Overview for 2003

Hatchery Loading: 170.1 vs 225 lbs limit

84 and 92 vs 75 lbs/3 month limit

16,255 vs 20,000 Coho limit

422 vs 1,000 Chinook limit

Lake TP Concentration: 8.12 mg/m^3 volume-weighted

50% vs 95% compliance with 8 mg/m^3 goal

Renovations: complete

Hatchery P Mass Balance: completed

Field & Laboratory Procedures: extensive QA/QC completed

Database Construction: complete

Watershed P and Flow Mass Balance: complete, tributary flow measurements

Special Studies: macrophytes and shoreline complete – light, sediment, zebra mussels underway

BASINS Watershed Model: baseline calibration complete - wet weather underway

Lake Water Quality Model: developed - calibration underway

Internal and External Coordination: cooperation excellent, WEF paper

Table 1.

Land use	Simulated Event Mean Concentration (mg/m3)	Event Mean Concentrations from Literature (mg/m3)
Commercial/Industrial	153	280-330
Low Density Residential	48	520-570
Grassland	8	10 –1300
Cropland	21	370 – 1300
Orchard	21	370 –1300
Feeding Operations	718	370 – 1300
Forest	9	10 - 110
Barren	20	80
Wetlands	8	120

Table 2. Simulated and Literature Event Mean Phosphorus Concentrations.

	BASINS 1997	Measured 2003	K&E 80-81	Mark 2003-2004	Best Est For 2003
Fewins	72.90		59.20	60.60	72.90
NonPoint	0.74				0.74
BC to PR	6.54				6.54
BS to H	1.69	3.40			3.40
BC to H	11.99	7.89			7.89
PR to H	1.69	8.83			8.83
H to PR	15.37	20.12			20.12
NonPoint	10.14				10.14
Carter	9.70		7.30	7.84	9.70
NonPoint	2.97				2.97
Collison	6.39		0.56	4.91	6.39
NonPoint	2.18				2.18
USGS	125.24	124.70	118.30	159.10	122.85
NonPoint	2.90				2.90
NB	31.10		25.80	27.50	31.10
Direct	8.80				8.80
Rain	8.43	11.68			11.68
Evap	13.80				15.88
M22	162.67		151.90	178.90	161.45

Table 3. Flow estimates based on Measurements and BASINS.

Lost Fish

	Lower Weir			Upper Weir		
Fish	**Number Passed**	**Mean Wt (lbs)**	**Fish Wt Passed**	**Number Harvested**	**Mean Wt (lbs)**	**Fish Wt Harvested**
Chinook Salmon Adult	422	11.43	4,823.46	154	8.68	1,336.72
Chinook Salmon Jack	198	3.68	728.64	12	3.29	39.48
Coho Salmon Adult	16,255	5.97	97,042.35	13,000	5.72	74,360.00
Coho Salmon Jack	515	1.41	726.15	499	1.42	708.58
	17,390.00		**103,320.60**	13,665.00		**76,444.78**
Lost Fish (Count)	3,725.00					
Lost Fish (lbs)	**26,875.82**					

Lost Fish

26,875	**0.004465**	**120**	**lbs**

Table 4. Lost Fish Calculation.

planted fish

			loss	
19,016	2.205	0.004465	10%	19 lbs

rain

rain	m2 sur area	conc	load	
40.17	10,222,058	11.63	267	lb

macrophytes

lbs senesce macro	%P		sloughing & excretion biomass/2	days	rate		load	
2,014	1.3	+	1,007	90	0.05	=	85	lbs

outlet

cfs	ave lake sur		
161.45	7.74	2,461	lbs

Table 5. Phosphorus Mass Balance Calculations.

	release				
p3	mg/m2/day	m2			
conc	rr	area	days		depth
0.55	0.35	36,421	91	2.6	90
0.513	0.35	254,944	88	17.3	75
0.475	0.35	1,116,899	69	59.5	60
0.438	0.35	2,092,163	25	40.4	45
0.4	0.35	4,224,794	0	0	30
				120	lbs

Table 6. Sediment Phosphorus Release Calculation.