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# **INVESTIGATING CONSEQUENCES OF TRANSLOCATION-STRESS IN PREGNANT BLACK (*DICEROS BICORNIS*) AND WHITE (*CERATOTHERIUM SIMUM*) RHINOCEROSES**

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## **Short Abstract**

Translocation is an important strategy for rhinoceros conservation. In order to establish viable populations, success relies on post-release survival and reproductive efficacy.

Here we report birth rates and birth-sex-ratios in 51 female black (BR) and 18 female white (WR) rhinoceroses translocated between 2004 and 2019. Blood samples were collected at capture or release and serum progesterone concentrations analysed using a chemiluminescence method. Birth and sex-ratios were recorded for 18-months after translocation.

Rhinoceroses were classified as "non-pregnant" ( $<0.64$  nmol/L, BR=10; WR=9), "luteal-activity" ( $>1-4.4$  nmol/L, BR=12; WR=2), "3-4-months pregnant" ( $4.5-6$  nmol/L, BR=3; WR=2), "5-8-months pregnant" ( $7-50$  nmol/L, BR=14; WR=5), "9-12-months pregnant" ( $50-70$  nmol/L, BR=9), and "13-16-months pregnant" ( $70- \geq 90$  nmol/L, BR=3), based on their progesterone concentrations. None of the BR or WR classified as "luteal activity" and of the BR classified as "3-4-months pregnant" gave birth. Only seventeen BR, classified as "5-8-months pregnant" or higher (68% of these classifications), gave birth to ten male (59%), five female (29%) and two calves of unknown gender, respectively. Post mortem examination on one BR from this classification indicated a recent abortion. Only one WR classified as "3-4-months pregnant" (50%) gave birth to a female calf and four WR classified as "5-8-months pregnant" (80%) gave birth to three male and one calf of unknown gender.

Results indicate that translocation-stress might disrupt mid- to late-term pregnancies in rhinoceroses and possibly cause a sex-ratio bias towards male calves. Both observations could be related to the corticosterone stress response and require further investigation.