

**PRESENTATIONS  
SESSION IX  
IN SITU MANAGEMENT OF WILDLIFE  
AND HABITAT**

## THE SIGNIFICANCE OF PRE-EXISTING SOCIAL BONDS IN TRANSLOCATED BLACK RHINOS

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Black rhinos (*Diceros bicornis*) are generally assumed to be solitary animals in the wild apart from cow-calf pairs and transient mating pairs. This perception may induce some rhino management suggestions that do not adequately take account of social factors. For instance, a standard recommendation in rhino metapopulation management is that, to counter the loss of genetic diversity through genetic drift, at least one new founder should be introduced into a sub-population every generation. This recommendation implies that a rhino can be moved from one population to another without major social problems.

The Lowveld Rhino Trust's experience of translocation operations suggests that pre-existing social bonds between rhinos are more significant to the success of such operations than has generally been appreciated.

Between 2003 and 2010, 121 black rhinos were introduced into a 2,300 km<sup>2</sup> section of Bubye Valley Conservancy (BVC), Zimbabwe. These translocations have provided a rare opportunity to observe black rhino behaviour as they involved the phased relocation of entire subpopulations. The translocations were undertaken in response to an expansion, year by year, of human settlement and poaching pressure within Bubiana Conservancy. The rhino populations in both conservancies were monitored at the individual level, and so the home ranges of individual rhinos and the associations between these rhinos both before and after the series of translocations are known. Black rhinos occupy fairly stable home ranges, with dominant bulls overlapping their ranges with those of several cows and sub-dominant animals. Rhinos occupying overlapping or adjacent home ranges can be regarded as neighbours that have fairly regular interactions of one kind or another.

Not all neighbours were translocated from the one conservancy to the other in the same year, because logistical and political constraints limited the scale of each annual operation. Nor were all rhinos released at the same point in BVC. Nonetheless, a clear tendency was shown for released rhinos to re-associate with the same neighbours that they had in Bubiana Conservancy, despite these re-associations requiring some rhinos to move significant distances through unfamiliar territory after release.

The importance of social factors in rhino translocations is also emphasised by observations of rhinos that experienced aggression from other rhinos, or failed to breed initially in BVC, after being brought in from other populations and released as complete strangers at BVC.

The significance of pre-existing social bonds in translocation success is also indicated by the outcome of long-distance translocations of black rhinos from South Africa to North Luangwa National Park in Zambia. Of 25 rhinos released within this area, in several groups, there has been a clear pattern of greater morbidity amongst those that were strangers (i.e. lacked relatives or previous neighbours within that translocated group) compared to those that had prior familiarity with one or more other rhinos within the translocated group.

The conclusion from these translocation experiences is that more tranquil re-introduction scenarios (i.e. less dispersion, less fighting) can be achieved by restocking with rhinos that already know each other prior to their translocation.

# THE SIGNIFICANCE OF PRE-EXISTING SOCIAL BONDS IN TRANSLOCATED BLACK RHINOS



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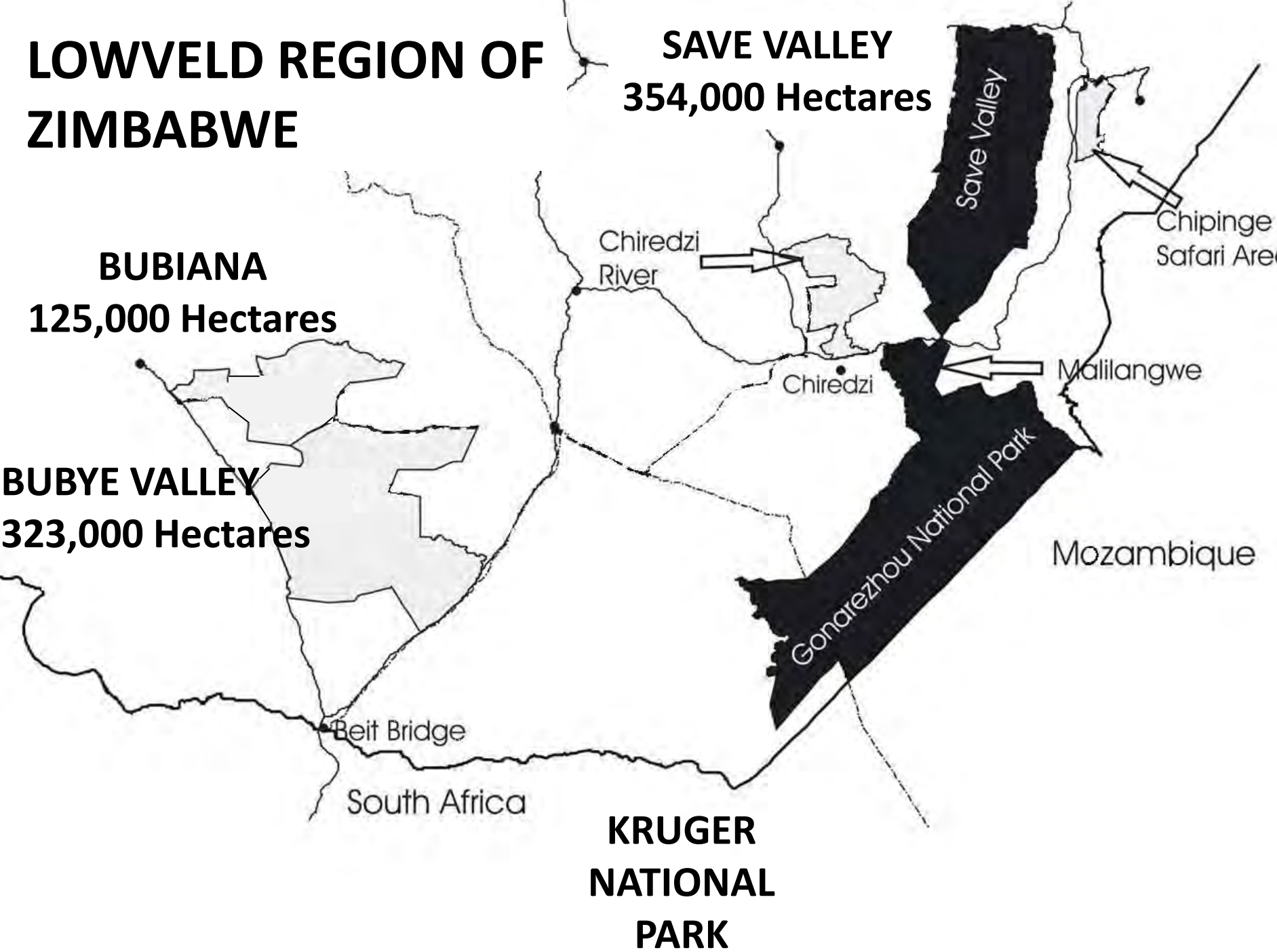


# LOWVELD REGION OF ZIMBABWE

**SAVE VALLEY**  
354,000 Hectares

**BUBIANA**  
125,000 Hectares

**BUBYE VALLEY**  
323,000 Hectares



# 1992/3 introductions into Bubiana and Save Valley Conservancies





**LOVELD  
RHO TRUST**







**2212 – BRENDA, FIRST CALF OF MARIYA, BORN 1997**



**2061 - FIONA, SECOND CALF OF MARIYA, BORN 2000**

**1214 – KILO, born 2006**



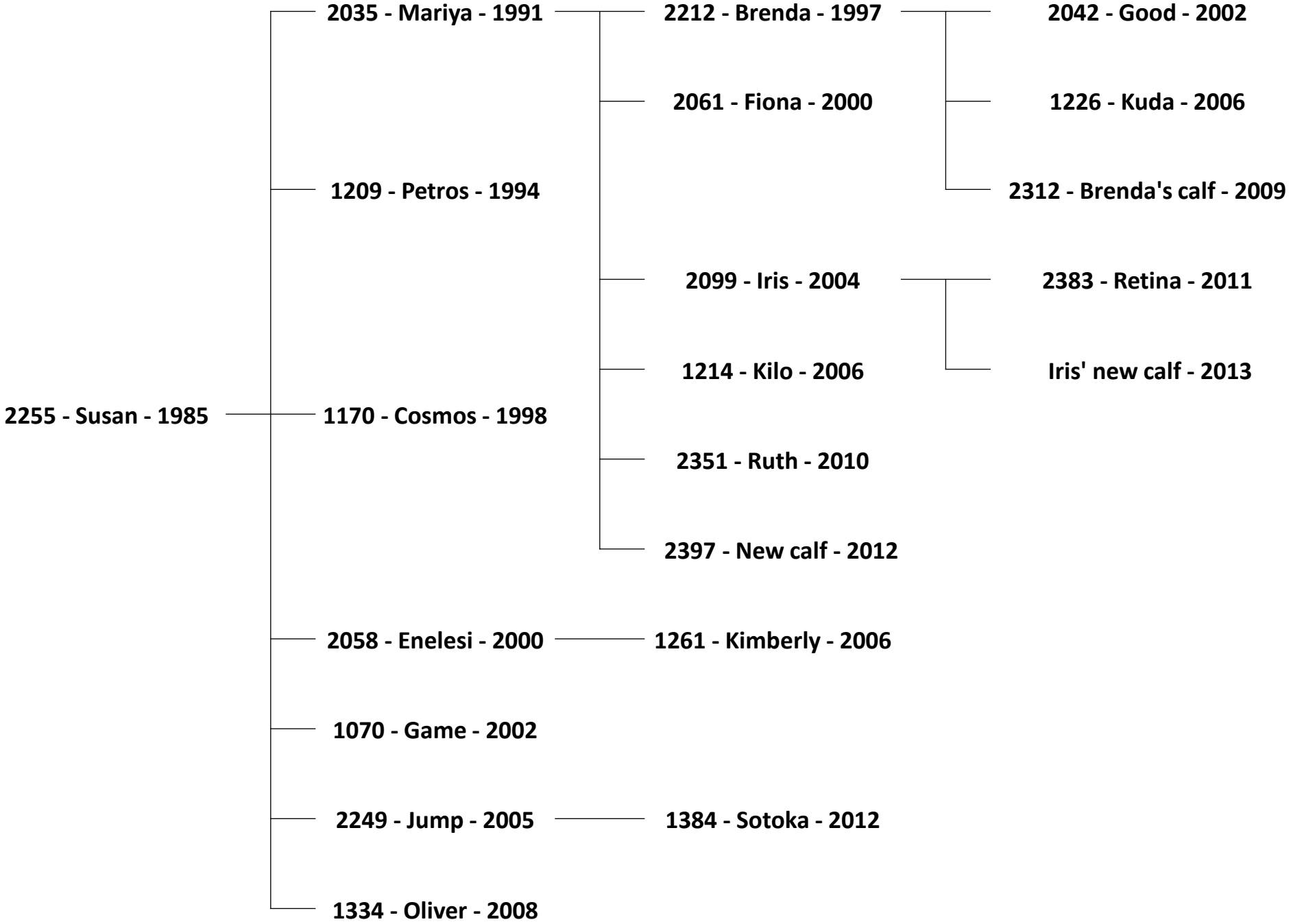
**2099 – IRIS, born 2004**



**2351 – RUTH, born 2010**

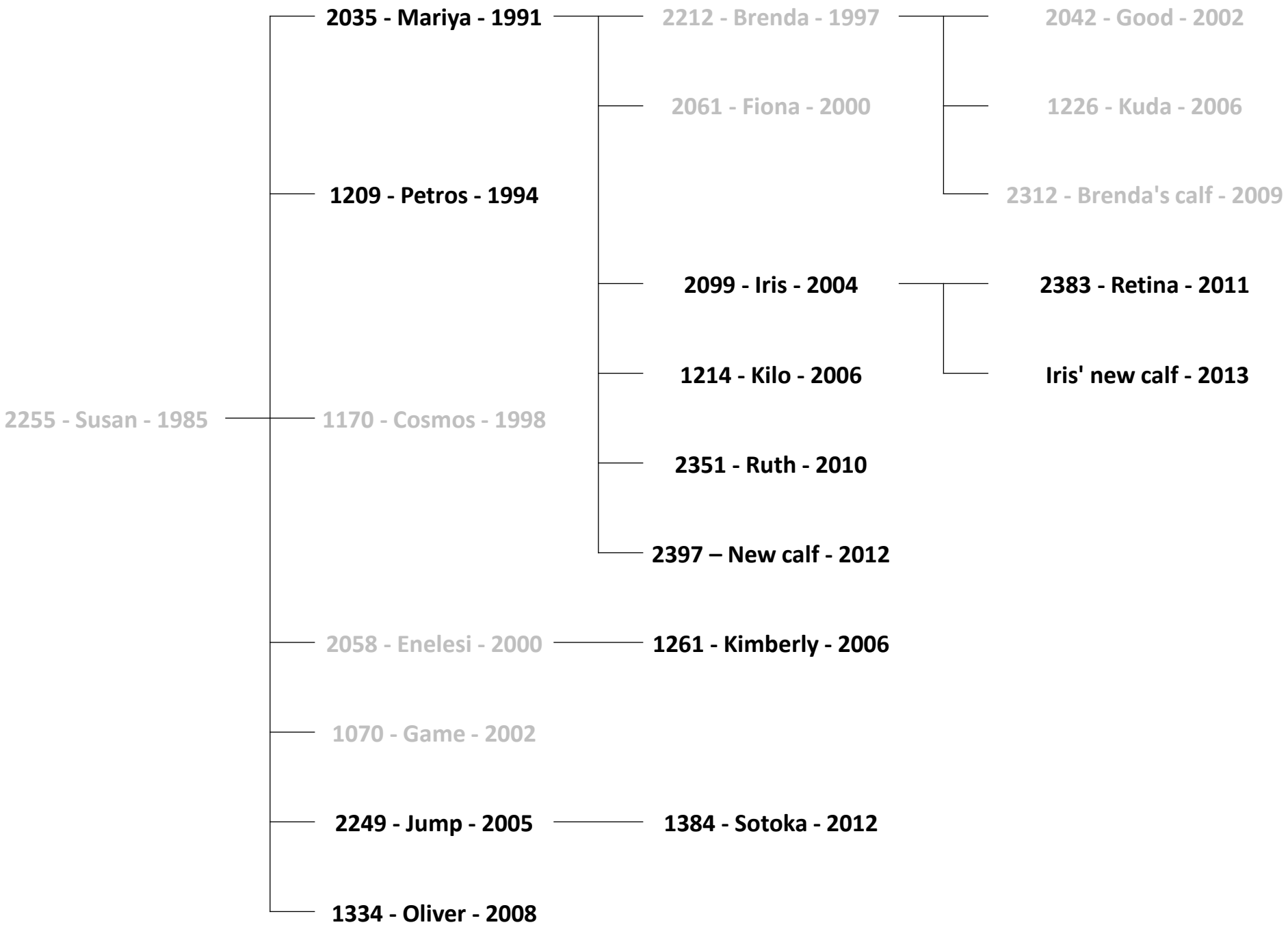


**2397 – MARIYA'S SIXTH CALF, born 2012**





Poaching orphan – “OLIVER” - Susan’s 2008 calf



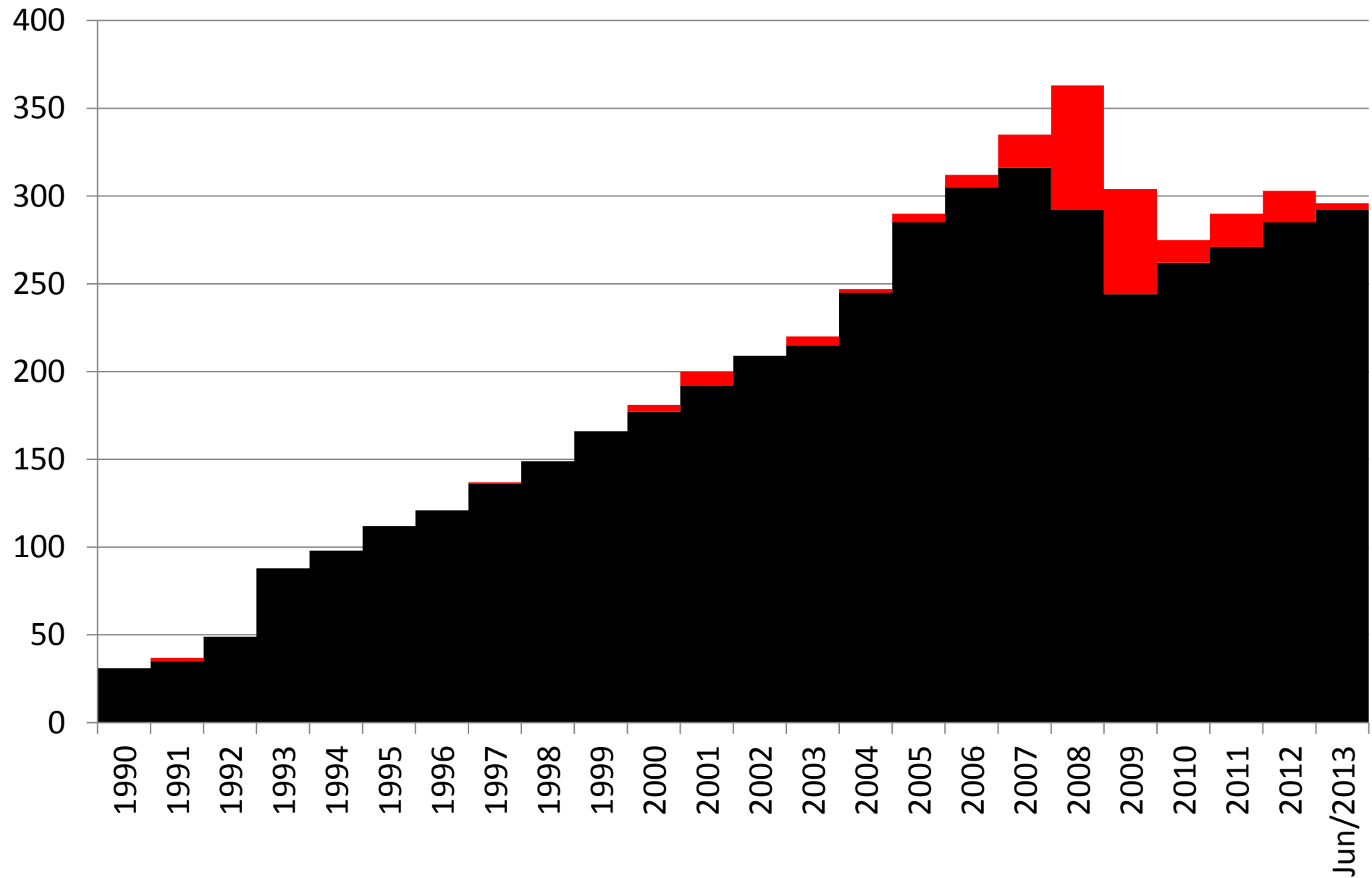


# **BUBIANA AND SAVE VALLEY BLACK RHINOS 20 YEARS PERFORMANCE 1994 – MID 2013**

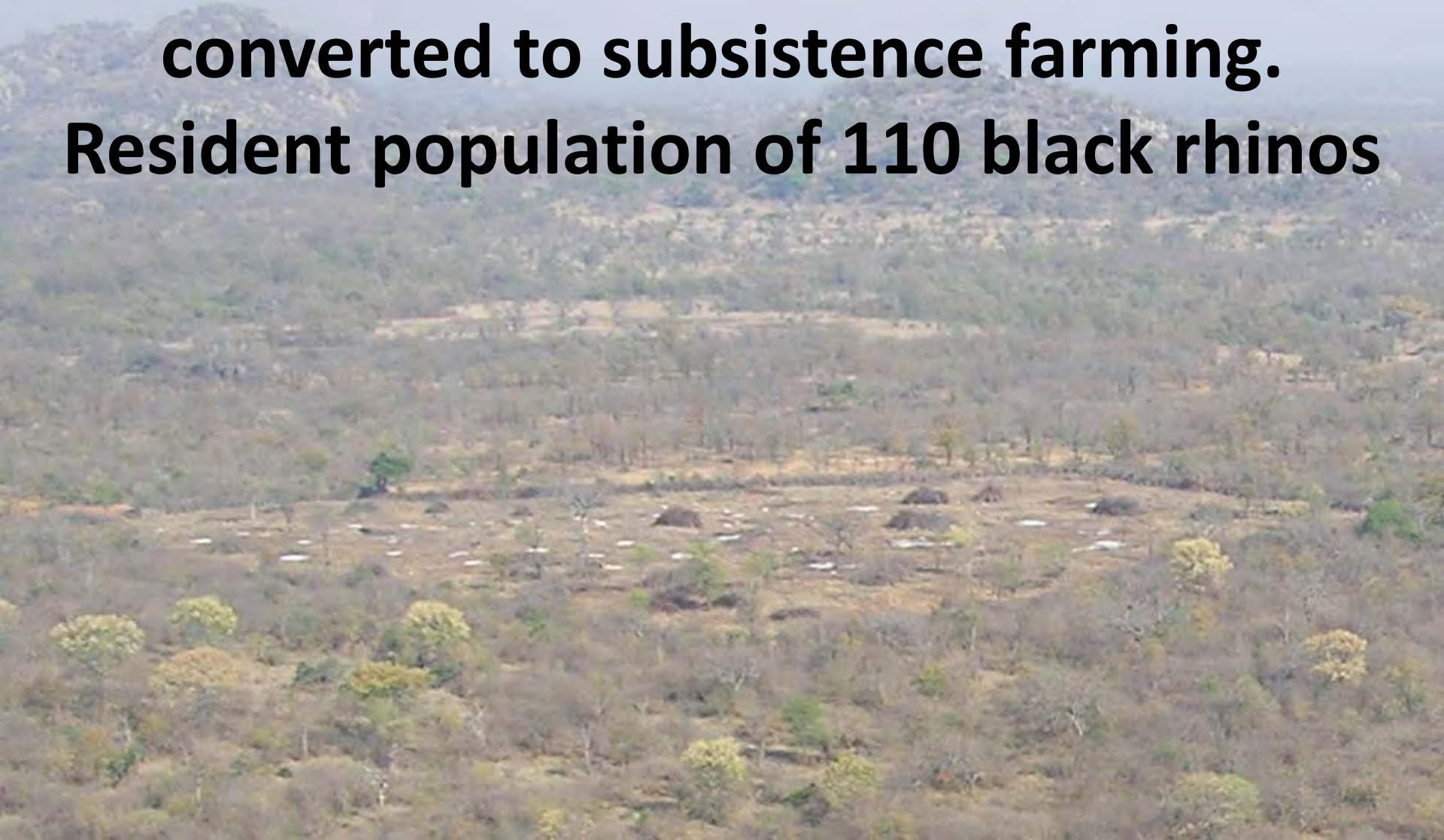
<b>Founders introduced</b>	<b>69</b>
<b>Population end 1993</b>	<b>87</b>
<b>Calves born from these 1994 -2013</b>	<b>405</b>
<b>Non-poaching deaths of these</b>	<b>37</b>
<b>Poaching deaths of these</b>	<b>227</b>
<b>Population mid 2013</b>	<b>228</b>
<b>Growth rate realised in 20 years</b>	<b>5%</b>

■ Black rhino in LRT project populations

■ Black rhinos poached in LRT project populations



**BUBIANA CONSERVANCY 2002**  
**60,000 out of 125,000 hectares**  
**converted to subsistence farming.**  
**Resident population of 110 black rhinos**



**From 2000-2002 :  
7 snare incidents  
7 poached rhinos  
(shot or snared)**

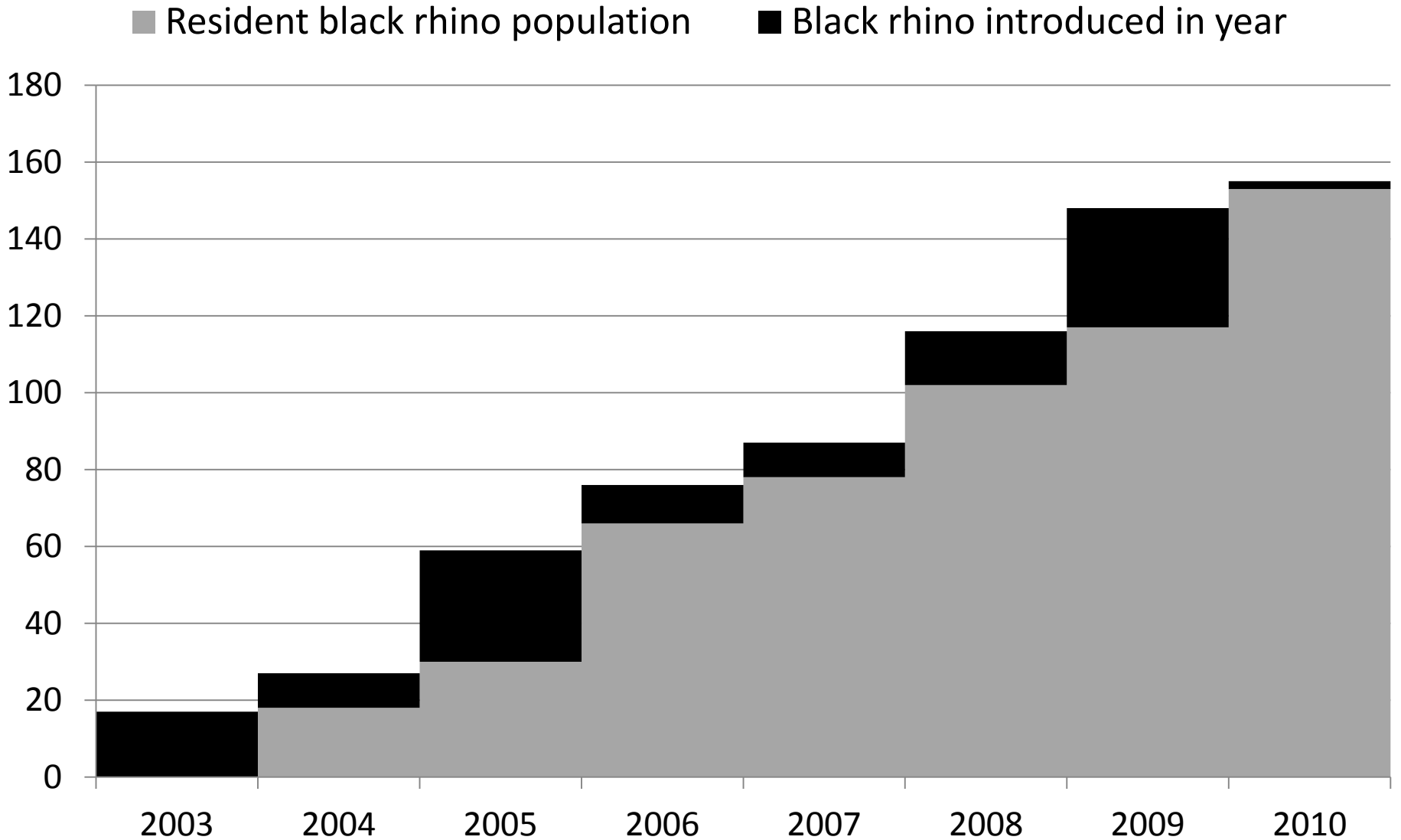




Bubiana

Bubyé

# BLACK RHINO INTRODUCTIONS TO MAIN SECTION – BUBYE VALLEY



**Southern African average: 5 - 15% of translocated black rhinos die due to post release stress or fighting.**

**Only 1/140 – 0.7% of black rhinos died due to post release stress or fighting in the Buby Valley introductions.**

**Why were there so few post release stress or fighting deaths in these translocations?**

**Large area**

**Many water points**

**Low rhino densities**

**Short translocation distances**

**MAJORITY OF RHINOS INTRODUCED ALREADY KNEW EACH OTHER**



Typical adult cow with calf under two years old.





Typical cow with new born and previous calf.



Cow with her calf and an adult bull



Adult bull, pregnant cow and non-related sub-adult



Adult cow with calf and unrelated sub-adult female

Two unrelated adult cows followed  
by their respective calves





**Bubye Valley Conservancy**

**SAMMY DIP BOMAS**

**2,300km<sup>2</sup>**

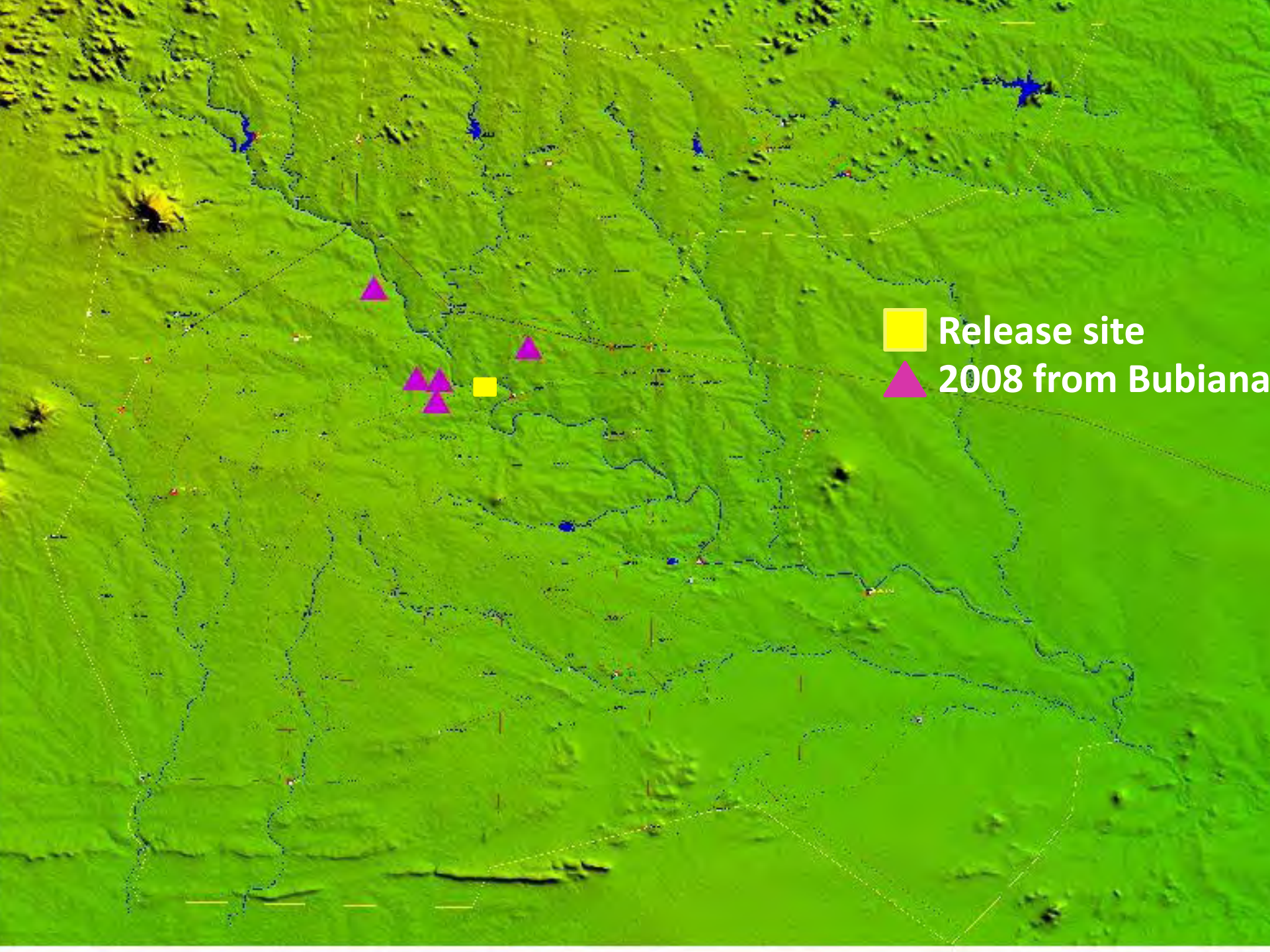
**CHAMAKUNDAU FREE**

**60km North-South**

**50km East-West**

**10km**

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■ Release site

▲ 2008 from Bubiana



# IN BUBIANA

# TRANSLOCATED 2008

# IN BUBYE



SINJALO



LOST



SIX



SIABUWA



JACKALBERRY



SINJALO



JACKALBERRY



SIABUWA



SIX



LOST



**SIABUWA (24YR, F) – INTRODUCED 2008**



**SIX (3YR, F) – INTRODUCED 2008**

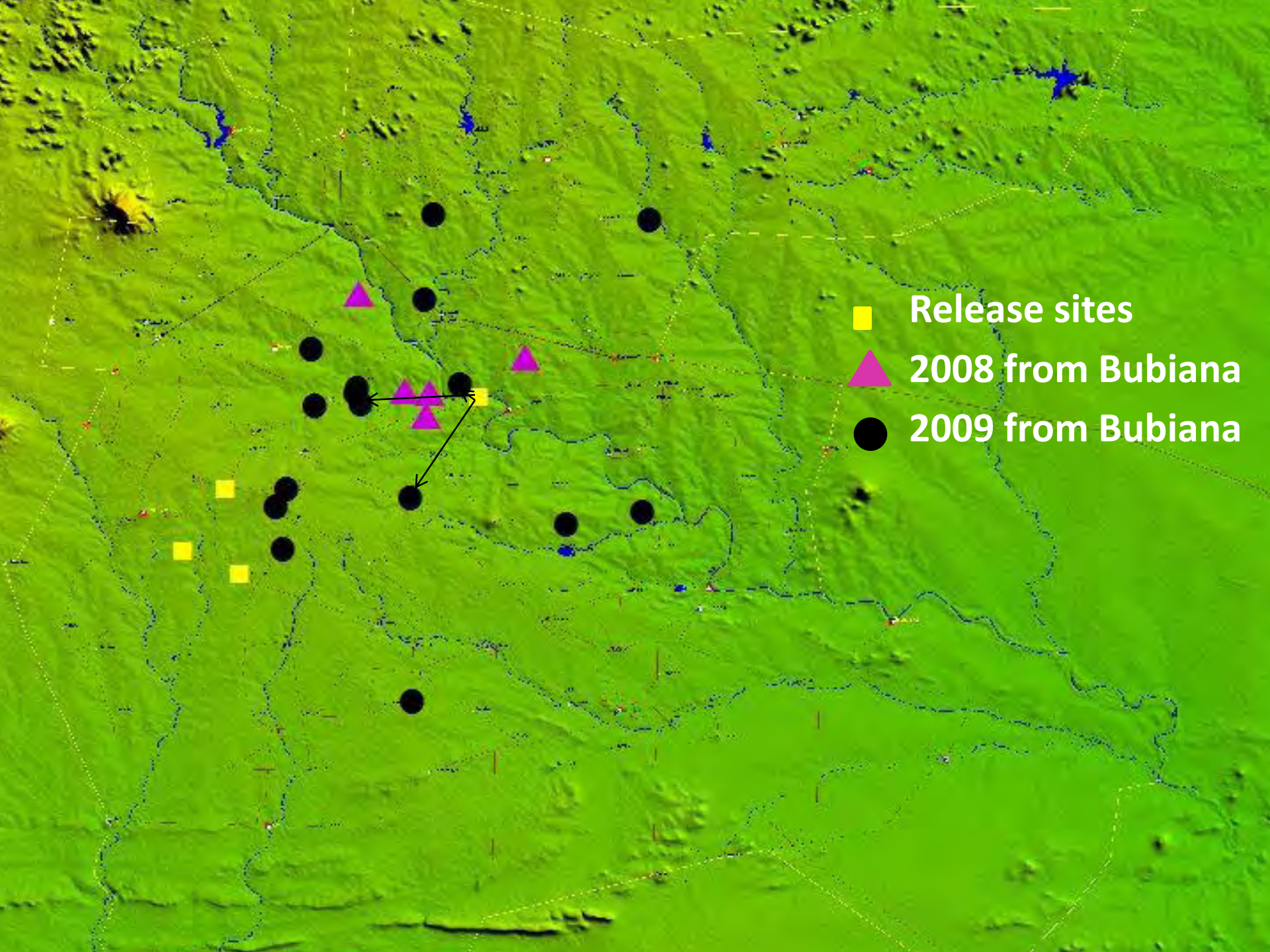


**SINJALO (6YR, M) – INTRODUCED 2008**



**SIX**  
**SINJALO**  
**SIABUWA'S 2009 CALF**

**SEPTEMBER 2011**

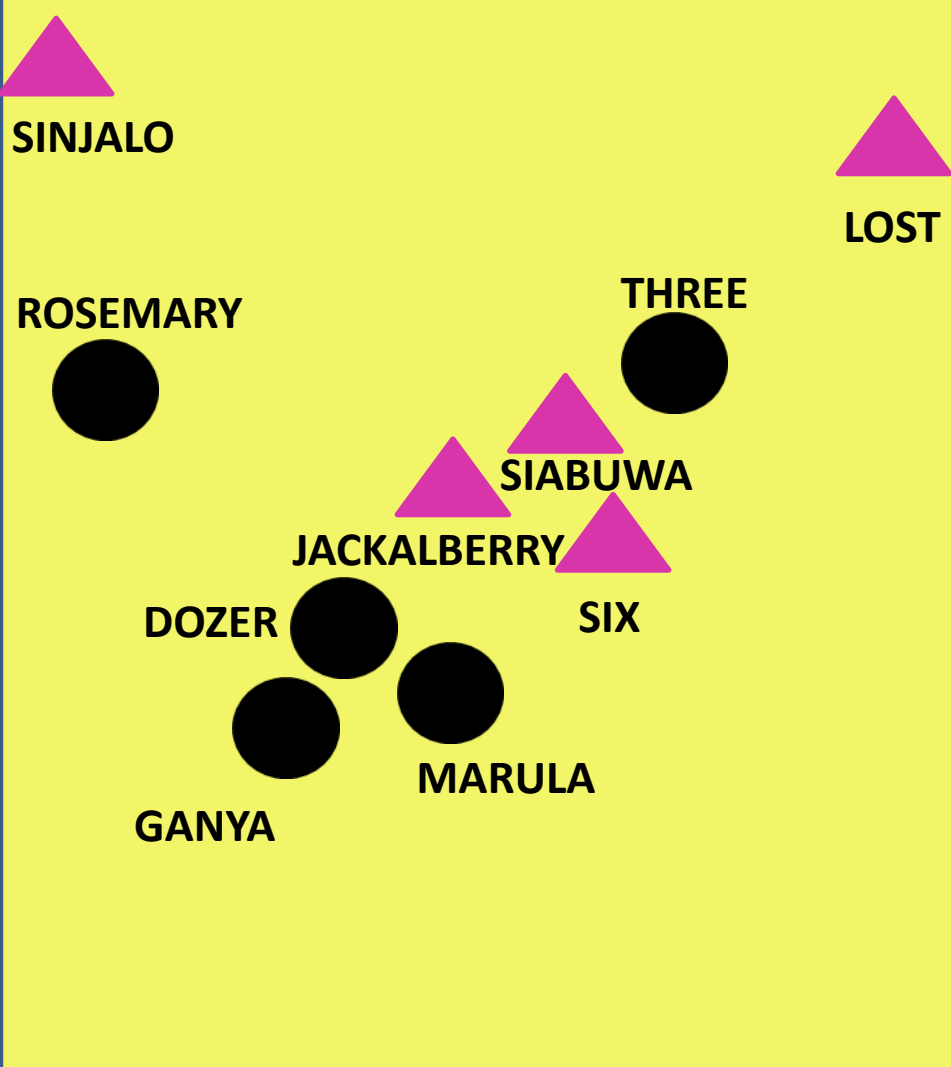


- Release sites
- ▲ 2008 from Bubiana
- 2009 from Bubiana

# IN BUBIANA

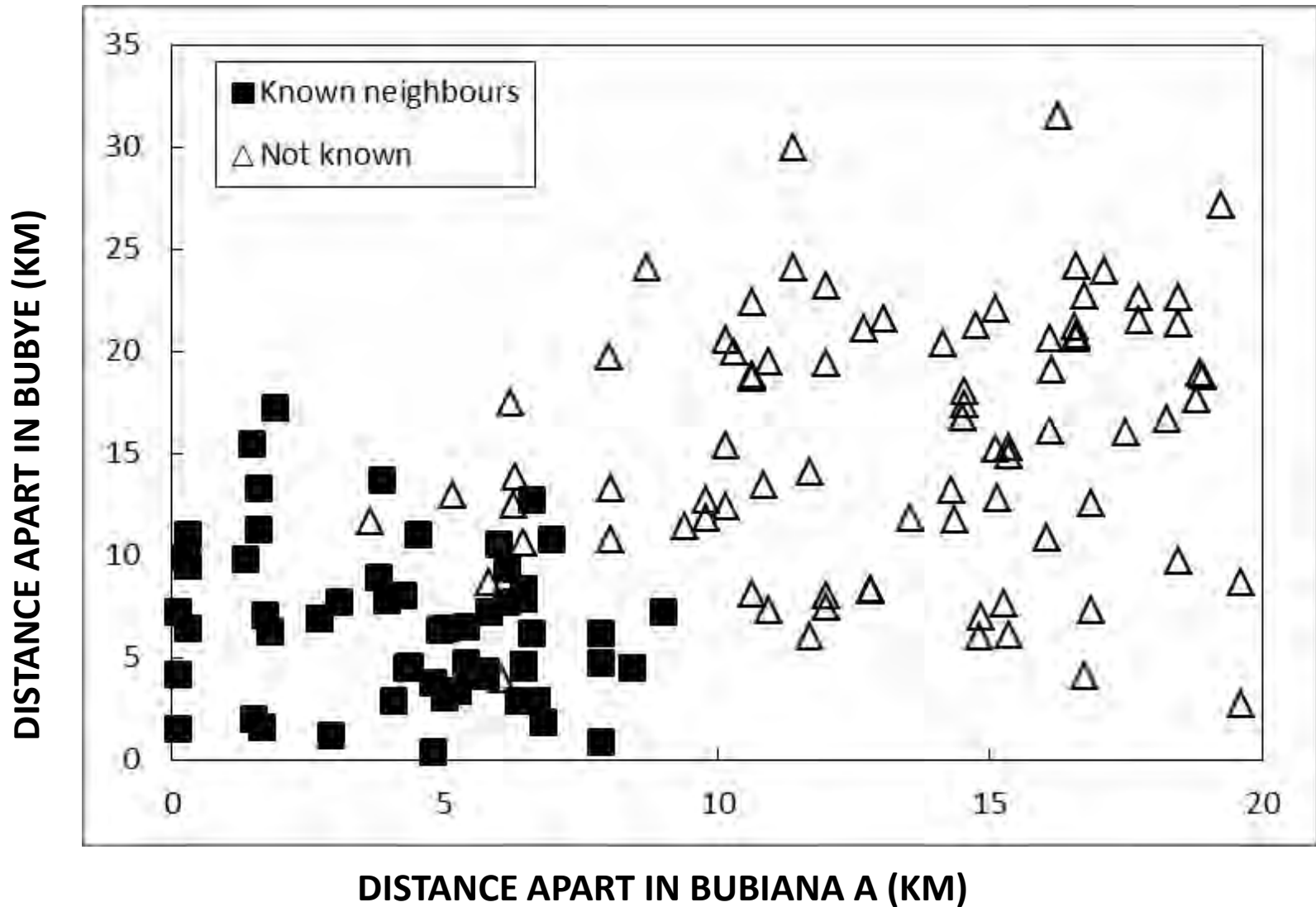
# TRANSLOCATED 2009

# IN BUBYE



GILL ↓

# DISTANCE BETWEEN BLACK RHINOS MOVED FROM BUBIANA TO BUBYE 2008 AND 2009



**Average black rhino density in Main Section was 1 rhino per 16.6km<sup>2</sup>.**



2009 introduced Ganya -11 year old bull from Bubiana, moved 14km from release into the area of highest rhino density (1 rhino per 10km<sup>2</sup>).  
No indication of any fresh fighting.



2010 introduction Godfrey - 8 year old bull from Save Valley, moved 42km inconsistently from release into an area of very low rhino density (1 rhino per 50km<sup>2</sup>).  
Facial lacerations indicate considerable post release fighting.



2009 intro. - Ganya -11 year old bull

2010 intro. - Godfrey - 8 year old bull

Ganya knew at least 5 other ex-Bubiana rhino in Bubyee, found them and settled in.

Godfrey knew no other rhinos and clearly did not settle easily.

# Black rhino reintroductions - North Luangwa, Zambia

	<b>Number introduced</b>	<b>Satisfactory establishment</b>	<b>Unsatisfactory establishment</b>
<b>Rhinos with some prior familiarity</b>	<b>7</b>	<b>5</b>	<b>2</b>
<b>Rhino with no prior familiarity</b>	<b>18</b>	<b>6</b>	<b>12</b>



**Black rhinos maintain strong social bonds that persist through translocations, even if translocations are phased over several years.**



**A more tranquil reintroduction scenario (i.e. less dispersion, less fighting, quicker breeding) will be achieved by restocking with rhinos that already know each other.**