

APPENDIX B18: MCLEAN CREEK

Discharge Records

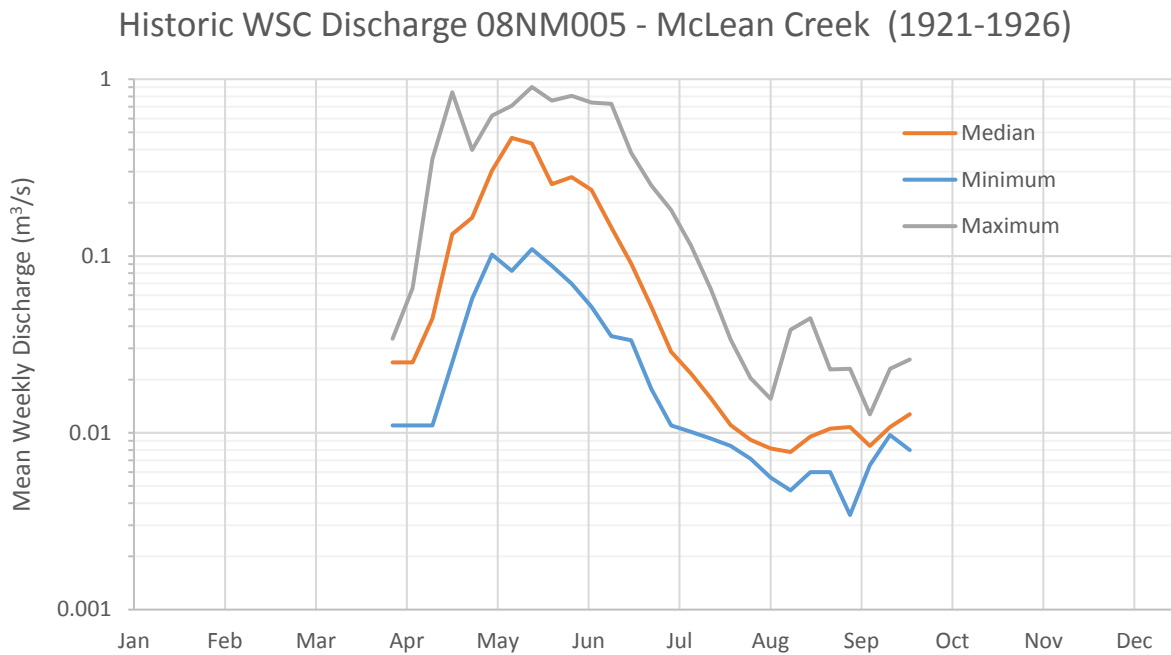


Figure B18-1: Historic discharge recorded at WSC station 08NM005 (McLean Creek near Okanagan Falls) from 1921-1926

Flow standards and periodicity – Okanagan Tennant analysis for McLean Creek

Week Ending	Life Stage/ Week	Rainbow						Kokanee				Steelhead					Chinook (summer) rearing	Ecological Flows	
		Adult migration	Spawning	Incubation	Rearing	Juvenile migration	Over-wintering	Adult migration	Spawning	Incubation	Juvenile migration	Adult migration	Spawning	Incubation	Rearing	Juvenile migration		Over-wintering	Wetland, side channel linkage, flushing and channel maintenance flow
Jan							20%			20%						20%			
Feb							20%			20%						20%			
Mar							20%			20%						20%			
1-Apr	13				20%					50%	282%	282%	20%				20%	<input checked="" type="checkbox"/>	
8-Apr	14				20%					50%	282%	282%	20%		50%		20%	<input checked="" type="checkbox"/>	
15-Apr	15	282%			20%					50%	282%	282%	20%		50%		20%	<input checked="" type="checkbox"/>	
22-Apr	16	282%			20%					50%	282%	282%	20%	20%	50%		20%	<input checked="" type="checkbox"/>	
29-Apr	17	282%			20%					50%	282%	282%	20%	20%	50%		20%	<input checked="" type="checkbox"/>	
6-May	18	282%			20%	50%				50%	282%	282%	20%	20%	50%			<input checked="" type="checkbox"/>	
13-May	19	282%			20%	50%				50%	282%	282%	20%	20%	50%			<input checked="" type="checkbox"/>	
20-May	20	282%	40%		20%	50%				50%	282%	282%	20%	20%	50%			<input checked="" type="checkbox"/>	
27-May	21	282%	40%	20%	20%	50%				50%	282%	282%	20%	20%	50%			680%	
3-Jun	22	282%	40%	20%	20%	50%					282%	282%	20%	20%	50%			680%	
10-Jun	23	282%	40%	20%	20%	50%					282%	282%	20%	20%	50%			<input checked="" type="checkbox"/>	100%
17-Jun	24	282%	40%	20%	20%	50%					282%	282%	20%	20%	50%			<input checked="" type="checkbox"/>	100%
24-Jun	25	282%	40%	20%	20%	50%							20%	20%					100%
1-Jul	26	282%	40%	20%	20%	50%							20%	20%					100%
8-Jul	27	282%	40%	20%	20%	50%							20%	20%					100%
15-Jul	28			20%	20%	50%								20%					100%
22-Jul	29			20%	20%									20%					100%
29-Jul	30			20%	20%									20%					100%
5-Aug	31				20%									20%					
12-Aug	32				20%									20%					
19-Aug	33				20%									20%					
26-Aug	34				20%			20%						20%					
2-Sep	35				20%		20%		20%					20%					
9-Sep	36				20%		20%	20%	20%					20%					
16-Sep	37				20%		20%	20%	20%					20%					
23-Sep	38				20%		20%	20%	20%					20%					
30-Sep	39				20%		20%	20%	20%					20%					
7-Oct	40				20%		20%	20%	20%					20%					
14-Oct	41				20%			20%	20%					20%					
21-Oct	42				20%			20%	20%					20%					
28-Oct	43				20%				20%					20%					
Nov						20%			20%						20%				
Dec						20%			20%						20%				

EFNs and critical flow for McLean Creek

Week Ending	Okanagan Tennant EFN					FINAL EFN		CRITICAL FLOWS (m ³ /s)			
	EFN - all factors (%LTMAD)	EFN based on flow standards (m ³ /s)	Nat. median weekly Q (m ³ /s)	Discharge m ³ /s	%LTMAD	Value (m ³ /s)	Dominant Species / Life Stage	Rainbow trout rearing & overwintering	Kokanee spawning	Rainbow trout migration & spawning	FINAL
Jan	20%	0.033	0.021	0.021	13%	0.021	overwintering egg incubation	0.008			0.008
Feb	20%	0.033	0.019	0.019	11%	0.019	overwintering egg incubation	0.008			0.008
Mar	20%	0.033	0.021	0.021	13%	0.021	overwintering egg incubation	0.008			0.008
1-Apr	282%	0.471	0.035	0.035	21%	0.035	ST spawning	0.008			0.008
8-Apr	282%	0.471	0.042	0.042	25%	0.042	ST spawning	0.008			0.008
15-Apr	282%	0.471	0.078	0.078	46%	0.078	ST spawning	0.008		0.084	0.084
22-Apr	282%	0.471	0.165	0.165	99%	0.165	ST spawning	0.008		0.084	0.084
29-Apr	282%	0.471	0.345	0.345	206%	0.345	ST spawning	0.008		0.084	0.084
6-May	282%	0.471	0.428	0.428	256%	0.428	ST spawning	0.008		0.084	0.084
13-May	282%	0.471	0.437	0.437	261%	0.437	ST spawning	0.008		0.084	0.084
20-May	282%	0.471	0.754	0.471	282%	0.471	ST spawning	0.008		0.084	0.084
27-May	680%	1.137	0.980	0.980	586%	0.980	Ecosystem	0.008		0.084	0.084
3-Jun	680%	1.137	0.863	0.863	517%	0.863	Ecosystem	0.008		0.084	0.084
10-Jun	282%	0.471	0.647	0.471	282%	0.471	RB Spawning	0.008		0.084	0.084
17-Jun	282%	0.471	0.533	0.471	282%	0.471	RB Spawning	0.008		0.084	0.084
24-Jun	282%	0.471	0.401	0.401	240%	0.401	RB Spawning	0.008		0.084	0.084
1-Jul	282%	0.471	0.231	0.231	138%	0.231	RB Spawning	0.008		0.084	0.084
8-Jul	282%	0.471	0.180	0.180	107%	0.180	RB Spawning	0.008		0.084	0.084
15-Jul	100%	0.167	0.125	0.125	75%	0.125	RB incubation	0.008			0.008
22-Jul	100%	0.167	0.103	0.103	62%	0.103	RB incubation	0.008			0.008
29-Jul	100%	0.167	0.066	0.066	39%	0.066	RB incubation	0.008			0.008
5-Aug	20%	0.033	0.046	0.033	20%	0.033	RB parr rearing	0.008			0.008
12-Aug	20%	0.033	0.039	0.033	20%	0.033	RB parr rearing	0.008			0.008
19-Aug	20%	0.033	0.029	0.029	18%	0.029	RB parr rearing	0.008			0.008
26-Aug	20%	0.033	0.033	0.033	20%	0.033	RB parr rearing	0.008			0.008
2-Sep	20%	0.033	0.032	0.032	19%	0.032	RB parr rearing	0.008			0.008
9-Sep	20%	0.033	0.026	0.026	15%	0.026	KO Spawning	0.008	0.017		0.017
16-Sep	20%	0.033	0.021	0.021	13%	0.021	KO Spawning	0.008	0.017		0.017
23-Sep	20%	0.033	0.026	0.026	15%	0.026	KO Spawning	0.008	0.017		0.017
30-Sep	20%	0.033	0.024	0.024	14%	0.024	KO Spawning	0.008	0.017		0.017
7-Oct	20%	0.033	0.021	0.021	13%	0.021	KO Spawning	0.008	0.017		0.017
14-Oct	20%	0.033	0.027	0.027	16%	0.027	KO Spawning	0.008	0.017		0.017
21-Oct	20%	0.033	0.034	0.033	20%	0.033	KO Spawning	0.008	0.017		0.017
28-Oct	20%	0.033	0.028	0.028	17%	0.028	RB parr rearing	0.008			0.008
Nov	20%	0.033	0.034	0.033	20%	0.033	overwintering egg incubation	0.008			0.008
Dec	20%	0.033	0.023	0.023	13%	0.023	overwintering egg incubation	0.008			0.008

Percentile Flows

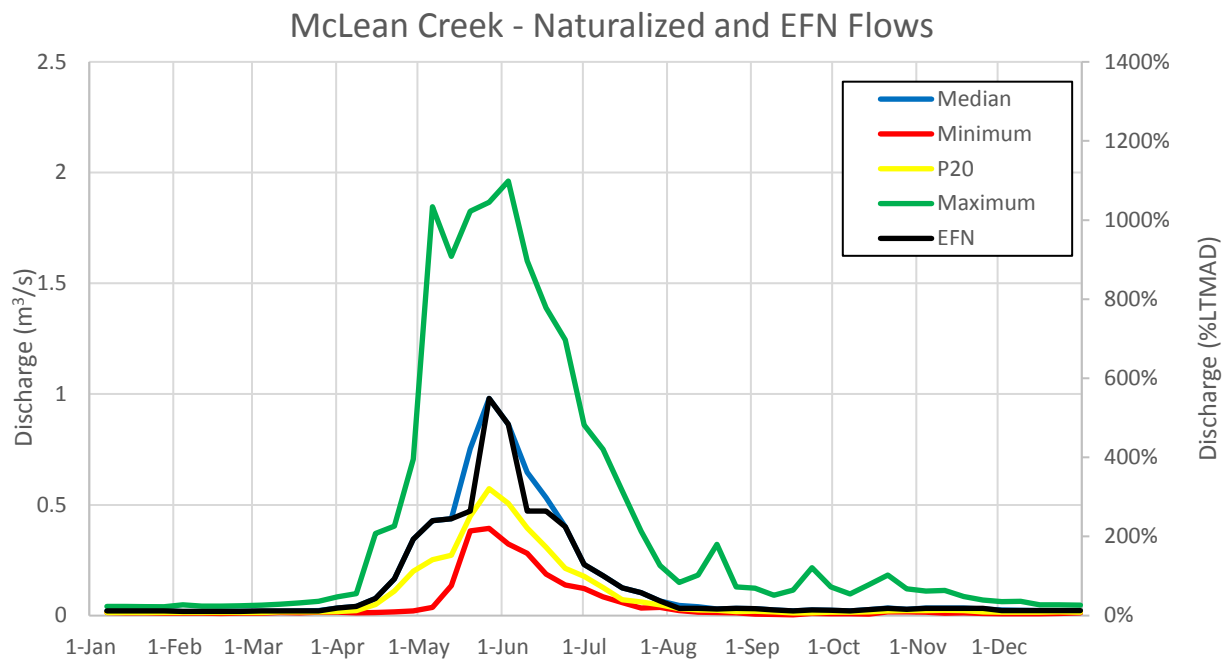


Figure B18-2: Okanagan Tennant EFNs compared to naturalized flow percentiles for Mclean Creek (Discharge & %LTMAD)

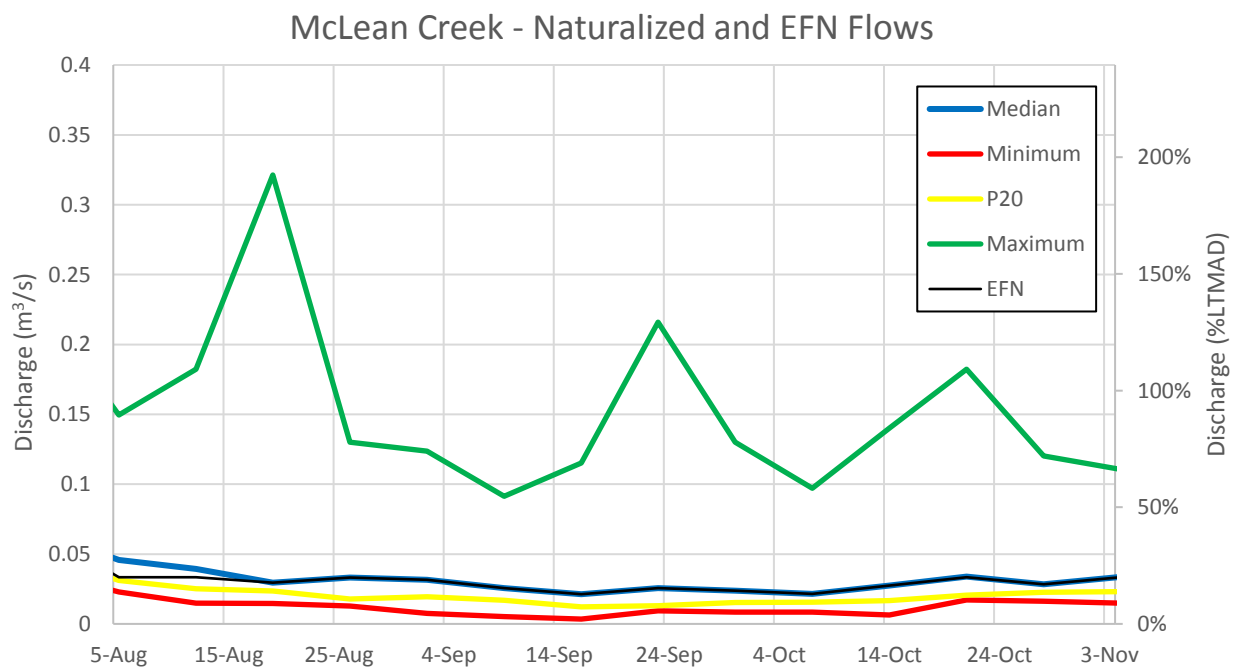


Figure B18-3: Okanagan Tennant EFNs compared to naturalized flow percentiles for McLean Creek Aug – Nov (Discharge & %LTMAD)

McLean Creek naturalized percentile flow data

NATURALIZED FLOW		as m ³ /s				as %LTMAD			
Week	Ending	Min	P20	Median	Max	Min	P20	Median	Max
01	7-Jan	0.013	0.014	0.021	0.042	8%	9%	13%	25%
02	14-Jan	0.013	0.014	0.026	0.041	8%	8%	15%	25%
03	21-Jan	0.012	0.014	0.024	0.040	7%	8%	14%	24%
04	28-Jan	0.011	0.014	0.021	0.040	7%	8%	12%	24%
05	4-Feb	0.011	0.014	0.019	0.048	7%	8%	11%	29%
06	11-Feb	0.011	0.014	0.019	0.043	6%	8%	11%	26%
07	18-Feb	0.010	0.013	0.019	0.043	6%	8%	11%	26%
08	25-Feb	0.012	0.014	0.019	0.044	7%	8%	11%	26%
09	4-Mar	0.011	0.014	0.019	0.048	7%	8%	12%	29%
10	11-Mar	0.013	0.017	0.019	0.052	8%	10%	11%	31%
11	18-Mar	0.013	0.017	0.021	0.057	8%	10%	12%	34%
12	25-Mar	0.015	0.017	0.023	0.065	9%	10%	14%	39%
13	1-Apr	0.016	0.018	0.035	0.084	10%	11%	21%	50%
14	8-Apr	0.012	0.022	0.042	0.099	7%	13%	25%	59%
15	15-Apr	0.014	0.051	0.078	0.371	8%	30%	46%	222%
16	22-Apr	0.018	0.111	0.165	0.403	10%	66%	99%	241%
17	29-Apr	0.021	0.200	0.345	0.707	13%	120%	206%	423%
18	6-May	0.036	0.253	0.428	1.845	22%	151%	256%	1104%
19	13-May	0.135	0.272	0.437	1.622	81%	163%	261%	970%
20	20-May	0.383	0.449	0.754	1.826	229%	268%	451%	1092%
21	27-May	0.394	0.573	0.980	1.866	236%	343%	586%	1116%
22	3-Jun	0.323	0.506	0.863	1.962	193%	303%	517%	1173%
23	10-Jun	0.281	0.396	0.647	1.601	168%	237%	387%	958%
24	17-Jun	0.187	0.309	0.533	1.389	112%	185%	319%	831%
25	24-Jun	0.139	0.213	0.401	1.245	83%	127%	240%	745%
26	1-Jul	0.123	0.177	0.231	0.861	74%	106%	138%	515%
27	8-Jul	0.084	0.127	0.180	0.751	51%	76%	107%	449%
28	15-Jul	0.058	0.072	0.125	0.563	35%	43%	75%	337%
29	22-Jul	0.034	0.062	0.103	0.381	21%	37%	62%	228%
30	29-Jul	0.038	0.049	0.066	0.226	22%	29%	39%	135%
31	5-Aug	0.023	0.031	0.046	0.149	14%	19%	27%	89%
32	12-Aug	0.015	0.025	0.039	0.182	9%	15%	23%	109%
33	19-Aug	0.015	0.024	0.029	0.321	9%	14%	18%	192%
34	26-Aug	0.013	0.018	0.033	0.130	8%	11%	20%	78%
35	2-Sep	0.007	0.019	0.032	0.124	4%	12%	19%	74%
36	9-Sep	0.005	0.017	0.026	0.091	3%	10%	15%	55%
37	16-Sep	0.003	0.012	0.021	0.115	2%	7%	13%	69%
38	23-Sep	0.009	0.013	0.026	0.216	6%	8%	15%	129%
39	30-Sep	0.008	0.015	0.024	0.130	5%	9%	14%	78%
40	7-Oct	0.008	0.016	0.021	0.097	5%	9%	13%	58%
41	14-Oct	0.006	0.017	0.027	0.140	4%	10%	16%	84%
42	21-Oct	0.017	0.020	0.034	0.182	10%	12%	20%	109%
43	28-Oct	0.016	0.023	0.028	0.120	10%	13%	17%	72%
44	4-Nov	0.015	0.023	0.034	0.111	9%	14%	20%	66%
45	11-Nov	0.012	0.025	0.034	0.114	7%	15%	20%	68%
46	18-Nov	0.013	0.023	0.034	0.086	8%	14%	21%	51%
47	25-Nov	0.010	0.017	0.029	0.071	6%	10%	18%	42%
48	2-Dec	0.008	0.015	0.025	0.064	5%	9%	15%	38%
49	9-Dec	0.008	0.016	0.024	0.065	5%	9%	14%	39%
50	16-Dec	0.008	0.016	0.023	0.049	5%	9%	14%	29%
51	23-Dec	0.010	0.016	0.022	0.049	6%	10%	13%	29%
52	31-Dec	0.012	0.016	0.020	0.047	7%	9%	12%	28%

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