

# Contraception for Elephants

## The Elephant Crisis in Africa

Local overabundance of elephants is a major conservation and animal welfare problem in parts of Africa because of limited habitat. Vegetation impacts, loss of biodiversity, and human-elephant conflict are the consequences. What can be done?



Culling has become less publicly acceptable, especially considering elephant social behavior, and translocation is very costly and limited to just a few animals.



**Another option:** Contraceptive porcine *zona pellucida* (pZP) vaccines have proven safe and effective in elephants, but the current pZP vaccine requires annual boosters, which makes it costly and impractical for broad-scale use in the field.

A long-lasting single-dose contraceptive vaccine and an understanding of the consequences of long-term contraception used at large scales could serve as a powerful tool for non-lethal, humane regulation of elephant populations.

## New vaccines – long lasting, single dose

A newly formulated pZP vaccine has delivered multi-year contraception in several mammalian species and should provide long-lasting contraception for African elephants too.

## The Research

Three sets of trials need to be conducted before the vaccine can be broadly recommended as a management tool for elephant populations.

Trials to prove vaccine safety and quantify antibody titers are nearing completion with captive African elephants through support from the International Elephant Foundation.

A field study to demonstrate contraceptive efficacy with a group of 40 African elephants in the Addo Elephant National Park, South Africa is currently being planned. Reproductive physiology and performance will be intensely monitored for 5 years, as well as behavior and ecological parameters (range, habitat and forage use) between treated and untreated animals. Vaccinated cows will then be monitored for an additional 5 years to determine reversibility.

Population modeling will be used to determine the percentage of elephants that need to be vaccinated to achieve specific management goals. This approach will be tested on large elephant populations throughout southern Africa in the third phase to confirm feasibility.

Project outputs will also include human capacity building through student training opportunities.



## The Research Team

**Ursula Bechert**, DVM, PhD, Director of NW Wildlife Conservation, Inc. and of Off-Campus Programs at the College of Science, Oregon State University, has over 12 years of experience working with elephants in a variety of disciplines and has conducted research in northern Botswana for the past 8 years.

**Mark Fraker**, MA, RPBio, President of TerraMar Environmental Research, Ltd., has worked with the new pZP vaccine formulation in a variety of species and has over 30 years of wildlife research experience.

**Graham Kerley**, PhD, Professor at the Nelson Mandela Metropolitan University and Director of the Center for African Conservation Ecology in Port Elizabeth, South Africa, has conducted research on semi-arid plant-animal interactions and the ecology and population dynamics of elephants and other wildlife species for over 20 years.

If you have questions about this research, please contact either Ursula at 1 541 737 5259 ([ursula.bechert@oregonstate.edu](mailto:ursula.bechert@oregonstate.edu)), Mark at 1 250 656 3972 ([maf@terramarresearch.com](mailto:maf@terramarresearch.com)), or Graham via phone at 27 (0)41 504 2308 or e-mail ([graham.kerley@nmmu.ac.za](mailto:graham.kerley@nmmu.ac.za)).

## To make a contribution

Please send your tax-deductible contributions to:

The Elephant Contraception Project  
NW WILDLIFE CONSERVATION, INC.  
4183 NW Peppertree Place  
Corvallis, OR 97330, U.S.A.

Or contribute on-line at:

ELEPHANT CARE INTERNATIONAL  
<http://www.elephantcare.org/culling.htm>  
E-mail: [hh@elephantcare.org](mailto:hh@elephantcare.org)

## What can be done?

A combination of management strategies needs to be applied to individual populations of elephants, depending on their size, habitat characteristics, and long-term goals for the region. Newly formulated pZP vaccines could provide a reversible, humane form of contraception for elephants, eventually precluding the need to cull.



Research is currently underway, but it will still take several years before the first herds of wild elephants are vaccinated with the intention of impacting population growth.

## We Need Your Support Now!



As available resources shrink in size and human population growth continues, elephants are being squeezed out of their habitats. Crop raiding and other forms of human-elephant conflict occur more frequently, and landscapes no longer have time to complete their cycles of transformation from grassland savannahs to indigenous forests.



To control the size of elephant populations, wildlife managers have tried translocating groups of animals, but this is expensive and often ineffective. Attempts to disperse concentrations of elephants along major rivers by providing additional waterholes elsewhere have met with limited success because forage is not available. Controlled hunting has a minimal impact on population growth because only bulls are targeted. Hormonal, surgical and other forms of contraception are not practical for large populations of elephants. Culling is publicly unacceptable and results in post-traumatic stress disorder in orphaned elephants (Nature, 2005).



# Contraception for Elephants



## A collaborative project involving:

TERRAMAR ENVIRONMENTAL RESEARCH LTD.  
NW WILDLIFE CONSERVATION INC.  
OREGON STATE UNIVERSITY  
NELSON MANDELA METROPOLITAN UNIVERSITY