

Appendix C: Ihutai Estuary Contaminant Load Model Results

Results from the Ihutai Estuary contaminant load model are reported in Tables 13, 14 and 15 below. Information in the tables is taken from tables in the model report (DHI, 2021) with some reformatting.

Urban and rural copper and zinc loads are presented as totals and per hectare. In some cases rural copper loads exceed urban copper loads per hectare. This reflects that there is a copper content in soils, and that significant amounts of sediment may be discharged from some rural catchments. Model results should be viewed cautiously, as they have not been confirmed by measurements.

Table 1: MEDUSA model annual TSS (particulate) loads.

Sub-catchment	Area (km ²)	% urban	Modelled TSS load (kg/yr)							
			Total	Total TSS/Ha	Roofs	Roads	Paved	Rural	Urban TSS/Ha	Rural TSS/Ha
Augusta St	0.726	71.8	4096.31	0.56	227.67	2707.33	321.33	839.98	6246.9	1157.0
Beachville	0.155	90.4	1020.55	0.66	64.33	900.33	55.67	0.21	7281.8	1.4
Bromley	1.263	86.7	9083.52	0.72	1261.67	3764	4055	2.85	8292.7	2.3
Burwood Forest / Brooklands	10.179	0.6	2991.15	0.03	< 0.01	< 0.01	< 0.01	2991.15		293.9
Charlesworth	0.17	1.8	2.84	0.00	< 0.01	< 0.01	< 0.01	2.84		16.7
Godley Head	1.833	0	43051.57	2.35	< 0.01	< 0.01	< 0.01	43051.57		23486.9
Estuary	1.675	33.8	4838.65	0.29	223	4146.33	456	13.31	8523.1	7.9
Linwood Canal	4.608	80.9	38545.3	0.84	2709	30924	4897.33	14.97	10335.7	3.2
Linwood Paddocks	0.883	0	15.01	0.00	< 0.01	< 0.01	< 0.01	15.01		17.0
Mcclurg	0.138	8.9	2009.65	1.46	< 0.01	< 0.01	< 0.01	2009.65		14562.7
McCormacks Bay	1.607	36.9	18168.55	1.13	304.33	5099.33	512.67	12252.21	9977.2	7624.3
Moncks Bay	0.562	62.1	3622.42	0.64	118.67	3405.67	95	3.09	10370.5	5.5
Mt Pleasant	0.853	86.3	4841.7	0.57	257	4416	167	1.7	6574.8	2.0
Parklands	4.68	78	30121.12	0.64	1932.33	26291.67	1593	304.12	8168.1	65.0
Richmond Hill	1.137	36	12869.93	1.13	153.33	3308.67	206	9201.93	8961.2	8093.2
Rifle Range	2.651	13.2	68530.04	2.59	181.67	3613	194	64541.37	11398.4	24346.0
Scarborough	0.604	61.9	1653.67	0.27	114.33	1390.67	145.33	3.34	4414.1	5.5
Southshore	1.979	52.6	7181.63	0.36	436.33	6290.67	177	277.63	6632.4	140.3
St Andrews Hill	0.454	97.4	4159.17	0.92	150.33	3898.33	110.33	0.17	9405.3	0.4
Sumner	4.772	23.8	122316.4	2.56	545.67	14854.33	655.67	106260.8	14136.8	22267.6
Taylors Mistake	1.427	2.6	32257.33	2.26	6.67	487.3	7	31756.36	13502.5	22253.9
Tidal View	0.093	94.2	1176	1.26	88.67	796	291.3	0.09	13423.4	1.0

Table 2: MEDUSA model annual copper loads.

Sub-catchment	Area (km ²)	% urban	Modelled Copper load (kg/yr)							
			Total	Total Cu/Ha	Roofs	Roads	Paved	Rural	Urban Cu/Ha	Rural Cu/Ha
Augusta St	0.726	71.8	2.01	0.0003	0.47	1.37	0.17	0.01	0.0004	0.0010
Beachville	0.155	90.4	0.57	0.0004	0.17	0.4	< 0.01	< 0.01	0.0004	0.0038
Bromley	1.263	86.7	4.6	0.0004	0.93	1.8	1.87	< 0.01	0.0004	0.0027
Burwood Forest / Brooklands	10.179	0.6	0.03	0.0000	< 0.01	< 0.01	< 0.01	0.03	0.0000	0.0000
Charlesworth	0.17	1.8	< 0.01	0.0000	< 0.01	< 0.01	< 0.01	< 0.01		
Godley Head	1.833	0	0.99	0.0001	< 0.01	< 0.01	< 0.01	0.99		0.0001
Estuary	1.675	33.8	2.8	0.0002	0.37	2.23	0.2	< 0.01	0.0005	0.0003
Linwood Canal	4.608	80.9	21.6	0.0005	4.73	14.63	2.23	< 0.01	0.0006	0.0025
Linwood Paddocks	0.883	0	< 0.01	0.0000	< 0.01	< 0.01	< 0.01	< 0.01		
Mcclurg	0.138	8.9	0.05	0.0000	< 0.01	< 0.01	< 0.01	0.05	0.0004	0.0000
McCormacks Bay	1.607	36.9	3.9	0.0002	0.57	2.93	0.2	0.2	0.0007	0.0004
Moncks Bay	0.562	62.1	1.83	0.0003	0.3	1.53	< 0.01	< 0.01	0.0005	0.0009
Mt Pleasant	0.853	86.3	2.77	0.0003	0.67	2	0.1	< 0.01	0.0004	0.0024
Parklands	4.68	78	19.07	0.0004	4.73	13.57	0.77	< 0.01	0.0005	0.0019
Richmond Hill	1.137	36	2.22	0.0002	0.3	1.6	0.1	0.22	0.0005	0.0003
Rifle Range	2.651	13.2	4.03	0.0002	0.4	2	0.1	1.53	0.0012	0.0002
Scarborough	0.604	61.9	1.03	0.0002	0.23	0.7	0.1	< 0.01	0.0003	0.0004
Southshore	1.979	52.6	4.3	0.0002	1.2	3	0.1	< 0.01	0.0004	0.0005
St Andrews Hill	0.454	97.4	2.23	0.0005	0.37	1.8	0.07	< 0.01	0.0005	0.0189
Sumner	4.772	23.8	11.46	0.0002	1.2	7.57	0.3	2.39	0.0010	0.0003
Taylors Mistake	1.427	2.6	0.2	0.0000	0	0.2	0	0.75	0.0005	0.0000
Tidal View	0.093	94.2	0.57	0.0006	0.1	0.37	0.1	<.0001	0.0007	0.0106

Table 3: MEDUSA model annual zinc loads.

Sub-catchment	Area (km ²)	% urban	Zinc load (kg/yr)							
			Total	Total Zn/Ha	Roofs	Roads	Paved	Rural	Urban Zn/Ha	Rural Zn/Ha
Augusta St	0.726	71.8	42	0.006	27.77	12.97	1.23	0.04	0.0080	0.0000
Beachville	0.155	90.4	10.13	0.007	7.73	2.2	0.2	< 0.01	0.0072	0.0000
Bromley	1.263	86.7	185.8	0.015	160.13	10.47	15.2	< 0.01	0.0170	0.0000
Burwood Forest / Brooklands	10.179	0.6	0.08	0.000	< 0.01	< 0.01	< 0.01	0.08	0.0000	0.0000
Charlesworth	0.17	1.8	< 0.01	0.000	< 0.01	< 0.01	< 0.01	< 0.01		
Godley Head	1.833	0	2.89	0.000	< 0.01	< 0.01	< 0.01	2.89	0.0000	0.0002
Estuary	1.675	33.8	50.27	0.003	27.6	20.97	1.7	< 0.01	0.0089	0.0000
Linwood Canal	4.608	80.9	500.87	0.011	333.3	149.2	18.37	< 0.01	0.0134	0.0000
Linwood Paddocks	0.883	0	< 0.01	0.000	< 0.01	< 0.01	< 0.01	< 0.01		
Mcclurg	0.138	8.9	0.14	0.000	< 0.01	< 0.01	< 0.01	0.14	0.0000	0.0001
McCormacks Bay	1.607	36.9	63.72	0.004	37.3	23.83	1.9	0.68	0.0106	0.0001
Moncks Bay	0.562	62.1	32.93	0.006	14.33	18.23	0.37	< 0.01	0.0094	0.0000
Mt Pleasant	0.853	86.3	43.23	0.005	30.8	11.77	0.67	< 0.01	0.0059	0.0000
Parklands	4.68	78	358.24	0.008	232.5	119.77	5.97	0.01	0.0098	0.0000
Richmond Hill	1.137	36	33.75	0.003	18.67	13.7	0.77	0.61	0.0081	0.0001
Rifle Range	2.651	13.2	45.53	0.002	22	18.47	0.77	4.3	0.0118	0.0002
Scarborough	0.604	61.9	18.7	0.003	13.9	4.23	0.57	< 0.01	0.0050	0.0000
Southshore	1.979	52.6	69.51	0.004	52	16.83	0.67	0.01	0.0067	0.0000
St Andrews Hill	0.454	97.4	37.13	0.008	18.07	18.67	0.4	< 0.01	0.0084	0.0000
Sumner	4.772	23.8	144.89	0.003	66.23	69.47	2.47	6.72	0.0122	0.0002
Taylor's Mistake	1.427	2.6	2.65	0.000	0.83	0.93	0	2.17	0.0013	0.0002
Tidal View	0.093	94.2	17.8	0.019	11.3	5.4	1.1	<.0001	0.0203	0.0000

