

# APPENDIX B3: nʔastqʷitkʷ - NASWHITO CREEK

## Habitat Mapping

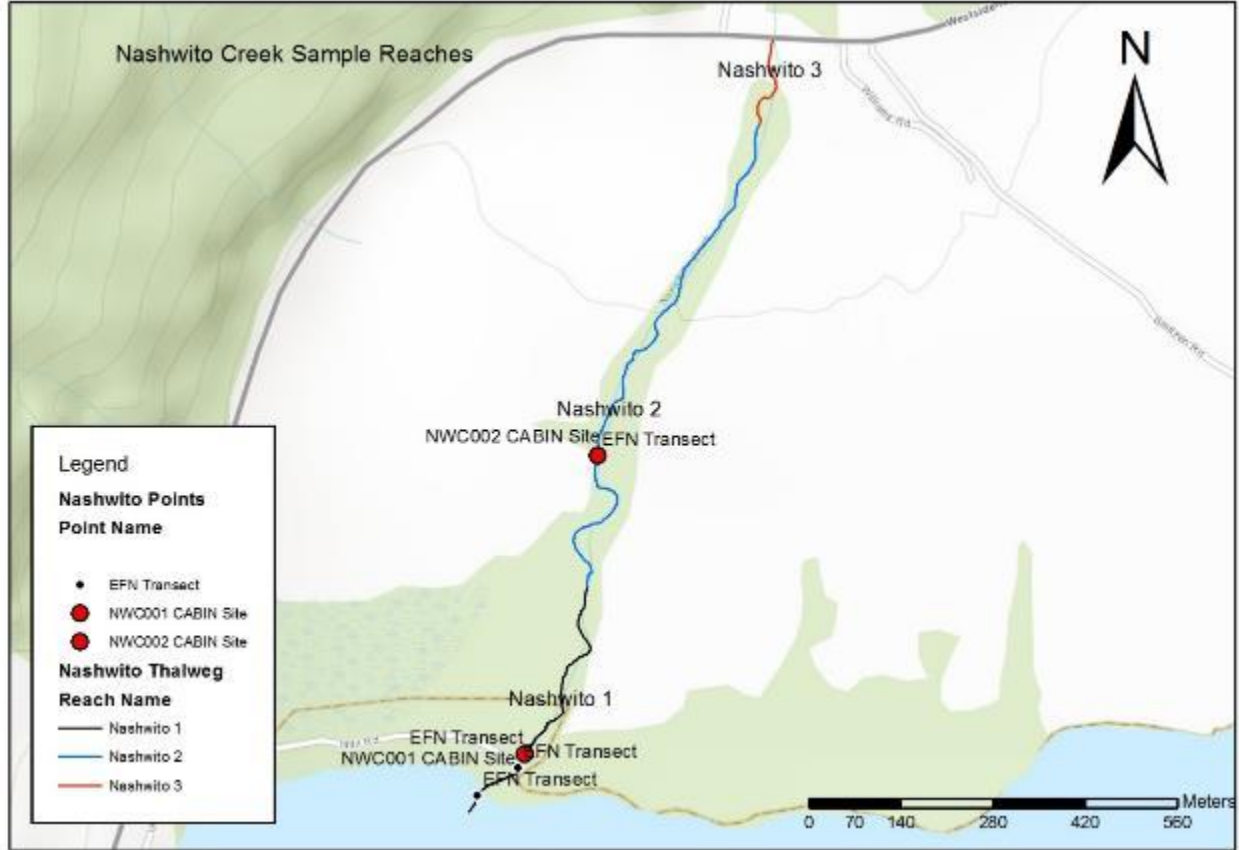


Figure B3-1: Habitat mapping of Naswhito Creek

Table B3-1: Length of habitat types recorded along Naswhito Creek in the fall of 2016. Habitat mapping was complete as part of the Okanagan Ecosystem Initiative (Enns et al. 2020)

	Total Length (m)	% of Total Reach Length
<b>Naswhito Reach 1</b>	<b>439.6</b>	
Glide	73.1	17
Pool	46.6	11
Pool tailout	16.0	4
Small cobble riffle	303.9	69
<b>Naswhito Reach 2</b>	<b>870.3</b>	
Glide	257.4	27
Large cobble riffle	481.3	55
Pool	91.1	11
Pool tailout	27.9	3
Small cobble riffle	12.6	2
<b>Naswhito Creek 3</b>	<b>148.2</b>	
Glide	53.5	36
Large cobble riffle	65.2	44
Pool	29.5	20

## EFN Transect Locations



Figure B3-2: EFN transect and hydrometric station locations along Naswhito Creek



## Transect Descriptions

### Naswhito Migration Barrier 1a

**Install Date** June 27, 2017

**Lat./Long.** 50.271575, -119.435558

**Comment** Shallow possible migration barrier near Glide and Riffle 1a. Small cobble riffle.



Looking upstream



Looking downstream



Looking right bank to left bank



Looking left bank to right bank



**Naswhito Glide 1a**

**Install Date** June 27, 2017

**Lat./Long.** 50.271229, -119.435500

**Comment** Reinstalled after Glide 1 was washed out during freshet 2017



Looking upstream



Looking downstream



Looking right bank to left bank



Looking left bank to right bank



**Naswhito Riffle 1a**

**Install Date** June 27, 2017

**Lat./Long.** 50.271454, -119.435659

**Comment** Reinstalled after Riffle 1 was washed out during freshet 2017



Looking upstream



Looking downstream



Looking right bank to left bank



Looking left bank to right bank



**Naswhito Riffle 2**

<b>Install Date</b>	August 12, 2016		
<b>Lat./Long.</b>	50.274623, -119.435147		
<b>Width (install)</b>	5.50 m	<b>Depth (install)</b>	0.17 m
<b>Avg. width range</b>	4.13 - 6.21 m	<b>Avg. depth range</b>	0.17 - 0.23 m
<b>Comment</b>	Large cobble riffle. Typical of reach.		



Looking upstream



Looking downstream



Looking right bank to left bank



Looking left bank to right bank

**Naswhito Glide 2**

<b>Install Date</b>	August 12, 2016		
<b>Lat./Long.</b>	50.274733, -119.435085		
<b>Width (install)</b>	4.4 m	<b>Depth (install)</b>	0.27 m
<b>Avg. width range</b>	3.88 - 5.27 m	<b>Avg. depth range</b>	0.23 - 0.31 m
<b>Comment</b>	Large cobble substrate. Typical of reach. Hydrometric station 5 m upstream.		



Looking upstream



Looking downstream



Looking right bank to left bank



Looking left bank to right bank



**Naswhito Creek Hydrometric Station**

**Install Date** Aug 30, 2016

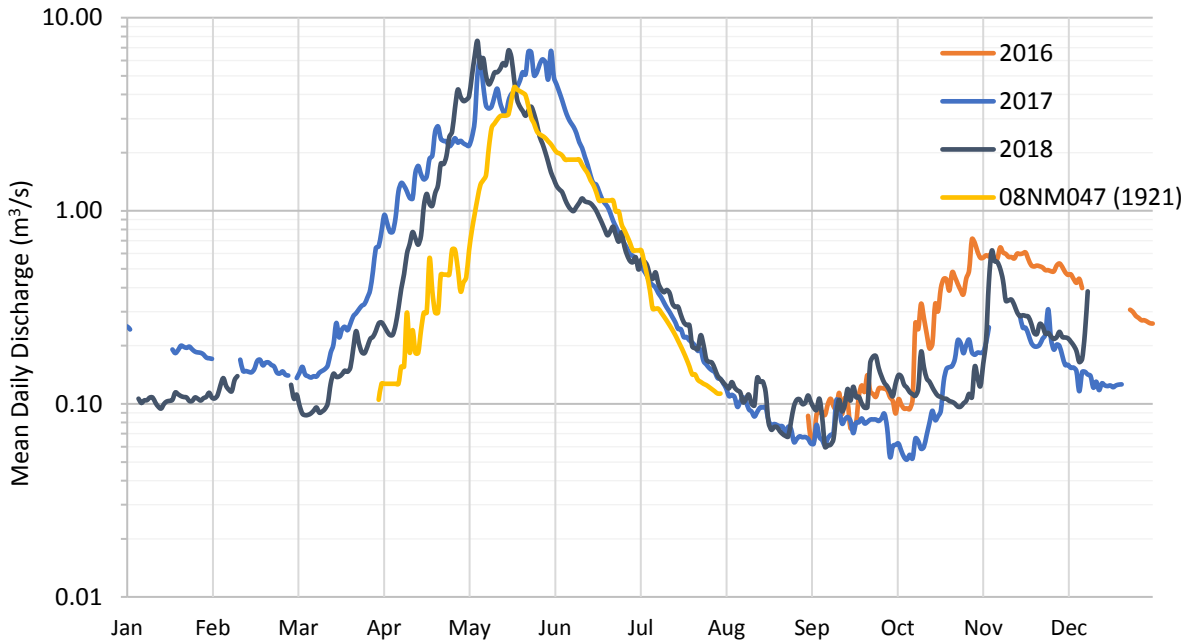
**Lat./Long.** 50.274764, -119.435070

**Comment** On Right Bank on large cottonwood just upstream of Glide 2



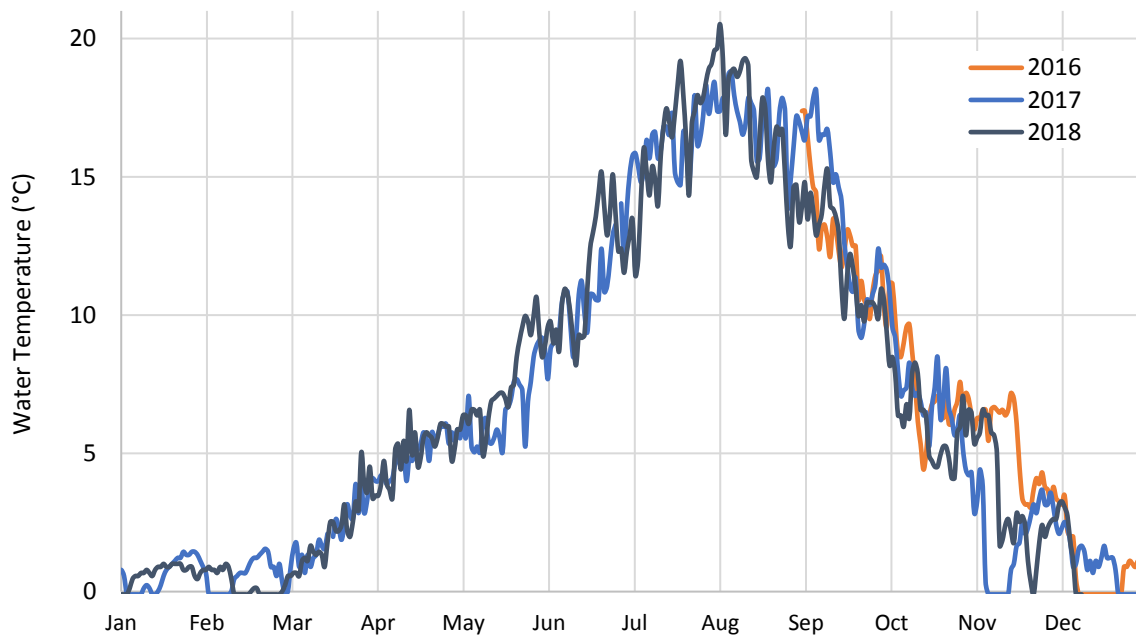


## Discharge Records



**Figure B3-3: Mean daily discharge measured at the Naswhito Hydrometric Station from 2016 to 2018, compared with historical discharge from WSC station 08NM047 (Naswhito Creek near Ewing’s Landing) in 1921**

## Water Temperature Records



**Figure B3-4: Daily maximum water temperatures recorded at the Naswhito Hydrometric Station from 2016 to 2018**

## Flow standards and periodicity – Okanagan Tennant analysis for Naswhito 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%	<input checked="" type="checkbox"/>	
8-Apr	14				20%						50%	<input checked="" type="checkbox"/>	
15-Apr	15	198%			20%						50%	<input checked="" type="checkbox"/>	
22-Apr	16	198%			20%						50%	<input checked="" type="checkbox"/>	
29-Apr	17	198%			20%						50%	<input checked="" type="checkbox"/>	
6-May	18	198%			20%	50%					50%	<input checked="" type="checkbox"/>	
13-May	19	198%	40%		20%	50%					50%	<input checked="" type="checkbox"/>	
20-May	20	198%	40%		20%	50%					50%	908%	
27-May	21	198%	40%	20%	20%	50%					50%	908%	
3-Jun	22	198%	40%	20%	20%	50%						<input checked="" type="checkbox"/>	100%
10-Jun	23	198%	40%	20%	20%	50%						<input checked="" type="checkbox"/>	100%
17-Jun	24	198%	40%	20%	20%	50%						<input checked="" type="checkbox"/>	100%
24-Jun	25	198%	40%	20%	20%	50%							100%
1-Jul	26	198%	40%	20%	20%	50%							100%
8-Jul	27	198%	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%			20%					
2-Sep	35				20%			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%			
21-Oct	42				20%					20%			
28-Oct	43				20%					20%			
Nov							20%			20%			
Dec							20%			20%			

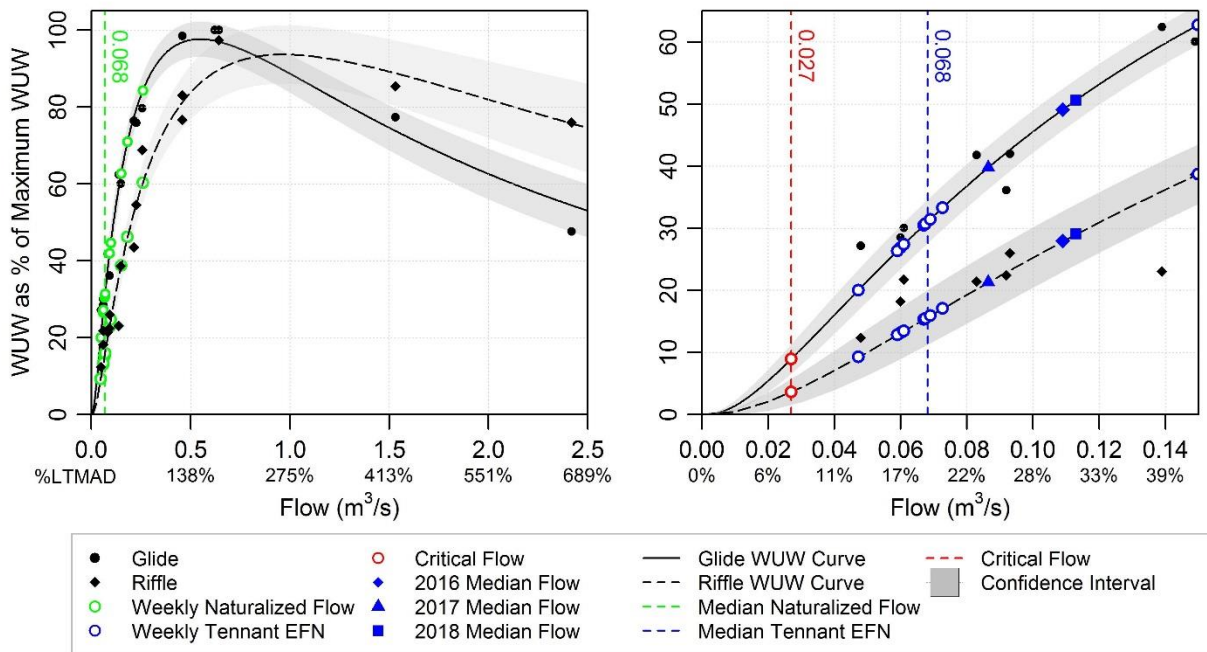


## EFNs and Critical Flows for Naswhito Creek

Week Ending	Okanagan Tennant EFN					WUW EFN (m³/s)				FINAL EFN (m³/s)		CRITICAL FLOW (m³/s)			
	Flow standard (%LTMAD)	Flow standard EFN (m³/s)	Nat. median flow (m³/s)	Okanagan Tennant EFN	%LTMAD	Rainbow rearing	Kokanee spawning	Rainbow spawning	FINAL	Value	Dominant Species / Life Stage	Rainbow rearing & overwintering	Kokanee spawning	Rainbow spawning	FINAL
Jan	20%	0.073	0.054	0.054	15%					<b>0.054</b>	overwintering, egg incubation	0.031			0.031
Feb	20%	0.073	0.053	0.053	15%					<b>0.053</b>	overwintering, egg incubation	0.031			0.031
Mar	20%	0.073	0.071	0.071	20%					<b>0.071</b>	overwintering, egg incubation	0.031			0.031
1-Apr	50%	0.182	0.220	0.182	50%	0.090			0.090	<b>0.182</b>	RB juvenile migration	0.031			0.031
8-Apr	50%	0.182	0.254	0.182	50%	0.090			0.090	<b>0.182</b>	RB juvenile migration	0.031			0.031
15-Apr	213%	0.774	0.344	0.344	95%	0.090			0.090	<b>0.344</b>	RB adult migration	0.031		0.344	0.344
22-Apr	213%	0.774	0.570	0.570	157%	0.090			0.090	<b>0.570</b>	RB adult migration	0.031		0.502	0.502
29-Apr	213%	0.774	1.147	0.774	213%	0.090			0.090	<b>0.774</b>	RB adult migration	0.031		0.502	0.502
6-May	213%	0.774	1.338	0.774	213%	0.090			0.090	<b>0.774</b>	RB adult migration	0.031		0.502	0.502
13-May	213%	0.774	1.453	0.774	213%	0.090		0.774	0.774	<b>0.774</b>	RB adult migration	0.031		0.502	0.502
20-May	908%	3.300	1.799	1.799	495%	0.090		0.774	0.774	<b>1.799</b>	Ecosystem flows	0.031		0.502	0.502
27-May	908%	3.300	1.695	1.695	466%	0.090		0.774	0.774	<b>1.695</b>	Ecosystem flows	0.031		0.502	0.502
3-Jun	213%	0.774	1.177	0.774	213%	0.090		0.774	0.774	<b>0.774</b>	RB Spawning	0.031		0.502	0.502
10-Jun	213%	0.774	1.121	0.774	213%	0.090		0.774	0.774	<b>0.774</b>	RB Spawning	0.031		0.502	0.502
17-Jun	213%	0.774	0.880	0.774	213%	0.090		0.774	0.774	<b>0.774</b>	RB Spawning	0.031		0.502	0.502
24-Jun	213%	0.774	0.616	0.616	169%	0.090		0.774	0.774	<b>0.616</b>	RB Spawning	0.031		0.502	0.502
1-Jul	213%	0.774	0.510	0.510	140%	0.090		0.774	0.774	<b>0.510</b>	RB Spawning	0.031		0.502	0.502
8-Jul	213%	0.774	0.366	0.366	101%	0.090		0.774	0.774	<b>0.366</b>	RB Spawning	0.031		0.366	0.366
15-Jul	100%	0.363	0.259	0.259	71%	0.090			0.090	<b>0.259</b>	RB Incubation	0.031			0.031
22-Jul	100%	0.363	0.182	0.182	50%	0.090			0.090	<b>0.182</b>	RB Incubation	0.031			0.031
29-Jul	100%	0.363	0.150	0.150	41%	0.090			0.090	<b>0.150</b>	RB Incubation	0.031			0.031
5-Aug	20%	0.073	0.091	0.073	20%	0.090			0.090	<b>0.090</b>	RB parr rearing	0.031			0.031
12-Aug	20%	0.073	0.098	0.073	20%	0.090			0.090	<b>0.090</b>	RB parr rearing	0.031			0.031
19-Aug	20%	0.073	0.067	0.067	18%	0.090			0.090	<b>0.090</b>	RB parr rearing	0.031			0.031
26-Aug	20%	0.073	0.067	0.067	19%	0.090			0.090	<b>0.090</b>	RB parr rearing	0.031			0.031
2-Sep	20%	0.073	0.069	0.069	19%	0.090			0.090	<b>0.090</b>	RB parr rearing	0.031			0.031
9-Sep	20%	0.073	0.047	0.047	13%	0.090	0.090		0.090	<b>0.090</b>	KO Spawning	0.031	0.060		0.060
16-Sep	20%	0.073	0.060	0.060	16%	0.090	0.090		0.090	<b>0.090</b>	KO Spawning	0.031	0.060		0.060
23-Sep	20%	0.073	0.059	0.059	16%	0.090	0.090		0.090	<b>0.090</b>	KO Spawning	0.031	0.059		0.059
30-Sep	20%	0.073	0.061	0.061	17%	0.090	0.090		0.090	<b>0.090</b>	KO Spawning	0.031	0.061		0.061
7-Oct	20%	0.073	0.061	0.061	17%	0.090	0.090		0.090	<b>0.090</b>	KO Spawning	0.031	0.061		0.061
14-Oct	20%	0.073	0.058	0.058	16%	0.090			0.090	<b>0.090</b>	RB rearing	0.031			0.031
21-Oct	20%	0.073	0.080	0.073	20%	0.090			0.090	<b>0.090</b>	RB rearing	0.031			0.031
28-Oct	20%	0.073	0.068	0.068	19%	0.090			0.090	<b>0.090</b>	RB rearing	0.031			0.031
Nov	20%	0.073	0.071	0.071	20%					<b>0.071</b>	overwintering, egg incubation	0.031			0.031
Dec	20%	0.073	0.048	0.048	13%					<b>0.048</b>	overwintering, egg incubation	0.031			0.031

## Weighted Usable Width

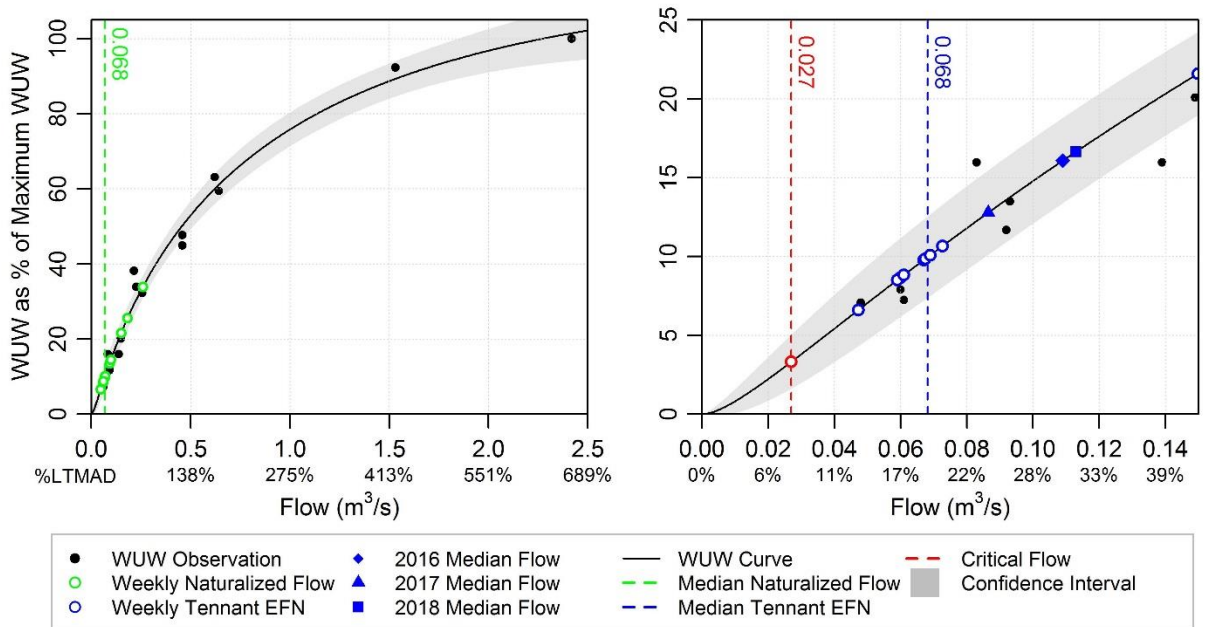
### Naswhito Creek Rainbow Parr Rearing WUW



Median values from mid-July to end of September (week 28-39)

Figure B3-5: WUW curves for Rainbow parr rearing in Naswhito Creek for all flows (left) and low flows (right)

### Naswhito Creek Insect Production WUW

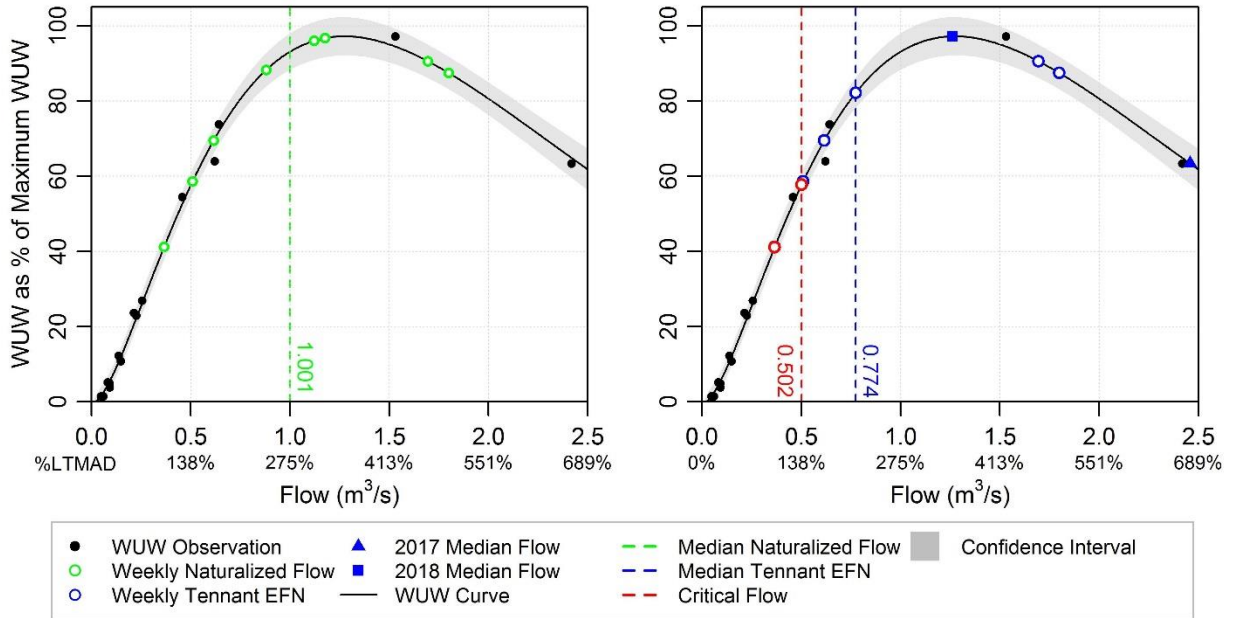


Median values from mid-July to end of September (week 28-39)

Figure B3-6: WUW curves for insect production in Naswhito Creek for all flows (left) and low flows (right)



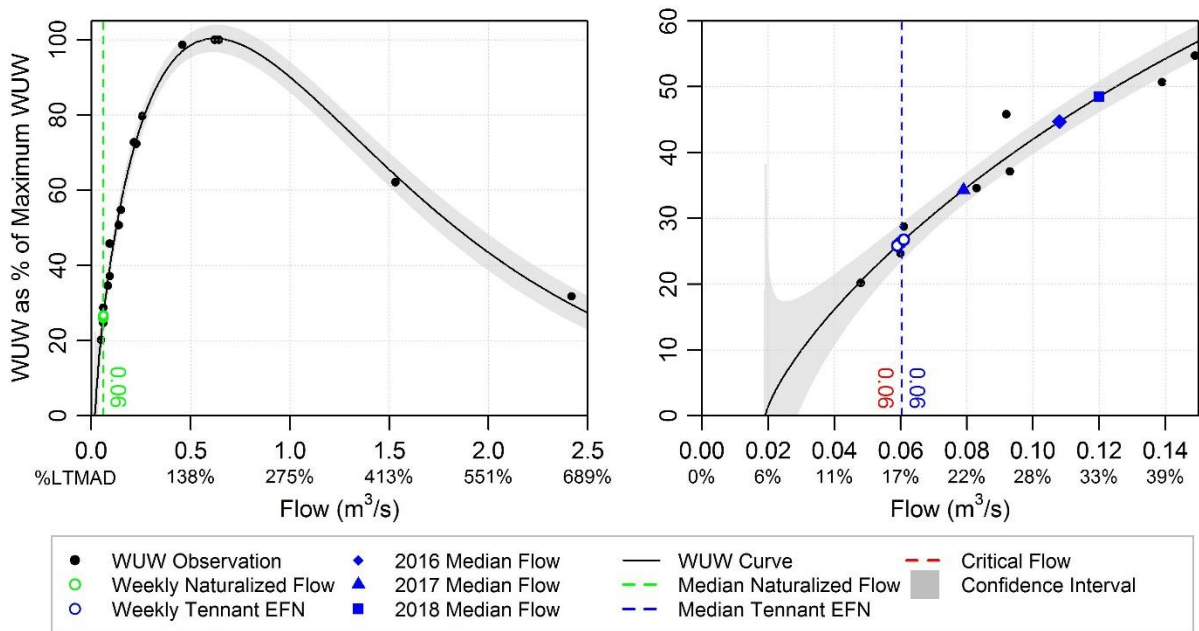
### Naswhito Creek Rainbow Spawning WUW



Median values from May 20 to July 10 (week 20-27)

Figure B3-7: WUW curves for Rainbow spawning in Naswhito Creek for all flows (left) and low flows (right)

### Naswhito Creek Kokanee Spawning WUW



Median values from September 12 to October 7 (week 37-40)

Figure B3-8: WUW curves for Kokanee spawning in Naswhito Creek for all flows (left) and low flows (right)

## Critical Flows

**Table B3-2: Critical flow analysis for Naswhito Creek**

Species / Life stage	Critical Flow Criteria	Riffle 1A		Riffle 2		Average	
		(m <sup>3</sup> /s)	%LTMAD	(m <sup>3</sup> /s)	%LTMAD	(m <sup>3</sup> /s)	%LTMAD
	Naturalized LTMAD	0.363	100%	0.363	100%		
	Wetted width at 100% LTMAD (m)	6.74		5.80			
<b>Insect production, Rainbow rearing &amp; overwintering</b>	60% of width at 100% LTMAD	0.027	7%	0.034	9%	0.031	8%
<b>Rainbow spawning</b>	25% of width at 100% LTMAD is ≥0.18m deep	0.606	167%	0.398	110%	0.502	138%
<b>Kokanee spawning</b>	25% of width at 100% LTMAD is ≥0.12m deep	0.178	49%	0.175	48%	0.177	49%

**Table B3-3: Final critical flows for Naswhito Creek**

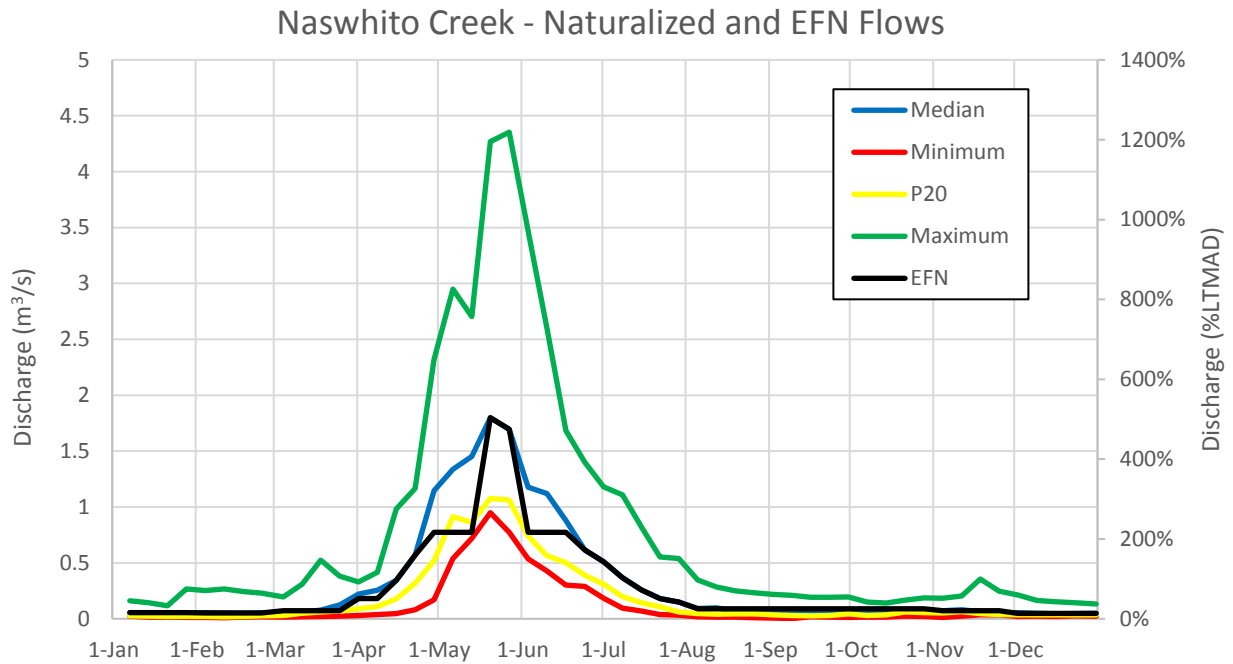
Species/Life stage	Final Critical Flow (m <sup>3</sup> /s)	% LTMAD	Criteria Used
<b>Rainbow rearing &amp; insect production</b>	0.031	8%	60% riffle width
<b>Rainbow spawning</b>	0.502	138%	0.18m passage depth
<b>Kokanee spawning</b>	0.060	16%	Median weekly naturalized flow
<b>Rainbow overwintering</b>	0.031	8%	60% riffle width

**Table B3-4: 30 day naturalized low flows for Summer and Winter provided by Associated (2019)**

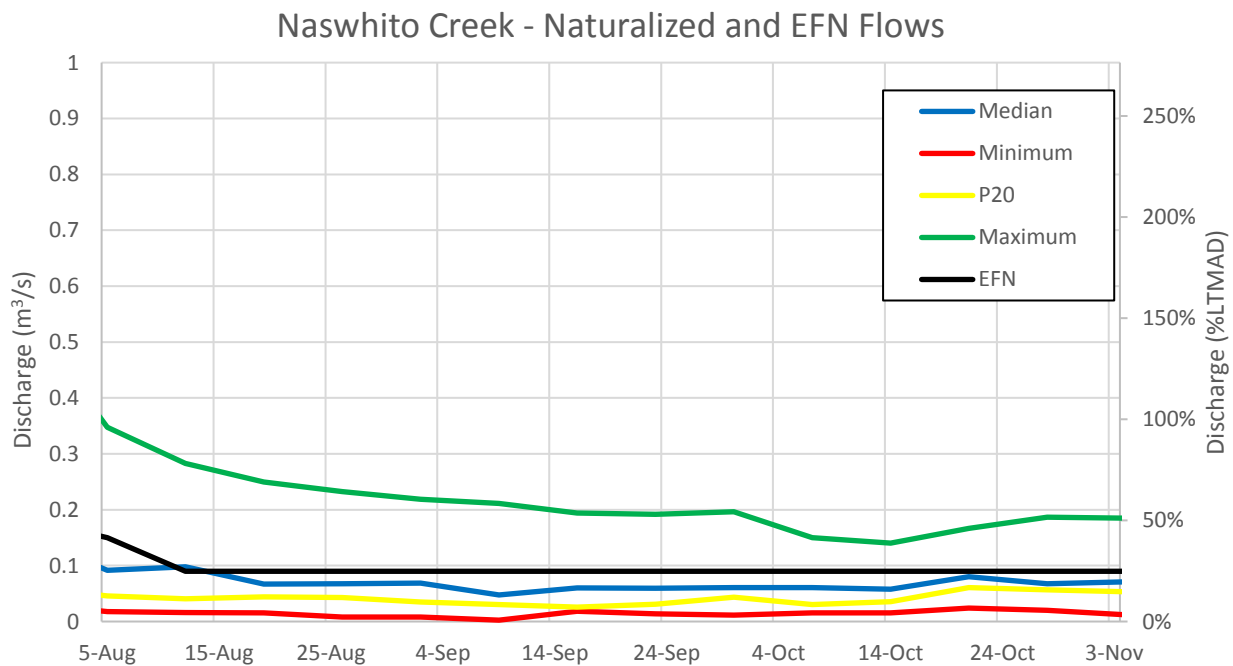
	(m <sup>3</sup> /s)	% LTMAD
<b>Summer (July 1 to September 30) Minimum</b>		
Summer 1:2-year return period 30 Day Naturalized Low	0.045	12%
Summer 1:5-year return period 30 Day Naturalized Low	0.021	6%
Summer 1:10-year return period 30 Day Naturalized Low	0.013	4%
Summer 1:20-year return period 30 Day Naturalized Low	0.009	2%
<b>Winter (November 1 to March 31) Minimum</b>		
Winter 1:2-year return period 30 Day Naturalized Low	0.038	10%
Winter 1:5-year return period 30 Day Naturalized Low	0.020	6%
Winter 1:10-year return period 30 Day Naturalized Low	0.014	4%



## Percentile Flows for Naswhito Creek



**Figure B3-9: EFN flows compared with naturalized flow percentiles for Naswhito Creek (Discharge & %LT MAD)**



**Figure B3-10: EFN flows compared with naturalized flow percentiles for Naswhito Creek Aug-Nov (Discharge & %LT MAD)**

## Naturalized Percentile Flows for Naswhito Creek

NATURALIZED FLOW		as m <sup>3</sup> /s				as %LTMAD			
Week	Ending	Min	P20	Median	Max	Min	P20	Median	Max
01	7-Jan	0.024	0.025	0.056	0.160	7%	7%	15%	44%
02	14-Jan	0.016	0.023	0.054	0.145	4%	6%	15%	40%
03	21-Jan	0.015	0.021	0.055	0.116	4%	6%	15%	32%
04	28-Jan	0.013	0.021	0.052	0.268	4%	6%	14%	74%
05	4-Feb	0.012	0.022	0.054	0.253	3%	6%	15%	70%
06	11-Feb	0.010	0.017	0.052	0.266	3%	5%	14%	73%
07	18-Feb	0.015	0.021	0.049	0.244	4%	6%	14%	67%
08	25-Feb	0.018	0.026	0.054	0.230	5%	7%	15%	63%
09	4-Mar	0.016	0.028	0.059	0.196	4%	8%	16%	54%
10	11-Mar	0.018	0.048	0.057	0.311	5%	13%	16%	85%
11	18-Mar	0.019	0.061	0.078	0.525	5%	17%	22%	145%
12	25-Mar	0.024	0.071	0.123	0.383	6%	19%	34%	105%
13	1-Apr	0.029	0.089	0.220	0.331	8%	24%	61%	91%
14	8-Apr	0.038	0.109	0.254	0.416	10%	30%	70%	114%
15	15-Apr	0.046	0.178	0.344	0.982	13%	49%	95%	270%
16	22-Apr	0.080	0.318	0.570	1.166	22%	88%	157%	321%
17	29-Apr	0.171	0.519	1.147	2.318	47%	143%	316%	638%
18	6-May	0.540	0.914	1.338	2.951	149%	251%	368%	812%
19	13-May	0.721	0.862	1.453	2.704	198%	237%	400%	744%
20	20-May	0.949	1.076	1.799	4.270	261%	296%	495%	1175%
21	27-May	0.774	1.062	1.695	4.353	213%	292%	466%	1198%
22	3-Jun	0.536	0.738	1.177	3.469	147%	203%	324%	955%
23	10-Jun	0.426	0.564	1.121	2.598	117%	155%	309%	715%
24	17-Jun	0.301	0.500	0.880	1.684	83%	138%	242%	464%
25	24-Jun	0.291	0.389	0.616	1.400	80%	107%	169%	385%
26	1-Jul	0.184	0.311	0.510	1.180	51%	86%	140%	325%
27	8-Jul	0.096	0.200	0.366	1.107	26%	55%	101%	305%
28	15-Jul	0.070	0.143	0.259	0.822	19%	39%	71%	226%
29	22-Jul	0.037	0.107	0.182	0.554	10%	29%	50%	153%
30	29-Jul	0.032	0.061	0.150	0.538	9%	17%	41%	148%
31	5-Aug	0.018	0.046	0.091	0.348	5%	13%	25%	96%
32	12-Aug	0.016	0.041	0.098	0.283	4%	11%	27%	78%
33	19-Aug	0.015	0.044	0.067	0.250	4%	12%	18%	69%
34	26-Aug	0.008	0.043	0.067	0.232	2%	12%	19%	64%
35	2-Sep	0.008	0.035	0.069	0.219	2%	10%	19%	60%
36	9-Sep	0.002	0.030	0.047	0.211	1%	8%	13%	58%
37	16-Sep	0.018	0.026	0.060	0.194	5%	7%	16%	53%
38	23-Sep	0.014	0.031	0.059	0.192	4%	8%	16%	53%
39	30-Sep	0.011	0.043	0.061	0.196	3%	12%	17%	54%
40	7-Oct	0.015	0.030	0.061	0.150	4%	8%	17%	41%
41	14-Oct	0.015	0.035	0.058	0.141	4%	10%	16%	39%
42	21-Oct	0.024	0.061	0.080	0.167	7%	17%	22%	46%
43	28-Oct	0.020	0.057	0.068	0.187	5%	16%	19%	51%
44	4-Nov	0.012	0.053	0.071	0.185	3%	15%	20%	51%
45	11-Nov	0.025	0.064	0.081	0.203	7%	18%	22%	56%
46	18-Nov	0.035	0.047	0.063	0.356	10%	13%	17%	98%
47	25-Nov	0.034	0.038	0.047	0.246	9%	10%	13%	68%
48	2-Dec	0.020	0.035	0.054	0.213	5%	10%	15%	59%
49	9-Dec	0.025	0.036	0.048	0.163	7%	10%	13%	45%
50	16-Dec	0.022	0.035	0.045	0.152	6%	10%	12%	42%
51	23-Dec	0.027	0.034	0.045	0.143	7%	9%	13%	39%
52	31-Dec	0.025	0.036	0.050	0.132	7%	10%	14%	36%

## Residual Percentile Flows for Naswhito Creek

RESIDUAL FLOW		as m <sup>3</sup> /s				as %LTMAD			
Week	Ending	Min	P20	Median	Max	Min	P20	Median	Max
01	7-Jan	0.024	0.025	0.056	0.160	7%	7%	15%	44%
02	14-Jan	0.016	0.023	0.054	0.145	4%	6%	15%	40%
03	21-Jan	0.015	0.021	0.055	0.116	4%	6%	15%	32%
04	28-Jan	0.013	0.021	0.052	0.268	4%	6%	14%	74%
05	4-Feb	0.012	0.022	0.054	0.253	3%	6%	15%	70%
06	11-Feb	0.010	0.017	0.052	0.266	3%	5%	14%	73%
07	18-Feb	0.015	0.021	0.049	0.244	4%	6%	14%	67%
08	25-Feb	0.018	0.026	0.054	0.230	5%	7%	15%	63%
09	4-Mar	0.016	0.028	0.059	0.196	4%	8%	16%	54%
10	11-Mar	0.018	0.048	0.057	0.311	5%	13%	16%	85%
11	18-Mar	0.019	0.061	0.078	0.525	5%	17%	22%	145%
12	25-Mar	0.024	0.071	0.123	0.383	6%	19%	34%	105%
13	1-Apr	0.029	0.089	0.220	0.331	8%	24%	61%	91%
14	8-Apr	0.022	0.093	0.238	0.399	6%	26%	66%	110%
15	15-Apr	0.030	0.162	0.328	0.966	8%	45%	90%	266%
16	22-Apr	0.063	0.302	0.554	1.150	17%	83%	152%	317%
17	29-Apr	0.155	0.503	1.131	2.301	43%	139%	311%	633%
18	6-May	0.523	0.897	1.322	2.932	144%	247%	364%	807%
19	13-May	0.705	0.844	1.433	2.687	194%	232%	394%	740%
20	20-May	0.929	1.058	1.780	4.252	256%	291%	490%	1170%
21	27-May	0.750	1.042	1.674	4.332	207%	287%	461%	1192%
22	3-Jun	0.511	0.717	1.156	3.450	141%	197%	318%	950%
23	10-Jun	0.402	0.543	1.100	2.577	111%	149%	303%	709%
24	17-Jun	0.276	0.477	0.857	1.663	76%	131%	236%	458%
25	24-Jun	0.266	0.365	0.596	1.379	73%	100%	164%	380%
26	1-Jul	0.160	0.286	0.485	1.160	44%	79%	134%	319%
27	8-Jul	0.088	0.191	0.357	1.101	24%	53%	98%	303%
28	15-Jul	0.061	0.134	0.252	0.815	17%	37%	69%	224%
29	22-Jul	0.028	0.097	0.173	0.550	8%	27%	48%	151%
30	29-Jul	0.021	0.052	0.141	0.530	6%	14%	39%	146%
31	5-Aug	0.007	0.036	0.082	0.340	2%	10%	23%	94%
32	12-Aug	0.009	0.032	0.090	0.275	3%	9%	25%	76%
33	19-Aug	0.006	0.038	0.060	0.244	2%	10%	17%	67%
34	26-Aug	0.000	0.036	0.061	0.227	0%	10%	17%	62%
35	2-Sep	0.000	0.028	0.064	0.214	0%	8%	18%	59%
36	9-Sep	0.000	0.022	0.042	0.208	0%	6%	11%	57%
37	16-Sep	0.014	0.019	0.055	0.192	4%	5%	15%	53%
38	23-Sep	0.009	0.025	0.053	0.191	3%	7%	15%	53%
39	30-Sep	0.008	0.041	0.058	0.196	2%	11%	16%	54%
40	7-Oct	0.014	0.029	0.060	0.150	4%	8%	16%	41%
41	14-Oct	0.015	0.035	0.058	0.140	4%	10%	16%	38%
42	21-Oct	0.024	0.061	0.080	0.166	7%	17%	22%	46%
43	28-Oct	0.020	0.057	0.068	0.187	5%	16%	19%	51%
44	4-Nov	0.012	0.053	0.071	0.185	3%	15%	20%	51%
45	11-Nov	0.025	0.064	0.081	0.203	7%	18%	22%	56%
46	18-Nov	0.035	0.047	0.063	0.356	10%	13%	17%	98%
47	25-Nov	0.034	0.038	0.047	0.246	9%	10%	13%	68%
48	2-Dec	0.020	0.035	0.054	0.213	5%	10%	15%	59%
49	9-Dec	0.025	0.036	0.048	0.163	7%	10%	13%	45%
50	16-Dec	0.022	0.035	0.045	0.152	6%	10%	12%	42%
51	23-Dec	0.027	0.034	0.045	0.143	7%	9%	13%	39%
52	31-Dec	0.025	0.036	0.050	0.132	7%	10%	14%	36%



## Maximum Licensed Percentile Flows for Naswhito Creek

MAX LICENSED RESIDUAL FLOW		as m <sup>3</sup> /s				as %LTMAD			
Week	Ending	Min	P20	Median	Max	Min	P20	Median	Max
01	7-Jan	0.023	0.025	0.056	0.160	6%	7%	15%	44%
02	14-Jan	0.015	0.023	0.054	0.145	4%	6%	15%	40%
03	21-Jan	0.015	0.021	0.055	0.116	4%	6%	15%	32%
04	28-Jan	0.013	0.021	0.052	0.268	4%	6%	14%	74%
05	4-Feb	0.012	0.022	0.054	0.253	3%	6%	15%	70%
06	11-Feb	0.010	0.017	0.052	0.266	3%	5%	14%	73%
07	18-Feb	0.015	0.021	0.049	0.244	4%	6%	14%	67%
08	25-Feb	0.018	0.025	0.054	0.229	5%	7%	15%	63%
09	4-Mar	0.015	0.028	0.059	0.195	4%	8%	16%	54%
10	11-Mar	0.018	0.048	0.057	0.310	5%	13%	16%	85%
11	18-Mar	0.019	0.061	0.078	0.525	5%	17%	22%	144%
12	25-Mar	0.023	0.071	0.123	0.383	6%	19%	34%	105%
13	1-Apr	0.028	0.089	0.220	0.331	8%	24%	61%	91%
14	8-Apr	0.022	0.093	0.238	0.399	6%	26%	66%	110%
15	15-Apr	0.030	0.162	0.327	0.966	8%	45%	90%	266%
16	22-Apr	0.063	0.302	0.552	1.148	17%	83%	152%	316%
17	29-Apr	0.155	0.503	1.131	2.289	43%	138%	311%	630%
18	6-May	0.523	0.896	1.322	2.915	144%	247%	364%	802%
19	13-May	0.704	0.835	1.422	2.678	194%	230%	391%	737%
20	20-May	0.895	1.030	1.739	4.229	246%	283%	479%	1164%
21	27-May	0.688	0.981	1.611	4.266	189%	270%	443%	1174%
22	3-Jun	0.444	0.646	1.082	3.402	122%	178%	298%	936%
23	10-Jun	0.331	0.485	1.026	2.486	91%	134%	282%	684%
24	17-Jun	0.204	0.418	0.774	1.581	56%	115%	213%	435%
25	24-Jun	0.178	0.284	0.520	1.309	49%	78%	143%	360%
26	1-Jul	0.067	0.193	0.388	1.071	18%	53%	107%	295%
27	8-Jul	0.000	0.089	0.253	1.000	0%	25%	70%	275%
28	15-Jul	0.000	0.025	0.158	0.716	0%	7%	43%	197%
29	22-Jul	0.000	0.000	0.066	0.463	0%	0%	18%	127%
30	29-Jul	0.000	0.000	0.036	0.412	0%	0%	10%	113%
31	5-Aug	0.000	0.000	0.000	0.220	0%	0%	0%	61%
32	12-Aug	0.000	0.000	0.000	0.155	0%	0%	0%	43%
33	19-Aug	0.000	0.000	0.000	0.153	0%	0%	0%	42%
34	26-Aug	0.000	0.000	0.000	0.112	0%	0%	0%	31%
35	2-Sep	0.000	0.000	0.000	0.119	0%	0%	0%	33%
36	9-Sep	0.000	0.000	0.000	0.158	0%	0%	0%	43%
37	16-Sep	0.000	0.000	0.000	0.153	0%	0%	0%	42%
38	23-Sep	0.000	0.000	0.011	0.171	0%	0%	3%	47%
39	30-Sep	0.000	0.009	0.042	0.186	0%	3%	12%	51%
40	7-Oct	0.000	0.014	0.049	0.143	0%	4%	13%	39%
41	14-Oct	0.009	0.026	0.057	0.134	2%	7%	16%	37%
42	21-Oct	0.023	0.059	0.080	0.165	6%	16%	22%	46%
43	28-Oct	0.020	0.056	0.067	0.186	5%	16%	19%	51%
44	4-Nov	0.012	0.053	0.071	0.185	3%	15%	20%	51%
45	11-Nov	0.025	0.064	0.081	0.203	7%	18%	22%	56%
46	18-Nov	0.035	0.047	0.062	0.356	10%	13%	17%	98%
47	25-Nov	0.034	0.038	0.047	0.245	9%	10%	13%	68%
48	2-Dec	0.019	0.035	0.054	0.213	5%	10%	15%	59%
49	9-Dec	0.025	0.036	0.048	0.163	7%	10%	13%	45%
50	16-Dec	0.021	0.035	0.045	0.152	6%	10%	12%	42%
51	23-Dec	0.027	0.034	0.045	0.142	7%	9%	12%	39%
52	31-Dec	0.024	0.035	0.050	0.132	7%	10%	14%	36%