

# MKUZE GAME RESERVE, KWAZULU-NATAL, SOUTH AFRICA, 9-14 DECEMBER 2009

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Mkuze Game Reserve covers an area of 40 000 hectares and lies on the Zululand coastal plain, about 40-50 m above sea-level and 40 km inland from the coast. The reserve is surrounded by settlements on three sides and is bounded in the north and east by the Mkuze River, in the west by the range of Lebombo hills and in the south by the northern boundary of Phinda Private Game Reserve. The Main Camp's coordinates are 27 35.978°S and 32 13.115°E. The reserve is covered by a mosaic of savanna types, with sand forest locally developed on a belt of old dunes, and a gallery of large trees dominated by *Ficus sycomorus* fringing the Mkuze River.

The main aquatic features in the reserve are the Mkuze River, the large, seasonally flooded Nsumu Pan and associated floodplain, a couple of small dams on rivers draining off the Lebombos, a couple of small pans that have water pumped to maintain levels, and several rain-filled depressions. The Mkuze River, which was flowing strongly at the time of our visit and carrying a high sediment load, is the only natural perennial water to be found in the reserve and it had recently back-filled into Nsumu Pan and other fringing depressions. None of the small drainage lines flowing off the Lebombos carried water at the time of our visit, but two dams on these (Noshoshela and Mukumbe), were filled with water. Finally, several of the small rain-filled depressions contained water, but these were much-disturbed by game wallowing.

We spent four days with Meyrick and Kerin Bowker surveying the reserve for dragonflies. The weather was mostly poor for dragonflying, remaining heavily overcast and windy and not exceeding 24°C on all but one day when most results were obtained. A couple of species were caught to confirm identification but most were identified visually; eight species were photographed.

## SPECIES RECORDED

A total of 39 species was recorded (see table below). The majority of these are common, widespread savanna species with a handful of forest-associated species among them (*Gynacantha manderica*, *Tetrathemis polleni*, *Chalcostephia flavifrons* and *Parazyxomma flavicans*). Given the variety of wetland types in the reserve, Mkuze would certainly yield many more species than 39 species in better weather conditions. The most numerous and widespread odonate was *Brachythemis leucosticta* (at 12 sites, 185 counted), followed by *Ceriagrion glabrum* and *Crocothemis erythraea*.

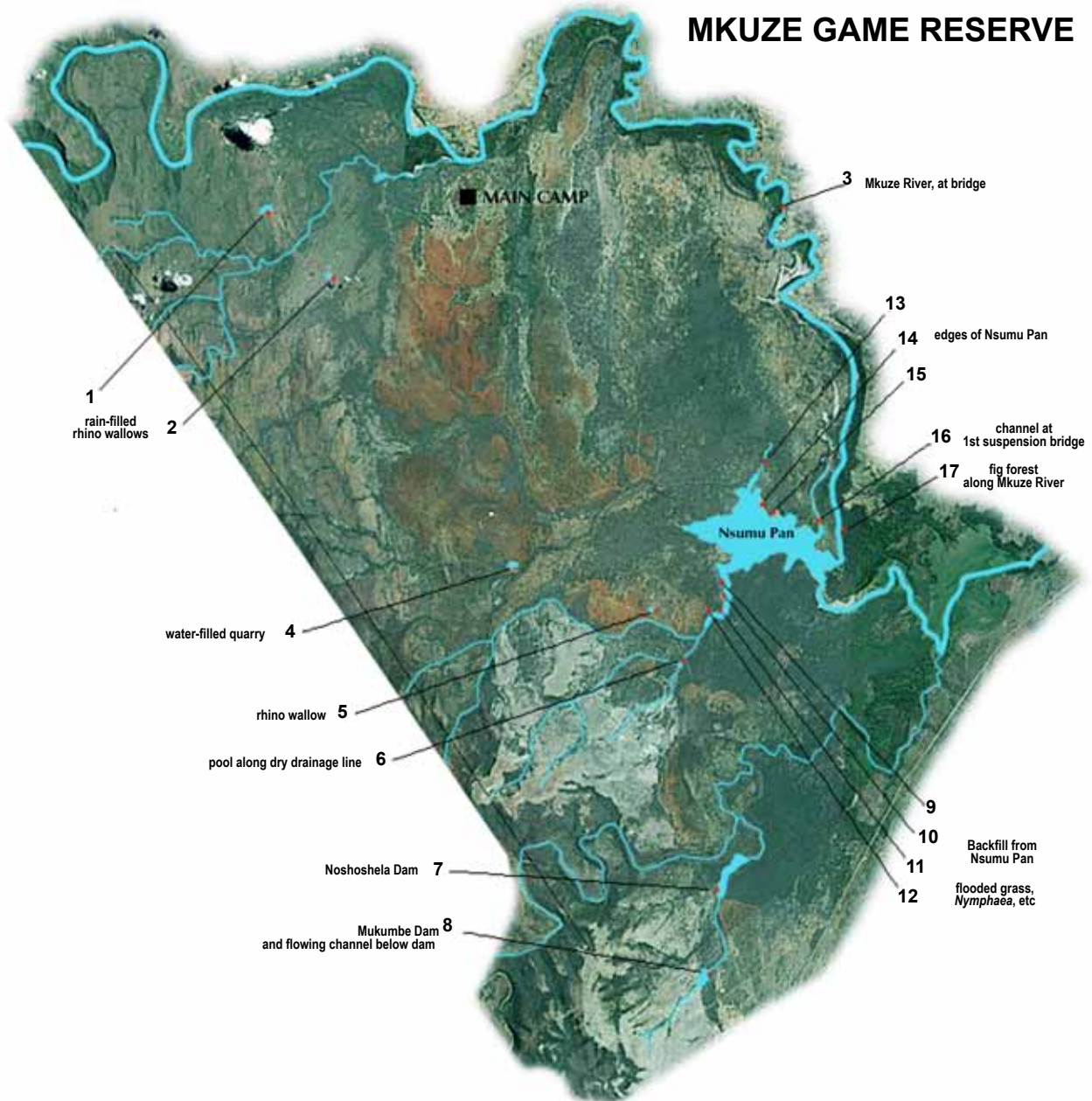
The two artificial dams, Noshoshela and Mukumbi, and the back-filled channel at the first bridge before the fig forest yielded the most species (22, 18 and 21 respectively) but this probably reflected weather conditions as much as anything. Of special interest were the large numbers of *Phaon iridipennis* and *Gynacantha manderica* at the two fig forest sites (16 and 17). A photographic record of these, and also *Pseudagrion coeleste* (*umzingaziense*), *Chalcostephia flavifrons*, *Diplacodes luminans*, *Orthetrum brachiale*, *Parazyxomma flavicans* and *Urothemis assignata* was obtained.

The measured TDS (total dissolved solids) values of the water at different sites indicated that the Mkuze River was carrying a high salt load (300-400 ppm) and this was maintained in Nsumu pan and in other back-filled channels from this river. By contrast, the two dams filled by streams draining off the adjacent Lebombo has much lower salt loads (140-169 ppm), while the lowest-measured rain-filled depression had a TDS of only 91 ppm. The high TDS and high silt load carried by the Mkuze River would certainly impact negatively on the dragonfly fauna here.

We greatly appreciate Meyrick and Kerin Bowker's invitation to join us in Mkuze and thank them, and Chris Kelly, for making our visit to Mkuze such an enjoyable experience.

Warwick & Michèle Tarboton, 24/04/2010

# MKUZE GAME RESERVE



## SITES VISITED

**1. Rhino wallow:** seasonally filled by rain. 2736.469S, 3210.044E. 10 Dec 2009, 09h30. Water TDS 210 ppm. Shallow pond, 50 x 10 m with emergent grass. Much disturbed by game. **2. Rhino wallow:** seasonally filled by rain. 2737.304S, 3211.144E. 10 Dec 2009 09h00. Water TDS 120 ppm. Shallow pond, 10 m diameter with emergent grass. Much disturbed by game. **3. Bridge over Mkuze River at Ophanzi (eastern) gate:** 2735.925S, 3218.125E. Alt 50 m. Water TDS 297 ppm. 12 Dec 2009, 09h30. 24 C, overcast. Fast-flowing, mud-laden river 20 m wide, fringed by degraded fig forest. **4. Rain-filled quarry:** 2741.150S, 3214.290E, alt 52 m asl. 9 Dec 2009, 16h15 27 C. Overcast. Open water with flooded grass edges. **5. Rhino wallow:** seasonally filled by rain. 2741.551S, 3216.718E. 9 Dec 2009 10h40. Water TDS 91 ppm. Shallow pond, 50 x 10 m with emergent grass. Much disturbed by game. **6. Residual pond on seasonal drainage line in dense bush:** 2742.192S, 3217.058E. Alt 32 m asl. Water TDS 144 ppm. 9 Dec 2009, 15h00. 24 C. Heavy overcast. **7. Noshoshela Dam:** 2745.434S, 3217.814E. Alt 42 m asl. Water TDS 140 ppm. Dam of 2 ha of open water fringed by fever trees. PHOTO. **8. Mukumbe Dam:** 2746.500S, 3217.841E. Alt 65 m asl. Water TDS 169 ppm. 12 Dec 2009, 13h00. 28 C. Dam of 1 ha of open water fringed by extensive flooded grass area with narrow channel of flowing water below the dam. PHOTO. **9. Backfill from Nsumu Pan:** 2741.193S, 3217.546E. 9 Dec 2009. Water TDS 363 ppm. Flooded grass below fever trees. PHOTO. **10. Backfill from Nsumu Pan:** 2741.353S, 3217.618E. 9 Dec 2009. 11h50. 23 C. Flooded grass below fever trees. **11. Backfill from Nsumu Pan:** 2741.499S, 3217.522E. 34 m asl. 9 Dec 2009. 15h00. Nymphaea-covered water below fever trees. PHOTO. **12. Nxwala outpost, backfill from Nsumu Pan:** 2741.522S, 3217.441E. 9 Dec 2009, 11h20.. Water TDS 155 ppm. Grass-lined channel, 5 m wide. **13. Backfill from Nsumu Pan:** 2739.394S, 3218.097E. 37 m asl. 9 Dec 2009. Water TDS 405 ppm. 21 C. 3 m wide open water channel fringed by flooded grass. **14. Nsumu Pan, at W hide:** 2740.125S, 3218.324E. Alt 35 m asl. 12 Dec 2009. Cool, overcast, windy. Open water, with reeds along edge. PHOTO. **15. Nsumu Pan, at E hide:** 2740.125S, 3218.324E. Alt 35 m asl. 12 Dec 2009. Water TDS 324 ppm. Cool, overcast, windy. Open water, with reeds along edge. **16. Fig Forest channel at 1st bridge:** 2740.127S, 3219.003E. Alt 25 m. 12 Dec 2009. 10 m wide open water channel fringed by flooded grass and thick bush PHOTO. **17. Fig Forest along Mkuze River:** 2740.171S, 3219.371E. Alt 21 m asl. Water TDS 340 ppm. 12 Dec 2009. Strongly flowing, mud-laden river fringed by tall fig forest and shrubby understorey. PHOTO.



**7. Noshoshela Dam:** This was the richest dragonfly site in Mkuze, with 22 species recorded; *Diplacodes luminans* and *Palpopleura lucia* were particularly common here.



**8. Mukumbe Dam:** *Diplacodes luminans*, *Diplacodes lefebvrii* and *Azuragrion nigradorsum* all very common here, and the only site in Mkuze where *Lestes tridens*, *Pseudagrion kersteni* and *Phyllomacromia contumax* were recorded.



**9. Backfill from Nsumu Pan:** *Acisoma panorpoides* and *Rhyothemis semihyalina* were both common here.



**14. Nsumu Pan, at W hide:** Scenically attractive but poor for dragonflies; perhaps just the cool, overcast weather?



**16. Fig Forest channel at 1st bridge:** *Trithemis arteriosa* was commoner here than anywhere else in Mkuze and this was where most *Pseudagrion coeleste* (*umsingaziense*) were found in Mkuze, on the floating vegetation over the water.



**16. Fig Forest channel at 1st bridge:** Numerous *Gynacantha manderica* were found hiding up during the day in the densely foliated thickets on the left; *Chalcostephia flavifrons* also present here.



**17. Fig Forest along Mkuze River:** This mud-laden river would seem to be a hostile environment for any dragonfly larvae, yet *Phaon iridipennis* was abundant in the vegetation along the edges.

**DRAGONFLIES RECORDED IN MKUZE GAME RESERVE, SOUTH AFRICA,  
9-14 DECEMBER 2009**

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL	SITES	
<b>ZYGOPTERA (Damselflies)</b>	<i>Phaon iridipennis</i> GLISTENING DEMOISELLE																	50	50	1	
	<i>Platycypha caligata</i> DANCING JEWEL																	1	1	1	
	<i>Lestes pallidus</i> PALLID SPREADWING	1	2		1				2											6	4
	<i>Lestes tridens</i> SPOTTED SPREADWING								7											7	1
	<i>Elatoneura glauca</i> COMMON THREADTAIL																			0	
	<i>Azuragrion nigradorsum</i> BLACK-TAILED BLUET							10	50											60	2
	<i>Ceragrion glabrum</i> COMMON CITRIL	1			1	7	1	6	10	6	6	5	2				1	1		47	12
	<i>Ischnura senegalensis</i> AFRICAN BLUETAIL								1									1		2	2
	<i>Pseudagrion coeleste</i> UMSINGAZI SPRITE								1					1			2	10		14	4
	<i>Pseudagrion commoniae nigerrimum</i> BLACK SPRITE							1												1	1
	<i>Pseudagrion hamoni</i> HAMON'S SPRITE							1	6				1	1	2			2		13	6
	<i>Pseudagrion kersteni</i> KERSTEN'S SPRITE									2										2	1
	<i>Pseudagrion massaicum</i> MASAI SPRITE							1	3					5			1	3		13	5
	<i>Pseudagrion sublacteam</i> CHERRY-EYE SPRITE				1														4	5	2
<b>ANISOPTERA (Dragonflies)</b>	<i>Ictinogomphus ferox</i> TIGERTAIL							2											2	1	
	<i>Anax ephippiger</i> VAGRANT EMPEROR							1											1	1	
	<i>Gynacantha manderica</i> LITTLE DUSK-HAWKER																10	20	30	2	
	<i>Phyllomacromia contumax</i> TWO-BANDED CRUISER								1										1	1	
	<i>Phyllomacromia picta</i> DARTING CRUISER								1										1	1	
	<i>Acisoma panorpoides</i> PINTAIL									4				3					7	2	
	<i>Brachythemis leucosticta</i> BANDED GROUNDLING	1		10		2		10	10	100	10		10	1			1	10	20	185	12
	<i>Chalcostephia flavifrons</i> INSPECTOR																	2		2	1
	<i>Crocothemis erythraea</i> BROAD SCARLET			1		1		10	3	4	3	3	2	2				4		33	10
	<i>Diplacodes lefebvreii</i> BLACK PERCHER		3			1			20			1						1		26	5
	<i>Diplacodes luminans</i> BARBET				1			30	40		5		2							78	5
	<i>Hemistigma albipuncta</i> PIED-SPOT					1		5	10	3	3	1	1					1		25	8
	<i>Nesiothemis farinosa</i> BLACK-TAILED SKIMMER								1						1			4		6	3
	<i>Orthetrum brachiale</i> STRONG SKIMMER				1	1		7		1		3						1		14	6
	<i>Orthetrum trinacria</i> LONG SKIMMER			2				1		1	1									5	4
	<i>Palpopleura lucia</i> LUCIA WIDOW							30	10									10		50	3
	<i>Pantala flavescens</i> PANTALA	1				1		20	2											24	4
	<i>Parazyxomma flavicans</i> BANDED DUSK-DARTER										1						1			2	2
	<i>Rhyothemis semihyalina</i> PHANTOM FLUTTERER			2					2	4								1	1	10	5
	<i>Tetrathemis polleni</i> BLACK-SPLASH						1	6												7	2
	<i>Tramea basilaris</i> KEYHOLE GLIDER							2	4									1			3
	<i>Trithemis annulata</i> VIOLET DROPWING							10						1			5			16	3
	<i>Trithemis arteriosa</i> RED-VEINED DROPWING							10	10									15		35	2
	<i>Trithemis kirbyi ardens</i> KIRBY'S DROPWING																1	2		3	2
	<i>Urothemis assignata</i> RED BASKER								2				1					1			3
	<i>Urothemis edwardsii</i> BLUE BASKER								1									2	1		3
		<b>number of individuals</b>	<b>4</b>	<b>5</b>	<b>16</b>	<b>4</b>	<b>14</b>	<b>5</b>	<b>173</b>	<b>186</b>	<b>123</b>	<b>29</b>	<b>14</b>	<b>28</b>	<b>5</b>	<b>2</b>	<b>6</b>	<b>86</b>	<b>99</b>	<b>784</b>	
		<b>number of species</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>5</b>	<b>22</b>	<b>18</b>	<b>8</b>	<b>7</b>	<b>6</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>21</b>	<b>7</b>		