Supplementary Material

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Using stable δ13C and δ15N isotopes to assess foodweb structures in an African subtropical temporary pool

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Supplementary Tables

Table S1: Parametric (Analysis of Variance) and non-parametric (Kruskal-Wallis H) test results for $\delta^{13}C$ and $\delta^{15}N$ intra-seasonal, between-group comparisons of the four food source groups sampled from the selected temporary site within the Ndumo Game Reserve (NGR) in May 2016 (dry season) (a) and February 2017 (wet season).

Season	Isotope	Parametric or Non-parametric	*n*	df	Significance (*F*-statistic or χ^2 statistic)
Dry	$\delta^{13}C$	Parametric	30	3	$p = 0.251$ ($F = 1.449$)
	$\delta^{15}N$	Non-parametric	30	3	$p < 0.001$ ($\chi^2 = 23.631$)
Wet	$\delta^{13}C$	Non-parametric	46	3	$p < 0.001$ ($\chi^2 = 19.340$)
	$\delta^{15}N$	Non-parametric	46	3	$p < 0.0001$ ($\chi^2 = 26.718$)

Table S2: Dunn's post hoc test analysis of significance results for $\delta^{13}C$ and $\delta^{15}N$ intra-seasonal, between-group comparisons of the four food source groups sampled from the selected temporary site within the Ndumo Game Reserve (NGR) in May 2016 (dry season) (a) and February 2017 (wet season). LPS – Lower primary sources, HPS – Higher primary sources, LSS – Lower secondary sources, HSS – Higher secondary sources.

Season	Isotope	Comparison	Significance
Dry	$\delta^{15}N$	LPS and HSS	$p < 0.001$ ($\chi^2 = -17.264$)
		LPS and HPS	$p = 0.002$ ($\chi^2 = -17.942$)
Wet	$\delta^{13}C$	HSS and LSS	$p = 0.021$ ($\chi^2 = -17.967$)
		HSS and LPS	$p = 0.002$ ($\chi^2 = -21.303$)
		HSS and HPS	$p < 0.0001$ ($\chi^2 = 23.479$)
	$\delta^{15}N$	HPS and HSS	$p < 0.0001$ ($\chi^2 = -24.097$)
		HPS and LSS	$p < 0.001$ ($\chi^2 = -22.075$)
		LPS and HSS	$p = 0.041$ ($\chi^2 = 16.313$)

Table S3: Parametric (independent samples) and non-parametric (Mann-Whitney *U*) test results for $\delta^{13}C$ and $\delta^{15}N$ inter-seasonal (dry compared to wet), within-group comparisons of the four food source groups and of *Nothobranchius orthonotus* sampled from the selected temporary site within the Ndumo Game Reserve (NGR) in May 2016 (dry season) and February 2017 (wet season). LPS – Lower primary sources, HPS – Higher primary sources, LSS – Lower secondary sources, HSS – Higher secondary sources.

Variable	Isotope	Parametric or Non-parametric	N	Significance
Consumers	$\delta^{13}C$	Parametric	5	$p = 0.317$ ($t_7 = 1.076$)
	$\delta^{15}N$	Parametric	4	$p = 0.007$ ($t_7 = -3.781$)
LPS	$\delta^{13}C$	Non-parametric	24	$p = 0.072$ ($U = 40$)
	$\delta^{15}N$	Non-parametric	24	$p < 0.0001$ ($U = 143$)
HPS	$\delta^{13}C$	Non-parametric	20	$p = 0.148$ ($U = 16$)
	$\delta^{15}N$	Non-parametric	20	$p < 0.001$ ($U = 0$)
LSS	$\delta^{13}C$	Non-parametric	16	$p = 0.263$ ($U = 19$)
	$\delta^{15}N$	Non-parametric	16	$p = 0.007$ ($U = 54$)
HSS	$\delta^{13}C$	Non-parametric	16	$p = 0.002$ ($U = 4$)
	$\delta^{15}N$	Parametric	16	$p = 0.296$ ($t_{14} = 1.085$)

Supplementary Figures

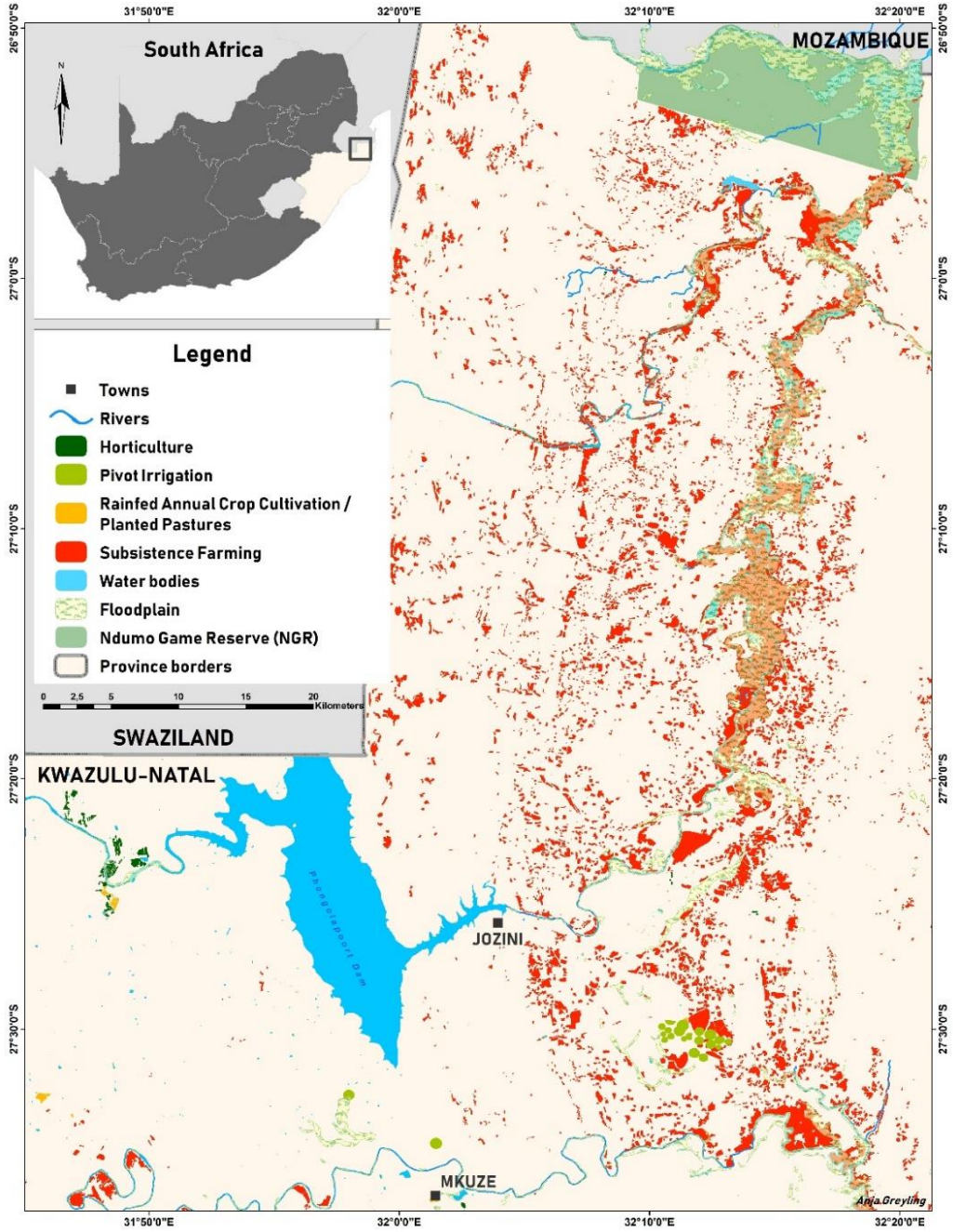

Figure S1: Map of the Pongolapoort Dam and lower Phongolo region indicating various irrigation schemes and farms located above the dam and on the floodplain outside the Ndumo Game Reserve

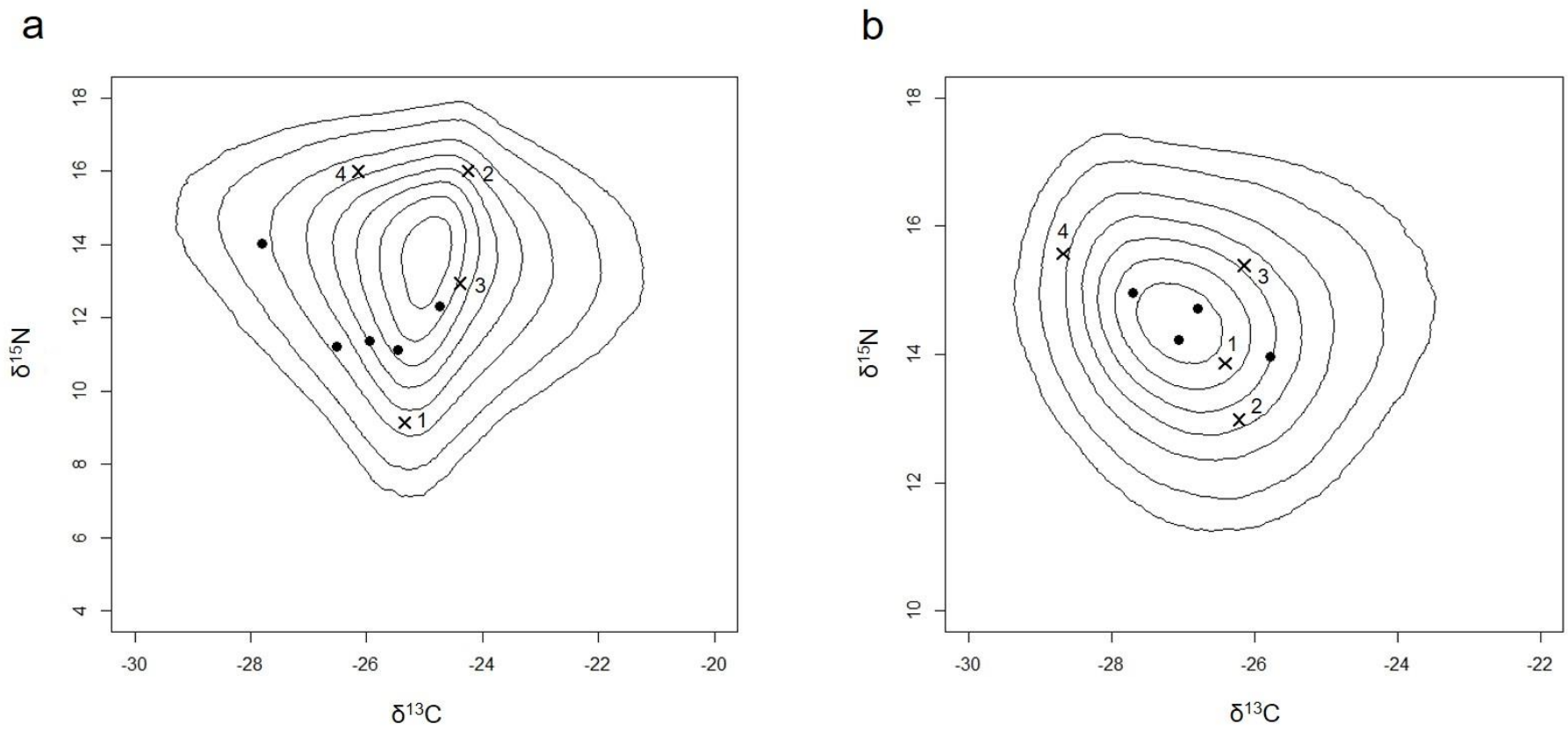

Figure S2: The simulated mixing polygon region for the initial Bayesian mixing model for the temporary pool in the dry (a) and wet (b) sampling seasons. Black dots represent the isotopic position of the consumer *Nothobranchius orthonotus* individuals. Black crosses indicate the position of the four food source groups. Black lines represent the probablilty contours at the 5% level (outermost contour) and at every 10% level towards the centre. No consumers are located outside the 95% mixing region and none were therefore omitted from the final mixing model. Numbers indicate food source groups: 1 – Lower primary sources, 2 – Higher primary sources, 3 – Lower secondary sources, 4 – Higher secondary sources.