



# **NIASSA CARNIVORE PROJECT**

## **ANNUAL REPORT**

### **2010**



**2010 Mbamba Lion Conservation Fun days**

In Collaboration with:



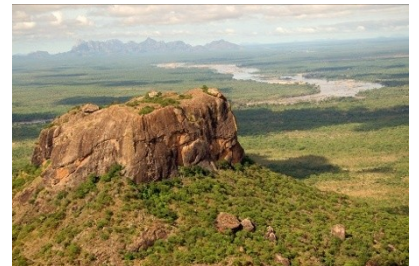
# Niassa Carnivore Project

*The Niassa Carnivore Project serves to secure and conserve lions and other large carnivores in Niassa National Reserve, northern Mozambique by promoting coexistence between carnivores and people. We acknowledge the costs to Niassa communities who live with carnivores while recognizing the potential of these carnivores to provide substantial ecological, cultural and economic benefits to Niassa Reserve and Mozambique.*

**Colleen and Keith Begg** and their two children Ella and Finn, an independent research and filming team, are working in an immense wilderness in northern Mozambique, to protect and secure some of the largest remaining populations of large carnivores in Africa, particularly the African lion, leopard, spotted hyaena, and African wild dog.

**Mozambique's Niassa National Reserve** is critical for large carnivore conservation. It is the largest protected area in Mozambique, and at 16 000 square miles, it is one of the largest in Africa. NNR is recognised internationally as a stronghold for conservation of large carnivores particularly lions and African wild dogs given the large area under protection. Securing this population in this protected area is of local, national and international importance. However, Niassa is far from secure at present and the challenges are immense. Rock art in the area shows that Niassa has always supported a human population. Today there are more people living in Niassa National Reserve (35 000) today than there are lions left in the world and this population is growing.

**The African Lion** have lost more than 30% of their historical range with only 23 000 to 40 000 lions remaining in Africa and concerns are mounting about continuing population declines across the region. Niassa has been identified as a priority lion conservation area. It protects two thirds of Mozambique's lions and is one of a handful of protected areas that are large enough to protect more than 1000 lions. But they are under threat and conserving them in Niassa touches on all the major challenges facing Niassa today. Major threats are habitat transformation and non target snaring where lions and leopards are caught in snares set for bush meat. Additional threats include retaliatory killing in response to attacks on livestock and people, sport hunting of under-age lions and leopards, and potentially disease (rabies and canine distemper) spread from domestic dogs.



# *Letter from Niassa*

**Greetings!** 2011 marks our ninth year in Niassa National Reserve! We never expected to be here so long but there is still so much to do. On our first visit to Niassa in 2002 we climbed a tall inselberg (granite “island mountain”) along the Lugenda River and the view of this immense wilderness with its great big African river winding through the woodland captured our imagination. Since we started the project in 2003 each year has brought new discoveries, an increasing respect for the 35 000 people who call Niassa home and live with wildlife all around them and an ever increasing sense of urgency. Sometimes a person’s most positive trait is also their greatest fault- passion, perfectionism, single mindedness etc. The same is true of Niassa. It is the sheer size of the place and its links to other wild areas that make it so important for international conservation efforts of many species particularly lions, African wild dog, leopard, spotted Hyaena, elephant and buffalo that all need extensive room to roam. But it is this same size and complexity that make it so difficult to manage. This is a protected area but it has all the conservation threats of logging, mining, population growth, development, and habitat transformation that unprotected areas face. SRN, the Mozambican management authority of Niassa has its hands full. Our job is to complement SRN’s activities but with a focus on carnivore conservation particularly lions and most urgently, to reduce human - carnivore conflict and snaring. Our mission is to secure the lions and other carnivore populations in Niassa but to do that we need to secure Niassa itself, it cannot happen in isolation.

Like everywhere across the region, elephant poaching increased dramatically in 2010, and the data we collected on bush meat snaring in 2010 is sobering and a direct threat to lions. Bush meat snaring is related to food security and income generation. The “living fences” program to reduce contact between people and lions and thereby reduce the number of lion attacks and lions killed in snares and at the same time help people to protect their food crops from bushpigs and warthogs is taking root and gaining momentum and is widely supported by Niassa communities. Our educational and outreach program is growing with the printing of the first Niassa conservation storybook *“Leopards, Mother Nature and one small girl”* written and beautifully illustrated by Afra Kingdon, and the safe behaviour poster illustrated by Conor Rawson which will be distributed across all protected areas in Mozambique. 2010 saw other successes as Agostinho finished his fieldwork on leopard for his research masters, Pedro Sandali received his drivers license and we were able to buy a second hand vehicle (sponsored by WCS) specifically for extension work. Our long term monitoring of the intensive study area lion population continues with 10 lions radio-marked in 2010. The population has remained stable despite significant turnover and high mortality.

The rain has finally stopped and it is time to head back to Niassa for the intensive 8 month dry season. Our team has been working throughout the rain maintaining the fences, radio-tracking the lions and monitoring human-carnivore conflict. They are at present opening roads for our return. We are looking forward to a productive year ahead.

Thank you all for your ongoing support!

*Colleen and Keith*

# Niassa Carnivore Project Team



Agostinho and Joaquim heading off to do camera trapping for his MSc research



Colleen at the Mbamba lion fun days (C) Brian Allen



Batista stacking living fence cuttings for Mbamba village



Pedro as a lion in a play for Mbamba village about snaring



Oscar helping with the painting of masks at the Lion fun days



Keith, Batista, Euzebio, Alberto and Ella radio collaring a new lion



Euzebio helping a farmer plant the living fence



Alberto, keeping everyone fed and camp in

# Current Threats

Threats to Niassa Lions	Ranking
Inadvertent snaring and poisoning	High
Retaliatory killing as a result of lion attacks	Medium
Sport hunting of underage lions	Medium
Disease – rabies and canine distemper	Low
Targeted snaring for skin trade	Low
Traditional medicine	Low

## Mbamba school stays dry

**October 2010** -Mbamba Village lies inside the intensive study area; it supports more than 2000 people in 420 households. NCP works closely with this village to test mitigation measures, understand issues more clearly and develop solutions. As part of an ongoing commitment to this community the Mbamba school rooms have been rehabilitated with new roofs, doors, shutters and a new coat of paint. For the first time in many years the children can go to school between December and March without getting wet and educational resources can safely be stored inside.



## Workshop for resolving human-lion conflict

**22 May 2010** – 18 researchers and fieldworkers from ten lion projects in Mozambique, Tanzania and Kenya met in Dar es Salaam to share practical solutions for reducing human-lion conflict, particularly lion attacks on humans but also attacks on livestock. This workshop was organised by NCP and the Rufigi Man-Eating Project. If lions are to persist we must find practical and sustainable ways to reduce this conflict and this is a focus of several projects in the region. Over two days of intensive discussion, the collective knowledge and experience was distilled into a detailed table that really got to grips with practical solutions that were being tested, the successes and even more importantly the failures. We are now collating this information into a practical or toolkit with details of each technique including pictures that can be used in the field by anyone working on human-lion conflict. This will be sent to a wide variety of conservation agencies, NGOs, researchers, protected area managers etc.

# Keeping track

***Since 2005 we have been keeping track of all the lions in an intensive study area in the southern eastern section of the Niassa Reserve along the Lugenda River. We seldom see the lions opportunistically. They are used to living amongst people and keep a low profile.***

More than 2000 people live in Mbamba village inside the study area and this area is heavily utilized by people for fishing, hunting and honey gathering but is not sport hunted. We fit radio-collars to the lions and Euzebio keeps track of them all; he calls them his “family”. He knows when one has died as the collar transmits a mortality signal and we can then drive in to see why.

On first glance the results are positive as the adult lion population in the intensive study area has stayed stable over the past six years with 22-25 adult lions but closer investigation is cause for concern. There has been a high turnover and at least 15 lions have died in the past 6 years in an area of only 800 sq. Km! This is likely to be a minimum as four known lions are unaccounted for and additional deaths of unknown lions are likely. In one year (between Nov 2009 and Nov 2010) seven adult lions (five males and one female) disappeared or died. This represents 32% of the lion population whereas natural mortality in other protected areas is only 6%.

Mbamba village reported five lions snared in the village between 2008 and 2009. An additional two lions were found in close proximity to the village and likely to have been snared or poisoned. Local hunters report that 5-6 lion skins and 3-4 leopard skins pass through Mbamba village each year. This supports our data. Yet the overall density of adult lions in the intensive study area has remained the same. This seems to be due to immigration of lions from other areas not high birth rates. There have been three takeovers of F-pride by adult males since 2005. The high mortality of lions in this area is not sustainable and while it may represent an extreme for Niassa Reserve as a whole we believe that more than 40 lions are dying from snaring each year in the protected area. We need to find solutions and we need to find them quickly.



*Paulo, the most recent male to be identified in the study area, in a male coalition with a smaller male, Paulino were radio-marked in November 2010.*

# Bush meat... lions are collateral damage

**There are people moving everywhere in Niassa collecting natural resources— fish, honey, grass, medicine, and of course bush meat. Lions and leopards are frequently caught in large cable or wire snares meant for buffalo, sable, eland and zebra. They are not the targets of the snares but are caught inadvertently. Once caught they are killed and the skins sold.**

In 2010, we did a preliminary questionnaire survey of 40 fishermen / hunters utilising the intensive study area to understand the need for bushmeat and snaring more clearly. These are men we know and with whom we have developed sufficient trust to collect reasonably accurate information on a sensitive topic. Snaring is illegal in the protected area. More than half of the men had eaten bush meat in the last week, and 22% had eaten meat more than once. 78% of the men interviewed would like to eat meat 3-4 times a week; however there was no preference for bush meat or other sources of red meat protein. Only 32% of the interviewees had domestic livestock to supplement their diets. Domestic meat protein is scarce and expensive. It costs more to buy a chicken (US\$3-4) than to buy a guinea fowl (60 cents) or a portion of bush meat (\$0,60 to \$1.60). Buffalo, zebra, porcupine, impala and guinea-fowl are the preferred types of bush meat but any meat will do and the carnivores are dangerous by-catch.



*Local hunter is with a full basket of bush meat and wire snares. The wire for the snares is frequently taken from the electric fences set up around villages to reduce human-elephant conflict. It is these snares that are the biggest threat to lions, leopards, spotted hyaenas and African wild dogs.*

Eight different snaring and trapping techniques used by local hunters have been identified but only 5-8 people in Mbamba village are considered specialized hunters that know how to snare large animals with cable or wire snares. These hunters earn significant income from hunting and in an area where opportunities to find paid employment are scarce, hunting remains an attractive form of work. Of the 8000 men in the Reserve only 300-400 have employment. A fisherman can earn \$30-\$100 from selling the catch caught in a month, while \$40 is earned from the sale of the meat of only one impala. We need to find ways to increase food security, access to meat protein and alternative livelihoods if lion conservation is to be successful. These issues go to the heart of the major challenges facing Niassa Reserve in the near future.

# Living Fences take root

**The “Living Fence” program is gaining momentum and is strongly supported by the local communities in Niassa. In 2010 we planted 560 m of double line fencing for three new fences in Mbamba village.**

In collaboration with SRN (the management authority of Niassa) test fences were also planted in three new villages. The goal of the fences is simple—to reduce contact between people and lions. The majority of lion attacks happen at night in fields during the wet season. Lions are attracted into the fields by bush pigs and warthogs that are major crop pests at this time when hunting for them is difficult in the long grass. This brings lions into contact with people protecting their fields at night, a recipe for disaster. Lions are also vulnerable to snares set for problem animals and bush meat set in the fields.



The first experimental cuttings of *Commiphora africana*, a local thorny plant were planted in Mbamba Village in November 2009. This followed tests of a local bamboo fence that was proven to be successful at reducing warthog damage but was labour intensive, and had to be rebuilt every year. The cuttings grew well and cuttings were used from it for a new fence. Cuttings are planted in a crisscross way to reduce holes at the base where bushpigs could push their way through. New growth needs to be cut back to encourage side growth and the develop-

ment of a thick hedge. A rule of thumb is the cuttings must be as thick as your thumb and as long as your forearm. The fences will take 2-3 growing seasons to grow to their full potential but people are optimistic and the fence cuttings are also being used to make fences around homes and bathing areas in the village. Once a critical mass of fences is reached in a village, new cuttings will be provided exclusively from existing fences and will not need to be brought in. The Living fences have the potential to be a low cost sustainable solution that might make a big difference.

# “From tiny seed a baobab will grow”

You can make a difference as an individual, no matter how young or old you are. That’s the theme of our outreach and education program. A critical part of this is to encourage and teach people how to protect themselves from carnivore attacks.

Between 2008 and 2009 we completed a survey across Niassa Reserve collating details of all attacks by carnivores on livestock and people. Since 1970, there have been 87 lion attacks, with 44 people killed and 43 injured. A critical question of the survey was “What were you doing before the lion, spotted hyaena or leopard attacked?”. This helped us identify behaviours that make people vulnerable. Sleeping outside in the fields and walking alone at night chasing crop pests in wet season were at the top of the list. People can protect themselves by taking simple precautions—safe shelters and safe behaviours. The Niassa story book is infused with these messages. It will be used by teachers as a teaching aid but at the same is filled with practical



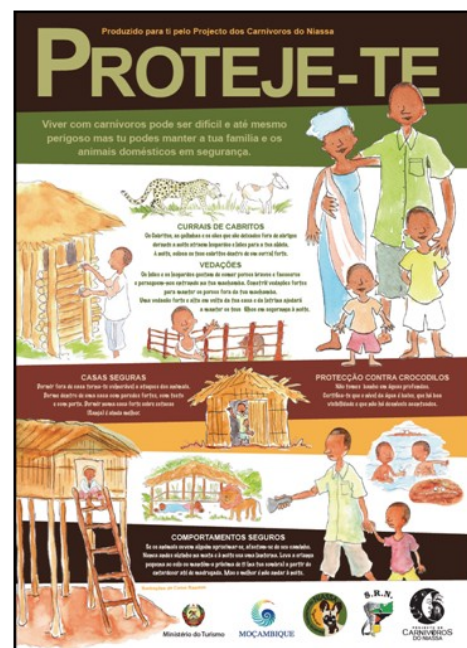
*Lions, leopards, Mother Nature and one small girl—first Niassa conservation storybook illustrated and written by Afra Kingdon for NCP*



Teachers and children with the new storybook at a Teachers meeting in November

children have ever seen. To accompany this, we have developed a Safe Behaviour poster illustrated by Conor Rawson with simple clear messages on ways to protect yourself and you livestock. These have been endorsed by the Ministry of Tourism and will be distributed across protected areas in Mozambique including Niassa. NCP was given a large boost in 2010 with the support from WCS to purchase a vehicle for extension work. The aim will be to visit villages in Niassa providing one-on-one support to communities to build goat corrals, safe shelters, living fences. A educational workbook and ABC cloth wall chart with a conservation message are also in development and will hopefully. There is still a long way to go but the seed has been planted.

advice and simple ecological messages, and beautifully illustrated and written by Afra Kingdon based on detailed information provided by NCP. The book has already been distributed to teachers for development for 2011 lessons and will be distributed to all 40 schools in Niassa in 2011. This is the first storybook many



# Financial Report

## Niassa Carnivore Project

Administered by The Ratel Trust

### Income Statement (US Dollars)

Calendar Year ending December 2010

#### Revenue in Ratel Trust Account

Donor Contributions for 2010	191732
Donor Contributions for 2011 deposited 2010	98461
Donor Contributions for 2012 deposited 2010	47860
<b>Revenue in account</b>	<b>338053</b>

#### Revenue in cash / equipment

Foot snaring Panthera	5000
Cash donations	8364
<b>Other revenue</b>	<b>13364</b>

<b>TOTAL REVENUE</b>	<b>351417</b>
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#### Expenses

Administration and development	4722
Fund raising and awareness	8526
Travel and resupply	11197
Personnel-salaries	37211
General Running costs / consumable	29528
Program-lion research-snaring-conflict	25295
Program-A. Jorge Masters-leopard density	6316
Program-Monitoring of sport hunting	2620
Program-Education and Extension	49836
Program-Community monitors	15246
Program –Disease prevention	92
Program-Training ,and dissemination of results	6625
Miscellaneous-contingency	642

<b>TOTAL EXPENSES</b>	<b>197856</b>
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<b>Change in net assets</b>	<b>153561</b>
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### Balance Sheet

Statement of Financial Position (US Dollars)

As of December 31 2010

#### Assets

Cash	12240
Cash Donor contributions 2011	93461
Cash donor contributions 2012	47860
<b>Total Assets (cash)</b>	<b>153561</b>

#### Liabilities

Accounts still payable for 2009	0
Change in net assets	153561
<b>Total Liabilities and Net Assets</b>	<b>153561</b>

## WITH THANKS TO ALL OUR DONORS

### **\$100 000 and above**

Panthera  
Wildlife Conservation Network  
WCN Solar Project  
Fair Play Foundation-Fauna and Flora International-USA  
Susan McConnell & Richard Scheller

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### **\$50 000 - \$100 000**

Rufford Innovation Award  
Wildlife Conservation Society

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### **\$10 000 - \$50 000**

Mary Boardman  
SCI-Flint Chapter  
Steven and Florence Goldby  
Cincinnati Zoo-The Angel Fund  
Fauna and Flora International-UK

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### **\$5000 - \$10000**

Concerto Nominees  
Gloria and Kent Marshall  
Lisette Gelber  
Zambezi Kavira Conservation Foundation  
Jon Vannini and India Sanjuan  
Larry and Rachael Bowman  
John Stuelpnagel  
Dallas Ecological Foundation

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### **\$1000 - \$5000**

Doug Walker-FFI-USA  
Savannas Forever  
Predator Conservation Trust  
Michael Piuze  
Rob and Val Barnett Harris  
Gonzalo Banus  
Kambako Safaris  
Londo Lodge Pemba  
Eveline Stalling  
Walli Finch  
Michael Hackett and David Hale  
Cheryl Kendall and Glenn Nash  
Bob Gerber  
Howard and Joyce Cosgrove-FFI-USA  
Peter and Eleanor Nalle-FFI-USA  
Michael Schaeffer and Michelle Maton  
Alison and Mark Nolting  
Carol and Jim Polich  
Houston Zoo

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### **\$100 - \$1000**

Luwire  
Peter Wan  
Charlie Knowles  
Linda Tabor-Beck  
Christine Davis  
Beverly Spector and Ken Lipson  
Kathryn Stoddard  
Stuwart Godin  
Julia Poelstra  
Joyce Kaneshiro and James Poley  
Julia Poelstra  
Rob and Elsbeth Harvey  
Linda Harden  
Justin Cohen and Sharon Greene  
Phillip Lowell  
Iri Cermak  
Jim Holt  
Junko Takeya  
Susan Combs  
Rod and Gill Zank  
Ted Adams  
Kija Mizany  
Gina Jacobs  
Marsha Hand  
Bill Kobialka  
Heidi Jo Markel and Avi Lerner

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