

D.A.R.T. ELEPHANT PROTECTION PROJECT

THE RAINY SEASON IN ZIMBABWE

In Zimbabwe the arrival of the inter-tropical convergence zone in late November brings a welcome end to the merciless heat of the long dry season and heralds the start of the more temperate rainy season.

Over the next four months towering cumulonimbus thunder clouds will release almost all the season's expected average annual rainfall of 630mm to stimulate the growth of succulent new vegetation and rapidly transform the parched dry landscape into an almost unrecognisable panorama of vibrant greens.

In addition this life-giving precipitation not only replenishes the muddy water holes and fills the rivers with clean, clear water but it also provides the catalyst to trigger the arrival of an entirely new generation of wild animals and birds in Hwange National Park whose birth has been miraculously synchronised to coincide with the start of the first rains.

Beyond the boundaries of this protected wildlife area however live the traditional residents of this harsh and inhospitable landscape whose livelihood and survival is heavily dependent on the rain and their ability to raise and reap their crops of maize, millet, sorghum, sugarcane, pumpkins and melons during this brief growing season.

Farming in these marginal areas of poor soil fertility and unpredictable rainfall is already incredibly difficult however the challenge of raising livestock or bringing a ripening crop to maturity and successfully harvesting it is made even more difficult for the impoverished villagers living along the borders of Hwange National Park by the seasonal visits of crop-raiding elephants and cattle-killing lions.....



Elephants are unable to resist the delicious temptations growing in rural fields,

From January onwards elephants will sporadically abandon the safety and protection of the National Park and venture into the neighbouring rural farming areas to inspect and sample some of the ripening crops. However as the end of the March approaches this is when the crop-raiding season begins in earnest.

This is the time when elephants, particularly the older confident bulls, will assemble along the internal boundaries of their protected areas in the late afternoon. As darkness falls they hurriedly cross those boundaries to enter the rural farming areas. Under the cover of darkness they feast on all the tasty agricultural produce that will not be found growing inside the protected wilderness areas of Hwange National Park.

CROP-RAIDING ELEPHANT DAMAGE

Every year many crop-raiding elephants are killed or wounded in the communal areas and other specially protected areas bordering Hwange National Park. Despite the use of high-powered rifles and other lethal management solutions to mitigate crop-raiding, elephants are not easily dissuaded and continue to raid crops....for this reason many elephants continue to be killed annually in retaliation for agricultural losses.



Inspecting a maize field damaged the previous evening



Field of young maize plants destroyed by elephant

D.A.R.T. ELEPHANT PROTECTION USING “NON-LETHAL” DETERRENT DEVICES

At the beginning of 2018, D.A.R.T. obtained the necessary permission and special permits from the National Parks Authority and the Hwange Rural District Council to assist rural villagers with a project to protect rural crops AND save many crop-raiding elephants from being unnecessarily killed.

To reduce response time it was necessary for the D.A.R.T. Team to be on-call and ready to respond whenever villagers phoned to report elephants entering a rural field. This meant the team would spend almost every night in the fields for the entire three months of the crop-ripening season from the beginning of March to the end of May 2018.



Wearing night vision goggles and armed with a heavy calibre rifle for personal protection I approached countless elephants in total darkness this season.

At a distance of approximately 20m I would fire a specially developed non-lethal deterrent device from my CO2-powered dart rifle.

This low impact device was specially designed to explode harmlessly on contact with the elephant's hide but would however produce a large flash and a loud bang.

This device proved highly effective and caused the elephants to take-off running at high speed back to the safety of the National Park or protected area.

Nocturnal elephant chasing kit and equipment



Low impact, light plastic “non-lethal” explosive deterrent device

Equipped with a newly developed and “carefully-tested” “non-lethal” deterrent, the D.A.R.T. Team was able to chase many elephants out of rural fields at night

This protected the ripening crops from being destroyed and saved many crop-raiding elephants from being killed.

Having been successfully carried out in total darkness, these nocturnal elephant chasing exercises became quite tiring, stressful and potentially very dangerous especially when done a number of times each night.



1 - Deterrent device in flight



2 - Deterrent device before impact



3 - Deterrent device exploding on impact

DEVELOPING FRIENDSHIPS WITH LOCAL COMMUNITIES

Going out every night to chase elephants from rural fields enabled us to meet and develop close friendships with many communal farmers and their families. This gave us an opportunity to learn much more about the hardships and survival challenges these rural people faced on a daily basis.

To protect their meagre fields, each farmer had constructed a temporary shelter on the edge of their fields where they would spend every night listening and waiting for elephants.

From these look-out posts the farmer could quickly respond and try to chase the elephants from his fields.

This he did by keeping small fires glowing along the boundary of his property and burning old tyres or elephant dung to produce an acrid smoke, or by clanging pots and pans together,

They also used special whips made from plaited bark that was wielded with unbelievable dexterity to produce a loud “crack” similar to the sound of a rifle shot.



Temporary look-out shelter on edge of fields



Gifts were generously given...

... and gratefully received.



Lasting friendships established

The unconditional generosity of these rural people was unparalleled.

As poor as they are, these villagers would always invite us to eat with them and would happily share what little they had with us.

DESPITE OUR EFFORTS TO PROTECT ELEPHANTS USING NON-LETHAL INTERVENTIONS, MANY OTHER CROP-RAIDING ELEPHANTS WERE KILLED.

Despite our best efforts, the D.A.R.T. team could not be everywhere at once.

During the 2018 season, crop-raiding elephant activity occurred across a wide front. While the D.A.R.T. Team was busy using “non-lethal” deterrents to chase elephants out of one communal area, in neighbouring communal areas other crop-raiding elephants were being shot and killed.

Arriving on the scene soon after one of these magnificent animals had been killed was a tragedy we came to experience on numerous occasions during the 2018 season.



Crop-Raiding elephant bull killed the previous night

Having only left the safety of Hwange National Park briefly one night to sample the sweet temptations of ripening maize, millet, sorghum, water melons, squashes and sugarcane that were growing in abundance along the boundary of the National Park these elephant bulls paid the ultimate price.

The extermination of these noble animals in retaliation for their brief indiscretion is indeed a tragedy.

Witnessing scenes like these is what motivated D.A.R.T. to initiate the Elephant Protection Project.

D.A.R.T. NEEDS YOUR SUPPORT TO HELP US PROTECT ELEPHANTS AND PREVENT MORE TRAGEDIES LIKE THIS.



**ELEPHANT SATELLITE TRACKING COLLAR -
TO MONITOR EFFECTIVENESS OF NON-LETHAL DETERRENT DEVICES**

After many weeks spent chasing elephants out of rural fields night after night, it became necessary to know how effective our non-lethal deterrents actually were in keeping elephants away. Without being able to identify individual elephants at night it was impossible to know if they were repeat offenders returning to the fields or new elephants.

One solution to this problem would involve the ability of being able to identify a crop-raiding elephant bull and immobilise him while he was inside a communal area feeding on ripening maize. He would then be fitted with a satellite tracking collar so his movements could be closely monitored. This would make it possible to accurately observe the elephant's response when he next tried to return to a field of ripening maize and was chased away with a non-lethal deterrent.

This satellite tracking collar would enable D.A.R.T. to monitor the real-time movements of the target elephant on a computer and send a "Deterrent Team" to intercept him before he entered a rural field. It would then be possible to accurately monitor and document the movements of the elephant in response to various non-lethal deterrents and assess their value and effectiveness in sustainably keeping elephants away from lethal boundaries and other areas of conflict with rural farmers.



Elephant Satellite Tracking Collar



Grateful thanks to Mr & Mrs P. Credlin



Special transmitter dart



Donated darting equipment

It takes approximately six minutes for the elephant immobilising drug (M99) to take effect. During this time a darted elephant can run a very long way before it succumbs to the drug and can be very difficult to find during the day if it disappears into thick vegetation. At night however an immobilised elephant would be impossible to find.

When darting an elephant at night therefore a special "transmitter dart" is an absolutely essential requirement to help follow and find the immobilised elephant.

ELEPHANT SATELLITE TRACKING COLLAR -
THE SEARCH TO FIND, IMMOBILISE AND COLLAR A SUITABLE ELEPHANT BULL

Crop-raiding elephant activity generally begins after nightfall. Therefore to find an elephant in the act of raiding crops meant the entire darting and collaring exercise would have to be done at night!!

This nocturnal darting concept was seriously considered and many close approaches were made under the cover of darkness however the idea was eventually dismissed due to the enormous risks it posed to both the darter and the elephant.

Instead it was decided that a search would be made only during daylight hours in areas where the Hwange National Park shared a common boundary with nearby communal farming areas. The objective would then be to find a suitable elephant bull in the late afternoon before sunset while he was in the process of leaving the Park to enter the rural farming area. Many afternoons were spent searching along the boundary of Hwange National Park to find a suitable elephant bull.



Many close approaches were made to identify a suitable elephant bull to collar.



Then we found an area where elephants often cross the boundary fence in daylight

**ELEPHANT SATELLITE TRACKING COLLAR -
A SUITABLE ELEPHANT BULL WAS FOUND AND COLLARED**

On the 5th August 2018 a suitable elephant was located at 4pm in the afternoon in a perfect darting location along the shared boundary between Hwange National Park and Tsholotsho Communal Land.

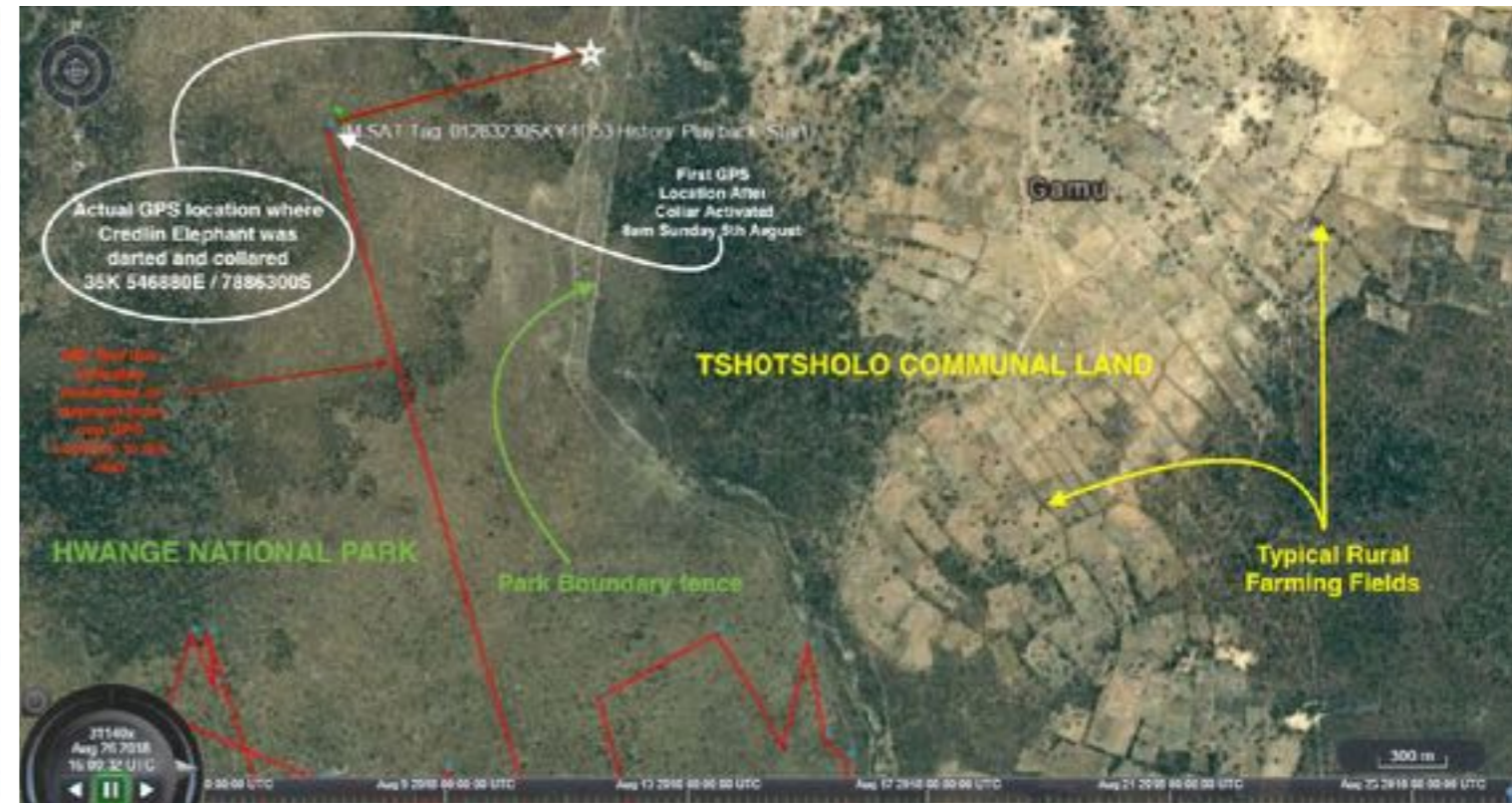
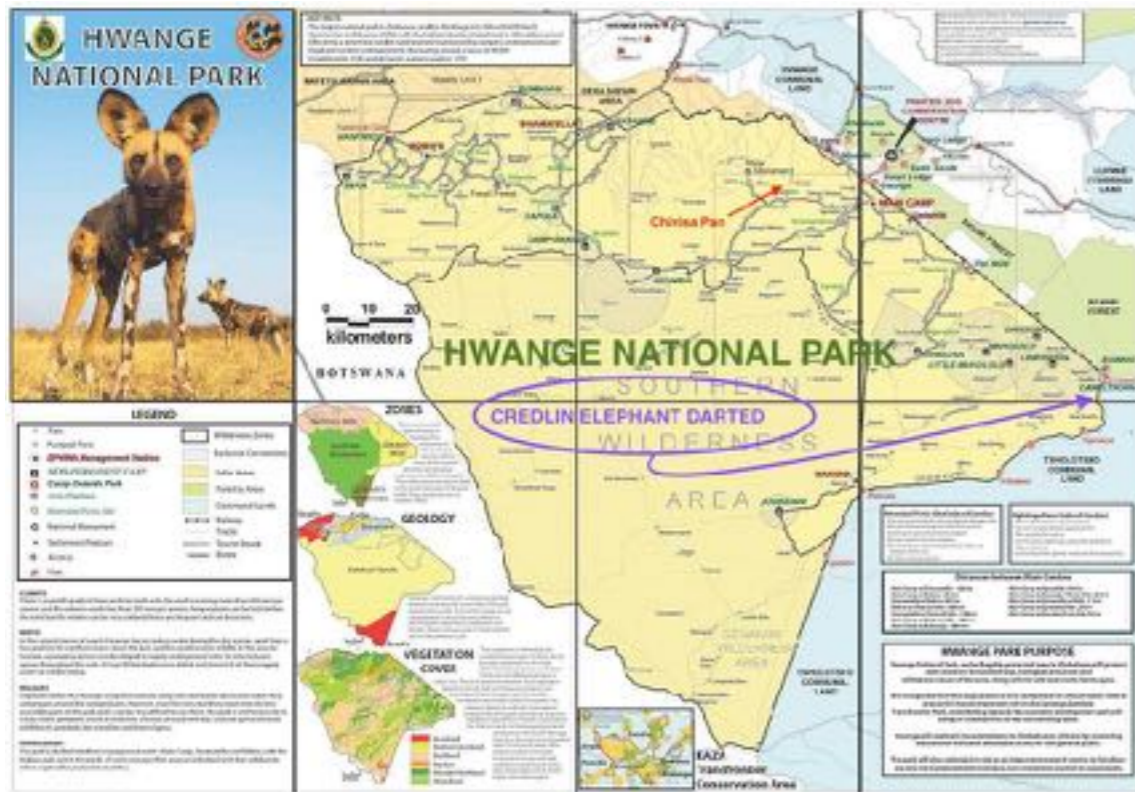
In line with our specific pre-capture requirements this elephant bull was found in the process of exiting the National Park and entering the neighbouring rural farming area. A tranquillising dart was loaded and the elephant was soon in a deep sleep.



It took approximately twenty minutes to fit and secure the elephant satellite tracking collar. The antidote to reverse the M99 immobilising drug was then administered and six minutes later the elephant was wide awake and back on his feet. After briefly inspecting the new collar with his trunk he casually wandered off into the sunset. Close monitoring of his movements could then begin.



ELEPHANT SATELLITE TRACKING COLLAR -
CLOSE MONITORING OF COLLARED ELEPHANT



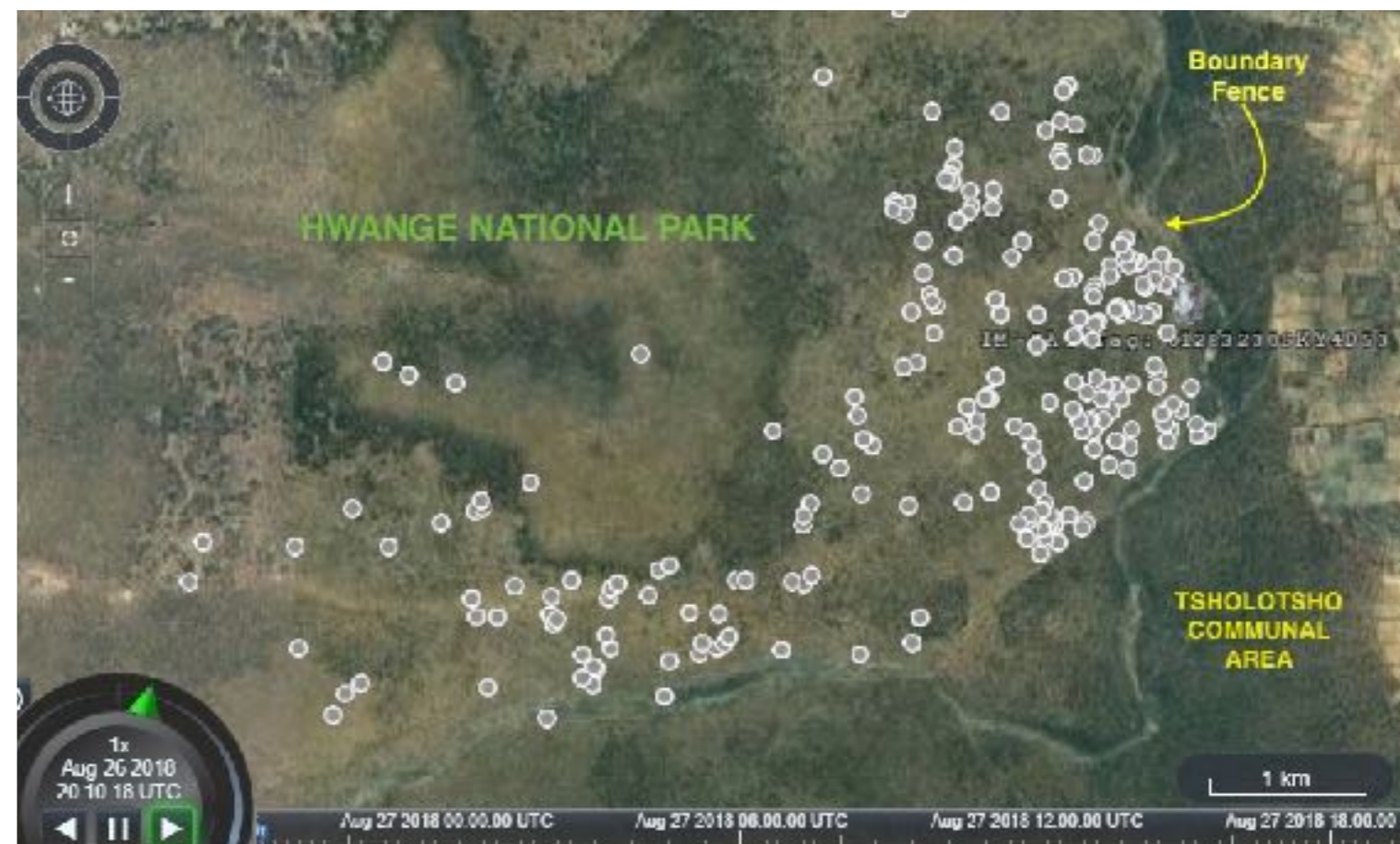
Location of Credlin elephant - Darted & Collared 4th August 2018

Precise GPS location where Credlin Elephant was darted in relation to Park Boundary

The advanced technology of this elephant satellite tracking collar enables precise GPS locations to be taken and recorded at set intervals of time.

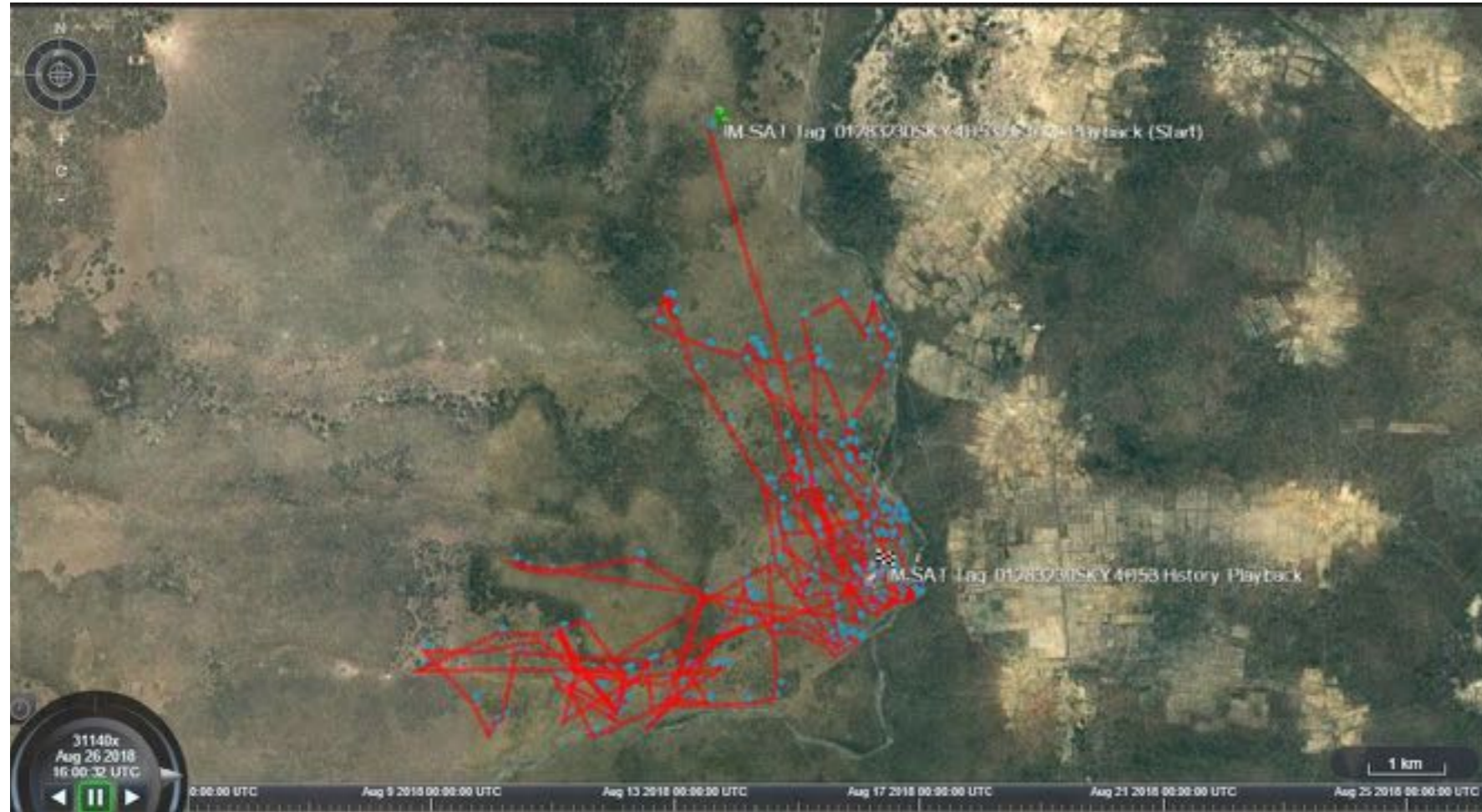
These intervals can be programmed to record elephant locations as frequently as one GPS point every thirty minutes or extended to record only one GPS point every twenty four hours. Sophisticated computer software then allows us to monitor and analyse the elephant's movements over time.

Initially the collar was set to download one GPS location every hour so the elephant's post-collaring movements could be closely monitored. A few days later the collar was reset to download a new GPS location every four hours.



GPS Locations of Credlin Elephant from 5th - 27th August 2018

ELEPHANT SATELLITE TRACKING COLLAR -
ON-GOING MONITORING OF COLLARED ELEPHANT



Satellite Collar GPS movement data from 5th August to 26th August 2018 shows the Credlin elephant is actively moving around his home range.

The satellite data clearly shows this elephant has not once crossed the boundary fence from Hwange National Park into the Tshotsholo Communal Farming Area since he was darted.

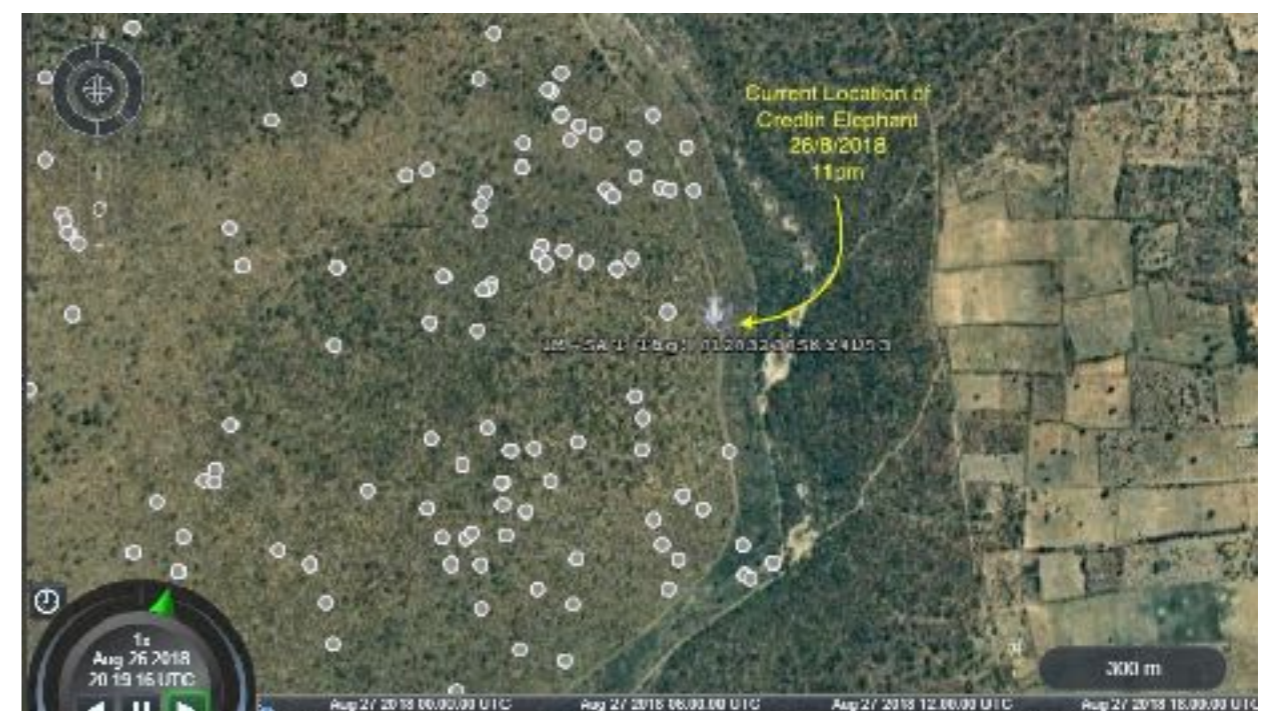
Could it be possible that our intervention by darting and collaring him just as he was about to cross the fence has perhaps acted as a deterrent and persuaded him not to cross the boundary fence???

The rural farming fields are currently lying fallow after the harvest. Without any ripening agricultural crops to lure him across the boundary perhaps there is not a strong enough incentive for him to cross the fence. This may change with the arrival of the next rains and the crop-raiding season begins once again.

Movement data of Credlin Elephant from 5th August - 26th August 2018



Credlin elephant movement data in more detail



Credlin elephant - Showing most recent GPS location at 11pm 26/8/18