

The Ecological Integrity of the Klip River (Gauteng)

**Appendix 6.11:** Ranges of selected water quality variables at which fish species were observed during present study. (Blue - narrow range; Red - wide range)

Variable	Species												
	<i>B. ano</i>	<i>B. pal</i>	<i>B. pau</i>	<i>Lb. aen</i>	<i>Lb. kim</i>	<i>L. cap</i>	<i>L. umb</i>	<i>A. scl</i>	<i>C. gar</i>	<i>P. phi</i>	<i>T. spar</i>	<i>C. carp</i>	
Temperature	min	10.8	13.5	13.5	12.3	14.4	12.3	13.3	14.3	12.3	13.3	13.3	12.3
	max	26	26.7	26	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26	26.7
pH	min	7.3	7.7	7.3	7.4	7.4	7.4	7.4	7.4	7.3	7.3	6.8	7.4
	max	8.4	7.8	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.3	8.3	8.4
EC	min	43	235	611	43	43	43	43	43	43	217	217	43
	max	1400	710	880	970	235	970	890	810	1400	950	1146	970
TDS	min	245	235	430	235	235	235	235	235	235	235	420	235
	max	1520	430	1520	1520	245	1520	1520	715	1230	1520	1520	700
O2 sat	min	50.2	85.9	50.2	68.9	72.4	68.9	72.4	68.9	50.2	50.2	68.9	71
	max	195	105.1	195	195	91.2	195	195	149.5	195	195	195	195
DO	min	3.91	6.09	3.91	5	6.09	5.56	5.56	6.06	3.91	3.91	5	5
	max	13.41	9.21	13.41	13.41	7.74	13.41	13.41	10.08	13.41	13.41	13.41	13.41
Turbidity	min	1.7	8.5	4.5	1.7	8.7	1.7	2.5	1.7	4.2	2.5	1.7	2.5
	max	51	28	28	51	51	51	51	28	51	51	60	51
SS	min	7	26	7	7	23	7	7	23	23	7	7	10
	max	142	130	142	172	130	172	130	142	130	172	142	172
Hardness	min	86	88	185	86	86	86	86	88	86	86	86	86
	max	610	225	370	325	88	325	295	310	610	370	325	325
Alkalinity	min	74	89	100	80	80	80	80	89	74	80	16	80
	max	170	100	165	170	170	170	170	170	170	165	135	170
Ca	min	18	17	46	17	17	17	17	17	17	17	18	17
	max	160	62	93	79	18	79	74	77	160	93	170	79
Mg	min	9.9	8.3	17	8.3	8.3	8.3	8.3	8.3	8.3	8.3	9.9	8.3
	max	59	24	38	31	9.9	31	28	30	59	38	65	31
Na	min	16	36	27	16	16	16	16	36	16	16	16	16
	max	105	61	105	83	36	83	83	64	105	105	83	83
K	min	2.2	1.2	3.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	3.3	1.2
	max	21	13	21	21	3.3	21	21	14	21	21	21	21
NH3	min	0.05	2	0.05	0.06	0.21	0.06	0.06	0.08	0.05	0.05	0.08	0.06
	max	3.8	2	1.8	2	2	2	2	2	2	2	1.8	2
Nitrite	min	0.05	0.08	0.06	0.05		0.05	0.05		0.05	0.05	0.05	0.06
	max	0.38	0.08	0.38	0.48		0.48	0.38		0.38	0.48	0.38	0.48
Ortho-P	min	0.26	0.87	0.71	0.26	0.26	0.26	0.26	0.71	0.26	0.26	0.26	0.26
	max	1.4	0.87	1.1	1.1	0.26	1.1	1.1	0.71	1.1	1.1	1.1	1.1
PO4	min	0.98	2.5	1.3	0.98		0.98	0.98		1	0.98	0.87	0.98
	max	2.9	2.5	2.5	2.9		2	2.5		2.9	2.9	2.9	2.9
SO4	min	9.5	65	100	9.5	19	9.5	9.5	9.5	9.5	19	19	9.5
	max	300	195	205	300	65	300	300	300	235	205	300	235
Cl	min	20	13	33	13	13	13	13	13	13	13	20	13
	max	73	13	71	77	13	77	77	70	77	73	73	77
F	min	0.14	0.13	0.25	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.2	0.13
	max	0.28	0.13	0.28	0.29	0.13	0.29	0.29	0.23	0.29	0.28	0.3	0.29
C.O.D.	min	2.4		23	2.4	2.4	2.4	2.4	2.4	2.4	23	27	2.4
	max	52		52	60	2.4	60	52	39	53	60	52	60
GCI (%)	min	65	67	65	65		65	65	70	65	65	65	65

*B.ano* - *Barbus anoplus*; *B.pal*- *Barbus pallidus*; *B.pau*-*Barbus paludinosus*; *Lb.aen*- *Labeobarbus aeneus*; *Lb.kim*-*Labeobarbus kimberleyensis*; *L.cap*-*Labeo capensis*; *L.umb*-*Labeo umbratus*; *A.scl*-*Austroglanis sclateri*; *C.gar*-*Clarias gariepinus*; *P.phi*-*Pseudocrenilabrus philander*; *T.spar*-*Tilapia sparrmanii*; *C.carp*-*Cyprinus carpio*.