Supplementary Information

Distribution of *Contracaecum* (Nematoda: Anisakidae) larvae in freshwater fish from the northern regions of South Africa

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Table S1: The year, total number of fish examined (*n*), infected hosts (*I*) and *Contracaecum* spp. burden (*C*) in five of the most prevalent fish species sampled seasonally from 14 reservoirs in the northern and north-eastern regions of South Africa between 2005 and 2013

Parameters		Fish species															
		<i>Clarias gariepinus</i>				<i>Micropterus salmoides</i>				<i>Oreochromis mossambicus</i>				<i>Schilbe intermedius</i>			
Locality	Season	Year	<i>n</i>	<i>I</i>	<i>C</i>	Year	<i>n</i>	<i>I</i>	<i>C</i>	Year	<i>n</i>	<i>I</i>	<i>C</i>	Year	<i>n</i>	<i>I</i>	<i>C</i>
AP	Sp	'08	5	4	143	–	–	–	–	'08	6	–	–	–	–	–	–
	Su	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Au	'09	3	2	7	–	–	–	–	'09	12	–	–	–	–	–	–
	Wi	'08/09	8	7	420	'09	1	1	7	'08/09	25	–	–	–	–	–	–
FBD	Sp	'12	1	1	110	–	–	–	–	'10	10	2	3	'09	10	10	455
	Su	'13	1	–	–	'09	2	1	3	'10/12	13	2	6	'10	10	10	657
	Au	'09	4	4	850	–	–	–	–	'09/10	23	5	7	'09/10/13	40	39	3 024
	Wi	'09	11	6	3 280	–	–	–	–	'06/11/12	20	–	–	'09	10	10	589
HR	Sp	'11	4	3	126	–	–	–	–	'11	6	5	5	–	–	–	–
	Su	–	–	–	–	'09	2	1	23	–	–	–	–	–	–	–	–
	Au	'10	3	2	25	'11	1	–	–	'11	7	4	4	–	–	–	–
	Wi	'11	7	2	4	–	–	–	–	'11	3	2	3	–	–	–	–
KPT	Sp	–	–	–	–	'08	7	1	1	'10	15	–	–	–	–	–	–
	Su	'08	5	–	–	–	–	–	–	'08	2	–	–	–	–	–	–
	Au	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Wi	'06	4	3	31	–	–	–	–	'06	5	–	–	–	–	–	–
LD	Sp	–	–	–	–	–	–	–	–	'10	25	5	13	'11	1	1	65
	Su	–	–	–	–	–	–	–	–	–	–	–	–	'11	15	14	1 617
	Au	–	–	–	–	–	–	–	–	'13	24	–	–	'10/12	30	19	1 106
	Wi	–	–	–	–	–	–	–	–	–	–	–	–	'11	12	12	956
MO	Sp	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Su	–	–	–	–	'13	1	–	–	–	–	–	–	–	–	–	–
	Au	–	–	–	–	–	–	–	–	'13	25	–	–	–	–	–	–
	Wi	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ND	Sp	'09/10	6	6	207	'09/10	7	3	9	'09/10	27	3	6	'09/10	26	20	421
	Su	'10	1	1	53	'11/13	9	1	1	'09/10	8	2	4	'10	7	5	78
	Au	'10	9	7	263	'10/11	5	–	–	'10/11	14	4	6	'10/11	20	13	171
	Wi	'10/11	2	1	120	–	–	–	–	'10	15	–	–	'07/10/11	37	18	408
NL	Sp	–	–	–	–	–	–	–	–	–	–	–	–	'07/09	11	11	543
	Su	–	–	–	–	–	–	–	–	–	–	–	–	'10	13	10	399
	Au	–	–	–	–	–	–	–	–	–	–	–	–	'08/10/13	21	20	1 455
	Wi	–	–	–	–	–	–	–	–	'09	20	1	1	'08/09	16	16	708
PB	Sp	'10	13	13	527	–	–	–	–	'10	18	–	–	'10/11	20	10	31
	Su	'11	20	20	637	–	–	–	–	'11	14	4	5	'11	14	8	27

	Au	'10	14	14	665	-	-	-	-	'10	20	3	7	'10	10	2	8	-	-	-	-
	Wi	'10	9	9	372	-	-	-	-	'10	20	3	3	'10	10	8	44	-	-	-	-
P1	Sp	'05	5	5	1 147	-	-	-	-	'05	9	-	-	-	-	-	-	-	-	-	-
	Su	'06	3	3	905	-	-	-	-	'06	11	-	-	-	-	-	-	-	-	-	-
	Au	'06	5	5	803	-	-	-	-	'06	10	1	3	-	-	-	-	-	-	-	-
	Wi	'05	5	5	2 221	-	-	-	-	'05	10	1	1	-	-	-	-	-	-	-	-
P2	Sp	'05	5	5	810	-	-	-	-	'05	10	2	6	-	-	-	-	-	-	-	-
	Su	'06	5	5	480	-	-	-	-	'06	10	2	3	-	-	-	-	-	-	-	-
	Au	'06	6	6	795	-	-	-	-	'06	19	3	7	-	-	-	-	-	-	-	-
	Wi	'05	5	5	1 510	-	-	-	-	'05	7	2	2	-	-	-	-	-	-	-	-
P3	Sp	'05	3	3	426	-	-	-	-	'05	10	4	11	-	-	-	-	-	-	-	-
	Su	'06	4	4	700	-	-	-	-	'06	10	5	11	-	-	-	-	-	-	-	-
	Au	'06	9	9	3 473	-	-	-	-	'06	19	9	19	-	-	-	-	-	-	-	-
	Wi	'05	2	2	1 060	-	-	-	-	'05	9	5	13	-	-	-	-	-	-	-	-
TP	Sp	-	-	-	-	-	-	-	-	'10	15	4	4	-	-	-	-	-	-	-	-
	Su	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Au	-	-	-	-	-	-	-	-	'09/10	16	-	-	-	-	-	-	-	-	-	-
	Wi	-	-	-	-	-	-	-	-	'10	15	-	-	-	-	-	-	-	-	-	-
TZ	Sp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Su	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Au	-	-	-	-	-	-	-	-	-	-	-	-	'13	10	3	13	'13	1	-	-
	Wi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ As referred to in Figure 1; AP = Anglo Platinum, FBD = Flag Boshielo Dam, HR = Hout River Dam, KPT = Komatipoort Reservoir, LK = Loskop Dam, MO = Molepo Dam, ND = Nandoni Dam, NL = Nwanedi-Luphephe Dams, P1–P3 = tailing dams, TS = Tompi Seleka, TZ = Tzaneen Dam

- indicates no data recorded

Sp = Spring, Su = Summer, Au = Autumn, Wi = Winter

Table S2: The year and number (*n*) of uninfected fish species sampled from ten of the 14 reservoirs situated in the northern regions South Africa between 2005 and 2013

Species	Sampling sites [‡]																			
	AP		FBD		HR		KPT		LD		MO		ND		NL		PB		TZ	
	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>	Year	<i>n</i>
<i>Barbus trimaculatus</i>	–	–	'12	5	–	–	–	–	–	–	–	–	–	–	'13	6	–	–	–	–
<i>Cyprinus carpio</i>	'13	2	'12/13	6/5	'11/12	11/28	–	–	'13	2	'13	6	–	–	–	–	–	–	'13	1
<i>Glossogobius giuris</i>	–	–	–	–	–	–	'06/08	6/1	–	–	–	–	–	–	–	–	–	–	–	–
<i>Hypophthalmichthys molitrix</i>	–	–	'12–13	120	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<i>Labeo rosae</i>	–	–	'09–13	261	–	–	–	–	'12	20	–	–	'09	1	–	–	'10	20	–	–
<i>Micralestes acutidens</i>	–	–	'09–13	10	–	–	–	–	–	–	–	–	'09	1	–	–	'10	1	'10	7
<i>Synodontis zambezensis</i>	–	–	'09–13	116	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<i>Tilapia sparrmanii</i>	–	–	–	–	–	–	–	–	–	–	'13	13	–	–	'13	1	–	–	–	–

[‡] As referred to in Figure 1; AP = Anglo Platinum, FBD = Flag Boshielo Dam, HR = Hout River Dam, KPT = Komatipoort Reservoir, LK = Loskop Dam, MO = Molepo Dam, ND = Nandoni Dam, NL = Nwanedi-Luphephe Dams, P1–P3 = tailing dams, TS = Tompi Seleka, TZ = Tzaneen Dam

Table S3: Studies done on the prevalence (P), mean intensity (MI), intensity range (IR) and mean abundance (MA) of *Contracaecum* larvae in fish species sampled from different localities in South Africa

Fish species	Locality	P (%)	MI	IR	MA	Reference
<i>Argyrosoma hololepidotus</i> (Lacepède, 1801)	Lake St Lucia	18.0	–	–	–	Whitfield and Heeg 1977
<i>Barbus marequensis</i> A. Smith, 1841 [†]	Nwanedi, Luphephe, Piet Gouws, Seshego dams Olifants, Mholapitse, Nwanedzi rivers	13.0	25.0	1–80	–	Mashego 1989
	Hartbeespoort Dam	9.1	7.0	–	–	Boomker 1994b
	Crocodile River, Kruger National Park	6.0	1.0	1	–	Boomker 1994a
<i>Barbus mattozi</i> Guimaraes, 1884	Nwanedi, Luphephe, Piet Gouws, Seshego dams	50.0	30.0	1–80	–	Mashego 1989
	Hartbeespoort Dam	83.3	14.0	6–28	–	Boomker 1994b
<i>Barbus paludinosus</i> (Smith, 1841)	Olifants, Mholapitse, Nwanedzi rivers	3.0	4.1	1–10	–	Mashego 1989
<i>Barbus trimaculatus</i>	Nwanedi, Luphephe, Piet Gouws, Seshego dams	3.0	5.0	1–10	–	Mashego 1989
<i>Barbus unitaeniatus</i> Günther, 1866	Olifants, Mholapitse, Nwanedzi rivers	3.0	3.5	1–8	–	Mashego 1989
<i>Brycinus imberi</i> Peters, 1852	Sabie River, Kruger National Park	91.0	11.0	1–47	–	Boomker 1994a
	Crocodile River, Kruger National Park	71.0	1.0	1–6	–	Boomker 1994a
<i>Chetia flaviventris</i> Trewavas, 1961	Hartbeespoort Dam	76.9	6.0	1–15	–	Boomker 1994b
<i>Clarias gariepinus</i>	Lake St Lucia	46.0	–	–	–	Whitfield and Heeg 1977
	Olifants River	–	–	–	–	Prudhoe and Hussey 1977
	Buffeldoom Dam	100.0	–	1–2 860	–	Mashego and Saayman 1981
	Seshego Dam	93.0	–	1–698	–	Mashego and Saayman 1981
	Piet Gouws Dam	78.0	–	1–69	–	Mashego and Saayman 1981
	Olifants River	75.0	–	1–5	–	Mashego and Saayman 1981
	Coetzedraai Dam	72.0	–	1–336	–	Mashego and Saayman 1981
	Krokodilsheuwel Dam	67.0	–	1–61	–	Mashego and Saayman 1981
	Lepellane Dam	31.0	–	1–96	–	Mashego and Saayman 1981

	Namakgale Dam	25.0	–	1–2	–	Mashego and Saayman 1981
	Turfloop Dam	10.0	–	1–6	–	Mashego and Saayman 1981
	Hartbeespoort Dam	100.0	–	–	–	Boomker 1982
	Sabie River, Kruger National Park	43.0	4.0	1–35	–	Boomker 1994a
	Crocodile River, Kruger National Park	49.0	32.0	1–351	–	Boomker 1994a
	Olifants River, Kruger National Park	100.0	2.0	2	2.0	Boomker 1994a
	Rietvlei Dam	86.0	16.3	3–44	–	Barson and Avenant-Oldewage 2006
	Nwanedi-Luphephe dams	100.0	96.3	1–250	96.3	Madanire-Moyo et al. 2010
	Flag Boshielo Dam	41.5	181.5	75.3		Madanire-Moyo et al. 2012a
<i>Cyprinus carpio</i>	Hartbeespoort Dam	27.3	5.0	1–12	–	Boomker 1994b
<i>Elops machnata</i> (Forsskal, 1775)	Lake St Lucia	3.0	–	–	–	Whitfield and Heeg 1977
<i>Hydrocynus vittatus</i>	Olifants River, Kruger National Park	100.0	37.0	31–42	37.0	Boomker 1994a
	Crocodile River, Kruger National Park	100.0	160.0	90–266	160.0	Boomker 1994a
<i>Lichia amia</i> (Linnaeus, 1758)	Lake St Lucia	5.0	–	–	–	Whitfield and Heeg 1977
<i>Muraenesox bagio</i> (Hamilton-Buchanan, 1822)	Lake St Lucia	8.0	–	–	–	Whitfield and Heeg 1977
<i>Oreochromis mossambicus</i>	Lake St Lucia	15.0	–	–	–	Whitfield and Heeg 1977
	Hartbeespoort Dam	2.2	1.0	–	–	Boomker 1994b
	Flag Boshielo Dam	25.0	3.0	0.8		Madanire-Moyo et al. 2012b
	Luphephe-Nwanedi dams	24.4	24.2	5.9	–	Madanire-Moyo et al. 2012b
<i>Platycephalus indicus</i> (Linnaeus, 1755)	Lake St Lucia	19.0	–	–	–	Whitfield and Heeg 1977
<i>Schilbe intermedius</i>	Sabie River, Kruger National Park	17.0	2.0	1–4	–	Boomker 1994a
	Crocodile River, Kruger National Park	67.0	1.0	1	–	Boomker 1994a
	Olifant River, Kruger National Park	50.0	1.0	1	–	Boomker 1994a
	Nwanedi-Luphephe dams	95.0	50.1	1–141	47.6	Smit and Luus-Powell 2012

[‡] Subsequently changed to *Labeobarbus marequensis* (A. Smith, 1841) (Skelton 2001)

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