

Appendix 6.3: Summary statistic of metals concentrations ($\mu\text{g/g}$ dry mass) in the gill tissue of fish investigated at selected localities in the Klip River during May 1998.

		Concentration in gill tissue ($\mu\text{g/g}$ dry mass)									
		Sr	Cu	Al	Cd	Ni	Mn	Fe	Zn	Pb	
Olifantsvlei	<i>Clarias gariepinus</i>	n = 25									
		Maximum	70.57	12.04	248.26	2.05	3.26	30.96	3457241.38	131.98	8.21
		Minimum	14.03	2.14	132.61	0.00	0.00	10.36	205.37	7.53	0.92
		Average	41.26	3.70	176.83	0.25	0.35	16.87	138594.94	75.39	4.12
		Median	39.55	3.26	175.47	0.00	0.00	15.15	323.62	76.46	4.21
	SD	11.58	1.94	28.21	0.62	0.98	5.27	691384.68	19.05	1.89	
	<i>Labecobarbus aeneus</i>	n = 19									
		Maximum	173.93	5.94	298.85	1.30	4.57	181.15	461.90	110.90	7.06
		Minimum	81.28	2.49	145.86	0.00	0.00	43.78	164.80	56.24	2.52
		Average	109.63	3.33	197.36	0.13	0.94	77.14	293.12	68.80	4.32
Median		104.90	3.08	183.80	0.00	0.00	68.44	283.60	65.04	4.06	
SD	22.77	0.83	48.79	0.38	1.50	33.09	99.73	12.73	1.44		
Henley-on-Klip	<i>Clarias gariepinus</i>	n = 5									
		Maximum	491.60	5.08	823.66	0.00	6.44	134.43	819.08	163.66	8.00
		Minimum	13.08	3.43	139.06	0.00	0.00	10.67	193.16	78.08	3.06
		Average	114.68	4.63	296.30	0.00	1.29	39.88	404.68	103.67	5.37
		Median	19.98	4.84	180.76	0.00	0.00	18.47	316.81	88.34	4.42
	SD	210.80	0.68	295.52	0.00	2.88	52.96	247.34	35.70	2.38	
	<i>Labeo umbratus</i>	n = 25									
		Maximum	1215.45	5.39	1388.12	2.45	9.82	141.58	1574.26	337.41	9.08
		Minimum	22.88	0.00	157.50	0.00	0.00	16.39	116.08	50.31	0.00
		Average	559.70	3.17	472.30	0.24	3.43	91.88	484.59	121.40	4.16
Median		543.52	3.46	408.46	0.00	3.78	94.77	410.60	111.32	5.32	
SD	358.35	1.33	260.03	0.61	2.82	29.34	306.09	54.96	3.35		

Appendix 6.4: Summary statistic of metals concentrations ($\mu\text{g/g}$ dry mass) in the liver tissue of fish investigated at selected localities in the Klip River during May 1998.

		Concentration in liver tissue ($\mu\text{g/g}$ dry mass)									
		Sr	Cu	Al	Cd	Ni	Mn	Fe	Zn	Pb	
Olifantsvlei	<i>Clarias gariepinus</i>	n = 24									
		Maximum	5.18	36.13	129.72	2.59	4.41	38.05	28863.95	141.18	11.86
		Minimum	0.00	6.40	15.90	0.00	0.00	1.23	3072.43	50.71	0.00
		Average	0.45	19.56	47.74	0.88	0.82	3.67	11249.13	94.21	3.06
		Median	0.00	17.55	37.73	0.85	0.00	2.19	9883.00	93.43	2.43
	SD	1.14	9.56	29.15	0.82	1.37	7.34	6117.31	21.62	3.00	
	<i>Labeoobarbus aeneus</i>	n = 20									
		Maximum	2.13	43.08	117.29	0.00	0.00	3.52	1309.26	104.11	3.43
		Minimum	0.00	6.13	5.83	0.00	0.00	1.31	203.93	52.63	0.00
		Average	0.11	18.74	16.45	0.00	0.00	2.19	630.22	78.08	0.75
Median		0.00	16.84	12.07	0.00	0.00	2.03	504.22	79.80	0.00	
SD	0.48	9.22	23.94	0.00	0.00	0.62	314.92	15.64	1.17		
Henley-on-Klip	<i>Clarias gariepinus</i>	n = 5									
		Maximum	2.21	139.63	26.62	0.00	0.00	2.41	5097.72	245.14	3.08
		Minimum	0.00	30.90	10.99	0.00	0.00	1.59	150.28	59.39	1.85
		Average	0.44	61.93	18.24	0.00	0.00	1.94	2999.11	172.45	2.53
		Median	0.00	43.60	18.31	0.00	0.00	1.76	3970.09	204.46	2.51
	SD	0.99	45.36	6.65	0.00	0.00	0.40	2000.24	79.33	0.52	
	<i>Labeco umbratus</i>	n = 25									
		Maximum	1.75	452.98	43.46	0.91	3.90	3.29	1643.38	205.74	4.46
		Minimum	0.00	4.25	5.26	0.00	0.00	0.63	137.66	35.48	1.04
		Average	0.26	68.01	13.98	0.04	0.80	1.72	454.18	69.20	2.60
Median		0.00	21.35	10.38	0.00	0.00	1.81	300.73	62.12	2.63	
SD	0.52	120.82	9.90	0.18	1.12	0.64	351.87	32.76	0.90		

Appendix 6.5: Summary statistic of metals concentrations ($\mu\text{g/g}$ dry mass) in the muscle tissue of fish investigated at selected localities in the Klip River during May 1998.

		Concentration in muscle tissue ($\mu\text{g/g}$ dry mass)									
		Sr	Cu	Al	Cd	Ni	Mn	Fe	Zn	Pb	
Olifantsvlei	<i>Clarias gariepinus</i>	n = 25									
		Maximum	7.94	3.34	48.35	2.04	0.00	3.09	292.06	63.48	2.92
		Minimum	0.00	0.00	2.38	0.00	0.00	0.00	33.90	6.15	0.00
		Average	0.65	0.71	12.57	0.08	0.00	0.38	78.97	23.13	0.50
		Median	0.00	0.76	10.16	0.00	0.00	0.12	59.57	20.31	0.00
	SD	1.80	0.78	9.28	0.41	0.00	0.73	56.23	12.03	0.84	
	<i>Laboeobarbus aeneus</i>	n = 20									
		Maximum	5.00	6.77	117.10	1.33	43166.67	18.90	2185.05	35.93	2.23
		Minimum	0.00	0.00	11.04	0.00	0.00	0.76	25.66	6.57	0.00
		Average	2.09	1.92	27.62	0.15	2158.33	2.98	283.16	20.42	0.46
Median		2.11	1.64	23.71	0.00	0.00	1.44	65.87	19.76	0.00	
SD	1.20	1.60	22.09	0.38	9652.36	4.24	599.36	6.65	0.78		
Henley-on-Klip	<i>Clarias gariepinus</i>	n = 5									
		Maximum	4.01	3.41	16.43	0.00	0.00	2.04	265.92	73.95	3.17
		Minimum	0.00	1.36	8.67	0.00	0.00	0.20	33.84	20.75	1.30
		Average	0.90	2.29	12.15	0.00	0.00	0.90	101.57	32.22	1.83
		Median	0.00	1.71	10.64	0.00	0.00	0.52	49.85	21.76	1.50
	SD	1.75	0.98	3.48	0.00	0.00	0.77	97.16	23.34	0.76	
	<i>Labeco umbratus</i>	n = 25									
		Maximum	53.50	5.75	45.69	2.74	3.27	5.90	131.47	75.64	4.39
		Minimum	0.00	1.00	9.72	0.00	0.00	0.15	15.98	14.79	0.00
		Average	14.83	2.71	23.72	0.19	0.13	2.13	58.07	42.78	2.53
Median		5.53	2.65	23.15	0.00	0.00	1.88	48.91	36.44	2.80	
SD	17.77	1.22	10.67	0.68	0.65	1.74	31.72	16.87	1.14		

Appendix 6.6: Summary statistic of metals concentrations ($\mu\text{g/g}$ dry mass) in the skin tissue of fish investigated at selected localities in the Klip River during May 1998.

		Concentration in skin tissue ($\mu\text{g/g}$ dry mass)									
		Sr	Cu	Al	Cd	Ni	Mn	Fe	Zn	Pb	
Olifantsvlei	<i>Clarias gariepinus</i>	n = 25									
		Maximum	1.80	2.83	24.43	0.00	3.62	5.81	168.67	101.99	5.84
		Minimum	0.10	0.00	4.39	0.00	0.00	0.00	24.25	14.05	0.00
		Average	0.92	1.18	12.99	0.00	0.14	0.75	60.74	42.79	2.84
		Median	1.06	1.03	12.17	0.00	0.00	0.45	50.05	33.10	2.60
	SD	0.45	0.68	5.27	0.00	0.72	1.23	34.13	28.70	1.53	
	<i>Labeobarbus aeneus</i>	n = 19									
		Maximum	2.59	4.50	23.32	0.00	0.00	1.78	132.05	309.53	4.21
		Minimum	0.00	0.75	6.62	0.00	0.00	0.00	21.06	54.02	1.30
		Average	0.54	1.44	13.47	0.00	0.00	0.51	52.58	128.22	2.86
Median		0.14	1.32	12.35	0.00	0.00	0.45	44.22	116.17	3.03	
SD	0.85	0.80	4.88	0.00	0.00	0.41	27.86	72.02	0.82		
Henley-on-Klip	<i>Clarias gariepinus</i>	n = 5									
		Maximum	11.16	1.52	18.79	0.00	0.00	1.30	46.82	116.67	4.76
		Minimum	0.00	0.94	6.08	0.00	0.00	0.08	18.90	38.08	1.84
		Average	2.62	1.21	10.48	0.00	0.00	0.41	32.85	68.56	2.88
		Median	0.19	1.24	8.31	0.00	0.00	0.20	33.25	55.16	2.56
	SD	4.82	0.21	5.18	0.00	0.00	0.50	10.92	30.67	1.12	
	<i>Labeo umbratus</i>	n = 25									
		Maximum	31.54	4.10	30.96	1.62	2.26	3.48	91.42	187.25	5.82
		Minimum	0.00	0.64	7.19	0.00	0.00	0.00	10.88	24.40	0.00
		Average	3.78	1.46	12.86	0.06	0.20	0.64	26.33	112.99	1.91
Median		1.07	1.41	11.75	0.00	0.00	0.42	19.65	107.54	0.00	
SD	6.99	0.68	5.15	0.32	0.57	0.77	20.65	43.92	2.17		