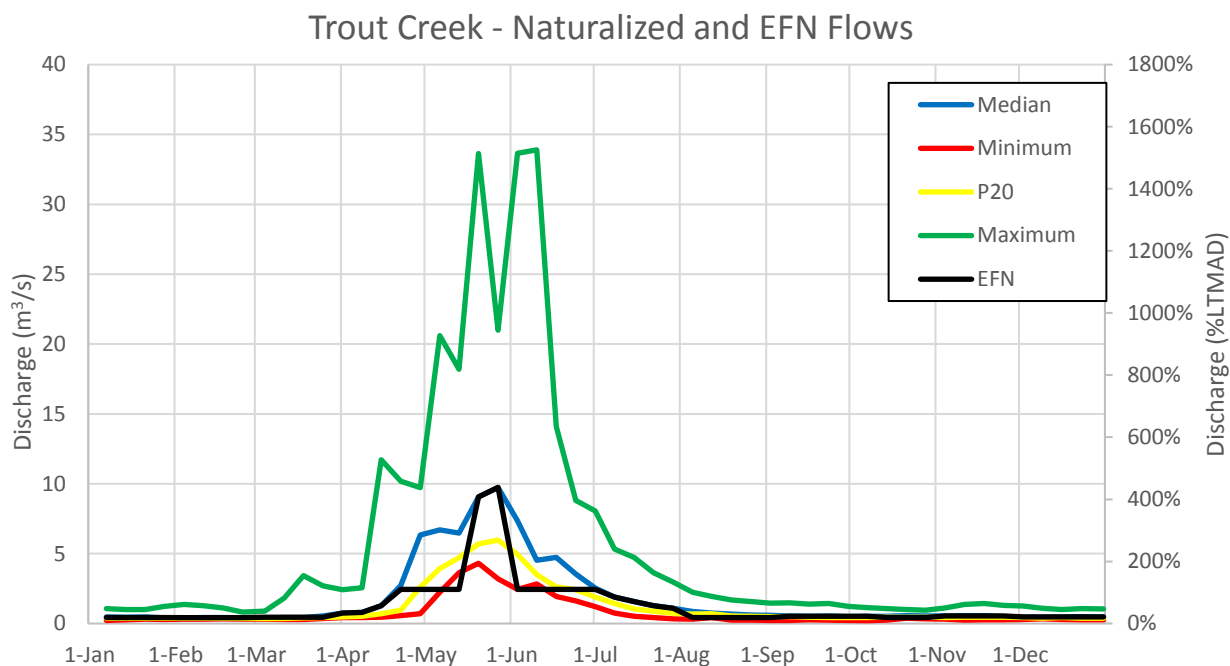


Figure 16-2: Okanagan Tennant EFNs compared to naturalized flow percentiles for Trout Creek (Discharge & %LTMD)

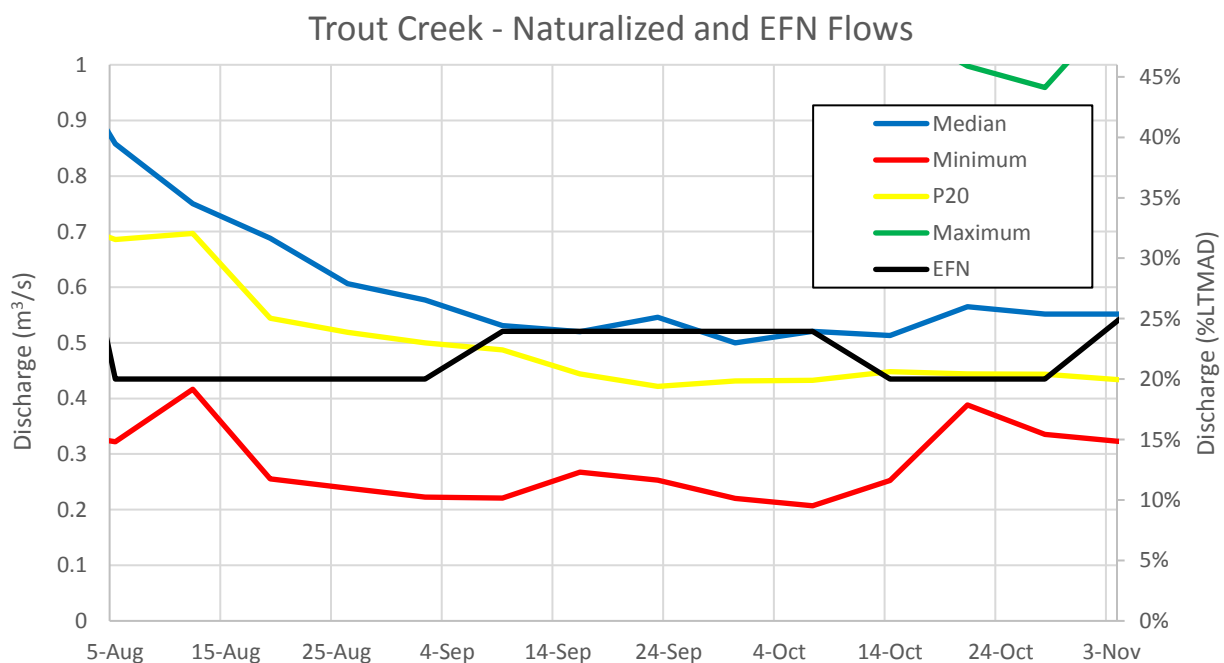


Figure B16-3: Okanagan Tennant EFNs compared to naturalized flow percentiles for Trout Creek Aug – Nov (Discharge & %LTMD)

Trout Creek naturalized percentile flow data

NATURALIZED FLOW		as m³/s				as %LTMAD			
Week	Ending	Min	P20	Median	Max	Min	P20	Median	Max
01	7-Jan	0.232	0.377	0.479	1.065	11%	17%	22%	49%
02	14-Jan	0.268	0.391	0.457	1.010	12%	18%	21%	46%
03	21-Jan	0.307	0.376	0.463	1.000	14%	17%	21%	46%
04	28-Jan	0.298	0.377	0.409	1.232	14%	17%	19%	57%
05	4-Feb	0.309	0.371	0.416	1.372	14%	17%	19%	63%
06	11-Feb	0.316	0.378	0.431	1.278	15%	17%	20%	59%
07	18-Feb	0.327	0.379	0.422	1.125	15%	17%	19%	52%
08	25-Feb	0.314	0.361	0.413	0.821	14%	17%	19%	38%
09	4-Mar	0.310	0.367	0.404	0.876	14%	17%	19%	40%
10	11-Mar	0.285	0.359	0.418	1.824	13%	17%	19%	84%
11	18-Mar	0.296	0.400	0.421	3.417	14%	18%	19%	157%
12	25-Mar	0.361	0.436	0.551	2.695	17%	20%	25%	124%
13	1-Apr	0.419	0.479	0.746	2.415	19%	22%	34%	111%
14	8-Apr	0.434	0.521	0.789	2.547	20%	24%	36%	117%
15	15-Apr	0.452	0.714	1.276	11.729	21%	33%	59%	539%
16	22-Apr	0.573	0.965	2.723	10.179	26%	44%	125%	468%
17	29-Apr	0.709	2.598	6.333	9.733	33%	120%	291%	448%
18	6-May	2.242	3.929	6.713	20.603	103%	181%	309%	948%
19	13-May	3.629	4.718	6.477	18.199	167%	217%	298%	837%
20	20-May	4.314	5.705	9.064	33.631	198%	262%	417%	1547%
21	27-May	3.209	5.965	9.738	20.993	148%	274%	448%	966%
22	3-Jun	2.434	4.943	7.339	33.669	112%	227%	338%	1549%
23	10-Jun	2.824	3.500	4.525	33.896	130%	161%	208%	1559%
24	17-Jun	1.947	2.635	4.736	14.106	90%	121%	218%	649%
25	24-Jun	1.625	2.417	3.538	8.802	75%	111%	163%	405%
26	1-Jul	1.214	1.886	2.533	8.053	56%	87%	116%	370%
27	8-Jul	0.745	1.426	1.884	5.317	34%	66%	87%	245%
28	15-Jul	0.520	1.038	1.568	4.728	24%	48%	72%	217%
29	22-Jul	0.426	0.896	1.268	3.624	20%	41%	58%	167%
30	29-Jul	0.345	0.736	1.090	2.968	16%	34%	50%	137%
31	5-Aug	0.322	0.686	0.858	2.235	15%	32%	39%	103%
32	12-Aug	0.416	0.697	0.750	1.947	19%	32%	35%	90%
33	19-Aug	0.255	0.544	0.688	1.697	12%	25%	32%	78%
34	26-Aug	0.238	0.519	0.607	1.568	11%	24%	28%	72%
35	2-Sep	0.222	0.500	0.577	1.455	10%	23%	27%	67%
36	9-Sep	0.221	0.487	0.531	1.485	10%	22%	24%	68%
37	16-Sep	0.268	0.444	0.520	1.396	12%	20%	24%	64%
38	23-Sep	0.253	0.422	0.546	1.426	12%	19%	25%	66%
39	30-Sep	0.220	0.431	0.500	1.236	10%	20%	23%	57%
40	7-Oct	0.207	0.433	0.520	1.128	10%	20%	24%	52%
41	14-Oct	0.252	0.448	0.513	1.078	12%	21%	24%	50%
42	21-Oct	0.388	0.444	0.565	0.998	18%	20%	26%	46%
43	28-Oct	0.335	0.444	0.552	0.959	15%	20%	25%	44%
44	4-Nov	0.322	0.433	0.552	1.114	15%	20%	25%	51%
45	11-Nov	0.238	0.460	0.572	1.355	11%	21%	26%	62%
46	18-Nov	0.261	0.451	0.556	1.425	12%	21%	26%	66%
47	25-Nov	0.270	0.440	0.485	1.300	12%	20%	22%	60%
48	2-Dec	0.285	0.420	0.448	1.263	13%	19%	21%	58%
49	9-Dec	0.326	0.389	0.442	1.093	15%	18%	20%	50%
50	16-Dec	0.293	0.417	0.484	1.006	13%	19%	22%	46%
51	23-Dec	0.279	0.393	0.486	1.070	13%	18%	22%	49%
52	31-Dec	0.257	0.388	0.463	1.044	12%	18%	21%	48%

Residual and maximum licensed flows are not available at this time.