

The effect of dehorning adult male rhinos on the frequency of fighting at Ziwa Rhino Sanctuary

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Introduction

Ziwa Rhino Sanctuary (ZRS) holds the only population of wild rhinos in Uganda. The rhinos at Ziwa are monitored 24 hours per day, 365 days a year and rangers record behaviour data; this paper focuses in particular on fighting incidents among males.

Adult male white rhinos compete for breeding rights and they may also fight with immature males to establish dominance. In ZRS, a mature and dominant male, *Taleo*, regularly fought with the three immature males, one of which, *Justus*, was fatally injured. It was decided that, in order to minimise the frequency of fighting and the likelihood of serious injuries, *Taleo* and two other adult males, *Moja* and *Hassani*, should be de-horned. Since the horns of the males would take at least two years to grow to a significant size, it would allow time for the remaining immature males to become strong enough to defend themselves.

Results and Comments

Table 1 shows a summary of the fighting data obtained from the available sightings. Initially, *Taleo* exhibited dominance over its nearest male rival *Moja* and was the only breeding male thereby fathering the first nine calves to be born in the sanctuary (confirmed by DNA analysis).

Table 1. Fighting occurrences 2011-2017.

Results	Taleo	Moja	Hassani
Taleo	x	70	63
Moja	70	x	5
Hassani	63	5	x
Young Males	17	5	8
TOTAL	150	80	76

Fighting between these two males, became so serious in 2011 (Table 2) that ZRS managers decided to de-horn *Taleo* and move him into a *boma* in order to try and calm his temperament. However, permission to de-horn was not granted and *Taleo* managed to smash his way out of the *boma* within two hours of being moved in. *Moja* responded to the renewed threat by moving to areas where *Taleo* did not visit thereby diminishing fighting frequency.

In February 2013, *Moja* became stuck in mud at a dam that was drying out. It took a struggle of 17 hours before he was rescued. On recovery, the behaviour of *Moja* changed from being passive to becoming assertive. This led to renewed fighting with *Taleo* but, this time, *Moja* was dominant resulting in *Taleo* yielding to *Moja* and characterised by a marked reduction in their fighting thereafter (see Table 2). He also took over breeding rights with the mating data showing that he is the father of six of the seven calves born between 2015 and 2017.

Taleo maintained his aggressive nature by fighting with the younger male *Hassani* and the three immature males. In a fight in April 2015 the immature male *Justus* suffered a fractured knee and died from unknown causes despite veterinary intervention. The following month all three males—*Taleo*, *Moja* and *Hassani*—were de-horned in order to enable the immature males to develop unchallenged.

Conclusion

The main aim for de-horning aggressive/dominant males was to reduce fights between the adult males and young males. This was achieved with a 69% reduction in the frequency of such fights, namely between *Taleo*/*Moja*/*Hassani* v *Obama*/*Augustu*.

There was a 68% reduction in fighting between all males after de-horning. Fights involving *Taleo* reduced 72%, those involving *Moja* reduced 91% and *Hassani* 57%; fights between *Taleo* and *Moja* reduced by 88%.

It is clear from the data gathered by daily monitoring that de-horning significantly reduced the frequency of fighting by the two main adult males with all other classes of males, (see “The 24-hour clock for white rhinos at Ziwa

Rhino Sanctuary, Uganda”, also in this issue). Other potential effects of de-horning on rhino behaviour are not reported in this paper and are the subject of further recommended research.

Table 2. Inter Male Fighting in Ziwa Rhino Reserve by Year.

	TALEO	TALEO	TALEO	MOJA	MOJA	HASSANI
	Moja	Hassani	YM	Hassani	YM	YM
2011	35	4	0	3	0	2
2012	1	11	1	0	0	1
2013	26	16	3	0	1	0
2014	5	12	4	2	0	0
2015	2	9	6	0	2	3
2016	1	5	2	0	0	2
2017	0	6	1	0	2	0

Table 3a. Aggression occurrences 2 years before dehorning.

Results	Taleo	Moja	Hassani
Taleo	x	17	27
Moja	17	x	2
Hassani	27	2	x
Young Males	10	3	1
TOTAL	54	22	30

Table 3b. Aggression occurrences 2 years after dehorning.

Results	Taleo	Moja	Hassani
Taleo	x	2	9
Moja	2	x	0
Hassani	9	0	x
Young Males	4	0	4
TOTAL	15	2	13