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## Scooping dung to ensure rhinos' future

*Annemieke got to name this baby rhino, Maatla, meaning power and energy. Photo: Annemieke van der Goot*

**By Tamara Hunter**

**Annemieke van der Goot settles into position in the pre-dawn of the South African wilderness even before her study targets are awake.**

As day breaks, she has the privilege of watching a small family group of endangered white rhinos stir and come to grips with the day. But the meditative mood doesn't last. The PhD student is already alert, waiting for a rhino to defecate.

Annemieke's research into the reproductive physiology of the Southern White Rhinoceros is part of the important

and complicated business of saving a species.

Every day, she follows her group of seven as closely as she can until one of them deposits the evidence she needs.

Once the animal has done its business and wandered far enough away, Annemieke quickly moves to dig into the dung ball and extract a 50g sample. The sample goes into a cooler bag and is driven back to base camp – often one or more hour's drive away across the vast privately-owned sanctuary in Limpopo where she is doing her work – to be deposited into a freezer. From there, it is taken to the University of Pretoria

for close analysis. Separate samples of grasses the rhinos like to eat are sent for analysis to the San Diego Zoo.

What Annemieke and her colleagues are looking for are clues which may help keep this ancient and remarkable species alive. Although the rhinos appear to breed well in the wild, they do not do so in captivity – and nobody yet knows why. It's a mystery conservationists need to unravel quickly, because a rapid escalation in horn poaching is now threatening to decimate wild rhino numbers.

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# Scooping dung to ensure rhinos' future *continued from page 1*



Getting up close with a baby rhino at the White Oaks conservation centre in Florida



Annemieke watches her family of rhinos. Photo: Stephanie Grehl

IBREAM (which was co-founded by A/Professor Paris) has helped several UWA PhD students from the School of Animal Biology undertake research projects in Africa. Others include a project attempting to learn more about the endangered and elusive pygmy hippopotamus on the Ivory Coast, and research into African painted dogs in South Africa.

Annemieke plans to continue working in the area she sees as her life's calling. She already works with several international zoos and organisations devoted to saving rhinos, and plans to return to South Africa.

"I really want to stay focused on this one animal and make my career there, because now I have so much knowledge of rhinos, it would be a pity for that all to go to waste," she said. "There are not too many rhino experts."

She speaks passionately about the risks now facing the White Rhino, which was rescued from the brink of extinction by legendary conservationist Ian Player as part of the famous Operation Rhino in the 1970s, but which is now once again declining in numbers due to poaching. There are an estimated 20,000 Southern White Rhinos left in the wild.

She knows that unlocking the breeding problem is only half the battle: for the rhinos to have a chance, the resurgence in poaching – for the animals' highly sought-after horns – must be addressed. It's a huge challenge, given a rhino horn, which weighs close to six kilograms, can now fetch more than the price of gold.

"When I am in South Africa I live amongst a lot of local people, and it's one of my passions to educate these people," she said.

"The children I meet, they might become the future poachers. In a way I understand them. I don't approve of it. But if a rhino means nothing to them, and if they can have money this way for their aunt to go to the hospital then why not do it? I try to change their minds and show them alternatives."

Annemieke returns to South Africa for the final field trip of her PhD in September.

"A lot of females in captivity don't get pregnant, and it's a problem specifically seen in white rhinos," Annemieke says. "Every zoo in the world is struggling with that same problem."

"Nobody has been able to pinpoint the difference: why do they breed better in one place than another? I am mostly working with rhinos in the wild and using them as a model to learn more about their physiology, so we can use that information to learn more about rhinos in captivity."

It's hoped the dung samples and grasses will help to reveal specific mechanisms regulating reproduction and how these are modified by intrinsic and extrinsic factors – including levels of phytoestrogens, which are

suspected to be higher in the diet of captive rhinos. The results could lead to better management programs for wild and captive rhinos – including the Northern White Rhino subspecies, of which there are only seven left.

Annemieke, who grew up in the Netherlands and holds a degree in Veterinary Medicine from Utrecht University, is doing her PhD through UWA in conjunction with the University of Pretoria, the South East Zoo Alliance for Reproduction and Conservation (SEZARC) based in White Oak Conservation Center, Florida, and IBREAM (the Institute for Breeding Rare and Endangered African Mammals). Her supervisors include Research Associate Professor Monique Paris and Winthrop Professor Graeme Martin.