

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	FISH											VSP				entrain	impinge		entrain	impinge
2			Average fl	Design		Average	Average		Design	design		monthly	entrain	impin		reduct	reduct		reduct	reduct
3			2002-2007	adjustment		Entrainme	impingement		entrain	impinge		Reduct	reduc	reduct		%	%		%	%
4	Unit 4	jan	40.1	1.715686		1846668	342		1878351.029	347.8676		0.134	251699	46.61426		0.005020022	0.011882		0.502002	1.188248
5		feb	40.8	0		3541033	124		3541033	124		0.134	474498.4	16.616		0.009463654	0.004236		0.946365	0.42356
6		mar	34.5	15.44118		2597943	78		2999095.963	90.04412		0.134	401878.9	12.06591		0.00801529	0.003076		0.801529	0.307573
7		aprl	27.7	32.10784		1438432	1458		1900281.49	1926.132		0.134	254637.7	258.1017		0.005078633	0.065793		0.507863	6.579291
8		may	37.4	8.333333		6333016	65		6860767.333	70.41667		0.133	912482.1	9.365417		0.018199038	0.002387		1.819904	0.238735
9		june	40.8	0		15505027	202		15505027	202		0.032	496160.9	6.464		0.009895702	0.001648		0.98957	0.164774
10		jul	40.8	0		9086148	49		9086148	49		0	0	0		0	0		0	0
11		aug	40.4	0.980392		7436993	24		7509904.696	24.23529		0	0	0		0	0		0	0
12		sept	36.3	11.02941		300167	60		333273.6544	66.61765		0.014	4665.831	0.932647		9.30579E-05	0.000238		0.009306	0.023774
13		oct	35.1	13.97059		46676	78		53196.91176	88.89706		0.126	6702.811	11.20103		0.000133684	0.002855		0.013368	0.285526
14		nov	36.6	10.29412		271976	405		299973.5294	446.6912		0.134	40196.45	59.85662		0.0008017	0.015258		0.08017	1.52581
15		dec	39.5	3.186275		166665	472		171975.4044	487.0392		0.134	23044.7	65.26325		0.000459616	0.016636		0.045962	1.663631
16								total	50139028.01	3922.941		total	2865967	486.4809					5.71604	12.40092
17																				
18	Unit 5	jan	41.3	1.196172		1891929	92		1914559.73	93.10048		0.112	214430.7	10.42725		0.004068708	0.008854		0.406871	0.88536
19		feb	37.3	10.76555		3627823	32		4018378.108	35.44498		0.112	450058.3	3.969837		0.008539617	0.003371		0.853962	0.337072
20		mar	35.7	14.5933		2846771	71		3262208.873	81.36124		0.112	365367.4	9.112459		0.006932651	0.007737		0.693265	0.773723
21		aprl	37.5	10.28708		1260391	160		1390048.447	176.4593		0.112	155685.4	19.76344		0.002954048	0.016781		0.295405	1.67808
22		may	32.1	23.20574		6488236	48		7993879.282	59.13876		0.107	855345.1	6.327847		0.016229716	0.005373		1.622972	0.537287
23		june	41.2	1.435407		15885052	69		16113067.1	69.99043		0.003	48339.2	0.209971		0.000917211	0.000178		0.091721	0.017828
24		jul	40.9	2.15311		9308848	74		9509277.742	75.5933		0	0	0		0	0		0	0
25		aug	41.8	0		7619272	210		7619272	210		0	0	0		0	0		0	0
26		sept	38.8	7.177033		214826	117		230244.134	125.3971		0	0	0		0	0		0	0
27		oct	39.6	5.263158		78593	106		82729.47368	111.5789		0.063	5211.957	7.029474		9.88941E-05	0.005969		0.009889	0.59686
28		nov	40.1	4.066986		379689	101		395130.8971	105.1077		0.112	44254.66	11.77206		0.000839709	0.009995		0.083971	0.999545
29		dec	41.1	1.674641		170750	34		173609.4498	34.56938		0.112	19444.26	3.87177		0.000368944	0.003287		0.036894	0.328745
30								total	52702405.24	1177.742		total	2158137	72.48411					4.09495	6.154501
31																				
32	Unit 6	jan	41.8	0		5630527	343		5630527	343		0.116	653141.1	39.788		0.004304188	0.041932		0.430419	4.193173
33		feb	41.8	0		10796680	60		10796680	60		0.116	1252415	6.96		0.008253391	0.007335		0.825339	0.7335
34		mar	29.7	28.94737		5976711	2		7706811.553	2.578947		0.116	893990.1	0.299158		0.005891378	0.000315		0.589138	0.031528
35		aprl	28.7	31.33971		3620361	155		4754971.744	203.5766		0.116	551576.7	23.61488		0.00363488	0.024887		0.363488	2.488722
36		may	35.9	14.11483		19309488	9		22034989.89	10.27033		0.116	2556059	1.191359		0.01684438	0.001256		1.684438	0.125555
37		june	41.4	0.956938		47275132	14		47727525.61	14.13397		0.028	1336371	0.395751		0.008806658	0.000417		0.880666	0.041707
38		jul	41.6	0.478469		27703843	18		27836397.27	18.08612		0	0	0		0	0		0	0
39		aug	41.8	0		22675538	0		22675538	0		0	0	0		0	0		0	0
40		sept	41.4	0.956938		822516	0		830386.9665	0		0.014	11625.42	0		7.66113E-05	0		0.007661	0
41		oct	40.1	4.066986		203862	104		212153.0383	108.2297		0.116	24609.75	12.55464		0.000162178	0.013231		0.016218	1.323107
42		nov	41.8	0		1031355	170		1031355	170		0.116	119637.2	19.72		0.000788407	0.020782		0.078841	2.078249
43		dec	41.8	0		508165	19		508165	19		0.116	58947.14	2.204		0.000388461	0.002323		0.038846	0.232275
44								total	151745501.1	948.8756		total	7458372	106.7278					4.915053	11.24782
45											Plant	total	12482476	665.6928						
46							plant	total	254586934.3	6049.558		%	0.04903	0.11004						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Macrocrustaceans																			
2																				
3																				
4												VSP				entrain	impinge		entrain	impinge
5			Average fl	Design		Average	Average		Design	design		monthly	entrain	impin		reduct	reduct		reduct	reduct
6			2002-2007	adjustment		Entrainment	impingement		entrain	impinge		Reduct	reduc	reduct		%	%		%	%
7	Unit 4	jan	40.1	1.715686		15933	857		16206.3603	871.7034		0.134	2171.652	116.8083		4.99E-06	0.010877		0.000499	1.087684
8		feb	40.8	0		10438	170		10438	170		0.134	1398.692	22.78		3.21E-06	0.002121		0.000321	0.212121
9		mar	34.5	15.44118		0	119		0	137.375		0.134	0	18.40825		0	0.001714		0	0.171412
10		aprl	27.7	32.10784		56068	1916		74070.2255	2531.186		0.134	9925.41	339.179		2.28E-05	0.031583		0.002278	3.158335
11		may	37.4	8.333333		46535676	1143		50413649	1238.25		0.133	6705015	164.6873		0.015392	0.015335		1.539188	1.533519
12		june	40.8	0		126629819	1210		126629819	1210		0.032	4052154	38.72		0.009302	0.003605		0.930203	0.360549
13		jul	40.8	0		188540501	573		188540501	573		0	0	0		0	0		0	0
14		aug	40.4	0.980392		56366792	480		56919407.6	484.7059		0	0	0		0	0		0	0
15		sept	36.3	11.02941		9018365	325		10013037.6	360.8456		0.014	140182.5	5.051838		0.000322	0.00047		0.03218	0.047041
16		oct	35.1	13.97059		2506743	269		2856949.74	306.5809		0.126	359975.7	38.62919		0.000826	0.003597		0.082635	0.359704
17		nov	36.6	10.29412		74577	1210		82254.0441	1334.559		0.134	11022.04	178.8309		2.53E-05	0.016652		0.00253	1.66522
18		dec	39.5	3.186275		61966	1474		63940.4069	1520.966		0.134	8568.015	203.8094		1.97E-05	0.018978		0.001967	1.897813
19								total	435620273	10739.17		total	11290414	1126.904					2.591802	10.4934
20																				
21	Unit 5	jan	41.3	1.196172		16323	49		16518.2512	49.58612		0.112	1850.044	5.553646		4.05E-06	0.003109		0.000405	0.31092
22		feb	37.3	10.76555		10694	7		11845.2679	7.753589		0.112	1326.67	0.868402		2.91E-06	0.000486		0.000291	0.048617
23		mar	35.7	14.5933		0	21		0	24.06459		0.112	0	2.695234		0	0.001509		0	0.150892
24		aprl	37.5	10.28708		57442	167		63351.1053	184.1794		0.112	7095.324	20.6281		1.56E-05	0.011549		0.001555	1.154862
25		may	32.1	23.20574		47676256	245		58739884.8	301.8541		0.107	6285168	32.29839		0.013775	0.018082		1.377461	1.808222
26		june	41.2	1.435407		129733491	183		131595694	185.6268		0.003	394787.1	0.55688		0.000865	0.000312		0.086522	0.031177
27		jul	40.9	2.15311		193161592	175		197320574	178.7679		0	0	0		0	0		0	0
28		aug	41.8	0		57748331	113		57748331	113		0	0	0		0	0		0	0
29		sept	38.8	7.177033		6658544	110		7136429.93	117.8947		0	0	0		0	0		0	0
30		oct	39.6	5.263158		3294579	216		3467977.89	227.3684		0.063	218482.6	14.32421		0.000479	0.008019		0.047883	0.801939
31		nov	40.1	4.066986		116679	237		121424.318	246.6388		0.112	13599.52	27.62354		2.98E-05	0.015465		0.00298	1.546501
32		dec	41.1	1.674641		63485	147		64548.1459	149.4617		0.112	7229.392	16.73971		1.58E-05	0.009372		0.001584	0.937171
33								total	456286579	1786.196		total	6929538	121.2881					1.518681	6.790302
34																				
35	Unit 6	jan	41.8	0		16323	14		16323	14		0.116	1893.468	1.624		4.21E-06	0.001247		0.000421	0.124707
36		feb	41.8	0		10694	14		10694	14		0.116	1240.504	1.624		2.76E-06	0.001247		0.000276	0.124707
37		mar	29.7	28.94737		0	0		0	0		0.116	0	0		0	0		0	0
38		aprl	28.7	31.33971		57442	120		75444.1579	157.6077		0.116	8751.522	18.28249		1.94E-05	0.014039		0.001944	1.403909
39		may	35.9	14.11483		47676256	176		54405679.7	200.8421		0.116	6311059	23.29768		0.014017	0.01789		1.401667	1.789025
40		june	41.4	0.956938		129733491	145		130974960	146.3876		0.028	3667299	4.098852		0.008145	0.003148		0.814496	0.31475
41		jul	41.6	0.478469		193161592	175		194085810	175.8373		0	0	0		0	0		0	0
42		aug	41.8	0		57748331	121		57748331	121		0	0	0		0	0		0	0
43		sept	41.4	0.956938		9239403	92		9327818.34	92.88038		0.014	130589.5	1.300325		0.00029	0.000999		0.029004	0.099852
44		oct	40.1	4.066986		3294579	91		3428569.06	94.70096		0.116	397714	10.98531		0.000883	0.008436		0.088331	0.84356
45		nov	41.8	0		116679	194		116679	194		0.116	13534.76	22.504		3.01E-05	0.017281		0.003006	1.728078
46		dec	41.8	0		63485	91		63485	91		0.116	7364.26	10.556		1.64E-05	0.008106		0.001636	0.810593
47								total	450253793	1302.256		total	10539446	94.27266					2.340779	7.23918
48																				
49											Plant	total	28759398	1342.465						
50									1342160645	13827.62		%	0.021428	0.097086						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Fish																				
2																					
3						Design	Design														
4						entrain	impinge					Entrain									
5				Unit 4	jan	1878351	347.8676			Combined	Jan	9423438									
6					feb	3541033	124				Feb	18356091									
7					mar	2999096	90.04412				Mar	13968116									
8					aprl	1900281	1926.132				Apr	8045302									
9					may	6860767	70.41667				May	36889637									
10					june	15505027	202				Jun	79345620									
11					jul	9086148	49				Jul	46431823									
12					aug	7509905	24.23529				Aug	37804715									
13					sept	333273.7	66.61765				Sep	1393905									
14					oct	53196.91	88.89706				Oct	348079.4									
15					nov	299973.5	446.6912				Nov	1726459									
16					dec	171975.4	487.0392				Dec	853749.9									
17																					
18																					
19				Unit 5	jan	1914560	93.10048					Impinge									
20					feb	4018378	35.44498				Jan	473.9681									
21					mar	3262209	81.36124				Feb	192.445									
22					aprl	1390048	176.4593				Mar	204.4054									
23					may	7993879	59.13876				Apr	2135.592									
24					june	16113067	69.99043				May	162.5554									
25					jul	9509278	75.5933				Jun	304.9904									
26					aug	7619272	210				Jul	157.5933									
27					sept	230244.1	125.3971				Aug	267.2353									
28					oct	82729.47	111.5789				Sep	225.0148									
29					nov	395130.9	105.1077				Oct	233.476									
30					dec	173609.4	34.56938				Nov	584.7988									
31											Dec	554.6086									
32																					
33				Unit 6	jan	5630527	343														
34					feb	10796680	60														
35					mar	7706812	2.578947														
36					aprl	4754972	203.5766														
37					may	22034990	10.27033														
38					june	47727526	14.13397														
39					jul	27836397	18.08612														
40					aug	22675538	0														
41					sept	830387	0														
42					oct	212153	108.2297														
43					nov	1031355	170														
44					dec	508165	19														
45						1.52E+08	948.8756														

Figure 8-1: Seasonal ichthyoplankton entrainment losses (all taxa at design flow)

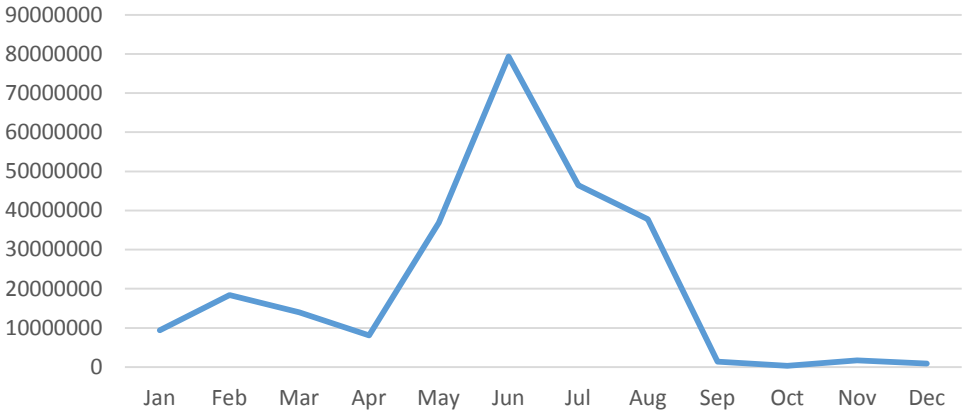
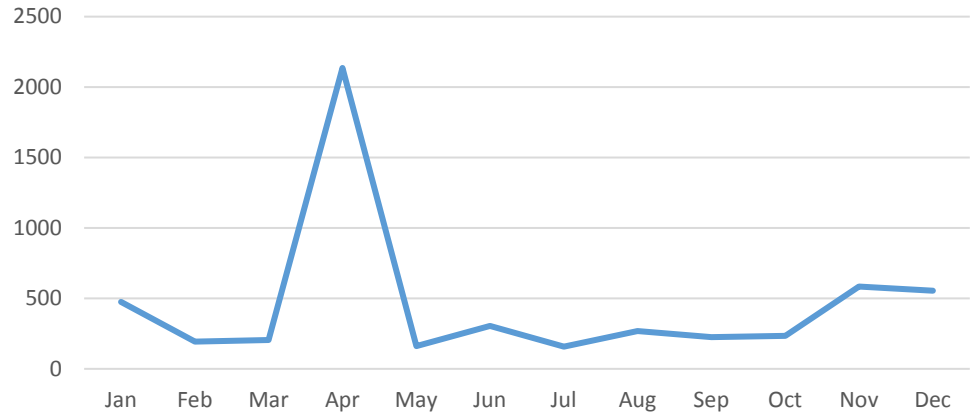
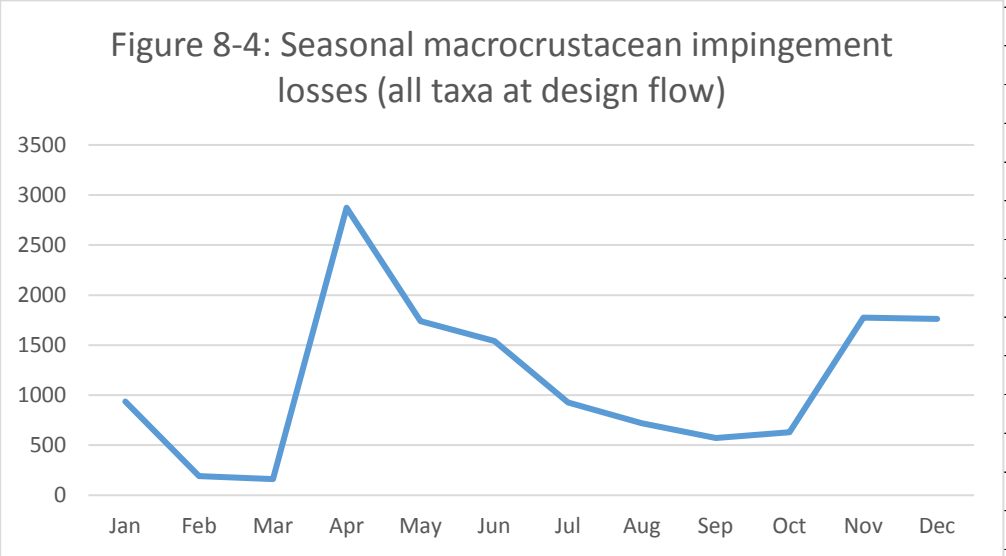
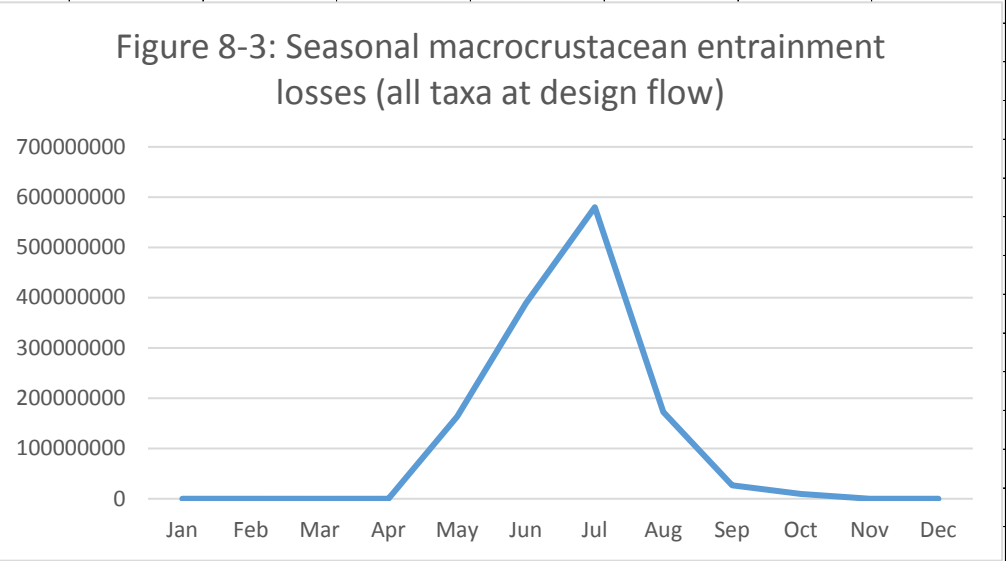


Figure 8-2: Seasonal Fish impingement losses (all taxa at design flow)



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3						Design	impinge													
4						entrain	entrain				Entrain									
5				Unit 4	jan	16206.36	871.7034		Combined	Jan	49047.61									
6					feb	10438	170			Feb	32977.27									
7					mar	0	137.375			Mar	0									
8					aprl	74070.23	2531.186			Apr	212865.5									
9					may	50413649	1238.25			May	1.64E+08									
10					june	1.27E+08	1210			Jun	3.89E+08									
11					jul	1.89E+08	573			Jul	5.8E+08									
12					aug	56919408	484.7059			Aug	1.72E+08									
13					sept	10013038	360.8456			Sep	26477286									
14					oct	2856950	306.5809			Oct	9753497									
15					nov	82254.04	1334.559			Nov	320357.4									
16					dec	63940.41	1520.966			Dec	191973.6									
17																				
18																				
19				Unit 5	jan	16518.25	49.58612				Impinge									
20					feb	11845.27	7.753589			Jan	935.2896									
21					mar	0	24.06459			Feb	191.7536									
22					aprl	63351.11	184.1794			Mar	161.4396									
23					may	58739885	301.8541			Apr	2872.973									
24					june	1.32E+08	185.6268			May	1740.946									
25					jul	1.97E+08	178.7679			Jun	1542.014									
26					aug	57748331	113			Jul	927.6053									
27					sept	7136430	117.8947			Aug	718.7059									
28					oct	3467978	227.3684			Sep	571.6207									
29					nov	121424.3	246.6388			Oct	628.6503									
30					dec	64548.15	149.4617			Nov	1775.198									
31										Dec	1761.427									
32																				
33				Unit 6	jan	16323	14													
34					feb	10694	14													
35					mar	0	0													
36					aprl	75444.16	157.6077													
37					may	54405680	200.8421													
38					june	1.31E+08	146.3876													
39					jul	1.94E+08	175.8373													
40					aug	57748331	121													
41					sept	9327818	92.88038													
42					oct	3428569	94.70096													
43					nov	116679	194													
44					dec	63485	91													



Schiller Design Flow July 18, 2014

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3																		
4																		
5																		
6																		
7					cooling towers		Ristroph		Wedgewire								VFD	
8									1.0 mm		0.8		0.69		0.6			
9		entrain	impinge		entrain	impinge	entrain	impinge	entrain	impinge	entrain	impinge	entrain	impinge	entrain	impinge	entrain	impinge
10	Fish	254586934	6049.558						29277497.45		201632852		216398894.2		240330066			
11	Macro	1342160645	13827.62						1342160645		1342160645		1342160645		1342160645			
12	total	1596747579	19877.18		1548845152	19280.867	0	14907.887	1371438142	16895.6	1543793497	16895.6	1558559539	16895.6	1582490711	16895.6	235200918.4	5923.4
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26	Impingement outage					Entrainment outage			%									
27		June	March			June	March		Reduction									
28	Fish	52.5	60.75		Fish	16113067	3262209	12850858	0.008048146									
29	Macro	139.5	18		Macro	131595694	0	131595694	0.082414839									
30		192	78.75	113.25		147708761	3262209	144446552										
31		0.00608744				0.090463												

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			Entrainment															
4										Wedgewire fish losses					Macro+fish saved			
5							Design flow minus VSP			1	0.8	0.69	0.6		1	0.8	0.69	0.6
6			Fish VSP Reductions		12482476		Fish	242104458		27842012.7	191746731	205788789	228546608		1382485134	1546389852	1560431910	1583189729
7			Macro VSP Reductions		28759398		Macro	1313401247		12482476	12482476	12482476	12482476					
8				total	41241874					40324488.7	204229207	218271265	241029084					
9										0.15839182	0.8021983	0.85735455	0.9467457					
10																		
11																		
12																		
13			Impingement															
14							Design flow minus VSP			Fish	Macro							
15			Fish VSP Reductions		666		Fish	5384		4711	10925.25							
16			Macro VSP Reductions		1342		Macro	12486		666	1342							
17				total	2008					5377	12267.25	17644.25						
18										0.88876033	0.88713118							