

Table S1

Species	Code	Genus	Tribe	Origin	# Individuals with sequenced microbiota	Diet information			Morphological data <sup>2</sup>							
						Gut content (with main food source bolded)	Main reference for gut content	Additional references	Diet_category	Approximate Metabolism <sup>1</sup>	# Individuals	gut_length_mean (mm)	gut_length_stdev	gut_length/SW <sup>3</sup>	gut_length/SL <sup>4</sup>	References
<i>Konia dikume</i>	<b>Kondik</b>	Konia	Oreochromini	Barombi	4	<b>mosquito larvae (genus <i>Chaoborus</i>)</b> , organic debris	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	I	Pr	5	32,30	5,85	1,00	0,31	this study
<i>Pungu maclareni</i>	<b>Punmac</b>	Pungu	Oreochromini	Barombi	5	<b>sponges</b> , organic debris and insect larvae	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	O	Pr	5	27,50	1,12	1,79	0,36	this study
<i>Stomatepia mariae</i>	<b>Stomar</b>	Stomatepia	Oreochromini	Barombi	4	<b>insects</b>	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	C	Pr	5	17,00	1,84	1,04	0,20	this study
<i>Stomatepia pindu</i>	<b>Stopin</b>	Stomatepia	Oreochromini	Barombi	5	<b>Insects</b>	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	C	Pr	5	11,44	3,39	1,33	0,17	this study
<i>Myaka myaka</i>	<b>Myamya</b>	Myaka	Oreochromini	Barombi	4	<b>phytoplankton</b> and small insects	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	P	F	5	20,70	0,91	2,03	0,28	this study
<i>Sarotherodon caroli</i>	<b>Sarcar</b>	Sarotherodon	Oreochromini	Barombi	4	<b>phytoplankton</b>	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	P	F	5	67,80	10,80	0,94	0,52	this study
<i>Sarotherodon linnellii</i>	<b>Sarlin</b>	Sarotherodon	Oreochromini	Barombi	5	<b>phytoplankton</b>	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	P	F	5	80,20	16,04	0,56	0,48	this study
<i>Konia eisentrauti</i>	<b>Koneis</b>	Konia	Oreochromini	Barombi	4	<b>organic debris, insects</b> and plants	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	O	F	5	16,50	4,96	1,40	0,23	this study
<i>Sarotherodon lohbergeri</i>	<b>Sarloh</b>	Sarotherodon	Oreochromini	Barombi	3	<b>organic debris</b> , diatoms, sponge spicules, filamentous algae, surface fallen plants	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	H	F	5	67,40	9,15	2,63	0,73	this study
<i>Sarotherodon steinbachi</i>	<b>Sarste</b>	Sarotherodon	Oreochromini	Barombi	5	<b>organic debris</b> , diatoms, sponge spicules, surface fallen plants	Trewavas et al. 1992	unpublished observations (stable isotopes and trophic morphology)	H	F	5	97,40	4,77	5,19	1,12	this study
<i>Plecodus straeleni</i>	<b>Plestr</b>	Plecodus	Perissodini	Tanganyika	3	<b>fish scales</b> and skin	Muschick et al. 2012	Muschick et al. 2014; Takahashi et al. 2007	SC	Pr	5	108,00	36,33	6,51	1,27	Muschick et al. 2012; Muschick et al. 2014
<i>Lamprologus lemairii</i>	<b>Lamlem</b>	Lamprologus	Lamprologini	Tanganyika	4	<b>crustaceans</b> and fish remains	Muschick et al. 2012	Muschick et al. 2014; Wagner et al. 2009	C	Pr	5	115,00	35,00	3,64	1,02	Muschick et al. 2012; Muschick et al. 2014
<i>Lepidolamprologus eolongatus</i>	<b>Lepelo</b>	Lepidolamprologus	Lamprologini	Tanganyika	3	<b>fish remains</b> , crustaceans and insects	Muschick et al. 2012	Muschick et al. 2014; Wagner et al. 2009	C	Pr	10	76,50	17,49	4,89	0,81	Muschick et al. 2012; Muschick et al. 2014
<i>Lepidolamprologus attenuatus</i>	<b>Lepatt</b>	Lepidolamprologus	Lamprologini	Tanganyika	5	<b>fishes remains, crustaceans, insects</b> , plants and sand	Muschick et al. 2012	Muschick et al. 2014	C	Pr	10	66,00	21,19	6,15	0,80	Muschick et al. 2012; Muschick et al. 2014
<i>Altolamprologus fasciatus</i>	<b>Altfas</b>	Altolamprologus	Lamprologini	Tanganyika	5	<b>insects</b> , crustaceans, fish remains	Muschick et al. 2012	Muschick et al. 2014	C	Pr	8	105,63	23,37	8,87	1,19	Muschick et al. 2012; Muschick et al. 2014
<i>Enantlopus melanogenys</i>	<b>Enamel</b>	Enantlopus	Ectodini	Tanganyika	2	<b>insects</b> , mollusks, fish remains and plants	Muschick et al. 2012	Muschick et al. 2014	C	Pr	7	127,14	28,12	12,06	1,41	Muschick et al. 2012; Muschick et al. 2014
<i>Gnathochromis pfefferi</i>	<b>Gnapfe</b>	Gnathochromis	Tropheini	Tanganyika	2	<b>insects, crustaceans</b> and sand	Muschick et al. 2012	Muschick et al. 2014	C	Pr	7	126,43	58,93	11,14	1,72	Muschick et al. 2012; Muschick et al. 2014
<i>Cypichromis coloratus</i>	<b>Cypcol</b>	Cypichromis	Cypichromini	Tanganyika	3	<b>Insects</b> and crustaceans (zooplankton)	Muschick et al. 2012	Muschick et al. 2014	P	Pr	10	94,50	27,43	12,21	1,82	Muschick et al. 2012; Muschick et al. 2014
<i>Neolamprologus savoyi</i>	<b>Neosav</b>	Neolamprologus	Lamprologini	Tanganyika	4	<b>insects, algae</b> and sand (plankton)	Muschick et al. 2012	Muschick et al. 2014	P	F	11	66,82	23,59	11,73	1,14	Muschick et al. 2012; Muschick et al. 2014
<i>Aulonochranus dewindtii</i>	<b>Audelw</b>	Aulonochranus	Ectodini	Tanganyika	5	<b>insects, crustaceans and algae</b>	Muschick et al. 2012	Muschick et al. 2014	O	F	9	116,67	66,19	8,68	1,46	Muschick et al. 2012; Muschick et al. 2014
<i>Ctenochormis horei</i>	<b>Ctehor</b>	Ctenochormis	Tropheini	Tanganyika	4	<b>insects, crustaceans, algae, plants</b> and sand	Muschick et al. 2012	Muschick et al. 2014	O	F	11	222,27	47,61	12,11	2,33	Muschick et al. 2012; Muschick et al. 2014
<i>Julidochromis ornatus</i>	<b>Julorn</b>	Julidochromis	Lamprologini	Tanganyika	5	<b>algae, insects</b> , plants, mollusks and sand	Muschick et al. 2012	Muschick et al. 2014	O	F	8	63,13	21,03	23,81	1,25	Muschick et al. 2012; Muschick et al. 2014
<i>Xenotilapia spiloteria</i>	<b>Xenspi</b>	Xenotilapia	Ectodini	Tanganyika	5	<b>mollusks, insects, sand</b> , algae and plants	Muschick et al. 2012	Muschick et al. 2014	O	F	3	121,67	32,53	17,20	1,72	Muschick et al. 2012; Muschick et al. 2014
<i>Variabilichromis moorii</i>	<b>Varmoo</b>	Variabilichromis	Lamprologini	Tanganyika	2	<b>algae</b> (browser), plants and insects	Muschick et al. 2012	Muschick et al. 2014; Hata et al. 2014; Hata et al. 2015; Ota et al. 2012	H	F	10	170,00	50,28	15,76	2,41	Muschick et al. 2012; Muschick et al. 2014
<i>Neolamprologus pulcher</i>	<b>Neopul</b>	Neolamprologus	Lamprologini	Tanganyika	5	<b>algae, sand, plants</b> and crustaceans (plankton)	Muschick et al. 2012	Muschick et al. 2014	H	F	9	111,11	24,85	19,27	1,88	Muschick et al. 2012; Muschick et al. 2014
<i>Interochromis loockii</i>	<b>Intloo</b>	Interochromis	Tropheini	Tanganyika	5	<b>algae</b> (grazer)	Muschick et al. 2012	Muschick et al. 2014; Hata et al. 2014; Hata et al. 2015	H	F	11	750,45	238,96	26,34	8,00	Muschick et al. 2012; Muschick et al. 2014
<i>Ophthalmotilapia ventralis</i>	<b>Ophven</b>	Ophthalmotilapia	Ectodini	Tanganyika	3	<b>algae</b> and insects	Muschick et al. 2012	Muschick et al. 2014	H	F	12	408,33	44,53	28,54	5,08	Muschick et al. 2012; Muschick et al. 2014
<i>Eretmodus cyanostictus</i>	<b>Erecya</b>	Eretmodus	Eretmodini	Tanganyika	5	<b>algae</b> (scraper), plants and insects	Muschick et al. 2012	Muschick et al. 2014; Hata et al. 2014; Hata et al. 2015; Wagner et al. 2009	H	F	4	350,00	86,79	32,27	5,25	Muschick et al. 2012; Muschick et al. 2014
<i>Simochromis babaulti</i>	<b>Simbab</b>	Simochromis	Tropheini	Tanganyika	2	<b>plants</b> (browser)	Muschick et al. 2012	Muschick et al. 2012	H	F	NA	NA	NA	NA	NA	Muschick et al. 2012; Muschick et al. 2014

<sup>1</sup> indicates whether a species regularly includes (F) or not (Pr) significant amount of vegetable material in its diet.<sup>2</sup> *C. leptosoma* was used as a proxy for *C. coloratus*<sup>3</sup> SW=specimen weight<sup>4</sup> SL= specimen length