



# Biodiversity Protection Units

## Tembo 1, Tembo 3, Tembo 5 and Kamungi Scouts

**Mobile protection teams within the Tsavo Conservation Area and in support of Kenya Wildlife Service, and specific Community Conservancies to assist their efforts to defend elephants against ivory poachers and traffickers. Through their presence these teams further protect biodiversity from illegal activities such as bushmeat poaching, charcoaling, hardwood extraction and illegal livestock grazing.**

### Summary

With a strong aerial unit providing aerial cover, Tsavo Trust recognised the need for ground support to Kenya Wildlife Service (KWS) along the Tsavo East National Park's southern boundary, resulting in the establishment of the Tembo 1 team in 2014. Following the successful achievements of this team, a second biodiversity protection unit, Tembo 3, was established for operations in 2016.

Tsavo Trust now operates a full time deployment of Tembo 1, Tembo 3 and Tembo 5 ground teams, that provide operational support to KWS, to secure the southern boundary of TENP (Tembo 1 - Dakota) and the northern boundary of Tsavo West NP (Tembo 3 - Kamboyo) and parts of the northern boundary to Tsavo East NP (Tembo 5 - Triangle / Kamungi).

By increasing ground patrol coverage and wildlife protection efforts effectively; their permanent presence in the sectors they operate deter poachers. With a vehicle permanently deployed with each team, at least two foot patrols per team can be achieved simultaneously, night ambushes can be set up following increased intelligence, and better coverage can be maintained.



Photo shows Tembo 1 unit at their patrol base - Dakota, Tsavo East National Park



# Illegal Wildlife Trade - Elephant and Bushmeat Poaching

## Background - A need for a full time elephant protection presence in Tsavo East National Park

Most communities that border the Tsavo Parks have not enjoyed any legal benefits following the establishment of the National Park in 1948. They have however relied heavily on natural resource extraction from the Parks in varying forms, from illegal wildlife trade to logging, charcoal burning, and illegal livestock encroachment to mention the main ones.

The better known hunting communities that border the Tsavo Parks are the Watha people (formerly known as the Waliangulu and made famous as elephant poachers in the 1950's and known as the 'elephant people'), along with the WaKamba, Waduruma and Giriama have been well known as masters of the bush for many decades. It is widely believed by many that poisoned arrow poaching has died out over time and as new generations have come, the younger men have not carried this tradition on. This is categorically not the case. Poaching via the use of poisoned arrows is extremely effective. It is silent (unlike gun-shot which gives away the position of a poacher), and devastatingly deadly. The people who poach via poisoned arrow are expert bush men and are able to get very close to the elephant they are targeting, all too often when an elephant carcass (having been killed by poisoned arrow) is found it is often several days or weeks old meaning that any chance of a successful rapid follow up has long been missed. We believe that through our findings over the last five years that at least 30 to 40 % of all poached elephants died as a result of poaching via poison arrow.

Bush meat poaching is also a very serious threat to many species, such as Dik-dik, Impala, Lesser Kudu and Giraffe to name a few. Such poaching is often not for subsistence, but rather fueling an illegal commercial trade in poached wildlife from the Tsavo Conservation Area.



Infamous poisoned arrow poacher, displaying 7 deadly poisoned arrows and 3 bows used for poaching elephants for their ivory



Arrested bushmeat poacher, having killed 7 Dikdik in a night poaching incident



Left is a freshly poached famous bull elephant that both KWS and Tsavo Trust knew well, called Satao.

He was killed via a poisoned arrow on 30th May 2014 on the southern boundary of TENP. He was found on the 2nd June 2014 by Tsavo Trust and KWS during an aerial patrol.

Overleaf is Satao shortly before he was poached.

# Elephant Protection Operations

## A background to Tsavo Trust's elephant protection efforts supporting KWS from 2013 to 2017 in response to poaching activities

Working in partnership with KWS through a Memorandum of Understanding, Tsavo Trust has provided support to KWS since 2013 through aerial and ground de-snaring and elephant protection operations, initially in the southern parts of Tsavo East National Park (Satao, Mukuaju, Dakota and Bachuma); expanding operations to other 'hot-spot' (Tsavo 'Triangle' and parts of Tsavo West NP) areas for poachers who use poisoned arrows to kill elephants for ivory, and bushmeat poachers using snares and night time 'lamping' to kill smaller wildlife species for meat.

Tsavo Trust initially supported KWS through employing 4 scouts to work alongside the 10 man KWS Platoon (Dakota Base), providing further 'eyes and ears' on the ground, and more man power for field patrols. After the successful first deployment between June 2014 and March 2015, the unit was sadly disbanded due to funding shortfalls. It became urgent that funding support was found to re deploy and further enhance this team to effectively dominate the locality against the poaching threat.

### Establishment of Tembo 1, Tembo 3 and Tembo 5 mobile ground protection teams - 2016 to 2018

Since 2016, three biodiversity protection units have been established, making significant impacts in combatting the poaching threat, to elephants in particular, and addressing the bushmeat poaching along the southern boundary of Tsavo East National Park from Bachuma in the west to Sala Gate in the east.

Requirements included a new 4x4 Land Cruiser fabricated for off-road use and a water bowser for logistical support (field deployments, water delivery etc), vehicle running costs, staff salaries for 1 head scout, 1 driver, 2 scouts, allowances for 4 KWS rangers, food rations, uniforms, insurance, medical, as well as basic field equipment for the personnel such as uniforms, tents and camping equipment, radios, GPS, binoculars, camera etc.



The majestic Satao, such a terrible loss. Tsavo Trust endeavours to protect the last few Super Tuskers, and the brave rangers of Tembo 1 and 3 work tirelessly in the Tsavo wilderness combatting illegal wildlife crime.

The total initial Capital Expenditure for Tembo 1 was \$78,000 and the first year's running costs amounted to \$64,000. Thanks to a number of very generous donors the total amount needed of \$142,000 was raised and in 2016, 'Tembo 1' (meaning 'Elephant 1') was deployed to carry on the important biodiversity protection role that the KWS platoon and Tsavo Trust scouts had done in 2014 and 2015. Two more protection units have since been deployed, **Tembo 3** in 2016, and **Tembo 5** in 2018.

By increasing the number of men on the ground who patrol jointly with KWS on a daily basis and by providing them with the basic logistical support to carry out field operations effectively, their physical presence acts as a deterrent to poachers, the boosted number of men apprehend poachers, and with vehicles at their disposal, deployments in several directions and by at least 2 foot patrols can be achieved and with this a far more thorough coverage of the threatened area will be achieved.



# Tembo 1 - Biodiversity Protection Unit

## Tsavo East National Park and southern TCA sectors

Tembo 1 is a joint KWS / Tsavo Trust field team, equipped with a suitable 4x4 vehicle, 1,000ltr water bowser, trained and vetted staff (6 scouts plus allowances for at least 2 armed KWS Rangers with field rations), the necessary equipment (tents, radios, binoculars, GPS, camera, uniforms) and the endorsement by KWS for this collaborative support unit.

The Tembo 1 team was deployed, to complement KWS's efforts, in the southern section of TENP. This section forms the 50km southern boundary of TENP and is both historically and currently a "poaching hot spot", particularly for poisoned arrow hunters. It was in this section that the well-known Tusker, Satao, was poached by poisoned arrow in late May 2014 (his carcass found by Tsavo Trust). Bushmeat poachers use snares and night-time "lamping" to kill small wildlife (subsistence and commercial), a significant threat along this southern TENP boundary. Human Wildlife Conflict (HWC) with elephant raiding small scale farmlands has aggravated local communities against elephants.

Since their deployment Tembo 1 operations have led to positive outcomes for elephant security but also other smaller wildlife of the area with numerous poachers having been arrested, recovery of elephant tusks, wire snares recovered, poacher's camps found as well as recovered bushmeat and poacher's equipment's and location of elephant carcasses.



Photo taken on 4th January 2017 in Tsavo East National Park, shows the newly deployed Tembo 1 field team having recovered large ivory (51kg and 50.5kg respectively) from one of the Big Tuskers coded as SA2, who was poached with poisoned arrow. Tsavo Trust aircraft located his fresh carcass the same day.

### TEMBO 1

**Deployed since:**  
2016

**Capital Setup Costs:**  
\$99,000

**Annual Running Costs:**  
\$56,000

**6 Tsavo Trust Personnel:**  
6 Scouts  
(+ KWS rangers)

**Area of Operations:**  
Tsavo East and southern  
TCA sectors

# Tembo 3 - Biodiversity Protection Unit

## Tsavo West National Park and northern TCA sectors

The Tembo 3 joint KWS/Tsavo Trust field operations team has been deployed to complement KWS's efforts on the northern boundary of Tsavo West National Park and parts of the northern boundary of Tsavo East National Park. Equipped with a suitable 4x4 vehicle, trained and vetted staff (6 Scouts plus allowances for at least 2 armed KWS Rangers with field rations), the necessary equipment (tents, radio's, binoculars, GPS, camera, uniforms) and the endorsement by KWS for this collaborative support unit.

The Tembo 3 team has been deployed, to complement KWS's efforts, on the northern boundary of Tsavo West, the northern boundary of the Tsavo East 'Triangle' area.

Since their deployment, Tembo 3 operations have been very succesful in finding and removing snares in Tsavo West NP and in border areas to the north of Tsavo East NP, including Kamungi Conservancy. Many of the patrols carried out by Tembo 3 are on foot, which allows for more well-hidden snares to be located, that would not be visible from the vehicle.

Scouts from Tembo 3 are recruited from the local community in Kamungi Conservancy on the border of Tsavo East NP. They were trained at the KWS Manyani Law Enforcement Academy, and are proving to be excellent scouts with the resillience and dedication needed for this important work.



Photo of Tembo 3 Team on a foot patrol in the Tsavo Conservation Area. Much of the de-snaring work done by Tembo 3 has to be done by foot, often in harsh conditions. The scouts are well trained at the KWS Law Enforcement Academy.

### TEMBO 3

**Deployed since:**  
April 2016

**Capital Setup Costs:**  
\$103,000

**Annual Running Costs:**  
\$56,000

**6 Tsavo Trust Personnel:**  
6 Scouts  
(+ KWS rangers)

**Area of Operations:**  
Tsavo West and northern  
TCA sectors



# Tembo 5 - Biodiversity Protection Unit

## Tsavo East National Park and northern TCA sectors

The Tembo 5 joint KWS/Tsavo Trust field operations team has been deployed to complement KWS's efforts in the Tsavo Triangle sector of TENP and parts of the northern TCA. Equipped with a 4x4 vehicle, trained and vetted staff (6 Scouts plus allowances for at least 2 armed KWS Rangers with field rations), the necessary equipment (tents, radio's, binoculars, GPS, camera, uniforms) and the endorsement by KWS for this collaborative support unit.

Since their deployment in 2018, Tembo 5 operations have been succesful in finding and removing snares in Tsavo East, ground operations following collared elephant alerts, and general protection patrols in support of KWS.



Photo of Tsavo Trust Community Rangers on parade in 2018

### TEMBO 5

**Deployed since:** June 2018

**Annual Running Costs:** \$56,000

**Area of Operations:** Tsavo East Triangle and northern TCA sectors

**Capital Setup Costs:** \$100,000

**6 Tsavo Trust Personnel:** 6 Scouts (+ KWS rangers)

## Goals and Outcomes

### Expected Results/Outcomes

- Significantly reduce elephant poaching
- Arrest elephant and bushmeat poachers
- Work in tandem with aircraft to locate carcasses to ascertain cause of death
- Recover as many elephant tusks from poachers or found carcasses as possible
- Locate and destroy all poacher equipment and camps/blinds found
- Remove all snares found

### Indicators used to measure outputs

- No. of patrol days carried out
- No. of arrests made
- No. of elephant carcasses located
- No. of elephant tusks recovered
- No. of poacher's camps/hides destroyed
- No. of snares removed

### Indicator target

- Daily patrols
- Indicators vary as poaching activity levels change

### Potential Risk

- Contact with armed poachers (firearms and poison arrow)
- Vehicle accident
- HWC - whilst on foot patrols coming into contact with potentially dangerous wildlife
- Information leakage on security matters

### Activity employed to mitigate risk

- Well trained KWS Rangers who are armed
- Well maintained, licensed and fully insured vehicles
- Staff insurances are in place
- Well trained and licensed driver
- Tsavo Trust rangers to be trained through KWS Law Enforcement Academy - Community Ranger

### Training Course

- Ongoing review of security protocols





# Monitoring and Evaluation

## Summary of Big Tusker Project Conservation Achievements and Impacts - 2017

Table below summarizes number of hours flown, miles covered, individual 'Big Tuskers' observed, ivory recovered, numbers of fresh and recent elephant carcasses, numbers of poacher's camps/blinds/hides and platforms, number of joint Tsavo Trust/KWS arrests, number of snares recovered and number of aerial responses to armed situations for the year 2017.

Activity	Hours Flown	Kilometres Covered
<b>Aerial Reconnaissance</b>	<b>867</b> Average 120 kph of low level flight 72 hours per month	<b>103,777</b> Average of 8,648 km/month Flights carried out jointly with KWS staff
	<b>Field Patrol Days</b>	<b>Kilometers covered</b>
<b>Ground Activities</b> (Joint KWS / Tsavo Trust)	Protection teams: 677 days Monitoring teams: 359 days	Protection teams: 81,166 km Monitoring teams: 57,070 km
	<b>No. Observed</b>	
<b>Big 'Tuskers'</b>	<b>Total: 10 iconic bulls, 7 cows &amp; 18 emerging bulls – total sightings aerial and ground teams = 150 bulls and 73 cows = Ave. 1 Tusker sighting every 0.6 days</b>	
<b>'Tuskers' Lost</b>	<b>6 confirmed (4 bulls, 2 cows), 3 unconfirmed (2 bulls, 1 cow):</b> 1. SA2 – poached ivory recvd. 4/1/17 (51 & 50.5kg). Poachers apprehended – TENP 2. DI1 – believed to have been poached – 24/12/16, TENP 3. KA1 – died naturally, found 20/2/17. Ivory - 53.5 & 52.5kg. TWNP 4. ND1 – euthanized, HWC – spear wounds, 22/7/17. Ivory 52 & 51kg - Amboseli 5. F_VPL – died naturally (old age/drought), found 7/8/17, TENP 6. F_MU1 – died naturally (old age/drought), found 12/10/17, TENP <b>3 unconfirmed (2 bulls, 1 cow):</b> 1. TH1 – missing since March 2016, last seen TE N/Area, TENP 2. MO1 – missing since May 2016, last seen on the Ranches! 3. F_ND1 – missing since December 2016, TENP	
	<b>No. Recovered</b>	
<b>Ivory recovered</b>	<b>241</b> elephant tusks (largest 53.5 and 52 kg) • 39 tusks recvd. from 11 ivory dealers (31 tusks = 290kg), 7 Ele. Poachers (8 tusks = 136kg) – Total 18 arrests made (KWS / Tsavo Trust) • 202 tusks recvd. from aerial & ground team findings (KWS / Tsavo Trust)	
<b>Elephant carcasses</b>	<b>Fresh</b> (less than 3 weeks old)	<b>Recent</b> (less than 3 months old)
	<b>110</b> (c of d: 5 train hit, 3 hit by truck, 11 poached, 87 natural, 4 unconfirmed)	<b>53</b> (3 poached, 42 natural, 7 unconfirmed)
	<b>Total 162 carcasses</b>	
<b>Carcasses/hours flown</b>	1 every 5.3 hours of flight	
<b>Poachers camps / hides</b>	<b>Fresh - 27</b>	<b>Recent - 16</b>
<b>Arrests</b>	<b>101</b> - by KWS / Tsavo Trust – (11 ivory dealers, 7 ivory poachers, 23 bush meat poachers, 59 illegal livestock, 1 other)	
<b>Snares/traps recovered</b>	<b>1,008</b> by joint KWS / Tsavo Trust Tembo Teams ( <b>41</b> large, <b>208</b> medium, <b>759</b> small)	
<b>Response/support to KWS - armed incidents</b>	<b>7</b> (5 re. elephant poachers, 1 re. rhino poachers, 1 other)	
<b>Other illegal activities seen</b>	<b>627</b> cattle bomas (244,590 plus cows, 88,000 shoats, 1,764 camels and donkeys, 1,113 people)	
<b>Written reports to KWS</b>	514 (daily email reports, various communications & monthly reports)	
<b>Meetings and interaction with KWS</b>	• Daily field collaboration with KWS personnel by Tsavo Trust ground and aerial teams • Regular formal meetings with KWS in various locations including TCA HQ; TENP and TWNP HQ; KWS HQ Nairobi and Tsavo Trust HQ	

# Sustainability

Tembo 1, 3 and 5 are on-going operational field teams, established to run as long as there is a need for such biodiversity protection teams in Tsavo. These teams have several funding support partners and Tsavo Trust is always seeking continued part funding support towards this project.

Tsavo Trust has a number of supporting partners to the Big Tusker Project's Tembo 1, Tembo 3 and Tembo 5 units, and what is encouraging is some of these partners have agreed to multi-year support. Should the total required budget not be found the teams will continue operations albeit activities will be scaled down according to available funds. However, this is not anticipated given the enthusiastic feedback received.

The following types of support and/or revenue will be pursued to fund the project in the future:

- Foundation grants
- Corporate grants
- Government grants
- Donations from individuals
- Tsavo Trust, through its operating budget, or other special fund

The vast and largely road less Tsavo Conservation Area (TCA) has to rely heavily on support from conservation partners. Kenya Wildlife Service, the governing wildlife authority in Kenya, fully acknowledges that it cannot achieve its conservation mandate alone and needs trusted partners to help achieve them. Tsavo Trust is resident in the TCA and has long-term commitments to the TCA. Tsavo Trust's field implementation partner, Zoological Society of London, are also committed long-term to the support of KWS as an implementing technical partner, having supported conservation in the TCA since 1989. Short and medium-term funding has already been secured (some funding secured up to and including 2021) to complement and continue project activities by Tsavo Trust and ZSL, as well as KWS' dedicated annual budget for TCA.

# Vision and Appeal

Should sufficient funding be secured to ensure the long term operations for Tembo 1, Tembo 3, and Tembo 5 Tsavo Trust would like to expand biodiversity protection capacity in support of KWS by establishing and deploying one more protection unit. This would allow each team to focus their operations over a smaller area, and provide increased protection to the wildlife of Tsavo.

Photo taken in November 2017 of an 'Emerging Tusker' in Tsavo East National Park.

Tsavo Trust aims to support KWS in their conservation efforts to protect such magnificent animals so that they may live for many years to come, and grow to be the next generation of 'Super Tuskers'

Photo by Joseph Kyalo Kimaile



## Conclusion

Effective protection for the magnificent Tuskers of Tsavo comes in various forms from a number of organisations. Tsavo Trust strongly believes that supporting the KWS through biodiversity protection units provides considerable, immediate and effective protection to known poaching 'hot-spot' areas of Tsavo. Tsavo Trust Tembo Teams in partnership with KWS have a proven and documented record of successful conservation operations and are effective in defending against wildlife crime.

Such protection comes at considerable costs, including financial and personal. It is important to acknowledge the personal risk and hardship that the brave KWS Rangers and Kamungi Scouts face on a daily basis, and were it not for the courage and commitment of these hard men and women of the bush - the Tusker guardians of Tsavo - the last few Super Tuskers would be extremely vulnerable. A number of rangers have been killed in action in the war against wildlife crime, these brave men made the ultimate sacrifice to the protection of animals that have no voice, and are defenceless to modern weapons and deadly poison.

Tsavo Trust Tembo units exist thanks to the very generous financial and in-kind donations from a number of supporters around the world. These ground field teams are expensive to establish and operate, however, the generosity shown to this cause has enabled these teams to provide essential protection in the Tsavo wilderness, and we are very grateful to everyone who contributes to ensure Tembo 1, Tembo 3 and Tembo 5 can continue to carry out their operations.

It cannot be said for certain how many elephants have been saved thanks to such generous support of this cause, nor can one quantify the value of just one elephant, we do know however, that they are extremely precious, and know that this view is shared by so many who donate to Tsavo Trust in order that we are able to carry out our mission of giving the wildlife and people of Tsavo a right to a future.



## Tembo Protection Unit - Direct Costs

Capital expenditure and running costs to set up and maintain a Tembo protection team:

Cost Description	Units	Cost Unit US\$	Total Cost US\$
<b>One off setup Capex Costs (US\$) - in bold below</b>			<b>99,210</b>
<b>Annual Running Costs</b>			<b>56,582</b>
<b>Itemized Costs:</b>			
<b>4x4 Vehicle, Trailer/Bowser and Running Costs</b>			
<b>1 new 4x4 vehicle (Toyota Land Cruiser p/up)</b>	<b>1</b>	<b>60,000 (one off cost)</b>	<b>60,000</b>
<b>Vehicle fabrication for rugged off-road conditions</b>	<b>1</b>	<b>10,000 (one-off cost)</b>	<b>10,000</b>
<b>1 trailer/water tank bowser</b>	<b>1</b>	<b>6,000 (one-off cost)</b>	<b>6,000</b>
1 year's vehicle running costs, incl fuel and maintenance (AA rates)	1	\$1/km, 2,500 km/month	30,000
1 year's fully comprehensive vehicle insurance	1	1,800	1,800
<b>Staff Salaries, Uniforms, Rations, Insurance, Medical</b>			
Salary - Head Scout (NCO), gross	1	\$400 / month	4,800
Salary - Driver, gross	1	\$300 / month	3,600
Salary - 4 Scouts, gross	4	\$200 / month	9,600
1 year's food rations (dry and fresh), 6 men	6	\$40 / month each	2,880
Uniforms	6	\$212 pp	1,272
Workman's compensation/insurance/liability cover (WIBA)	6	\$150/person/year	900
Medical insurance for whole team		Covered by NHIF	
<b>Field Equipment</b>			
<b>2 x 10ft x 10ft Heavy Duty canvas tents</b>	<b>2</b>	<b>\$1,800 (one off)</b>	<b>3,600</b>
<b>Camp equipment, camp stools x 6, tables x 2, cooking equip.</b>	<b>Misc</b>	<b>Misc. (one off)</b>	<b>500</b>
<b>6 bed rolls</b>	<b>6</b>	<b>\$85</b>	<b>510</b>
<b>Radios - 1 base set in vehicle</b>	<b>1</b>	<b>\$600</b>	<b>600</b>
<b>Radios - 2 hand held sets plus solar charging panels</b>	<b>2</b>	<b>\$500</b>	<b>1,000</b>
<b>GPS - waterproof and shockproof</b>	<b>2</b>	<b>\$600</b>	<b>1,200</b>
<b>Binoculars - waterproof and shockproof</b>	<b>4</b>	<b>\$500</b>	<b>2,000</b>
<b>Digital camera - waterproof and shockproof</b>	<b>2</b>	<b>\$500</b>	<b>1,000</b>
<b>Smartphone - waterproof and shockproof</b>	<b>2</b>	<b>\$400</b>	<b>800</b>
<b>Operating Costs</b>			
Smartphone airtime and data	1	\$20/ month	240
First Aid Kit supplies	1	\$50 p/a	50
Court case attendances - per diem - 8 per month at \$5	12	\$40	480
<b>Activity Costs</b>			
<b>Scout Training - KWS Manyani</b>	<b>6</b>	<b>\$2,000 pp</b>	<b>12,000</b>
<b>Total Capital setup costs and Annual Direct Running Costs</b>			<b>\$155,792</b>