APPENDIXES

Appendix 1. Description of sampling sites.

Station No.	Name	Geo-references	Habitat description
1	Tanjung Kuin	3°07.740'N; 102°36.410'E	Sungai Bera is connected to the lake system near Tanjung Ku Open water surrounded by Pandanus stand. Depth about 1.4 in April 1998.Water flow minimal. A jetty point. Some chalets a a camping ground are situated here.
2	Sungai Tasik	3°08.690'N; 102°36.641'E	Narrow channel with minimal flow. Depth about 0.8m in Ap 1998. Surrounded by freshwater swamp vegetation and spar Pandanus stands.
3	Lubuk Pathir	3°08.382'N; 102°36.471'E	Open water close to the main channel and flowing towar Sungai Tasik. Thick cover of Pandanus stand. Depth about 4.5 in April 1998. Water flow very swift.
4	Tanjung Papan	3°05.965'N; 102°36.871'E	Main body of the lake to the south of Tanjung Kuin. Water w stagnant and depth was about 3m in April 1998. Lepironia ree abundant on both sides of the bank with isolated clumps Pandanus stands along the water edge.
5	Kampung Benal	3°04.615'N; 102°37.353'E	Main channel of the lake. Pandanus and Lepironia on both sid of the banks. Depth about 3.6m in June 1998. Water was slo flowing.
6	Kuala Sungai Tembangan	3°03.953'N; 102°37.445'E	Open water with Lepironia reeds on the banks. Utricularia s found growing on submerged rotting branches of emerge plants. Depth about 1.2m in June 1998. Water flow was slo moving.
7	Lubuk Kuang	3°03.270'N; 102°38.160'E	Nymphoides sp. was found in a small patch in the open wa while Pandanus and Lepironia reeds lined the banks. Dep about 2.3m in April 1998. Water flow very minimal and stagn in some parts.
8	Kampung Baapa	3°00.993'N; 102°34.068'E	Open water in the vicinity of a village. Lepironia reeds and spar Pandanus stands. Depth was about 1.7m in April 1998. Wa flow minimal. Lake used for laundry and bathing by lo residents.
9	Sungai Bera 1	3°07.272'N; 102°37.767'E	River flowing next to Felda Bera Selatan 2 residential p Swamp forest vegetation and Pandanus lined the banks. At po below the bridge, river is occasionally used for laundry, wash motobikes or bathing by the Semelai who settles nearby. Wate slow-moving.
10	Sungai Bera 2	3°09.006'N; 102°36.976'E	A jetty is located along the river. River is also used for laun and bathing. Moderately disturbed as it is a common route boatman. Vegetation along the banks includes bamboo, ratta Pandanus as well as other forest trees.
11	Paya Kelantong	3°06.704'N; 102°32.608'E	A shallow stream that flows from the rubber and palm plantations in the catchment area into the lake near Lubuk Pat Depth was about 0.5m in April 1998. Water was stagnant a has high sedimentation.
12	Sungai Tembangan	3°00.604'N; 102°34.279'E	River flowing through a swamp forest located among oil pa plantations. High sedimentation. Water flow very minimal.

***pendix 2.** Measurement of depth for sampling stations in Tasek Bera (Apr - Oct 1998)*

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error
Tanjung Kuin	1.85	1.99	0.6514	0.3761	1.40	2.02	1.0251	0.5918	1.94	2.44	0.8660	0.5000	2.89	3.34	0.8643	0.4990	1.74	2.24	0.8834	0.5100	1.71	2.24	0.8723	0.5036
	1.42				3.20				3.44				4.34				3.26				3.25			
	2.70				1.45				1.94				2.80				1.72				1.77			
Sungai Tasik	0.74	0.88	0.1909	0.1102	1.72	1.50	0.3696	0.2134	1.99	2.18	0.2629	0.1518	2.45	2.87	0.3669	0.2118	1.70	1.92	0.2542	0.1468	1.83	1.83	0.2050	0.1184
	0.81				1.70				2.48				3.10				1.87				1.62			
	1.10				1.07				2.07				3.07				2.20				2.03			
Lubuk Pathir	4.30	4.63	0.3512	0.2028	4.70	3.38	2.0678	1.1938	3.88	4.67	0.6871	0.3967	4.00	5.40	1.2166	0.7024	3.45	4.38	0.8098	0.4676	3.03	3.99	0.8551	0.4937
	5.00				4.45				5.08				6.20				4.80				4.67			
	4.60				1.00				5.06				6.00				4.90				4.27			
Tanjung Papan	4.25	2.98	1.3288	0.7672	3.45	2.92	0.7974	0.4604	4.32	3.79	1.2801	0.7391	5.65	5.28	0.4424	0.2554	5.35	4.94	0.7539	0.4352	5.41	4.73	0.7845	0.4529
	3.10				3.30				4.72				5.40				5.40				4.90			
	1.60				2.00				2.33				4.79				4.07				3.87			
Kampung Benal	[illegible]	[illegible]	[illegible]	[illegible]	1.05	2.63	1.3823	0.7981	3.42	4.12	0.6091	0.3517	4.33	4.94	0.6421	0.3707	4.59	3.95	1.1551	0.6669	3.31	4.31	0.9457	0.5460
	[illegible]				3.25				4.47				4.88				4.65				5.19			
	[illegible]				3.60				4.48				5.61				2.62				4.43			
Kuala Sungai Tembangan	[illegible]	[illegible]	[illegible]	[illegible]	0.51	0.82	0.3503	0.2022	1.20	1.69	0.4754	0.2745	2.17	2.25	0.3961	0.2287	1.26	1.45	0.1747	0.1009	2.03	1.79	0.2450	0.1415
	[illegible]				1.20				2.15				2.68				1.60				1.54			
	[illegible]				0.75				1.71				1.90				1.50				1.79			
Lubuk Kuang	2.30	1.95	0.6062	0.3500	0.25	1.07	0.7286	0.4206	1.92	2.07	0.6972	0.4025	2.00	2.47	0.5479	0.3164	1.53	1.69	0.8558	0.4941	2.34	1.86	0.5246	0.3029
	2.30				1.65				2.83				3.07				2.61				1.94			
	1.25				1.30				1.46				2.33				0.92				1.30			
Kg Baapa	1.50	1.35	0.4500	0.2598	1.20	0.88	0.3547	0.2048	1.38	1.94	0.4851	0.2801	1.62	1.85	0.4784	0.2762	1.42	0.93	0.5232	0.3021	2.33	1.64	0.5968	0.3445
	1.70				0.95				2.21				1.53				0.38				1.25			
	0.84				0.50				2.23				2.40				1.00				1.35			
Sg Bera 1	0.50	0.55	0.3431	0.1981	0.50	0.43	0.0577	0.0333	0.33	0.54	0.3989	0.2303	0.83	0.94	0.1992	0.1150	0.57	0.42	0.1305	0.0754	0.46	0.40	0.1436	0.0829
	0.92				0.40				1.00				0.82				0.38				0.51			
	0.24				0.40				0.29				1.17				0.32				0.24			
Sg Bera 2	0.64	0.68	0.0586	0.0338	0.52	0.69	0.1652	0.0954	1.32	1.24	0.0929	0.0536	1.57	1.66	0.3092	0.1785	0.40	0.81	0.3881	0.2241	0.40	0.66	0.2290	0.1322
	0.75				0.70				1.14				1.40				1.17				0.73			
	0.66				0.85				1.27				2.00				0.87				0.84			
Paya Kelantong	0.53	0.46	0.1044	0.0603	0.18	0.15	0.0462	0.0267	0.73	0.47	0.2346	0.1354	0.45	0.48	0.0289	0.0167	0.22	0.26	0.0458	0.0265	0.33	0.24	0.1026	0.0593
	0.34				0.18				0.39				0.50				0.25				0.27			
	0.51				0.10				0.28				0.50				0.31				0.13			
Sg Tembangan	1.20	0.82	0.3851	0.2223	0.15	0.17	0.0681	0.0393	0.79	0.95	0.2409	0.1391	1.28	1.27	0.0808	0.0467	0.35	0.29	0.0849	0.0490	0.30	0.41	0.2593	0.1497
	0.43				0.12				0.84				1.34				0.23				0.23			
	0.83				0.25				1.23				1.18								0.71			

ppendix 3. Measurement of turbidity for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Average	SD	Standard error
Tanjung Kuin	1.65	1.32	0.2930	0.1691	1.00	0.92	0.1443	0.0833	1.32	1.61	0.3523	0.2034	1.80	1.77	0.0379	0.0219	0.94	0.87	0.0608	0.0351	1.32	1.39	0.1701	0.0982
	1.10				1.00				2.00				1.73				0.84				1.58			
	1.20				0.75				1.50				1.79				0.83				1.26			
Sungai Tasik	0.67	0.61	0.0603	0.0348	1.01	0.99	0.0208	0.0120	1.19	1.20	0.0808	0.0467	1.45	1.50	0.0624	0.0361	0.89	0.85	0.0473	0.0273	1.27	1.30	0.0351	0.0203
	0.60				0.98				1.29				1.57				0.80				1.34			
	0.55				0.97				1.13				1.48				0.87				1.30			
Lubuk Pathir	1.28	1.06	0.1940	0.1120	0.85	0.92	0.0764	0.0441	1.89	1.90	0.0404	0.0233	1.50	1.71	0.3381	0.1952	0.80	0.88	0.0764	0.0441	1.43	1.44	0.0115	0.0067
	0.93				1.00				1.86				1.53				0.90				1.45			
	0.96				0.90				1.94				2.10				0.95				1.45			
Tanjung Papan	0.79	0.78	0.0458	0.0265	0.53	0.63	0.0874	0.0504	1.41	1.39	0.0289	0.0167	1.37	1.46	0.0808	0.0467	0.99	1.09	0.1790	0.1033	1.48	1.62	0.1193	0.0689
	0.73				0.70				1.41				1.51				0.99				1.70			
	0.82				0.65				1.36				1.51				1.30				1.67			
Kampung Benal					0.40	0.46	0.0529	0.0306	1.30	1.17	0.2055	0.1186	1.22	1.18	0.0351	0.0203	0.95	0.86	0.0794	0.0458	1.40	1.44	0.0513	0.0296
					0.50				1.27				1.15				0.83				1.50			
					0.48				0.93				1.18				0.80				1.43			
Kuala Sungai Tembangan					0.45	0.51	0.0513	0.0296	-	1.23	0.0424	0.0245	1.24	1.28	0.2074	0.1198	0.83	0.76	0.1607	0.0928	1.61	1.38	0.2042	0.1179
					0.55				1.26				1.50				0.88				1.22			
					0.52				1.20				1.09				0.58				1.31			
Lubuk Kuang	1.20	0.98	0.1929	0.1114	-	0.75	0.0000	0.0000	-	2.19	-	-	1.17	1.19	0.0529	0.0306	0.91	0.71	0.2159	0.1247	1.65	1.54	0.3156	0.1822
	0.84				0.75				2.19				1.15				0.73				1.78			
	0.90				0.75				-				1.25				0.48				1.18			
Kg Baapa	0.58	0.59	0.0603	0.0348	0.80	0.78	0.0354	0.0204	-	1.90	-	-	1.10	1.14	0.0473	0.0273	0.84	0.81	0.0424	0.0245	1.55	1.37	0.2616	0.1511
	0.65				0.75				-				1.19				-				-			
	0.53				-				1.90				1.12				0.78				1.18			
Sg Bera 1	-	0.68	-	-	-	-	-	-	-	-	-	-	0.43	0.42	0.0100	0.0058	-	-	-	-	-	-	-	-
	0.68				-				0.80				0.42				-				-			
	-				-				-				0.41				-				-			
Sg Bera 2	-	-	0.0495	0.0286	-	0.49	0.0141	0.0082	0.88	0.88	0.0153	0.0088	0.67	0.67	0.0300	0.0173	-	0.55	0.0071	0.0041	-	0.57	0.0212	0.0122
	0.57				0.50				0.90				0.64				0.54				0.58			
	0.50				0.48				0.87				0.70				0.55				0.55			
Paya Kelantong	-	-	-	-	-	-	-	-	-	-	-	-	0.41	0.43	0.0283	0.0163	0.15	0.18	0.0354	0.0204	-	-	-	-
	-				-				-				0.45				0.20				-			
	-				-				-				-				-				-			
Sg Tembangan	0.63	-	-	-	0.10	0.14	0.0566	0.0327	-	0.80	-	-	0.40	0.43	0.0306	0.0176	-	0.33	-	-	-	-	-	-
	-				-				-				0.46				-				-			
	-				0.18				0.80				0.42				0.33				-			

pendix 4. Measurement of conductivity for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error
Tanjung Kuin	42.1	42.3	0.2000	0.1155	72.5	72.4	0.3055	0.1764	54.9	55.0	0.2082	0.1202	66.4	64.2	2.8919	1.6697	49.2	48.2	0.8718	0.5033	-	-	-	-
	42.3				72.7				55.2				65.2				47.8				-			
	42.5				72.1				54.8				60.9				47.6				-			
Sungai Tasik	44.7	44.8	0.1732	0.1000	72.1	72.0	0.2309	0.1333	55.7	55.8	0.0577	0.0333	57.1	56.1	1.7321	1.0000	47.8	47.7	0.1000	0.0577	-	-	-	-
	45.0				72.1				55.8				54.1				47.7				-			
	44.7				71.7				55.8				57.1				47.6				-			
Lubuk Pathir	43.1	42.9	0.6807	0.3930	11.2	11.2	0.0473	0.0273	56.1	55.5	1.2741	0.7356	60.9	62.3	1.2166	0.7024	47.6	47.8	0.2517	0.1453	-	-	-	-
	43.4				11.2				56.3				63.1				47.8				-			
	42.1				11.1				54.0				62.9				48.1				-			
Tanjung Papan	41.4	41.5	0.4583	0.2646	65.3	65.0	0.2517	0.1453	51.5	51.4	0.1000	0.0577	55.7	53.6	1.8583	1.0729	46.9	47.1	0.2082	0.1202	-	-	-	-
	41.1				65.0				51.3				52.3				47.0				-			
	42.0				64.8				51.4				52.7				47.3				-			
Kampung Benal	[illegible]				62.5	63.4	0.8083	0.4667	48.8	48.9	0.0577	0.0333	51.1	50.8	0.4163	0.2404	46.2	46.2	0.2517	0.1453	-	-	-	-
					64.1				48.9				50.3				46.5				-			
					63.5				48.9				50.9				46.0				-			
Kuala Sungai Tembangan					64.8	61.9	2.5357	1.4640	55.1	56.7	3.0665	1.7704	52.0	53.3	1.2220	0.7055	46.0	46.2	0.2887	0.1667	-	-	-	-
					60.8				54.7				53.6				46.0				-			
					60.1				60.2				54.4				46.5				-			
Lubuk Kuang	39.1	39.0	0.1155	0.0667	51.1	49.4	1.4742	0.8511	86.2	86.7	1.6653	0.9615	55.2	54.5	0.6557	0.3786	39.8	40.8	1.8193	1.0504	-	-	-	-
	38.9				48.3				85.4				53.9				42.9				-			
	39.1				48.9				88.6				54.4				39.7				-			
Kg Baapa	40.1	40.0	0.3606	0.2082	43.3	43.6	0.2517	0.1453	84.7	84.7	0.0577	0.0333	53.4	54.0	0.5508	0.3180	37.1	38.0	1.0149	0.5859	-	-	-	-
	39.6				43.6				84.7				54.3				39.1				-			
	40.3				43.8				84.6				54.4				37.8				-			
Sg Bera 1	39.2	39.1	0.3055	0.1764	34.4	34.5	0.1155	0.0667	30.1	30.0	0.1000	0.0577	21.7	21.6	0.1365	0.0788	20.9	21.0	0.2967	0.1713	-	-	-	-
	38.8				34.6				30.0				21.5				20.8				-			
	39.4				34.6				29.9				21.5				21.4				-			
Sg Bera 2	44.5	44.1	0.4583	0.2646	64.8	60.1	4.6014	2.6566	47.0	46.9	0.1732	0.1000	41.5	41.3	0.2000	0.1155	38.0	37.9	0.1000	0.0577	-	-	-	-
	44.2				60.0				46.7				41.1				37.8				-			
	43.6				55.6				47.0				41.3				37.9				-			
Paya Kelantong	129.6	129.6	0.5508	0.3180	74.9	78.5	4.0501	2.3383	77.0	79.2	2.5534	1.4742	63.3	64.2	1.6166	0.9333	82.6	95.2	14.4395	8.3366	-	-	-	-
	129.0				77.8				78.6				63.3				92.1				-			
	130.1				82.9				82.0				66.1				111.0				-			
Sg Tembangan	77.3	77.1	0.4041	0.2333	91.1	90.4	1.2124	0.7000	59.8	58.6	1.6073	0.9280	57.6	57.1	1.2288	0.7095	-	-	-	-	-	-	-	-
	76.6				91.1				59.3				58.0				-				-			
	77.3				89.0				56.8				55.7				-				-			

ppendix 5. Measurement of pH for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun -98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error
Tanjung Kuin	6.74	6.73	0.0231	0.0133	5.14	5.17	0.0361	0.0208	5.84	5.81	0.0643	0.0371	4.3	4.5	0.2121	0.1225	5.72	5.63	0.1007	0.0581	5.59	5.58	0.021	0.0120
	6.74				5.16				5.74				4.6				5.64				5.56			
	6.70				5.21				5.86				-				5.52				5.60			
Sungai Tasik	6.18	6.18	0.0200	0.0115	4.89	4.93	0.0400	0.0231	5.55	5.60	0.0503	0.0291	4.6	4.7	0.2309	0.1333	5.55	5.58	0.0737	0.0426	4.61	5.23	0.537	0.3102
	6.20				4.93				5.65				4.6				5.52				5.52			
	6.16				4.97				5.59				5.0				5.66				5.56			
Lubuk Pathir	6.33	6.30	0.0416	0.0240	5.39	5.09	0.2650	0.1530	5.62	5.64	0.0252	0.0145	5.0	5.1	0.0577	0.0333	5.60	5.69	0.1589	0.0917	5.55	5.57	0.04	0.0233
	6.25				4.88				5.67				5.1				5.59				5.55			
	6.31				5.01				5.64				5.1				5.87				5.62			
Tanjung Papan	6.44	6.57	0.1758	0.1015	5.36	5.39	0.1617	0.0933	5.40	5.43	0.0252	0.0145	-	-	-	-	5.40	5.41	0.0755	0.0436	5.17	5.22	0.05	0.0289
	6.77				5.56				5.43				-				5.49				5.22			
	6.50				5.24				5.45				-				5.34				5.27			
Kampung Benal					5.40	5.17	0.2207	0.1274	5.56	5.50	0.0569	0.0328	-	-	-	-	5.72	5.55	0.1443	0.0833	5.17	5.23	0.057	0.0328
					5.15				5.48				-				5.47				5.28			
					4.96				5.45				-				5.47				5.25			
Kuala Sungai Tembangan					5.03	4.95	0.0700	0.0404	5.44	5.43	0.0503	0.0291	-	-	-	-	5.40	5.44	0.0839	0.0484	5.20	5.38	0.225	0.1299
					4.92				5.38				-				5.39				5.63			
					4.90				5.48				-				5.54				5.30			
Lubuk Kuang	6.12	6.07	0.0757	0.0437	5.21	5.19	0.0721	0.0416	-	-	-	-	-	-	-	-	5.54	5.59	0.0611	0.0353	5.17	5.55	0.335	0.1932
	6.10				5.25				-				-				5.58				5.81			
	5.98				5.11				-				-				5.66				5.66			
Kg Baapa	6.29	6.09	0.1861	0.1074	1.20	0.88	0.3547	0.2048	-	-	-	-	-	-	-	-	5.61	5.64	0.0252	0.0145	5.47	5.75	0.347	0.2002
	5.92				0.95				-				-				5.66				5.65			
	6.07				0.50				-				-				5.64				6.14			
Sg Bera 1	5.93	5.95	0.0208	0.0120	5.61	5.69	0.1159	0.0669	5.65	5.64	0.01	0.0058	-	-	-	-	5.83	5.81	0.0321	0.0186	6.07	5.98	0.078	0.0448
	5.94				5.82				5.64				-				5.77				5.96			
	5.97				5.63				5.63				-				5.82				5.92			
Sg Bera 2	6.24	5.97	0.2312	0.1335	5.47	5.55	0.0723	0.0418	5.62	5.66	0.0586	0.0338	-	-	-	-	5.84	5.71	0.1419	0.0819	5.40	5.78	0.349	0.2017
	5.83				5.60				5.64				-				5.74				5.84			
	5.85				5.59				5.73				-				5.56				6.09			
Paya Kelantong	5.49	5.36	0.1258	0.0726	5.79	5.91	0.1311	0.0757	-	-	-	-	-	-	-	-	6.29	6.43	0.1563	0.0902	5.73	5.77	0.106	0.0611
	5.34				5.89				-				-				6.41				5.69			
	5.24				6.05				-				-				6.60				5.89			
Sg Tembangan	6.06	5.68	0.4186	0.2417	5.68	5.69	0.0603	0.0348	-	-	-	-	-	-	-	-	6.17	6.13	0.0451	0.0260	6.10	6.27	0.409	0.2359
	5.74				5.75				-				-				6.13				6.74			
	5.23				5.63				-				-				6.08				5.98			

ppendix 6. Measurement of temperature for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Average	SD	Standard error
Tanjung Kuin	28.0	28.5	0.4163	0.2404	34.0	33.3	0.5774	0.3333	32.0	31.9	0.1000	0.0577	28.8	28.7	0.0577	0.0333	28.5	28.5	0.0000	0.0000	30.7	30.2	0.5568	0.3215
	28.6				33.0				31.9				28.7				28.5				29.6			
	28.8				33.0				31.8				28.7				28.5				30.3			
Sungai Tasik	26.7	26.7	0.0000	0.0000	32.5	32.5	0.0000	0.0000	31.7	31.7	0.0000	0.0000	27.6	27.6	0.0000	0.0000	28.7	28.5	0.2887	0.1667	30.2	30.5	0.8888	0.5132
	26.7				32.5				31.7				27.6				28.2				29.8			
	26.7				32.5				31.7				27.6				28.7				31.5			
Lubuk Pathir	27.0	27.0	0.0000	0.0000	31.0	32.0	0.8660	0.5000	31.9	31.9	0.0577	0.0333	28.0	28.1	0.0577	0.0333	28.8	28.7	0.1732	0.1000	25.0	24.8	1.1590	0.6692
	27.0				32.5				31.9				28.1				28.8				25.9			
	27.0				32.5				32.0				28.1				28.5				23.6			
Tanjung Papan	27.8	28.7	1.0149	0.5859	30.7	30.9	0.1732	0.1000	31.0	31.0	0.0000	0.0000	27.9	27.8	0.0577	0.0333	27.3	27.3	0.1528	0.0882	30.0	29.4	0.6028	0.3480
	29.8				31.0				31.0				27.8				27.5				28.8			
	28.5				31.0				31.0				27.8				27.2				29.5			
Kampung Benal					29.5	29.8	0.2887	0.1667	30.1	30.1	0.0577	0.0333	27.8	27.4	0.3786	0.2186	26.6	27.0	0.5508	0.3180	27.4	27.3	0.1000	0.0577
					30.0				30.1				27.2				26.7				27.3			
					30.0				30.2				27.1				27.6				27.2			
Kuala Sungai Tembangan					30.5	29.9	0.6557	0.3786	29.7	29.4	0.3606	0.2082	28.8	28.4	0.5132	0.2963	26.2	27.3	0.9292	0.5364	27.7	27.8	0.1000	0.0577
					29.2				29.5				28.5				27.7				27.9			
					30.0				29.0				27.8				27.9				27.8			
Lubuk Kuang	28.8	29.2	0.3606	0.2082	31.5	31.5	0.0000	0.0000	28.8	28.8	0.0000	0.0000	26.6	26.5	0.1155	0.0667	29.7	28.9	1.2166	0.7024	27.3	27.3	0.0000	0.0000
	29.3				31.5				28.8				26.6				27.5				27.3			
	29.5				31.5				28.8				26.4				29.5				27.3			
Kg Baapa	26.8	26.5	0.2646	0.1528	31.0	31.0	0.0000	0.0000	27.8	27.8	0.0577	0.0333	25.7	25.4	0.2309	0.1333	28.9	28.8	0.3215	0.1856	26.8	27.0	0.2082	0.1202
	26.3				31.0				27.8				25.3				28.4				27.1			
	26.4				31.0				27.7				25.3				29.0				27.2			
Sg Bera 1	25.3	25.3	0.0000	0.0000	29.0	28.2	0.7638	0.4410	28.5	28.5	0.0577	0.0333	25.3	25.3	0.0000	0.0000	27.1	26.8	0.2646	0.1528	27.3	28.0	1.0214	0.5897
	25.3				28.0				28.4				25.3				26.7				27.6			
	25.3				27.5				28.5				25.3				26.6				29.2			
Sg Bera 2	25.9	26.0	0.2646	0.1528	30.0	30.8	0.7638	0.4410	30.7	30.7	0.0000	0.0000	26.8	26.7	0.0577	0.0333	28.0	29.2	1.0116	0.5840	29.3	29.3	0.0577	0.0333
	25.8				31.0				30.7				26.7				29.7				29.3			
	26.3				31.5				30.7				26.7				29.8				29.4			
Paya Kelantong	26.7	26.5	1.0149	0.5859	29.5	30.2	0.7638	0.4410	29.0	28.8	0.4933	0.2848	26.7	26.7	0.0000	0.0000	29.1	28.5	1.7214	0.9939	29.6	29.2	0.7506	0.4333
	27.4				30.0				29.1				26.7				29.9				29.6			
	25.4				31.0				28.2				26.7				26.6				28.3			
Sg Tembangan	25.3	25.6	0.7572	0.4372	29.0	29.2	0.7638	0.4410	26.7	26.7	0.0577	0.0333	25.8	25.8	0.1528	0.0882	27.0	26.6	1.4422	0.8327	29.1	28.1	0.8718	0.5033
	25.1				28.5				26.8				25.7				25.0				27.7			
	26.5				30.0				26.7				26.0				27.8				27.5			

ppendix 7. Measurement of dissolved oxygen for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error	Value	Mean	SD	Standard error
Tanjung Kuin	6.1	5.8	0.5774	0.3333	3.70	3.4	0.2646	0.1528	4.10	4.6	0.4359	0.2517	2.80	2.8	0.3000	0.1732	3.20	3.4	0.2517	0.1453	4.60	4.6	0.0577	0.0333
	5.1				3.30				4.90				3.10				3.40				4.70			
	6.1				3.20				4.80				2.50				3.70				4.60			
Sungai Tasik	2.5	2.5	0.0000	0.0000	2.45	2.5	0.0500	0.0289	3.00	3.0	0.0000	0.0000	2.30	2.3	0.0577	0.0333	2.20	2.3	0.2309	0.1333	3.50	3.4	0.1000	0.0577
	2.5				2.55				3.00				2.30				2.20				3.30			
	2.5				2.50				3.00				2.20				2.60				3.40			
Lubuk Pathir	4.2	4.1	0.0577	0.0333	2.50	2.3	0.2887	0.1667	3.70	3.8	0.0577	0.0333	2.50	2.5	0.0577	0.0333	2.60	2.9	0.2517	0.1453	4.80	5.0	0.3786	0.2186
	4.1				2.50				3.80				2.50				2.90				4.70			
	4.1				2.00				3.80				2.40				3.10				5.40			
Tanjung Papan	3.9	3.8	0.1528	0.0882	1.10	1.1	0.1000	0.0577	2.10	2.1	0.0577	0.0333	2.65	2.0	0.5795	0.3346	2.50	2.3	0.1528	0.0882	2.10	2.1	0.0577	0.0333
	3.6				1.00				2.00				1.70				2.20				2.20			
	3.8				1.20				2.10				1.60				2.30				2.10			
Kampung Benal					2.00	2.0	0.1528	0.0882	3.20	3.2	0.0577	0.0333	1.80	1.7	0.1155	0.0667	2.80	2.7	0.1000	0.0577	2.00	2.1	0.1732	0.1000
					2.20				3.20				1.80				2.60				2.00			
					1.90				3.10				1.60				2.70				2.30			
Kuala Sungai Tembangan					2.50	2.5	0.1528	0.0882	3.10	3.3	0.2517	0.1453	2.20	2.1	0.3606	0.2082	2.00	2.1	0.1000	0.0577	2.30	2.2	0.1000	0.0577
					2.70				3.60				1.70				2.20				2.20			
					2.40				3.30				2.40				2.10				2.10			
Lubuk Kuang	4.7	5.2	0.4509	0.2603	3.20	3.7	0.4770	0.2754	3.90	3.7	0.5292	0.3055	2.20	2.2	0.0577	0.0333	3.30	3.2	0.1155	0.0667	2.30	2.4	0.1528	0.0882
	5.2				4.15				4.10				2.20				3.30				2.60			
	5.6				3.60				3.10				2.10				3.10				2.40			
Kg Baapa	3.6	3.6	0.1528	0.0882	5.12	5.2	0.0462	0.0267	4.00	4.1	0.1155	0.0667	2.3	2.3	0.0577	0.0333	4.20	3.8	0.4509	0.2603	2.80	2.5	0.2517	0.1453
	3.7				5.20				4.00				2.3				3.30				2.50			
	3.4				5.20				4.20				2.4				3.80				2.30			
Sg Bera 1	2.4	2.3	0.1732	0.1000	2.65	2.8	0.1258	0.0726	2.80	2.9	0.1000	0.0577	3.2	3.4	0.1732	0.1000	3.50	3.3	0.4726	0.2728	1.60	1.8	0.1528	0.0882
	2.4				2.80				2.90				3.5				2.80				1.90			
	2.1				2.90				3.00				3.5				3.70				1.80			
Sg Bera 2	3.5	3.3	0.2517	0.1453	3.90	3.5	0.3464	0.2000	3.60	3.7	0.1155	0.0667	2.2	2.2	0.0577	0.0333	3.3	3.4	0.1528	0.0882	3.9	3.9	0.1528	0.0882
	3.0				3.30				3.80				2.2				3.4				4.0			
	3.3				3.30				3.80				2.1				3.6				3.7			
Paya Kelantong	3.2	2.7	0.8083	0.4667	2.10	2.1	0.1528	0.0882	1.60	1.1	0.7000	0.4041	1.0	1.1	0.0577	0.0333	0.5	0.4	0.1000	0.0577	2.1	2.2	0.9074	0.5239
	3.2				2.00				1.40				1.1				0.4				3.2			
	1.8				2.30				0.30				1.1				0.3				1.4			
Sg Tembangan	6.2	4.5	1.5144	0.8743	1.60	1.8	0.4041	0.2333	2.90	2.8	0.2646	0.1528	3.1	2.9	0.2517	0.1453	1.5	2.0	0.4726	0.2728	3.4	3.6	0.3215	0.1856
	3.8				1.60				3.00				2.9				2.4				3.5			
	3.4				2.30				2.50				2.6				2.2				4.0			

ppendix 8. Measurement of chlorophyll-a for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value	Mean	Std deviation	Std error	Value	Mean	Std deviation	Std error	Value	Mean	Std deviation	Std error	Value	Mean	Std deviation	Std error	Value	Mean	Std deviation	Std error	Value	Mean	Std deviation	Std error
Tanjung Kuin	5.3503				0.9883				1.6148				0.3483				0.4463				2.4758			
	5.0652	5.5701	0.6436	0.3716	0.7659	0.7589	0.2330	0.1345	1.5356	1.6395	0.1182	0.0682	0.1515	0.2208	0.1105	0.0638	0.4306	0.4387	0.0079	0.0045	2.2543	2.2689	0.2000	0.1154
	6.2947				0.5225				1.7681				0.1628				0.4391				2.0767			
Sungai Tasik	4.4180				1.1540				0.6419				0.0108				0.3629				3.0704			
	2.5618	3.5473	0.9334	0.5389	1.1860	1.1398	0.0548	0.0316	0.7943	0.7509	0.0950	0.0549	0.1615	0.1044	0.0817	0.0472	0.3883	0.4455	0.1218	0.0703	2.3173	2.4675	0.5436	0.3138
	3.6622				1.0793				0.8164				0.1409				0.5854				2.0148			
Lubuk Pathir	7.1925				0.9756				0.7879				0.1256				0.2964				2.9934			
	9.2351	7.3437	1.8206	1.0511	1.0492	0.8800	0.2322	0.1341	1.2282	0.9616	0.2343	0.1353	0.2517	0.1859	0.0632	0.0365	0.3144	0.2556	0.0868	0.0501	7.4502	3.9496	3.1339	1.8094
	5.6035				0.6153				0.8689				0.1804				0.1559				1.4051			
Tanjung Papan	2.9876				1.0395				0.4378				0.3539				0.1584				1.3618			
	6.5101	4.0647	2.1228	1.2256	0.4450	0.6898	0.3108	0.1794	0.4391	0.4464	0.0138	0.0080	0.1034	0.2778	0.1515	0.0875	0.1185	0.1628	0.0467	0.0270	0.6918	0.8601	0.4423	0.2554
	2.6965				0.5849				0.4623				0.3763				0.2116				0.5266			
Kampung Benal					0.4361				0.4375				0.2720				0.2256				0.6056			
					0.4818	0.4711	0.0310	0.0179	0.3897	0.3965	0.0381	0.0220	0.1533	0.1649	0.1018	0.0587	0.2493	0.2550	0.0326	0.0188	0.6273	0.6535	0.0651	0.0376
					0.4953				0.3622				0.0695				0.2901				0.7276			
Kuala Sungai					0.4180				0.3527				0.4652				1.0763				1.1661			
Tembangan					0.4113	0.4332	0.0322	0.0186	0.4240	0.4153	0.0588	0.0340	0.0871	0.2000	0.2305	0.1331	0.2530	0.4971	0.5036	0.2908	0.8554	0.9404	0.1974	0.1140
					0.4702				0.4693				0.0478				0.1622				0.7997			
Lubuk Kuang	2.8567				1.7470				0.4827				1.2600				0.0973				0.7774			
	7.3589	5.9786	2.7097	1.5644	0.6385	1.0870	0.5838	0.3370	0.7332	0.5695	0.1418	0.0819	0.5097	0.6384	0.5682	0.3281	0.3950	0.2089	0.1623	0.0937	0.6761	0.6838	0.0899	0.0519
	7.7202				0.8754				0.4927				0.1456				0.1344				0.5981			
Kg Baapa	2.5648				0.7824				3.2770				-0.1154				0.4821				1.1287			
	2.0557	2.7016	0.7240	0.4180	0.6199	1.8696	2.0255	1.1694	0.8021	1.7385	1.3428	0.7753	0.0269	0.1017	0.2625	0.1516	0.2233	0.3700	0.1328	0.0767	1.4436	0.8939	0.6974	0.4027
	3.4842				4.2066				1.1366				0.3934				0.4045				0.1094			
Sg Bera 1	4.7311				0.1778				0.1210				-0.0741				0.1250				0.3389			
	4.1042	5.2200	1.4245	0.8225	0.1204	0.1245	0.0513	0.0296	0.0479	0.0811	0.0370	0.0214	-0.0776	-0.1127	0.0638	0.0368	0.0628	0.0729	0.0479	0.0277	0.5208	0.3588	0.1531	0.0884
	6.8246				0.0754				0.0742				-0.1863				0.0308				0.2165			
Sg Bera 2	5.6860				0.4695				0.6585				-0.0109				0.0744				1.6070			
	7.4172	6.5362	0.8660	0.5000	0.8649	0.5895	0.2391	0.1381	0.4142	0.5167	0.1268	0.0732	-0.0651	-0.0253	0.0350	0.0202	0.1663	0.1205	0.0459	0.0265	0.5352	1.2205	0.5951	0.3436
	6.5052				0.4341				0.4773				0.0002				0.1210				1.5194			
Paya Kelantong	2.6404				0.3208				0.8860				-0.0489				0.4169				0.7216			
	3.7608	2.8526	0.8229	0.4751	1.1073	0.6303	0.4192	0.2420	1.5900	1.1197	0.4073	0.2352	-0.0538	-0.0641	0.0223	0.0129	0.8600	0.9644	0.6064	0.3501	2.2218	1.3730	0.7693	0.4442
	2.1566				0.4629				0.8830				-0.0897				1.6162				1.1755			
Sg Tembangan	5.4122				1.1727				0.2073				-0.0670				0.1338				0.1805			
	2.9484	3.5535	1.6419	0.9480	2.0919	1.3587	0.6602	0.3812	0.2150	0.2866	0.1307	0.0755	-0.1135	-0.0453	0.0812	0.0469	0.1556	0.1453	0.0110	0.0063	1.2480	0.5709	0.5887	0.3399
	2.3000				0.8115				0.4375				0.0446				0.1464				0.2841			

ppendix 9. Measurement of dissolved orthophosphate for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviatior	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error
Tanjung Kuin	0.0009	0.0006	0.0002	0.0001	0.0035	0.0031	0.0019	0.0011	0.0034	0.0016	0.0015	0.0009	0.0173	0.0065	0.0094	0.0054	0.0039	0.0019	0.0017	0.0010	0.0009	0.0013	0.0004	0.0002
	0.0004				0.0047				0.0008				0.0015				0.0009				0.0012			
	0.0005				0.0010				0.0007				0.0007				0.0009				0.0017			
Sungai Tasik	0.0011	0.0013	0.0006	0.0004	0.0007	0.0005	0.0001	0.0001	0.0002	0.0002	0.0001	0.0000	0.0004	0.0006	0.0004	0.0002	0.0005	0.0006	0.0002	0.0001	0.0008	0.0008	0.0000	0.0000
	0.0009				0.0005				0.0002				0.0004				0.0008				0.0008			
	0.0021				0.0004				0.0001				0.0011				0.0004				0.0008			
Lubuk Pathir	0.0021	0.0020	0.0005	0.0003	0.0004	0.0004	0.0001	0.0000	0.0002	0.0002	0.0000	0.0000	0.0006	0.0006	0.0001	0.0000	0.0005	0.0004	0.0001	0.0001	0.0008	0.0007	0.0001	0.0001
	0.0014				0.0003				0.0002				0.0005				0.0002				0.0006			
	0.0024				0.0004				0.0002				0.0005				0.0004				0.0006			
Tanjung Papan	0.0026	0.0028	0.0002	0.0001	0.0003	0.0005	0.0003	0.0001	0.0001	0.0000	0.0000	0.0000	0.0004	0.0005	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0008	0.0006	0.0001	0.0001
	0.0030				0.0007				0.0000				0.0005				0.0001				0.0005			
	0.0027				0.0004				0.0000				0.0006				0.0001				0.0006			
Kampung Benal					0.0151	0.0095	0.0048	0.0028	0.0000	0.0001	0.0001	0.0001	0.0002	0.0003	0.0001	0.0001	0.0002	0.0004	0.0002	0.0001	0.0004	0.0003	0.0001	0.0001
					0.0069				0.0002				0.0004				0.0004				0.0004			
					0.0065				0.0000				0.0002				0.0006				0.0001			
Kuala Sungai Tembangan					0.0033	0.0013	0.0018	0.0010	0.0001	0.0001	0.0000	0.0000	0.0003	0.0003	0.0002	0.0001	0.0005	0.0005	0.0000	0.0000	0.0008	0.0007	0.0001	0.0001
					0.0001				0.0000				0.0002				0.0005				0.0006			
					0.0005				0.0001				0.0005				0.0005				0.0006			
Lubuk Kuang	0.0023	0.0022	0.0001	0.0000	0.0004	0.0005	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0004	0.0004	0.0001	0.0000	0.0005	0.0005	0.0001	0.0001	0.0006	0.0007	0.0002	0.0001
	0.0023				0.0007				0.0000				0.0003				0.0005				0.0009			
	0.0021				0.0005				0.0000				0.0005				0.0003				0.0006			
Kg Baapa	0.0020	0.0020	0.0001	0.0001	0.0003	0.0004	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0002	0.0000	0.0000	0.0010	0.0010	0.0000	0.0000	0.0006	0.0012	0.0010	0.0006
	0.0019				0.0005				0.0000				0.0002				0.0010				0.0024			
	0.0021				0.0006				0.0001				0.0002				0.0010				0.0007			
Sg Bera 1	0.0025	0.0022	0.0003	0.0002	0.0007	0.0005	0.0001	0.0001	0.0001	0.0003	0.0004	0.0002	0.0007	0.0005	0.0002	0.0001	0.0011	0.0007	0.0004	0.0002	0.0007	0.0008	0.0001	0.0001
	0.0022				0.0005				0.0000				0.0003				0.0005				0.0008			
	0.0019				0.0004				0.0007				0.0005				0.0004				0.0008			
Sg Bera 2	0.0019	0.0014	0.0004	0.0003	0.0007	0.0006	0.0001	0.0001	0.0000	0.0001	0.0000	0.0000	0.0005	0.0004	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0010	0.0010	0.0001	0.0000
	0.0010				0.0005				0.0001				0.0003				0.0001				0.0009			
	0.0015				0.0005				0.0000				0.0004				0.0001				0.0010			
Paya Kelantong	0.0011	0.0012	0.0001	0.0001	0.0004	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003	0.0003	0.0000	0.0000	0.0005	0.0005	0.0000	0.0000	0.0007	0.0007	0.0002	0.0001
	0.0013				0.0006				0.0001				0.0003				0.0005				0.0009			
	0.0014				0.0006				0.0002				0.0003				0.0005				0.0005			
Sg Tembangan	0.0013	0.0013	0.0000	0.0000	0.0006	0.0005	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0003	0.0003	0.0000	0.0000	0.0004	0.0003	0.0001	0.0001	0.0005	0.0005	0.0000	0.0000
	0.0013				0.0005				0.0001				0.0003				0.0001				0.0004			
	0.0013				0.0005				0.0001				0.0003				0.0003				0.0005			

pendix 10. Measurement of ammoniacal nitrogen for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error	Value (mgL^{-1})	Mean	Std deviation	Std error
Tanjung Kuin	0.1654	0.1477	0.0205	0.0118	3.0960	1.9780	1.0526	0.6077	0.6377	0.3724	0.2350	0.1357	0.9059	1.9697	1.0395	0.6002	0.8623	0.7190	0.1701	0.0982	3.0275	1.0092	1.7479	1.0092
	0.1526				1.8321				0.1902				2.9831				0.5309				0.0000			
	0.1252				1.0060				0.2893				2.0201				0.7637				0.0000			
Sungai Tasik	0.0636	0.1326	0.0630	0.0364	2.2411	1.7803	0.5923	0.3420	0.1934	0.1753	0.0342	0.0197	2.6127	2.8247	1.1110	0.6414	1.1444	0.5200	0.5512	0.3182	1.0686	0.8207	0.2423	0.1399
	0.1872				1.1122				0.1359				1.8349				0.1010				0.5844			
	0.1469				1.9875				0.1966				4.0264				0.3146				0.8091			
Lubuk Pathir	0.0612	0.0558	0.0047	0.0027	2.2534	1.6371	0.6460	0.3730	0.0656	0.1082	0.0532	0.0307	1.6775	2.8030	1.3965	0.8063	0.9499	0.6916	0.3359	0.1939	0.8502	0.3210	0.4618	0.2666
	0.0530				1.6930				0.1678				4.3659				0.8130				0.0000			
	0.0532				0.9649				0.0911				2.3658				0.3118				0.1129			
Tanjung Papan	0.0489	0.0615	0.0110	0.0063	2.3188	1.7394	0.7296	0.4213	0.1615	0.3255	0.2310	0.1334	2.2146	1.9419	0.2991	0.1727	0.4269	0.6642	0.2342	0.1352	0.0000	0.4360	0.3792	0.2189
	0.0688				0.9200				0.5897				1.6220				0.8951				0.6192			
	0.0668				1.9793				0.2254				1.9892				0.6706				0.6888			
Kampung Benal					1.5376	1.7039	0.8750	0.5052	0.2829	0.2607	0.0992	0.0573	1.3812	2.9132	2.0293	1.1716	0.6322	0.6195	0.0347	0.0200	0.0000	0.1020	0.1766	0.1020
					2.6501				0.3468				5.2148				0.6459				0.3059			
					0.9240				0.1522				2.1436				0.5802				0.0000			
Kuala Sungai Tembangan					1.9875	1.6480	0.6896	0.3981	0.4363	0.2872	0.1502	0.0867	1.3904	1.5828	0.3494	0.2017	1.0348	0.8732	0.1576	0.0910	0.0000	0.0000	0.0000	0.0000
					0.8545				0.1359				1.3719				0.7199				0.0000			
					2.1020				0.2893				1.9861				0.8650				0.0000			
Lubuk Kuang	0.0620	0.0581	0.0051	0.0030	0.0367	0.0196	0.0184	0.0107	0.1103	0.0666	0.0485	0.0280	2.4954	2.6374	0.2432	0.1404	0.3748	1.0555	1.0429	0.6021	1.3154	0.8548	0.7410	0.4278
	0.0523				0.0220				0.0144				2.9183				2.2562				1.2490			
	0.0600				0.0000				0.0752				2.4985				0.5355				0.0000			
Kg Baapa	0.0534	0.0522	0.0050	0.0029	0.0000	0.0088	0.0077	0.0044	0.1615	0.1146	0.0480	0.0277	1.9275	1.6641	0.3642	0.2103	0.7966	0.6633	0.2500	0.1444	0.9895	0.5805	0.5166	0.2982
	0.0564				0.0124				0.1167				1.2485				0.3748				0.0000			
	0.0467				0.0140				0.0656				1.8164				0.8185				0.7521			
Sg Bera 1	0.0412	0.0382	0.0030	0.0017	0.2696	0.6663	0.6348	0.3665	0.1934	0.1327	0.1024	0.0591	2.0232	2.0180	0.1343	0.0776	0.4241	1.1781	1.3178	0.7609	0.0000	0.3003	0.5201	0.3003
	0.0382				0.3309				0.1902				2.1497				2.6998				0.9009			
	0.0352				1.3985				0.0144				1.8812				0.4104				0.0000			
Sg Bera 2	0.0310	0.0194	0.0103	0.0060	0.0023	0.0023	0.0001	0.0001	0.1998	0.1284	0.0689	0.0398	2.1528	2.4234	0.5038	0.2909	1.1635	1.0403	0.1182	0.0682	0.6319	0.6625	0.3223	0.1861
	0.0157				0.0022				0.1231				2.1127				1.0293				0.3565			
	0.0114				0.0024				0.0624				3.0047				0.9280				0.9990			
Paya Kelantong	0.0026	0.0250	0.0220	0.0127	0.0013	0.0020	0.0006	0.0004	0.2765	0.2006	0.0751	0.0434	1.4553	2.1106	0.5832	0.3367	0.5967	0.7171	0.1279	0.0738	0.0000	0.9677	0.8710	0.5029
	0.0257				0.0024				0.1263				2.5726				0.8513				1.6889			
	0.0467				0.0024				0.1991				2.3041				0.7035				1.2142			
Sg Tembangan	0.0559	0.0537	0.0085	0.0049	0.0045	0.0044	0.0043	0.0025	0.0720	0.0816	0.0194	0.0112	1.5139	1.9481	0.5235	0.3022	1.9659	1.9823	0.8463	0.4886	0.9325	0.5552	0.4911	0.2835
	0.0443				0.0086				0.0688				2.5294				2.8367				0.0000			
	0.0608				0.0000				0.1039				1.8010				1.1444				0.7332			

ppendix 11. Measurement of nitrate for sampling stations in Tasek Bera (Apr - Oct 1998)

Station	Apr-98				May / Jun - 98				Jul-98				Aug-98				Sep-98				Oct-98			
	Value (ppm)	Mean	Std deviation	Std error	Value (ppm)	Mean	Std deviation	Std error	Value (ppm)	Mean	Std deviation	Std error	Value (ppm)	Mean	Std deviation	Std error	Value (ppm)	Mean	Std deviation	Std error	Value (ppm)	Mean	Std deviation	Std error
Tanjung Kuin	0.3187	0.2778	0.0601	0.0347	0.2733	0.2582	0.0274	0.0158	0.2509	0.2176	0.0289	0.0167	1.6500	1.5750	0.1061	0.0750	0.9400	0.9400	0.0000	0.0000	0.6400	0.6500	0.0141	0.0100
	0.2088				0.2266				0.2026				1.5000				0.9400				0.6600			
	0.3059				0.2749				0.1992															
Sungai Tasik	0.2760	0.2581	0.0350	0.0202	0.2539	0.3221	0.1409	0.0813	0.0476	0.0855	0.0379	0.0219	1.0100	1.0600	0.0707	0.0500	0.5700	0.5950	0.0354	0.0250	0.9700	0.9700	0.0000	0.0000
	0.2805				0.4841				0.1234				1.1100				0.6200				0.9700			
	0.2178				0.2282				0.0855															
Lubuk Pathir	0.2600	0.2295	0.0273	0.0157	0.2652	0.2400	0.0249	0.0144	0.1510	0.1280	0.0210	0.0122	2.1500	2.1500	0.0000	0.0000	0.6500	0.6150	0.0495	0.0350	0.9800	1.0300	0.0707	0.0500
	0.2074				0.2395				0.1096				2.1500				0.5800				1.0800			
	0.2212				0.2153				0.1234															
Tanjung Papan	0.3426	0.3351	0.0111	0.0064	0.3038	0.3113	0.0204	0.0118	0.7538	0.7400	0.0158	0.0091	0.1800	0.1800	0.0000	0.0000	0.3700	0.3700	0.0000	0.0000	0.5700	0.5900	0.0283	0.0200
	0.3404				0.2958				0.7228				0.1800				0.3700				0.6100			
	0.3224				0.3344				0.7434															
Kampung Benal					0.1864	0.1752	0.0098	0.0056	0.3990	0.3703	0.0293	0.0169	0.5400	0.4900	0.0707	0.0500	0.4900	0.5150	0.0354	0.0250	0.5650	0.5600	0.0071	0.0050
					0.1703				0.3404				0.4400				0.5400				0.5550			
					0.1689				0.3714															
Kuala Sungai Tembangan					0.2546	0.2291	0.0226	0.0130	0.2715	0.2853	0.0182	0.0105	0.6400	0.6400	0.0000	0.0000	0.4500	0.4550	0.0071	0.0050	0.6150	0.6300	0.0212	0.0150
					0.2118				0.2784				0.6400				0.4600				0.6450			
					0.2209				0.3060															
Lubuk Kuang	0.3361	0.3482	0.0229	0.0132	0.3531	0.3406	0.0112	0.0065	0.1096	0.0982	0.0560	0.0323	0.7300	0.7450	0.0212	0.0150	0.5100	0.5100	0.0000	0.0000	0.7300	0.7450	0.0212	0.0150
	0.3338				0.3313				0.0373				0.7600				0.5100				0.7600			
	0.3745				0.3376				0.1475															
Kg Baapa	0.3549	0.3938	0.0409	0.0236	0.1956	0.2434	0.0513	0.0296	0.1648	0.1406	0.0215	0.0124	0.4100	0.4350	0.0354	0.0250	0.5200	0.5500	0.0424	0.0300	0.7300	0.7100	0.0283	0.0200
	0.3899				0.2975				0.1234				0.4600				0.5800				0.6900			
	0.4365				0.2371				0.1338															
Sg Bera 1	0.2693	0.2945	0.0226	0.0130	0.2381	0.2325	0.0064	0.0037	0.1854	0.2026	0.0621	0.0359	0.7300	0.7050	0.0354	0.0250	1.3600	1.3550	0.0071	0.0050	0.6500	0.6500	0.0000	0.0000
	0.3011				0.2255				0.2715				0.6800				1.3500				0.6500			
	0.3130				0.2339				0.1510															
Sg Bera 2	0.3714	0.3397	0.0279	0.0161	0.0000	0.0000	0.0000	0.0000	0.1820	0.1969	0.0650	0.0375	0.7800	0.7800	0.0000	0.0000	0.7900	0.7350	0.0778	0.0550	0.8900	0.9750	0.1202	0.0850
	0.3187				0.0000				0.2681				0.7800				0.6800				1.0600			
	0.3290				0.0000				0.1406															
Paya Kelantong	0.1666	0.1257	0.0355	0.0205	0.1843	0.1986	0.0127	0.0073	0.0000	0.0000	0.0000	0.0000	5.6400	5.6000	0.0566	0.0400	0.4900	0.4900	0.0000	0.0000	0.3200	0.3375	0.0247	0.0175
	0.1037				0.2034				0.0000				5.5600				0.4900				0.3550			
	0.1067				0.2082				0.0000															
Sg Tembangan	0.2555	0.1713	0.0740	0.0427	0.0000	0.0013	0.0011	0.0006	0.0000	0.0000	0.0000	0.0000	0.3200	0.3200	0.0000	0.0000	0.2400	0.2750	0.0495	0.0350	0.4050	0.4100	0.0071	0.0050
	0.1417				0.0019				0.0000				0.3200				0.3100				0.4150			
	0.1166				0.0019				0.0000															

endix 12. Shannon-Weiner Diversity Index (H') for phytoplankton in Tasek Bera (April - September 1998)

on	Sampling station		Apr-98	May-98	Jul-98	Aug-98	Sep-98
	Tanjung Kuin	a	0.8187	0.8482	0.9480	0.8136	0.5659
		b	0.7508	0.9003	0.9277	0.9287	0.2173
		c	0.8978	0.9506	0.9654	0.7915	0.3768
		Total	**0.8772**	**1.0149**	**1.0452**	**0.9726**	**0.5770**
	Sungai Tasek	a	0.8535	0.9621	1.0400	0.6930	0.2775
		b	0.9581	0.8539	1.0030	0.8164	0.5184
		c	1.0078	0.9329	1.0527	0.7967	0.6021
		Total	**0.8865**	**0.9990**	**1.1727**	**0.9411**	**0.7152**
	Lubuk Pathir	a	1.0111	0.7778	1.1661	0.4163	0.3010
		b	1.0472	0.7253	1.0734	0.6525	0.1000
		c	0.9899	0.5435	1.1881	0.7054	0.4515
		Total	**1.0703**	**0.7192**	**1.2897**	**0.6760**	**0.2057**
	Tanjung Papan	a	0.8499	0.6693	0.7967	1.0405	0.6778
		b	0.723	0.7027	0.7283	0.8278	0.4771
		c	0.787	1.0900	0.7471	1.0880	0.6990
		Total	**0.9545**	**1.1094**	**1.0885**	**1.3164**	**1.0171**
	Kampung Benal	a		0.9616	0.9867	0.8451	0.6021
		b		0.9341	0.6778	0.5775	0.6021
		c		0.8583	0.9503	0.5659	1.1423
		Total		**1.1251**	**1.0911**	**0.9490**	**1.2122**
	Kuala Sg Tembangan	a		0.4269	0.3010	0.9577	0.6021
		b		0.9603	0.7592	0.6778	0.9031
		c		0.7237	0.9364	0.8278	0.6021
		Total		**1.0353**	**1.0863**	**1.1183**	**1.1289**
	Lubuk Kuang	a	0.8645	1.1018	1.0213	0.9319	0.9031
		b	0.8867	1.0006	0.6778	0.7378	0.8451
		c	1.0076	0.8474	0.7592	0.8278	0.5786
		Total	**1.1299**	**1.2493**	**1.1976**	**1.1378**	**1.1994**
	Kampung Baapa	a	1.0778	1.0485	0.8873	0.4771	0.5786
		b	1.2670	0.7952	1.0667	0.5396	0.0000
		c	1.1248	0.8356	1.6726	0.6778	0.3010
		Total	**1.3781**	**1.1504**	**1.2155**	**0.9030**	**0.6867**
	Sg Bera 1	a	0.6901	0.3010	0.4868	0.1957	0.3195
		b	0.9541	0.2442	0.3195	0.6778	0.1957
		c	0.7788	0.0000	0.6505	0.3010	0.0000
		Total	**1.0160**	**0.4662**	**0.6373**	**0.6674**	**0.2551**
	Sg Bera 2	a	1.0615	0.7242	0.9457	0.2764	0.4771
		b	0.9227	0.4771	0.8866	0.4771	0.4515
		c	0.8952	0.8628	0.9788	0.5232	0.2442
		Total	**1.0438**	**1.0445**	**1.1429**	**0.7773**	**0.6142**
	Paya Kelantong	a	0.6687	0.5843	1.0184	0.4771	0.3010
		b	0.5855	0.4532	0.8460	0.4771	0.7283
		c	0.9149	0.3987	0.6896	0.3010	0.5546
		Total	**0.7932**	**0.6471**	**1.1869**	**0.8772**	**0.9290**
	Sg Tembangan	a	0.5227	0.4392	0.8451	0.6021	0.3010
		b	0.9221	0.7591	0.5268	0.0000	0.4127
		c	0.4151	0.4771	0.0000	0.4771	0.3010
		Total	**0.8990**	**0.8747**	**0.9030**	**0.7952**	**0.6867**

endix 13. Margalef's Species Index (d) for phytoplankton in Tasek Bera (April - September 1998)

on	Sampling station	Apr-98	May-98	Jul-98	Aug-98	Sep-98
	Tanjung Kuin	0.0376	0.1813	0.1563	0.1707	0.3500
	Sungai Tasek	0.0518	0.1244	0.3194	0.2500	0.2917
	Lubuk Pathir	0.0355	0.0576	0.2182	0.1111	0.0606
	Tanjung Papan	0.2203	0.3289	0.4667	0.5854	0.7143
	Kampung Benal		0.2727	0.6364	0.5455	0.6538
	Kuala Sg Tembangan		0.4211	0.4848	0.4848	0.8125
	Lubuk Kuang	0.2364	0.3210	0.5862	0.5848	0.8000
	Kampung Baapa	0.3271	0.3291	0.4444	0.6000	0.5556
	Sg Bera 1	0.3519	0.3750	0.2759	0.3571	0.1500
)	Sg Bera 2	0.0867	0.5385	0.3390	0.3684	0.3636
	Paya Kelantong	0.1279	0.1398	0.2526	0.6364	0.5000
2	Sg Tembangan	0.2381	0.5000	0.6000	0.7778	0.5556

ppendix 15. Sorensen's Quotient of Similarity for sampling stations 1 to 12 in Tasek Bera

tion	1	2	3	4	5	6	7	8	9	10	11	12
1		52.41	55.78	41.38	31.25	37.40	31.72	17.11	26.17	48.89	33.33	19.42
2	52.41		51.28	39.46	33.33	32.81	33.33	24.36	21.24	46.81	30.16	19.47
3	55.78	51.28		40.54	39.39	41.54	39.49	21.79	24.78	47.55	28.57	19.30
4	41.38	39.46	40.54		37.80	36.80	44.30	25.50	24.30	35.29	35.29	29.91
5	31.25	33.33	39.39	37.80		40.37	36.09	27.07	22.22	35.29	31.07	32.61
6	37.40	32.81	41.54	36.80	40.37		39.10	27.07	25.00	38.66	40.78	27.27
7	31.72	33.33	39.49	44.30	36.09	39.10		30.86	24.78	30.14	26.77	24.14
8	17.11	24.36	21.79	25.50	27.07	27.07	30.86		19.64	27.40	29.69	28.07
9	26.17	21.24	24.78	24.30	22.22	25.00	24.78	19.64		28.28	30.95	25.35
10	48.89	46.81	47.55	35.29	35.29	38.66	30.14	27.40	28.28		35.09	23.53
11	33.33	30.16	28.57	35.29	31.07	40.78	26.77	29.69	30.95	35.09		39.53
12	19.42	19.47	19.30	29.91	32.61	27.27	24.14	28.07	25.35	23.53	39.53	

Appendix 16. Phytoplankton Count (cells.L^{-1}) for sampling stations 1 to 12 by month

			Apr-98					May/Jun -98					Jul-98				
Sampling station	Station	Sub station	Total cell count (cells/ml)	Total	Mean	Standard deviation	Standard error	Total cell count (cells/ml)	Total	Mean	Standard deviation	Standard error	Total cell count (cells/ml)	Total	Mean	Standard deviation	Standard error
Tanjung Kuin	1	a	332.917					75.000					83.333				
		b	174.150					53.125					56.250				
		c	264.583	771.650	257.217	79.6393	45.9798	56.250	184.375	61.458	11.8311	6.8307	60.417	200.000	66.667	14.5833	8.4197
Sungai Tasek	2	a	337.325					94.792					17.708				
		b	96.800					80.208					33.333				
		c	171.000	605.125	201.708	123.1679	71.1110	50.000	225.000	75.000	22.8455	13.1899	23.958	75.000	25.000	7.8644	4.5405
Lubuk Pathir	3	a	620.750					123.958					52.083				
		b	316.075					93.750					64.583				
		c	264.000	1200.825	400.275	192.7041	111.2578	180.208	397.917	132.639	43.8780	25.3329	55.208	171.875	57.292	6.5052	3.7558
Tanjung Papan	4	a	50.983					21.875					10.417				
		b	47.400					28.125					9.375				
		c	36.900	135.283	45.094	7.3193	4.2258	32.292	82.292	27.431	5.2429	3.0270	11.458	31.250	10.417	1.0417	0.6014
Kampung Benal	5	a	-					34.375					11.458				
		b	-					30.208					6.250				
		c	-	-	-	-	-	34.375	98.958	32.986	2.4056	1.3889	5.208	22.917	7.639	3.3485	1.9333
Kuala Sg Tembangan	6	a	-					12.500					2.083				
		b	-					15.625					12.500				
		c	-	-	-	-	-	11.458	39.583	13.194	2.1684	1.2519	20.833	35.417	11.806	9.3943	5.4238
Lubuk Kuang	7	a	74.317					45.833					13.542				
		b	59.933					25.000					6.250				
		c	50.500	184.750	61.583	11.9938	6.9246	13.542	84.375	28.125	16.3711	9.4518	10.417	30.208	10.069	3.6582	2.1121
Kampung Baapa	8	a	59.817					27.083					9.375				
		b	62.283					23.958					26.042				
		c	60.633	182.733	60.911	1.2566	0.7255	27.083	78.125	26.042	1.8042	1.0417	11.458	46.875	15.625	9.0810	5.2429
Sg Bera 1	9	a	28.200					2.083					11.458				
		b	13.333					4.167					8.333				
		c	36.000	77.533	25.844	11.5155	6.6485	2.083	8.333	2.778	1.2028	0.6944	10.417	30.208	10.069	1.5912	0.9187
Sg Bera 2	10	a	306.250					8.333					19.792				
		b	122.867					3.125					29.167				
		c	309.833	738.950	246.317	106.9258	61.7337	15.625	27.083	9.028	6.2789	3.6251	12.500	61.458	20.486	8.3550	4.8238
Paya Kelantong	11	a	12.500					60.417					39.583				
		b	62.500					19.792					30.208				
		c	14.583	89.583	29.861	28.2853	16.3305	16.667	96.875	32.292	24.4070	14.0914	29.167	98.958	32.986	5.7371	3.3123
Sg Tembangan	12	a	45.833					6.250					7.292				

Appendix 16. Phytoplankton Count (cells.L^{-1}) for sampling stations 1 to 12 by month (continued)

			Aug-98					Sep-98				
Sampling station	Station	Sub station	Total cell count (cells/ml)	Total	Mean	Standard deviation	Standard error	Total cell count (cells/ml)	Total	Mean	Standard deviation	Standard error
Tanjung Kuin	1	a	26.042					6.083				
		b	36.458					5.417				
		c	22.917	85.417	28.472	7.0905	4.0937	6.100	17.600	5.867	0.3898	0.2251
Sungai Tasek	2	a	35.417					8.500				
		b	33.333					7.583				
		c	10.417	79.167	26.389	13.8715	8.0087	3.250	19.333	6.444	2.8042	1.6190
Lubuk Pathir	3	a	66.667					0.583				
		b	37.500					57.500				
		c	17.708	121.875	40.625	24.6283	14.2192	2.833	60.917	20.306	32.2310	18.6086
Tanjung Papan	4	a	15.625					2.600				
		b	8.333					0.925				
		c	18.750	42.708	14.236	5.3454	3.0862	2.188	5.713	1.904	0.8727	0.5039
Kampung Benal	5	a	7.292					1.667				
		b	6.250					1.683				
		c	9.375	22.917	7.639	1.5912	0.9187	9.417	12.767	4.256	4.4697	2.5806
Kuala Sg Tembangan	6	a	20.833					1.350				
		b	6.250					1.533				
		c	8.333	35.417	11.806	7.8874	4.5538	1.917	4.800	1.600	0.2892	0.1669
Lubuk Kuang	7	a	11.458					3.000				
		b	12.500					2.392				
		c	8.333	32.292	10.764	2.1684	1.2519	2.125	7.517	2.506	0.4485	0.2589
Kampung Baapa	8	a	3.125					2.563				
		b	6.250					1.108				
		c	6.250	15.625	5.208	1.8042	1.0417	1.058	4.729	1.576	0.8544	0.4933
Sg Bera 1	9	a	6.250					3.633				
		b	6.250					2.375				
		c	2.083	14.583	4.861	2.4056	1.3889	2.875	8.883	2.961	0.6336	0.3658
Sg Bera 2	10	a	3.125					1.375				
		b	3.125					2.233				
		c	13.542	19.792	6.597	6.0141	3.4722	2.083	5.692	1.897	0.4584	0.2647
Paya Kelantong	11	a	3.125					0.958				
		b	6.250					4.613				
		c	2.083	11.458	3.819	2.1684	1.2519	3.704	9.275	3.092	1.9025	1.0984
Sg Tembangan	12	a	4.167					0.917				

No.	Station	Depth (m)	Light DO (ppm) Initial (C_1)	Light DO (ppm) Final (C_3)	Net photosynthesis (P_N) C_3-C_1	Dark DO (ppm) Initial (C_1)	Dark DO (ppm) Final (C_2)	Respiratory activity (R) C_1-C_2	Gross photosynthesis (P_G) C_3-C_2	Mean	Standard deviation	Time Initial	Time Final	Incubation time (hour)	Productivity (mg/O2/l/hour)
1	Tanjung Kuin	0	6.0	6.4	0.4	5.6	6.6	-1.0	-0.6	-0.05	0.7653	1.35 pm	5.35 pm	4.000	-0.012
		1	5.1	5.7	0.6	5.4	5.5	-0.1	0.5						
2	Sungai Tasik	0	2.5	2.6	0.1	2.4	2.4	0.0	0.1	0.05	0.1082	11.30 am	12.50 pm	1.333	0.038
		1	2.5	2.6	0.1	2.6	2.7	-0.1	0.0						
3	Lubuk Pahtir	0	4.2	3.9	-0.3	4.3	4.0	0.3	0.0	0.15	0.2595	9.15 am	12.35 pm	3.167	0.047
		1	4.0	4.2	0.2	4.0	3.9	0.1	0.3						
4	Tanjung Papan	0	5.6	6.5	0.9	5.9	6.1	-0.2	0.7	-0.25	1.2185	3.00 pm	5.00 pm	2.000	-0.125
		1	2.3	3.5	1.2	2.3	4.7	-2.4	-1.2						
5	Kampung Benal														
6	Kuala Sungai Tembangan														
7	Lubuk Kuang	0	4.3	5.2	0.9	5.3	5.4	-0.1	0.8	0.10	1.0361	2.20 pm	4.10 pm	2.167	0.046
		1	4.3	4.4	0.1	4.4	5.1	-0.7	-0.6						
8	Kg Baapa	0	3.2	4.5	1.3	3.4	3.6	-0.2	1.1	1.00	0.3232	12.30 pm	6.00 pm	5.500	0.182
		1	2.3	3.5	1.2	3.1	3.4	-0.3	0.9						
9	Sg Bera 1	0	2.7	4.4	1.7	2.9	3.2	-0.3	1.4	1.40	-	10.40 am	4.10 pm	5.500	0.255
		1	-	-	-	-	-	-	-						
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-				
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-				
12	Sg Tembangan	0	3.6	3.7	0.1	3.1	3.4	-0.3	-0.2	-0.20	-0.0800	12.50 pm	3.20 pm	2.500	-0.080
		1	3.0	3.1	0.1	2.7	3.0	-0.3	-0.2						

No.	Station	Depth (m)	Light DO (ppm) Initial (C_1)	Light DO (ppm) Final (C_3)	Net photosynthesis (P_N) C_3-C_1	Dark DO (ppm) Initial (C_1)	Dark DO (ppm) Final (C_2)	Respiratory activity (R) C_1-C_2	Gross photosynthesis (P_G) C_3-C_2	Mean	Standard deviation	Time Initial	Time Final	Incubation time (hour)	Productivity (mg/O2/l/hour)
1	Tanjung Kuin	0	3.6	2.8	-0.8	3.6	3.2	0.4	-0.4	-0.4	-0.101	10.35am	1.50pm	3.250	-0.129
		1	3.0	3.2	0.2	3.0	3.6	-0.6	-0.4						
2	Sungai Tasik	0	2.2	2.6	0.5	2.3	2.2	0.2	0.6	0.6	0.195	9.52 am	2.15 pm	4.417	0.125
		1	2.2	2.5	0.4	2.3	2.2	0.2	0.5						
3	Lubuk Pahtir	0	2.2	2.3	0.1	2.0	2.2	-0.2	-0.1	0.1	0.261	8.50 am	2.20 pm	5.500	0.014
		1	2.2	2.7	0.5	2.0	2.2	-0.2	0.3						
4	Tanjung Papan	0	1.1	1.5	0.4	1.4	1.4	0.0	0.4	0.4	0.372	11.47 am	1.23 pm	1.600	0.266
		1	1.2	1.2	0.1	1.6	1.2	0.5	0.5						
5	Kampung Benal	0	2.4	1.9	-0.5	2.0	1.8	0.2	-0.3	0.0	0.424	9.15 am	3.15 pm	6.000	0.000
		1	1.9	2.0	0.1	1.9	1.7	0.2	0.3						
6	Kuala Sungai Tembangan	0	2.8	2.7	-0.1	2.8	2.2	0.6	0.5	0.5	0.169	10.00 am	2.55 pm	3.917	0.134
		1	2.3	2.5	0.2	2.6	2.2	0.4	0.6						
7	Lubuk Kuang	0	3.3	4.4	1.1	2.9	2.8	0.1	1.2	1.2	0.525	11.05 am	2.35 pm	2.500	0.490
		1	2.5	3.5	1.1	3.3	3.1	0.2	1.3						
8	Kg Baapa	0	5.3	5.0	-0.3	4.8	4.3	0.5	0.2	0.2	-	12.30 pm	1.50 pm	1.333	0.150
		1	-	-	-	-	-		-						
9	Sg Bera 1	0	2.8	2.2	-0.6	2.7	2.0	0.7	0.1	0.1	-	8.23 am	3.45 pm	7.333	0.014
		1	-	-	-	-	-	-	-						
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-				
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-				
12	Sg Tembangan	0	2.0	1.6	-0.4	2.0	1.6	0.4	0.0	0.0	-	10.00 am	1.20 pm	3.333	0.000
		1	-	-	-	-	-	-		-					

No.	Station	Depth (m)	Light DO (ppm) Initial (C_1)	Light DO (ppm) Final (C_3)	Net photosynthesis (P_N) C_3-C_1	Dark DO (ppm) Initial (C_1)	Dark DO (ppm) Final (C_2)	Respiratory activity (R) C_1-C_2	Gross photosynthesis (P_G) C_3-C_2	Mean	Standard deviation	Time Initial	Time Final	Incubation time (hour)	Productivity (mg/O2/l/hour)
1	Tanjung Kuin	0	4.8	5.2	0.4	4.8	4.7	0.1	0.5	0.2	0.4950	9.50 am	12.25 pm	2.75	0.055
		1	5.1	4.7	-0.4	4.8	4.6	0.2	-0.2						
2	Sungai Tasik	0	2.9	2.9	0.0	3.0	2.8	0.2	0.2	0.0	0.3536	9.20 am	12.45 pm	3.417	-0.015
		1	3.0	2.7	-0.3	2.7	2.7	0.0	-0.3						
3	Lubuk Pahtir	0	3.9	3.7	-0.2	3.9	3.4	0.5	0.3	0.1	0.2828	8.30 am	12.35 pm	4.083	0.024
		1	3.8	3.5	-0.3	3.6	3.4	0.2	-0.1						
4	Tanjung Papan	0	2.0	2.0	0.0	2.1	2.0	0.1	0.1	0.1	0.0000	10.50am	12:00pm	1.167	0.086
		1	2.1	2.0	-0.1	2.2	2.0	0.2	0.1						
5	Kampung Benal	0	3.1	3.0	-0.1	3.2	2.7	0.5	0.4	0.1	0.4243	9.00 am	3.10 pm	6.167	0.016
		1	3.3	2.7	-0.6	3.1	2.7	0.4	-0.2						
6	Kuala Sungai Tembangan	0	3.4	3.1	-0.3	3.4	3.2	0.2	-0.1	0.0	0.1414	9.35 am	2.30 pm	4.917	0.000
		1	3.2	2.9	-0.3	3.5	3.1	0.4	0.1						
7	Lubuk Kuang	0	3.9	3.8	-0.1	3.7	3.2	0.5	0.4	0.5	0.0707	10.20 am	2.10 pm	3.833	0.117
		1	3.6	3.6	0.0	3.9	3.4	0.5	0.5						
8	Kg Baapa	0	4.0	4.0	0.0	4.0	3.9	0.1	0.1	0.2	0.1414	11.30 am	1.35 pm	2.083	0.096
		1	3.8	4.0	0.2	4.0	3.9	0.1	0.3						
9	Sg Bera 1	0	2.3	3.5	1.2	2.3	3.4	-1.1	0.1	0.1	-	4.45 pm	6.00 pm	1.25	0.080
		1	-	-	-	-	-	-	-						
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-			-	
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-			-	
12	Sg Tembangan	0	2.5	2.6	0.1	2.5	2.5	0.0	0.1	0.1	-	10.55 am	12.40 pm	1.583	0.063
		1	2.6	2.6	0.0	2.6	2.7	-0.1	-						

Appendix [illegible]: Productivity of phytoplankton for sampling stations 1 to 12 in Tasek Bera (10-13/8/98)

No.	Station	Depth (m)	Light DO (ppm) Initial (C_1)	Light DO (ppm) Final (C_3)	Net photosynthesis (P_N) C_3-C_1	Dark DO (ppm) Initial (C_1)	Dark DO (ppm) Final (C_2)	Respiratory activity (R) C_1-C_2	Gross photosynthesis (P_G) C_3-C_2	Mean	Standard deviation	Time Initial	Time Final	Incubation time (hour)	Productivity (mg/O2/l/hour)
1	Tanjung Kuin	0	3.0	2.8	-0.2	3.0	2.8	0.2	0.0	0.7	0.9644	0.20am	2.10 pm	3.833	0.183
		0.5	3.0	4.6	1.6	3.0	2.8	0.2	1.8						
		1	3.0	2.7	-0.3	3.0	2.4	0.6	0.3						
2	Sungai Tasik	0	2.2	1.9	-0.3	2.2	1.9	0.3	0.0	-0.1	0.2646	9.35am	2.35pm	5.000	-0.020
		0.5	2.2	2.0	-0.2	2.2	2.4	-0.2	-0.4						
		1	2.1	2.1	0.0	2.2	2.1	0.1	0.1						
3	Lubuk Pahtir	0	2.6	2.1	-0.5	2.4	2.3	0.1	-0.4	0.1	0.6110	8.43 am	2.20 pm	5.667	0.024
		0.5	2.4	3.0	0.6	2.3	2.1	0.2	0.8						
		1	2.1	2.0	-0.1	2.2	2.1	0.1	0.0						
4	Tanjung Papan	0	1.6	1.6	0.0	1.6	1.4	0.2	0.2	2.0	2.6963	1.25 am	1.45 pm	2.333	0.857
		0.5	1.6	2.1	0.5	1.6	1.4	0.2	0.7						
		1	1.6	6.5	4.9	1.7	1.5	0.2	5.1						
5	Kampung Benal	0	1.6	1.7	0.1	1.6	1.6	0.0	0.1	0.1	0.0577	1.40am	2.25pm	2.750	0.048
		0.5	1.6	1.7	0.1	1.6	1.6	0.0	0.1						
		1	1.6	1.6	0.0	1.6	1.4	0.2	0.2						
6	Kuala Sungai Tembangan	0	1.7	1.7	0.0	1.9	1.6	0.3	0.3	0.1	0.1528	1.05 am	2.40pm	2.583	0.052
		0.5	1.6	1.6	0.0	1.8	1.7	0.1	0.1						
		1	1.7	1.6	-0.1	1.9	1.8	0.1	0.0						
7	Lubuk Kuang	0	2.0	2.2	0.2	2.1	2.0	0.1	0.3	0.2	0.0577	0.12am	3.00 pm	4.833	0.048
		0.5	2.0	2.1	0.1	1.9	1.8	0.1	0.2						
		1	2.1	2.1	0.0	2.2	2.0	0.2	0.2						
8	Kg Baapa	0	2.4	1.9	-0.5	2.3	2.0	0.3	-0.2	-0.1	0.1528	9.33 am	3.30pm	6.000	-0.011
		0.5	2.3	2.0	-0.3	2.2	2.0	0.2	-0.1						
		1	2.3	2.0	-0.3	2.4	2.0	0.4	0.1						
9	Sg Bera 1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Sg Tembangan	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5													

Appendix [illegible]: Productivity of phytoplankton for sampling stations 1 to 12 in Tasik Bera (19-21/9/98)

No.	Station	Depth (m)	Light DO (ppm)		Net photosynthesis (P_N)	Dark DO (ppm)		Respiratory activity (R)	Gross photosynthesis (P_G)	Mean	Standard deviation	Time		Incubation time (hour)	Productivity (mg/O2/l/hour)
			Initial (C_1)	Final (C_3)	C_3-C_1	Initial (C_1)	Final (C_2)	C_1-C_2	C_3-C_2			Initial	Final		
1	Tanjung Kuin	0	3.5	4.3	0.8	3.6	3.9	-0.3	0.5	0.6	0.4163	9.45 am	12.55pm	3.1670	0.200
		0.5	3.5	3.9	0.4	3.6	3.7	-0.1	0.3						
		1	3.6	3.7	0.1	4.1	3.1	1.0	1.1						
2	Sungai Tasik	0	3.1	2.9	-0.2	2.7	2.9	-0.2	-0.4	-0.3	0.1528	9.05 am	1.15 pm	4.1670	-0.064
		0.5	2.7	2.6	-0.1	2.6	2.6	0.0	-0.1						
		1	2.7	2.4	-0.3	2.7	2.7	0.0	-0.3						
3	Lubuk Pahtir	0	3.1	2.9	-0.2	2.7	2.9	-0.2	-0.4	-0.3	0.1528	8.40am	1.05 pm	4.4170	-0.060
		0.5	2.7	2.6	-0.1	2.6	2.6	0.0	-0.1						
		1	2.7	2.4	-0.3	2.7	2.7	0.0	-0.3						
4	Tanjung Papan	0	2.1	3.5	1.4	1.9	3.4	-1.5	-0.1	0.2	0.3786	10.37am	12.37pm	2.0000	0.083
		0.5	1.8	4.2	2.4	1.9	3.7	-1.8	0.6						
		1	1.7	3.3	1.6	1.8	3.4	-1.6	0.0						
5	Kampung Benal	0	2.3	2.3	0.0	2.5	2.9	-0.4	-0.4	-0.4	0.2000	8.40 am	2.00pm	5.3330	-0.075
		0.5	2.3	2.4	0.1	2.3	2.6	-0.3	-0.2						
		1	3.1	2.4	-0.7	2.4	2.3	0.1	-0.6						
6	Kuala Sungai Tembangan	0	2.4	3.1	0.7	2.9	3.2	-0.3	0.4	0.2	0.3786	9.24am	1.45 pm	4.3330	0.054
		0.5	2.5	2.5	0.0	2.8	3.0	-0.2	-0.2						
		1	2.7	2.8	0.1	3.7	3.3	0.4	0.5						
7	Lubuk Kuang	0	3.5	3.8	0.3	3.6	3.5	0.1	0.4	-0.1	0.5000	9.50 am	1.30 pm	3.6660	-0.027
		0.5	3.6	3.5	-0.1	3.6	3.6	0.0	-0.1						
		1	3.9	3.4	-0.5	3.7	3.8	-0.1	-0.6						
8	Kg Baapa	0	4.0	4.1	0.1	4.0	3.9	0.1	0.2	0.2	0.0000	10.45am	1.00pm	1.7500	0.114
		0.5	4.0	4.4	0.4	4.2	4.2	0.0	0.2						
		1	-	-	-	-	-	-	-						
9	Sg Bera 1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
12	Sg Tembangan	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		

Appendix 19 i: Productivity of phytoplankton for sampling stations 1 to 12 in Tasek Bera (24-26/10/98)

No.	Station	Depth (m)	Light DO (ppm) Initial (C_1)	Light DO (ppm) Final (C_3)	Net photosynthesis (P_N) C_3-C_1	Dark DO (ppm) Initial (C_1)	Dark DO (ppm) Final (C_2)	Respiratory activity (R) C_1-C_2	Gross photosynthesis ((P_G) C_3-C_2	Mean	Standard deviation	Time Initial	Time Final	Incubation time (hour)	Productivity (mg/O2/l/hour)
1	Tanjung Kuin	0	4.4	4.4	0.0	4.2	4.6	-0.4	-0.4	-0.3	0.3215	10.10am	1.30pm	3.333	-0.080
		0.5	4.6	4.5	-0.1	4.3	4.1	0.2	0.1						
		1	5.1	4.1	-1.0	4.7	4.2	0.5	-0.5						
2	Sungai Tasik	0	3.2	3.3	0.1	3.2	3.2	0.0	0.1	-0.3	0.5859	9.22am	2.11pm	4.833	-0.069
		0.5	3.3	3.4	0.1	3.2	3.4	-0.2	-0.1						
		1	3.7	3.1	-0.6	3.2	3.6	-0.4	-1.0						
3	Lubuk Pahtir	0	3.6	3.5	-0.1	3.2	3.3	-0.1	-0.2	0.1	0.7000	8.33am	1.45pm	5.25	0.019
		0.5	3.8	3.3	-0.5	3.5	3.4	0.1	-0.4						
		1	4.2	3.7	-0.5	4.3	2.9	1.4	0.9						
4	Tanjung Papan	0	2.0	2.1	0.1	1.8	1.9	-0.1	0.0	0.0	0.2000	11.15am	12.50pm	3.583	0.000
		0.5	2.0	1.9	-0.1	1.9	2.0	-0.1	-0.2						
		1	2.2	2.1	-0.1	2.0	1.7	0.3	0.2						
5	Kampung Benal	0	2.1	2.0	-0.1	2.1	1.8	0.3	0.2	-0.1	0.3055	9.25am	2.15pm	4.833	-0.014
		0.5	2.0	2.0	0.0	2.1	2.1	0.0	0.0						
		1	2.1	1.9	-0.2	2.2	2.4	-0.2	-0.4						
6	Kuala Sungai Tembangan	0	2.2	2.2	0.0	2.2	2.2	0.0	0.0	0.1	0.3055	10.10am	2.00pm	3.833	0.017
		0.5	2.2	2.2	0.0	2.3	1.9	0.4	0.4						
		1	2.3	1.9	-0.4	2.4	2.2	0.2	-0.2						
7	Lubuk Kuang	0	2.0	2.2	0.2	2.3	2.4	-0.1	0.1	0.0	0.1155	10.50am	1.30pm	2.667	-0.012
		0.5	2.2	2.2	0.0	2.1	2.2	-0.1	-0.1						
		1	2.5	2.5	0.0	2.3	2.4	-0.1	-0.1						
8	Kg Baapa	0	2.5	2.7	0.2	2.6	2.5	0.1	0.3	0.1	0.2082	11.50am	1.00pm	1.167	0.057
		0.5	2.4	2.6	0.2	2.4	2.7	-0.3	-0.1						
		1	2.6	2.5	-0.1	2.5	2.4	0.1	0.0						
9	Sg Bera 1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
10	Sg Bera 2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
11	Paya Kelantong	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		
12	Sg Tembangan	0	-	-	-	-	-	-	-	-	-	-	-	-	-
		0.5	-	-	-	-	-	-	-	-	-	-	-		
		1	-	-	-	-	-	-	-	-	-	-	-		

Appendix 18. Rainfall (mm) in selected plantations in Tasek Bera (1997 vs 1998)

Month	Triang Selatan 1		Triang Selatan 2		Bera Selatan 2		Tembangau 4		Tembangau 8		Total		Mean	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	**1997**	**1998**
Jan	24.60	211.90	15.20	144.78	54.00	232.68	16.00	135.90	13.20	80.30	123.00	805.56	**24.60**	**161.112**
Feb	40.20	32.50	132.08	33.02	57.00	49.46	26.21	60.51	67.30	8.00	322.79	183.49	**64.56**	**36.698**
Mar	172.80	130.40	246.38	101.60	267.70	103.00	130.60	60.50	429.70	57.50	1247.18	453.00	**249.44**	**90.6**
Apr	231.40	104.80	220.98	119.40	282.90	61.08	361.20	35.00	62.25	105.20	1158.73	425.48	**231.75**	**85.096**
May	98.10	150.00	86.00	180.30	80.30	151.65	41.05	191.55	39.80	129.20	345.25	802.70	**69.05**	**160.54**
Jun	51.30	120.50	66.04	66.04	129.00	114.56	92.06	133.00	172.60	130.00	511.00	564.10	**102.20**	**112.82**
Jul	221.20	116.80	93.98	213.36	96.00	97.05	51.10	123.00	137.80	88.50	600.08	638.71	**120.02**	**127.742**
Aug	29.10	204.10	96.52	73.15	40.20	259.01	8.70	184.10	14.25	118.00	188.77	838.36	**37.75**	**167.672**
Sep	62.70	20.10	48.26	22.86	70.90	35.80	80.06	21.44	116.85	35.00	378.77	135.20	**75.75**	**27.04**
Oct	234.80	160.40	137.16	81.28	183.40	138.10	256.04	117.32	144.90	174.00	956.30	671.10	**191.26**	**134.22**
Nov	159.90	187.20	146.05	99.06	298.60	113.20	332.59	119.55	107.25	248.50	1044.39	767.51	**208.88**	**153.502**
Dec	251.10	400.90	208.28	289.56	297.00	378.90	231.07	192.00	118.8	243.80	1106.25	1505.16	**221.25**	**301.032**
Total	**1577.20**	**1839.60**	**1496.93**	**1424.41**	**1857.00**	**1734.49**	**1626.68**	**1373.87**	**1424.70**	**1418.00**	**7982.51**	**7790.37**	**1596.50**	**1558.07**

Sulphate of Ammonium (SA)	Total (Tonne) per hectare													Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)
Stage 1A	339.09		0.34						0.28					0.63	212.40
Stage 1B	350.12		0.35						0.29					0.64	223.80
Stage 2A	493.40			0.18						0.15				0.33	162.97
Stage 2B	175.42			0.36						0.29				0.64	112.63
Subtotal	1358.03	0.00	0.69	0.54	0.00	0.00	0.00	0.00	0.57	0.43	0.00	0.00	0.00	2.24	711.80

Muriate of Potash (MOP)	Total (Tonne) per hectare													Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)
Stage 1A	339.09				0.35					0.23				0.58	196.70
Stage 1B	350.12				0.36					0.24				0.59	208.00
Stage 2A	493.40					0.22					0.10			0.32	159.10
Stage 2B	175.42					0.43					0.70			1.13	198.10
Subtotal	1358.03	0.00	0.00	0.00	0.71	0.65	0.00	0.00	0.00	0.47	0.80	0.00	0.00	2.63	761.90

Kieserite	Total (Tonne) per hectare													Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)
Stage 1A	339.09							0.20						0.20	66.20
Stage 1B	350.12							0.20						0.20	69.90
Stage 2A	493.40								0.12					0.12	60.45
Stage 2B	175.42								0.24					0.24	41.95
Subtotal	1358.03	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.36	0.00	0.00	0.00	0.00	0.76	238.50

Jordan Rock Phosphate (JRP)	Total (Tonne) per hectare													Fertilizer loading (Tonne)
Month	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)
Stage 1A	339.09						0.20							0.20	66.20
Stage 1B	350.12						0.20							0.20	69.90
Stage 2A	493.40							0.12						0.12	60.45
Stage 2B	175.42							0.24						0.24	41.95
Subtotal	1358.03	0.00	0.00	0.00	0.00	0.00	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.76	238.50

Summary	Total (Tonne) per hectare													Fertilizer loading (Tonne)
Month	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)
Sulphate of Ammonium (SA)	339.09	0.00	0.69	0.54	0.00	0.00	0.00	0.00	0.57	0.43	0.00	0.00	0.00	2.24	758.87
Muriate of Potash (MOP)	350.12	0.00	0.00	0.00	0.71	0.65	0.00	0.00	0.00	0.47	0.80	0.00	0.00	2.63	919.38
Kieserite	493.40	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.36	0.00	0.00	0.00	0.00	0.76	373.27
Jordan Rock Phosphate (JRP)	175.42	0.00	0.00	0.00	0.00	0.00	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.76	132.71

Appendix 19b: Fertiliser loading in Triang Selatan 2 Plantation, Tasek Bera (1998)

Sulphate of Ammonium (SA)	Total (Tonne) per hectare														Fertilizer
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	loading (Tonne)
Stage 1	541.60				0.14		0.12	0.12						0.39	212.42
Stage 2	392.50					0.13				0.25				0.38	149.24
Stage 3	233.00									0.28				0.28	64.22
Stage 3486-01	386.11					0.14				0.25				0.39	149.01
Subtotal	1553.21	0.00	0.00	0.00	0.14	0.27	0.12	0.12	0.00	0.52	0.00	0.00	0.00	1.43	574.89

Muriate of Potash (MOP)	Total (Tonne) per hectare														Fertilizer
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	loading (Tonne)
Stage 1	541.60					0.30			0.10	0.10				0.51	274.96
Stage 2	392.50						0.28				0.19			0.47	184.88
Stage 3	233.00					0.33			0.22					0.55	128.44
Stage 3486-01	386.11						0.29		0.19					0.48	185.53
Subtotal	1553.21	0.00	0.00	0.00	0.00	0.64	0.57	0.00	0.51	0.10	0.19	0.00	0.00	2.01	773.81

Kieserite	Total (Tonne) per hectare														Fertilizer
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	loading (Tonne)
Stage 1	541.60							0.15						0.15	79.27
Stage 2	392.50							0.07	0.07					0.13	51.82
Stage 3	233.00								0.15					0.15	34.25
Stage 3486-01	386.11							0.15						0.15	57.96
Subtotal	1553.21	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.21	0.00	0.00	0.00	0.00	0.58	223.30

Jordan Rock Phosphate (JRP)	Total (Tonne) per hectare														Fertilizer
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	loading (Tonne)
Stage 1	541.60					0.24								0.24	128.74
Stage 2	392.50					0.23								0.23	90.67
Stage 3	233.00					0.29								0.29	68.50
Stage 3486-01	386.11					0.23								0.23	89.71
Subtotal	1553.21	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	377.62

Summary	Total (Tonne) per hectare														Fertilizer
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	loading (Tonne)
Sulphate of Ammonium (SA)	541.60	0.00	0.00	0.00	0.14	0.27	0.12	0.12	0.00	0.52	0.00	0.00	0.00	1.19	642.61
Muriate of Potash (MOP)	392.50	0.00	0.00	0.00	0.00	0.64	0.57	0.00	0.51	0.10	0.19	0.00	0.00	2.01	789.11
Kieserite	233.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.21	0.00	0.00	0.00	0.00	0.58	134.09
Jordan Rock Phosphate (JRP)	386.11	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	384.20

Appendix 19c: Fertiliser loading in Triang Selatan 1 Plantation, Pasek Dera

Sulphate of Ammonium (SA)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	516.03			0.15			0.24							0.39	203.11
Stage 2	993.60		0.05	0.05	0.05			0.25						0.40	401.14
Stage 3	26.17		0.16					0.24						0.41	10.65
Subtotal	1535.80	0.00	0.21	0.00	0.05	0.00	0.24	0.50	0.00	0.00	0.00	0.00	0.00	1.20	614.90

Muriate of Potash (MOP)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	516.03					0.28				0.19				0.47	242.97
Stage 2	993.60				0.08	0.15	0.06			0.19				0.47	470.99
Stage 3	26.17				0.28					0.18				0.46	12.00
Subtotal	1535.80	0.00	0.00	0.00	0.36	0.43	0.06	0.00	0.00	0.56	0.00	0.00	0.00	1.40	725.96

Kieserite	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	516.03				0.07	0.07								0.14	73.22
Stage 2	993.60				0.14									0.14	143.60
Stage 3	26.17					0.16								0.16	4.30
Subtotal	1535.80	0.00	0.00	0.00	0.22	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	221.12

Jordan Rock Phosphate (JRP)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	516.03					0.11	0.11							0.23	116.50
Stage 2	993.60					0.11	0.11							0.23	228.50
Stage 3	26.17						0.23							0.23	6.00
Subtotal	1535.80	0.00	0.00	0.00	0.00	0.23	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.69	351.00

Summary	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Sulphate of Ammonium (SA)	516.03	0.00	0.21	0.00	0.05	0.00	0.24	0.50	0.00	0.00	0.00	0.00	0.00	1.00	517.03
Muriate of Potash (MOP)	993.60	0.00	0.00	0.00	0.36	0.43	0.06	0.00	0.00	0.56	0.00	0.00	0.00	1.40	1394.43
Kieserite	26.17	0.00	0.00	0.00	0.22	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	11.80
Jordan Rock Phosphate (JRP)	1535.80	0.00	0.00	0.00	0.00	0.23	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.69	1052.03

Sulphate of Ammonium (SA)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	339.09				0.18				0.16					0.34	113.90
Stage 2	350.12				0.14		0.06	0.09	0.08			0.05		0.43	150.67
Stage 3	493.40					0.27			0.23					0.50	247.15
Stage 4	175.42				0.17	0.07			0.21					0.45	79.55
Subtotal	1358.03	0.00	0.00	0.00	0.49	0.34	0.06	0.09	0.69	0.00	0.00	0.05	0.00	1.72	591.27

Muriate of Potash (MOP)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	339.09					0.02	0.21			0.12				0.35	119.70
Stage 2	350.12					0.24		0.07	0.10		0.04			0.45	157.66
Stage 3	493.40						0.31			0.06	0.12			0.50	245.25
Stage 4	175.42					0.16	0.14					0.18		0.49	85.15
Subtotal	1358.03	0.00	0.00	0.00	0.00	0.42	0.67	0.07	0.10	0.19	0.16	0.18	0.00	1.79	607.76

Kieserite	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	339.09							0.12						0.12	40.40
Stage 2	350.12						0.10	0.04						0.13	46.91
Stage 3	493.40							0.15						0.15	74.89
Stage 4	175.42							0.13						0.13	22.45
Subtotal	1358.03	0.00	0.00	0.00	0.00	0.00	0.10	0.44	0.00	0.00	0.00	0.00	0.00	0.53	184.65

Tunisia Rock Phosphate (JRP)	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Stage 1	339.09										0.11			0.11	35.95
Stage 2	350.12										0.12			0.12	41.65
Stage 3	493.40											0.21	0.00	0.22	107.30
Stage 4	175.42									0.23				0.23	39.85
Subtotal	1358.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.22	0.21	0.00	0.67	224.75

Summary	Total (Tonne) per hectare														Fertilizer loading (Tonne)
	Total Area (Ha)	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Subtotal (Tonne)	
Sulphate of Ammonium (SA)	339.09	0.00	0.00	0.00	0.49	0.34	0.06	0.09	0.69	0.00	0.00	0.05	0.00	1.72	583.45
Muriate of Potash (MOP)	350.12	0.00	0.00	0.00	0.00	0.42	0.67	0.07	0.10	0.19	0.16	0.18	0.00	1.79	625.24
Kieserite	493.40	0.00	0.00	0.00	0.00	0.00	0.10	0.44	0.00	0.00	0.00	0.00	0.00	0.53	262.93

ppendix 20. List of phytoplankton from Tasek Bera (Furtado and Mori, 1982).

vision : **Cyanophyta**
ass : Cyanophyceae
rder : Chroococcales
mily : Chroococcaceae
Chroococcus tenax (Kirch.) Hieron.
Gloeocapsa sp.
Coelosphaerium kuetzingianum Nag
Merismopedia elegans A. Braun
Merismopedia glauca (Ehrnb.) Nag
Microcystis incerta Lemm.

rder : Nostocales
mily : Oscillatoriaceae
Oscillatoria borneti Zukal
Oscillatoria chalybea (Mert.) Gom
Oscillatoria geitleriana Elekin
Oscillatora princeps Vauch.
Oscillatoria pseudogeminata Schmid
Oscillatoria splendida Grev.

vision : Euglenophyta
ass : Euglenophyceae
rder : Euglenales
mily : Euglenaceae
Euglena acus Ehrb.
Euglena fusca (Klebs) Lemm.
Euglena gracilis
Euglena granulata (Klebs) Lemm.
Euglena mutabilis Schmitz
Euglena oxyuris Schmarda
Euglena proxima Dangeard
Euglena sanguinea Ehrb.
Phacus caudatus Hubn.
Phacus longicauda (Ehrb) Duj.
Phacus myersi Skvort.
Phacus tortus (Lemm.) Skvort.
Phacus trifacialis Prowse
Trachelomonas hispida (Perty) Stein em. Defl.
Trachelomonas intermedia Dang.
Trachelomonas klebsi Defl.
Trachelomonas similis Stokes
Trachelomonas volvocina Ehrb
Trachelomonas volvocinopsis Swir.
Trachelomonas volzii Lemm.

vision : Pyrrophyta
ass : Dinophyceae
rder : Gymnodiniales
mily : Gymnodiniaceae
Gymnodinium sp.

rder : Peridiniales
amily : Glenodinidaceae
Glenodinium sp.

amily : Peridiniaceae
Peridinium sp.

rder : Dinococcales
amily : Dinococcaceae
Tetradinium sp.

vision : Chrysophyta
ass : Xanthophyceae
rder : Michococcales
amily : Chlorobotrydaceae
Botryococcus sudeticus Lemm.

ass : Chrysophyceae
rder : Ochromonadales
amily : Synuraceae
Chrysodidymus gracilis Prowse
Chrysodidymus synuroides Ehrb.
Synura uvella Ehrb.

amily : Dinobyraceae
Dinobryon divergens Imhof.
Dinobryon sertularia Ehrb.

vision : Bacillariophyta
rder : Centrales
amily : Coscinodiscaceae
Melosira sp.
Cyclotella meneghiniana Kutz

rder : Pennales
amily : Fragilariaceae
Diatoma elongatum Ag.
Diatoma vulgare Bory
Tabellaria fenestrata (Lyngb) Kutz
Asterionella sp.
Fragilaria sp.
Synedra ulna (Nitz) Ehrb.

amily : Eunotiaceae
Eunotia arcus Ehrb.
Eunotia diodon Ehrb.
Eunotia faba (Ehrb.) Grun
Eunotia flexuosa (Breb) Kutz
Eunotia flexuosa var. *eurycephala* Grun.
Eunotia gracilis (Ehr.) Rbh.
Eunotia hexaglyphis Ehrb.
Eunotia lunaris (Ehrb.) Grun.
Eunotia naegelii Migula
Eunotia paludosa Grun.
Eunotia pectinalis (Kutz) Rbh.
Eunotia pectinalis var. *minor* (Dillw.) Rbh.

amily : Eunotiaceae
Eunotia robusta Ralfs
Eunotia robusta var. *diadema* (Ehrb.) Ralfs
Eunotia sudetica O. Mull. var. *incisa* (Mayer) A. Cleve
Eunotia serra Ehrb.
Eunotia theronii Cholnoky

amily : Naviculaceae
Anomoeneis serians (Breb. ex Kutz) Cleve var. *acuta* Hustd.
Anomoeneis serians var. *brachysira* (Breb. ex Kutz) Hustd.
Frustulia rhomboides (Ehrb.) De Toni
Frustulia rhomboides var. *saxonica* (Rhb.) De Toni
Pinnularia abaujensis (Pant.) Ross
Pinnularia gibba Ehrb. var. *mesogomyla* (Ehrb.) Hustd.
Pinnularia luculenta A.S.
Pinnularia maior (Kutz) Rhb. (Ehrb.)
Pinnularia nobilis Ehrb.
Pleurosigma sp.
Neidium iridis (Ehrb.) Ieve var. *amphigomphus* (Ehrb.) V. Heurck
Navicula sp.
Stauroneis sp.

amily : Gomphonemataceae
Gomphonema longiceps Ehrb. var. *subclavatum* Grun.

amily : Nitzschiaceae
Nitzschia sp.

amily : Suriellaceae
Stenopterobia sp.
Suriella biseriata Breb.
Suriella biseriata var. *contricta* Agrun
Suriella elegans Ehrb.
Suriella engleri O. Muller f. *angustior* O. Muller
Suriella linearis W. Smith
Suriella linearis var. *constricta* (Ehrb.) Grun.
Suriella pseudospiralis Hustd.
Suriella spiralis Kutz

vision : Chlorophyta
ass : Cholophyceae
rder : Volvocales
amily : Chalmydomonadaceae
Chlamydomonas sp.

rder : Tetrasporales
amily : Palmellaceae
Palmella mucosa Kutz
Gloeocystis gigas (Kutz) Lager.

amily : Tetrasporaceae
Schizochlamys gelatinosa A. Br.

rder : Chlorococcales
amily : Hydrodictyaceae
Pediastrum duplex Meyen
Pediastrum boryanum (Turp.) Menegh. var.

amily : Oocystaceae
Chlorella luteoviridis Chod.
Ankistrodesmus fusiformis Chod.

amily : Dictyosphaeraceae
Westella sp.

amily : Scenedesmaceae
Scenedesmus bijuga (Turpin) Lagerh.
Scenedesmus diagonalis Ley
Scenedesmus ecornis (Ralfs) Chod.
Scenedesmus ecornis var. *disciformis* Chod
Scenedesmus perforatus Lemm.
Coelastrum sp.

rder : Ulotrichales
amily : Ulotrichaceae
Ulothrix cylindricum Prescott

amily : Microsporaceae
Microspora sp.

rder : Zygnematales
amily : Zygnemataceae
Mougetia spp.
Spirogyra spp.
Zygnema spp.
Sirogonium sp.

amily : Mesotaeniaceae
Cylindrocystis brebissonii Menegh.
Cylindrocystis crassa De Bary
Netrium digitus (Ehrb.) Itzigs. Et Rothe
Netrium digitus var. *lamellosum* (Breb.) Gronbl.
Spirotaenia sp.

amily : Gonatozygaceae
Gonatozygon brebissonii De Bary
Gonatozygon kinahini (Arch.) Rbh.
Gonatozygon moniliformis Ehrb.
Gonatozygon monotaenium De Bary
Gonatozygon monotaenium var. *pilosellum* Nordst.
Gonatozygon sudanense Gronbl et Scott

amily : Desmidiaceae
Penium cylindrus (Ehrb.) Breb.
Penium exiguum W. West var. *globerrimum* Gronbl.
Penium margaritaceum (Ehrb.) Breb
Penium silvae-nigare Rabanaus
Penium sprirostriolatiforme West et West
Penium spirostriolatum

amily : Desmidiaceae

Closterium abruptum W. West var. *angustissimum* Schm.
Closterium acerosum (Schrank) Ehrb.
Closterium biclavatum Borges
Closterium cuspidatum Bail.
Closterium dianae Ehrb.
Closterium dianae var. *arcuatum* (Breb) Rbh.
Closterium dianae var. *minus* (Wille) Schroder
Closterium ehrenbergii Menengh.
Closterium gracile Breb
Closterium infractum Messik.
Closterium intermedium Ralfs
Closterium kuetzingii Breb
Closterium libellula Focke
Closterium libellula var. *elongatum* (Krieg.) Scott et Prescott
Closterium libellula var. *interruptum* (W. et W.) Donat
Closterium longonense Nordst var. *crassius* Gutw.
Closterium navicula (Breb) Lutkem. var. *crassum* (W. et. W.) Gronbl.
Closterium macilentum Breb
Closterium moniliferum Bory Ehrb.
Closterium nematodes Josh.
Closterium porrectum Nordst.
Closterium ralfsii Breb. var. *hybridium* Rbh.
Closterium setaceum Ehrb.
Closterium striolatum Ehrb.
Closterium venus Kutzd
Roya sp.
Pleurotaenium baculoides (Roy et Biss) Playf.
Pleurotaenium burmense (Josh.) Kutz var. *elegans* Prowse
Pleurotaenium coronatum (Breb) Rbh. var. *nodulosum* (Breb) W. West
Pleurotaenium ehrenbergii (Breb) De Bary
Pleurotaenium ehrenbergii var. *undulatum* Schaarschm.
Pleurotaenium elatum (Turner) Borge var. *subundulatum* Hirano
Pleurotaenium kayei (Arch.) Rbh.
Pleurotaenium minutum (Ralfs) Delp.
Pleurotaenium minutum var. *crassum* (W. West) Krieg.
Pleurotaenium nodosum (Bail.) Lund var. *gutwinskii* Krieg
Pleurotaenium ovatum Nordst
Pleurotaenium ovatum var. *inermius* Mobius
Pleurotaenium subcoronulatum (Turn.) West et West
Pleurotaenium trabecula (Ehrb.) Nag
Pleurotaenium trabecula var. *rectum* (Delp.) West et West
Pleurotaenium tridentulum (Wolle) W. West
Pleurotaenium tridentulum var. *gracile* Korster
Pluerotaenium undatum Scott et Prescott
Pleurotaenium verrucosum (Bail.) Lund. var. *validum* Scott et Gronbl
Pleurotaenium verrucosum var. *bulbosum* Krieg
Docidium baculum Breb
Triploceras gracile Breb
Triploceras gracile f. *curvatum* Scott et Prescott
Triploceras gracile var. *undulatum* Scott et Prescott
Triploceras splendens Prowse
Triploceras brebissonii var. *tenuissima* Mobius
Triploceras laevis (Kutz) Ralfs
Euastrum acanthophorum Trun. F. *minus* Scott et Prescott
Euastrum ampullaceum Ralfs

amily : Desmidiaceae

Euastrum ansatum Ehrb.
Euastrum ansatum var. *dideltiforme* Ducell
Euastrum ansatum var. *pyxidatum* Delp.
Euastrum binale (Turpin) Ehrb. var. *sectum* Turner
Euastrum cuneatum Jenner
Euastrum denticulatum (Kirchen.) Gay
Euastrum didelta Ralfs var. *bengalicum* Lagerh.
Euastrum gnathophorum West et West
Euastrum gnathophorum var. *bulbosum* Scott et Prescott
Euastrum humerosum Ralfs
Euastrum insulare (Wittr.) Roy var. *silesiacum* Gronbl
Euastrum longicolle Nordst
Euastrum longicolle var. *capitatum* West et West f. *minus* Scott et Prescott
Euastrum moebii (Borge) Scott et Prescott var. *tetrachastriforme* West et West f. *latum* Scott et Prescott
Euastrum sinuosum Lenorm. var *reductum* West et West
Euastrum sinuosum var. *scrobiculatum* Nordst
Euastrum sublobatum Breb
Ichthyocercus longispinus (Borge) Krieg
Ichthyodontum schlanii Scott et Prescott var. *parothium* Scott et Prescott
Micrasterias alata Wall.
Micrasterias alata f. *tumida* Prowse
Micrasterias anomala Turn
Micrasterias anomala var. *kalimantana* Scott et Prescott
Micrasterias anomala var. *sumatrana* Scott et Prescott
Micrasterias apiculata (Ehrb) Mengh. var. *lacerata* Turn.
Micrasterias ceratofera Josh
Micrasterias foliaceae Bail.
Micrasterias foliaceae var. *quadrinflata* Scott et Prescott
Micrasterias foliaceae var. *spinosa* Prowse
Micrasterias fimbriata Ralfs var. *elephanta* Wolle
Micrasterias lux Josh.
Micrasterias lux var. *sachlanii* Scott et Prescott
Micrasterias mahabuleshwarensis Hobs
Micrasterias mahabuleshwarensis var. *chauliodon* Scott et Prescott
Micrasterias mahabuleshwarensis var. *surculifera* Lagerh
Micrasterias pinnatifida
Micrasterias quadridentata (Nordst) Gronbl f. *indonesiensis* Scott et Prescott
Micrasterias radians Turn
Micrasterias rotata (Grev) Ralfs
Micrasterias sol (Ehrb) Kutz var *ornata* Nordst
Micrasterias thomasiana Arch. var. *evoluta* Krieg
Micrasterias thomasiana var *notata* (Nordst) Gronbl
Micrasterias torreyi var. *curvata* Krieg
Cosmarium alpecta Roy et Biss
Cosmarium armatum Joshua var. *verrucosum* Hirano
Cosmarium askenasyi Schm.
Cosmarium askenasyi f. *latum* Scott et Prescott
Cosmarium auriculatum Riensch
Cosmarium binerve Lund. var. *subangulatum* Scott et Prescott
Cosmarium ceylanicum W. et. West f. *minus* Scott et Prescott
Cosmarium circulare Reinsch f. *minor* West et West
Cosmarium contractum Kirchn. var. *pachydermum* Scot et Prescott
Cosmarium crassangulatum Borge
Cosmarium decoratum W. et West var. dentiferum West et West
Cosmarium denticulatum Borge var. *rotundatum* Borge

amily : Desmidiaceae

Cosmarium diplosporum (Lund.) Lutkem
Cosmarium globosum Bulnh var. *wollei* West et West
Cosmarium lagerheimianum (Turn.) Scott et Prescott
Cosmarium malleum Krieg.
Cosmarium marinvernianum (Racib.) Schmidle
Cosmarium maximum (Borge) West
Cosmarium moniliforme (Turp.) Ralfs var *indentatum* Scott et Gronbl
Cosmarium nudum (Turn) Gutw.
Cosmarium obsoletum (Hantz) Reinsch var. *sitvens* Gutw
Cosmarium portianum Arch.
Cosmarium quadrifarium lund.
Cosmarium reniforme (Ralfs) Arch. var. *elevatum* West et West
Cosmarium sexnotatum Gutw
Cosmarium spinuliferum West et West
Cosmarium subexcavatum West et West
Cosmarium subturgidum (Turn) Schmidle
Cosmarium trilobulata Reinsch
Cosmarium trilobulata var. *printzii* Messik
Cosmarium westi Bernard
Cosmarium zonatum Lund. var. *pyriforme* Scott et Prescott
Xanthidium acanthophorum Nordst var. *raciborskii* Gutw
Xanthidium antilopaeum (Breb) Kutz var. *laeve* Schm. f. *longispinum* Scott et Prescott
Xanthidium armatum (Breb) Rbh.
Xanthidium armatum var. *anguligerum* Krieg
Xanthidium burkillii West et West
Xanthidium kalimantanum Scott et Prescott
Xanthidium lepidum West et West
Xanthidium perissacanthum Scott et Prescott
Xanthidium superbum Elfv. var. *centricornis* Prowse
Arthrodesmus arcuatus Josh. var. *minus* Scott et prescott
Arthrodesmus convergens Ehrb.
Arthrodesmus curvatus Turn. var. *incrassatus* Scott et Prescott
Arthrodesmus gibberulus Josh.
Arthrodesmus impar (Jacob) Gronbl
Arthrodesmus octocornis Ehrb.
Arthrodesmus sachlanii Scott et Prescott
Arthrodesmus spechtii Scott et Prescott
Arthrodesmus subvalidus Gronbl
Arthrodesmus sumatranus Scott et Prescott
Cosmocladium sp.
Staurastrum anisacanthum Scott et Prescott
Staurastrum arthrodesmiforme Behre
Staurastrum cerastes Lund.
Staurastrum cerastes var. *coronatum* Krieg. f. *inflatum* Scott et Prescott
Staurastrum columbetoides West et West
Staurastrum connatum (Lund.) Roy et Biss
Staurastrum corniculatum Lund. var. *variabile* Nordst
Staurastrum curvatum W. West
Staurastrum cuspidatum Breb
Staurastrum cuspidatum var. *divergens* Nordst
Staurastrum dejectum Breb
Staurastrum ensiferum Turner
Staurastrum exporrectum Scott et Prescott
Staurastrum forficulatum Lund
Staurastrum freemani West et West

amily : Desmidiaceae

Staurastrum freemani var. *triquetrum* West et west
Staurastrum furcatum (Ehrb.) Breb
Staurastrum gracile Ralfs
Staurastrum gracile var *ornatum* Krieg
Staurastrum limneticum Schm.
Staurastrum limneticum var. *burmense* West et West
Staurastrum longispinum (Bail.) Arch. var. *bidentatum* (Wittr.) West
Staurastrum megacanthum Lund.
Staurastrum megacanthum var. *orientale* Prescott
Staurastrum megacanthum var. *scoticum* West et West
Staurastrum modestum Behre
Staurastrum octodontum Skuja
Staurastrum obiculare Ralfs var. *depressum* Roy et Biss
Staurastrum obiculare var. *denticulatum* Nordst
Staurastrum prionotum Scott et Prescott
Staurastrum punctulatum Breb.
Staurastrum saltans Josh.
Staurastrum saltans var. *polycharax* Scott et Prescott
Staurastrum saltans var. *sumatranum* Scott et Prescott
Staurastrum sexangulare Lund
Staurastrum sexangulare var. *attenuatum* Turn.
Staurastrum sexangulare var. *bidentatum* Gutw. f. *crassum* Scott et Prescott
Staurastrum sexangulare var. *productum* Nordst
Staurastrum sexangulare var. *subglabrum* West et West
Staurastrum smithii (G.M. Smith) Teiling
Staurastrum stauroton Scott et Prescott
Staurastrum subauriculatum West et West var. truncatum West et West
Staurastrum subgracillimum West et West
Staurastrum subsaltans var. *indonesianum* Scott et Prescott
Staurastrum subtrifurcatum West et West var. *major* West et West
Staurastrum tetracerum Ralfs
Staurastrum thienmanii Krieg
Staurastrum thienmanii f. *triradiatum* Scott et Prescott
Staurastrum tohopekaligense Wolle
Staurastrum tohopekaligense f. *minus* Turn) Scott et Prescott
Staurastrum triforcipatum West et West
Staurastrum trissacanthum Scott et Prescott var. *dissacanthum* Scott et Prescott
Staurastrum wandae Raciborski var. *brevispinum* Gronbl
Staurastrum wildmanii Gutw.
Staurastrum wildmanii var. *majus* (West et West) Scott et Prescott
Staurastrum zahlbruckneri Lutkem var *mamillatum* West et West
Staurastrum zonatum Borges
Sphaerozosma granulatum Roy et Biss.
Onychonema laeve Nordst. var. *micracanthum* Nordt.
Spondylosium nitens (Wal) Arch. var. *triangulare* Turn. f. *javanicum* Gutw.
Spondylosium moniliforme Lund.
Spondylosium planum (Wolle) West et West
Hyalothecea dissiliens (Smith) Breb
Hyalothecea dissiliens var. *hians* Wolle
Hyalothecea influta Scott et Gronbl
Hyalothecea mucosa (Dillw.) Ehrb.
Hyalothecea undulata Nordst
Hyalothecea undulata var. *perundulata* Gronbl
Gorenbladia neglecta (Racib.) Teiling
Gorenbladia neglecta var. *elongata* Scott et Gronbl.

amily : Desmidiaceae

Desmidium aptogonum Breb var. *tetragonum* West et West
Desmidium baileyi (Ralfs) Nordst
Desmidium baileyi f. *longiprocessum* Scott et Prescott
Desmidium baileyi f. *tetragonum* Nordst.
Desmidium bengalicum Turn.
Desmidium coarctatum Nordst
Desmidium grevillei (Kutz) De Bary
Desmidium graciliceps (Nordst) Lagerh
Desmidium quadratum Nordst
Desmidium suboccidentale Scott et Prescott
Desmidium swartzii Ag.
Desmidium swartzii var. *quadrangulatum* (Rolp.) Roy
Bambusina brebissonii Kutz
Phymatodocis irregularis Schm.
Phymatodocis irregularis var. *internedia* Gutw
Phymatodocis nordstedtiana Wolle
Phymatodocis nordstedtiana var. *triangularis* Prowse
Streptonema quadrangularis Prowse
Streptonema trilobatum Wall.

Appendix 21. List of phytoplankton from Tasek Bera (Phang and Murugadas, 1997).

ivision : Bacillariophyta
amily : Achnanthaceae
Achnanthes crenulata Grunow

amily : Cymbellaceae
Amphora coffeaeformis Agardh

amily : Eunotiaceae
Eunotia camelus Ehrenberg
Eunotia curvata (Kurtz.) Lagerheim
Eunotia flexuosa Brebisson ex. Kutzing
Eunotia pectinalis (Dillwyn) Rabenhorst
Eunotia robusta Ralfs.
Eunotia sarenkensis A. Cleve-Euler
Eunotia valida Hustedt

amily : Fragilariaceae
Fragilaria vaucheriae (Kutz.) Boye Petersen

amily : Naviculaceae
Frustulia rhomboides (Her) De Toni
Navicula amphibola Cleve
Navicula bacillum Ehrenberg
Navicula dicephala (Ehr.) W. Smith
Navicula tridentula Krasske
Neidium affine (Ehr.) Pfitzer
Pinnularia braunii (Grun.) Cleve
Pinnularia legumen Ehrenberg
Pinnularia trigonocephala P.T. Cleve
Stauroneis anceps Ehrenberg

amily : Nitzschiaceae
Nitzschia ignorata Krasske
Stenopterobia internida Rfike.

amily : Suriellaceae
Suriella spiralis Kutzing

amily : Tabellariaceae
Tabellaria fenestrata (Lyngbye) Kutzing
Tabellaria flocculosa (Roth) Kutzing

ivision : Chlorophyta
amily : Chlorococcaceae
Chlorococcum sp. Fries

amily : Coleochaetaceae
Coleochaete divergens Hansgirg

amily : Cylindrocapsaceae
Cylindrocapsa conferta W. West

amily : Desmidiaceae
Closterium cornu Ehrenberg
Closterium venus Kutzing
Cosmarium angulosum (Rab.) W. and G.S. West
Staurastrum arachnea W. and G.S. West
Staurastrum dejectum Brebisson
Staurastrum furcigerum Brebisson
Staurastrum limneticum G.M. Smith
Staurastrum manfeldtii Schumacer
Staurastrum obiculare Ralfs.
Staurastrum pachyrhyncus Brebisson
Staurastrum pentacerum (Wolle.) G.M. Smith
Staurastrum trifidum W. and G.S. Smith
Xanthidium cristatum Brebisson

amily : Hydrodictyaceae
Pediastrum simplex (Meyen) Lemmermann

amily : Microsporaceae
Radiofilum flavescens G.S. West

amily : Oocystaceae
Ankistrodesmus braunii (Nag.) Brunn
Chodatella citriformis Snow

amily : Palmellaceae
Gleocystis gigas Kutzing

amily : Scenedesmadaceae
Actinastrum fluviatile (Schroeder) Fott

amily : Ulotrichaceae
Ulothrix varitabilis Kutzing

amily : Zygnemataceae
Mougetia nummuloides (Hass.) de Toni
Spirogyra weberi Kutzing

ivision : Chrysophyta
amily : Dinobryonaceae
Dinobryon sertularia Ehrenberg

amily : Synuraceae
Mallomonas caudata Conrad

ivision : Cyanophyta
Oscillatoria angustissima West and West
Oscillatoria nigra Vaucher
Oscillatoria ornata Kutzing
Oscillatoria princeps Vaucher

Division : Euglenophyta
Family : Euglenaceae
Euglena acus Ehrenberg
Euglena proxima Dangeard
Phacus acuminatus Stok.
Trachelomonas allia Drez. em. Defl.
Trachelomonas volvocina Ehrenberg
Trachelomonas oblonga Lemm.

Division : Pyrrophyta
Family : Gymnodiniaceae
Gymnodinium sp. Stein

Appendix 22. List of phytoplankton from Tasek Bera (Williamson, David B., 1998)

Family : Closteriaceae
Closterium biclavatum Borges
Closterium intermedium Ralfs. var *intermedium*
Closterium nematodes Josh. var *nematodes*
Closterium ralfsii Breb. ex Breb. var *hybridum* Rabenh
Closterium striolatum Ehr. ex Ralfs var. *borgei* (Borge) W. Krieg
Closterium sp. *morphae*

Family : Desmidiaceae
Pleurotaenium ovatum Nordst. var *ovatum*
Pleurotaenium subcoronulatum (Turn.) W. et G.S. West var. *subcoronulatum*
Pleurotaenium verrucosum (Bail.) Lund var. *verrucosum*
Triploceras gracile Bail. var. *gracile*
Triploceras splendens Prowse
Icthyocercus longispinus (Borge) Krieg
Euastrum incavatum Josh. Et Nordst. var. *platycephalum* Scott et Prescott
Euastrum longicolle Nordst var. *capitatum* W. et G.S. West
Micrasterias foliaceae Bail. ex Ralfs var. *ornata* Nordst
Micrasterias thomasiana Arch. var. *evoluta* W. Krieg
Actinotaenium adelochondrum (Elfv.) Teil.
Actinotaenium cucurbitinum (Biss.) Teil.
Actinotaenium incurvum (Gronbl) Rino
Cosmarium askenasyi Schm.
Cosmarium contractum Kirchn. var *incrassatum* Scott et Prescott
Cosmarium lagerheimianum (Turn.) Scott et Prescott
Cosmarium otu s Krieg. var *ornatum* Scott et Prescott
Cosmarium praegrande Lund.
Cosmarium zonatum Lund var. *zonatum*
Xanthidium amatum (Breb.) Rab. var. *anguligerum* W. Krieg.
Xanthidium lepidum W. et G.S. West var. *lepidum*
Xanthidium sachlanii Scott et Prescott
Xanthidium superbum Elfv. var. *centricornis* Prowse
Staurodesmus dickiei (Ralfs) Lillier var. *denticulatus* (Nordst.) Teil
Staurodesmus triangularis (Lagerh.) Teil. var *limneticus* Teil.
Staurastrum acestrophorum W. et G.S. West
Staurastrum cerates Lund
Staurastrum freemanii W. et G.S. West var. *freemanii facies biradiata*
Staurastrum subsaltans W. et G.S. West var. *indonesianum* Scott et Prescott
Bambusina brebissonii Kutz ex Kutz var. *brebissonii*
Desmidium bengalicum Turner
Desmidium coarctatum Nordst *forma*

Abbreviations

The variable codes are shown as the original outcome of the statictica software applied with the logarithmic transformation sign.

Where,

H_ = Shannon-Weiner Index of Diversity

D = Margalef's Species Index

J = Equitability or Species Evenness Index

CHLLA = Chlorophyll-a concentration

COUNT = Phytoplankton cell count

PRODUCTI = Productivity measurement

DEPTH = Water depth

TRANSPAR = Transparency

CONDUCTI = Conductivity

PH = pH (acidity)

TEMP = Temperature

DO = Dissolved oxygen

PHOSPH = Dissolved orthophosphate

NH4_N = Ammoniacal-nitrogen concentration

NO3 = Nitrate concentration

ppendix 23. Results of two-way ANOVA to access difference in environmental and biotic parameters of all the sampling stations

Variables	p-level
H_	0.999461
D	0.999456
J	0.999466
CHLLA	0.868082
COUNT	0.999527
PRODUCTI	0.000568*
DEPTH	0.522037
TRANSPAR	0.000880*
CONDUCTI	0.998195
PH	0.720773
TEMP	0.537483
DO	0.543153
PHOSPH	0.537383
NH4_N	0.533075
NO3	0.538741

* Significance level : $p<0.05$

ppendix 24. Results of two-way ANOVA to access difference in environmental and biotic parameters among different sampling occasions (April to October 1998)

Variables	p-level
H_	0.000000*
D	0.000000*
J	0.000000*
CHLLA	0.006431*
COUNT	0.000000*
PRODUCTI	0.085823
DEPTH	0.066231
TRANSPAR	0.139144
CONDUCTI	0.000000*
PH	0.000000*
TEMP	0.065416
DO	0.061716
PHOSPH	0.064647
NH4_N	0.071291
NO3	0.066651

*Significance level : $p<0.05$