

## APPENDIX C: SELECT NUTRIENT MODELING RESULTS

TABLE C.1 Summary of total phosphorus (TP) loading by subdrainage for Basins 1, 2, and 3.

Basin	Sub-drainage to Basin	Land Area (ha)	Water Flow (m <sup>3</sup> /year)	Watershed Loads		
				P Concentration (mg/L)	P Mass (kg/year) Cumulative	P Mass (kg/year) Not Cumulative
Basin 1	Basin 1 Direct	110	666,450	0.04	27	27
	Trib to Basin 1	120	708,173	0.03	24	24
	<b>TOTAL</b>	<b>229</b>	<b>1,374,623</b>	<b>0.04</b>	<b>52</b>	
Basin 2	Basin 2 Direct	128	760,660	0.03	25	25
	Trib to Basin 2	157	938,114	0.02	16	16
	<b>TOTAL</b>	<b>285</b>	<b>1,698,773</b>	<b>0.02</b>	<b>41</b>	
Basin 3	Basin 3 Direct	454	2,765,095	0.05	137	137
	Cook Brook	419	2,626,955	0.01	30	30
	Dinsmore Pond	301	1,859,792	0.01	18	18
	Direct Red Hill Brook Drainage	967	36,014,254	0.01	419	95
	Halfway Brook	788	4,963,483	0.02	78	78
	Lees Pond	354	40,762,955	0.01	502	59
	Little Pond	68	416,363	0.01	6	6
	Middle Brook	679	4,287,256	0.02	80	80
	Montgomery Brook	369	3,963,320	0.01	31	22
	Red Hill Pond	907	5,729,461	0.01	72	67
	Shannon Brook	1705	13,527,746	0.01	195	168
	Shannon Pond	480	3,058,261	0.01	45	45
	Skinner Brook	267	1,683,773	0.01	15	15
	Stanton Brook	325	2,058,442	0.01	19	19
	Creamery Brook	190	1,177,122	0.02	28	28
	Trib 2 to Basin 3	441	4,068,517	0.02	67	40
	Trib 2 to Red Hill Brook	486	3,086,526	0.01	34	34
Meadow Pond	48	283,462	0.02	7	7	
Weed Brook/Berry Pond	1899	11,856,425	0.01	129	129	
Weed Brook/Trib	398	13,068,505	0.01	153	43	
Garland Pond	355	38,421,900	0.01	444	25	
Trib 1 to Trib 2 to Basin 3	202	1,511,720	0.03	40	35	
	<b>TOTAL</b>	<b>12,103</b>	<b>70,375,053</b>	<b>0.01</b>	<b>1,097</b>	

*Basin 3 loads are not summed due to water routing through certain basins; refer to model*

TABLE C.2 Moultonborough Bay Inlet total phosphorus (TP) and water loading summary.

INPUT CATEGORY	BASIN 1			BASIN 2			BASIN 3		
	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)
ATMOSPHERIC	5	8%	295,995	9	11%	558,205	31	3%	1,868,572
INTERNAL	1	2%	0	0	0%	0	18	2%	0
WATERFOWL	2	2%	0	3	3%	0	9	1%	0
SEPTIC SYSTEM	3	5%	2,505	8	9%	6,545	47	4%	39,441
WATERSHED LOAD	52	83%	1,374,623	41	47%	1,698,773	1,060	88%	70,375,053
LOAD FROM BASIN 1				25	29%	1,673,123			
LOAD FROM BASIN 2							37	3%	3,936,647
<b>TOTAL LOAD TO LAKE</b>	<b>62</b>	<b>100%</b>	<b>1,673,123</b>	<b>86</b>	<b>100%</b>	<b>3,936,647</b>	<b>1,202</b>	<b>100%</b>	<b>76,219,714</b>

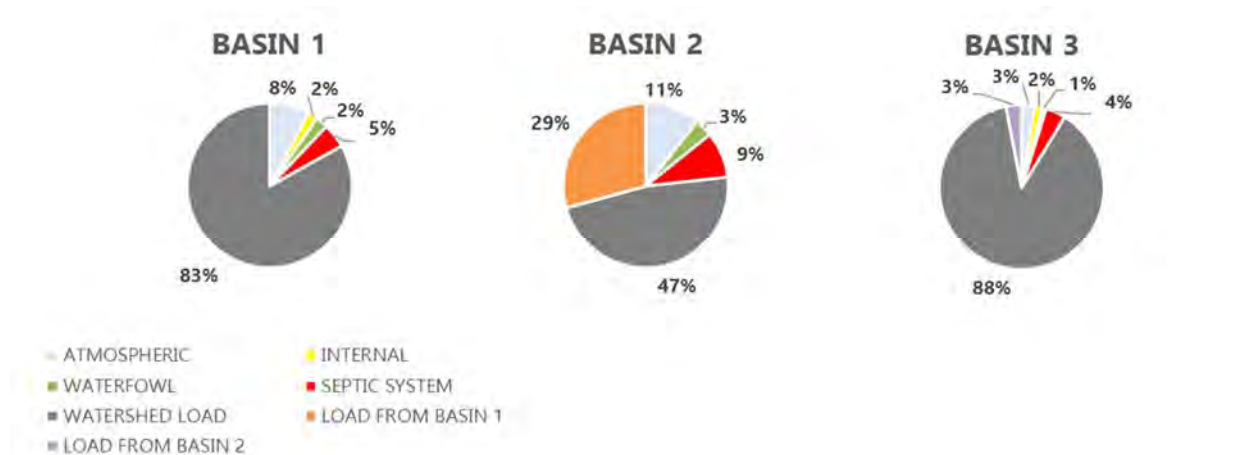


FIGURE C.1 Percentage of total phosphorus loading (kg/yr) by source (atmospheric, internal loading, waterfowl, septic systems, watershed load, load from Basin 1, or load from Basin 2) for Basin 1, 2, and 3.

TABLE C.3 Historical, current, and future phosphorus loading by subdrainage.

Basin	Sub-drainage to Basin	Land Area (ha)	Historical Watershed Loads		Current Watershed Loads		Future Watershed Loads	
			Water Flow (m3/yr)	P mass (kg/year)	Water Flow (m3/yr)	P mass (kg/yr)	Water Flow (m3/yr)	P mass (kg/yr)
Basin 1	Basin 1 Direct	110	677,085	3	666,450	27	673,080	45
	Trib to Basin 1	120	699,267	3	708,173	24	709,958	37
	<b>TOTAL</b>	<b>229</b>	<b>1,376,352</b>	<b>7</b>	<b>1,374,623</b>	<b>52</b>	<b>1,383,037</b>	<b>83</b>
Basin 2	Basin 2 Direct	128	765,217	4	760,660	25	763,843	49
	Trib to Basin 2	157	925,357	4	938,114	16	939,035	23
	<b>TOTAL</b>	<b>285</b>	<b>1,690,574</b>	<b>8</b>	<b>1,698,773</b>	<b>41</b>	<b>1,702,879</b>	<b>72</b>
Basin 3	Basin 3 Direct	454	2,816,022	12	2,765,095	137	2,773,671	195
	Cook Brook	419	2,639,678	12	2,626,955	30	2,641,534	32
	Dinsmore Pond	301	1,859,436	11	1,859,792	18	1,859,792	18
	Direct Red Hill Brook Drainage	967	36,178,004	29	36,014,254	95	36,200,472	140
	Halfway Brook	788	4,998,230	16	4,963,483	78	5,029,395	98
	Lees Pond	354	40,927,618	12	40,762,955	59	40,963,235	97
	Little Pond	68	417,276	1	416,363	6	416,363	6
	Middle Brook	679	4,304,288	14	4,287,256	80	4,333,930	156
	Montgomery Brook	369	3,981,214	6	3,963,320	22	3,963,320	22
	Red Hill Pond	907	5,749,028	27	5,729,461	67	5,729,461	67
	Shannon Brook	1705	13,565,827	36	13,527,746	168	13,608,262	303
	Shannon Pond	480	3,057,714	16	3,058,261	45	3,058,878	51
	Skinner Brook	267	1,683,683	8	1,683,773	15	1,689,877	42
	Stanton Brook	325	2,064,759	6	2,058,442	19	2,058,442	19
	Creamery Brook	190	1,207,356	4	1,177,122	28	1,177,122	28
Trib 2 to Basin 3	441	4,040,101	10	4,068,517	40	4,088,113	74	
Trib 2 to Red Hill Brook	486	3,097,468	17	3,086,526	34	3,104,553	73	
Meadow Pond	48	281,553	1	283,462	7	284,908	9	
Weed Brook/Berry Pond	1899	11,916,127	33	11,856,425	129	11,958,659	164	
Weed Brook/Trib	398	13,134,443	12	13,068,505	43	13,184,341	54	
Garland Pond	355	38,589,894	12	38,421,900	25	38,617,501	53	
Trib 1 to Trib 2 to Basin 3	202	1,484,945	5	1,511,720	35	1,519,101	61	
<b>TOTAL</b>	<b>12,103</b>	<b>74,573,212</b>	<b>70,375,053</b>	<b>70,375,053</b>	<b>70,796,605</b>	<b>70,796,605</b>		

Basin 3 loads are not summed due to water routing through certain basins; refer to model  
 Note: Water flow is cumulative routing through drainages; P mass is NOT cumulative routing through drainages

TABLE C.4 Historical, current, and future phosphorus loading by input category for Basins 1, 2, and 3.

INPUT CATEGORY BASIN 1	HISTORICAL			CURRENT			FUTURE		
	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)
ATMOSPHERIC	5	37%	295,995	5	8%	295,995	5	5%	295,995
INTERNAL	0	0%	0	1	2%	0	1	1%	0
WATERFOWL	2	11%	0	2	2%	0	2	2%	0
SEPTIC SYSTEM	0	0%	0	3	5%	2,505	5	5%	4,196
WATERSHED LOAD	7	52%	1,376,352	52	83%	1,374,623	83	87%	1,383,037
<b>TOTAL LOAD TO LAKE</b>	<b>13</b>	<b>100%</b>	<b>1,672,348</b>	<b>62</b>	<b>100%</b>	<b>1,673,123</b>	<b>95</b>	<b>100%</b>	<b>1,683,229</b>

INPUT CATEGORY BASIN 2	HISTORICAL			CURRENT			FUTURE		
	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)
ATMOSPHERIC	9	21%	558,205	9	11%	558,205	9	7%	558,205
INTERNAL	0	0%	0	0	0%	0	0	0%	0
WATERFOWL	3	7%	0	3	3%	0	3	2%	0
SEPTIC SYSTEM	0	0%	0	8	9%	6,545	10	8%	8,735
WATERSHED LOAD	8	18%	1,690,574	41	47%	1,698,773	72	54%	1,702,879
LOAD FROM BASIN 1	25	55%	1,672,348	25	29%	1,673,123	38	29%	1,683,229
<b>TOTAL LOAD TO LAKE</b>	<b>45</b>	<b>100%</b>	<b>3,921,128</b>	<b>86</b>	<b>100%</b>	<b>3,936,647</b>	<b>133</b>	<b>100%</b>	<b>3,953,049</b>

INPUT CATEGORY BASIN 3	HISTORICAL			CURRENT			FUTURE		
	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)	P (KG/YR)	%	WATER (CU.M/YR)
ATMOSPHERIC	31	10%	1,868,572	31	3%	1,868,572	31	2%	1,868,572
INTERNAL	0	0%	0	18	2%	0	18	1%	0
WATERFOWL	9	3%	0	9	1%	0	9	0%	0
SEPTIC SYSTEM	0	0%	0	47	4%	39,441	94	5%	79,062
WATERSHED LOAD	260	82%	70,652,084	1,060	88%	70,375,053	1,609	88%	70,796,605
LOAD FROM BASIN 2	19	6%	3,921,128	37	3%	3,936,647	57	3%	3,953,049
<b>TOTAL LOAD TO LAKE</b>	<b>319</b>	<b>100%</b>	<b>76,441,784</b>	<b>1,202</b>	<b>100%</b>	<b>76,219,714</b>	<b>1,819</b>	<b>100%</b>	<b>76,697,288</b>