

The regulations provided in paragraph 25 of the National Norms and Standards for the Management of Elephant in South Africa should always be followed. When an elephant is in potentially dangerous environment, such as a community, safety is of utmost importance – both for the elephant(s) and for humans.

Introduction

Elephants that are accustomed to electrified fences will usually continue to perceive the fence as an impenetrable barrier. But elephants will also test fences. If the fences are well-maintained then elephants will generally not attempt to break through the fences. However, this only applies to elephants that are not stressed (forage stress, water stress, spatial stress, human impact stress etc.). Fences that are not well-maintained with none, low or fluctuating levels of voltage will have weak spots detectable to elephants. The elephants will test the fence and be able to break through, thereby rupturing the perception of fences being impenetrable.

After the first time, elephant(s) have broken a fence it is of utmost importance to investigate the reasons behind the fence breakage. With this knowledge, it will be possible to act accordingly and find the most appropriate management strategy to prevent future breakouts, as well as to prevent habitual fence-breaking elephants. For a thorough manual on this see “Tool box for dealing with damage-causing elephants on private and small reserves in South Africa” by Marion Garai on www.esag.co.za.

The best method to avoid elephant breakouts is to prevent it before it even happens. This means to ensure that the costs of breaking through a fence are higher than the perceived benefits on the other side of the fence. Most importantly, this means that all fences – whether it is a perimeter fence or an internal fence – are working properly with a voltage high enough to deter any elephant from testing the fence. And this needs to be continuously. Consistency is very important.

A proactive approach will be more cost-efficient in the long-term than the costs associated with fence breakages, i.e. costs relating to repairing damaged fences, infrastructure, liability etc., and the costs associated with preventing future breakouts, e.g. monitoring, collaring, potential translocations etc.

It is important to keep in mind that an elephant breaking a fence is not necessarily an aggressive elephant.

Proactive measure to prevent elephants breaking fences

Below is a list of measures that, if followed rigorously, will reduce the chances of fence breakages.

- Proper boma-training prior to release on reserve for elephant(s) not accustomed with electrified fences.
- Properly functioning electrified fences and gates with daily patrols and maintenance.
- Additional modifications to fence in high-risk areas.
- Additional modifications to fence at weak-points.
- Avoid palatable vegetation in fenced-in areas or near fences.
- Avoid irrigation/watering of gardens etc. in the dry season.
- Avoid having a waterhole and/or pool in fenced-in areas and/or near a fence.
- Avoid feeding to lure animals to fence, e.g. salt-licks, throwing food over fence etc.
- Never allow an elephant to repeatedly break a fence.
- Have ethical code of conduct for traffic (game drives and residents), e.g. animals have right of way, and conduct ethical game drives (whether professional guides from a lodge or self-drive).
- Ensure some sort of penalty if the code of conduct is not followed.



- Ensure that all users (guides, guests, residents, contractors etc.) are educated about elephant behaviour and ethical behaviour when in the vicinity of elephants.
- Having a full background history on each elephant in terms of possible previous translocations, traumas, relations, previous behaviour, major events etc.
- Limit the number of internal fences.
- Be aware of the shape of the reserve. Avoid fragmentation and dead-ends for the elephants. They need to be able to roam freely as much as possible.

Tactics that can be used to prevent elephants breaking through a boundary

Below is a list of some possible tactics that can be used to prevent elephants from breaking through a fence.

- Blocking their path to the fence, i.e. a human presence at the fence can be enough by knowing they are being watched.
- Speaking calmly (not shouting) so they know you are there (the presence of a human can be enough).
- If the elephant tries to break the fence, drive towards them at high speed while making noise, e.g. revving engine, shouting, banging on side of door etc. This is in imitation of a mock charge and is aggressive behaviour, which means this should only be done by qualified personnel.
- Using a fire extinguisher (be aware of wind direction).
- Using chili spray or pepper spray (be aware of wind direction).
- Spraying water on the elephant. This may initially be enough to push the elephant away from the fence. This is temporary, as they will habituate. However, wet skin has a lower resistance than dry skin resulting in a more powerful electric shock, when an electrified wire touches the skin.
- Using a paintball gun. It should never be fired repeatedly, never to any sensitive body parts, and should never cause injuries! The elephant will associate the sound of a firing paintball gun with pain, if it has been hit previously. Therefore, the sound of a firing paintball gun can be enough to push the elephant away from the fence. A direct hit (not to any sensitive body parts) every now and then will maintain the unpredictability of this method and reduce the chances of habituation.
- Firing warning shots (should only be used as a last resort if being charged).

If it is necessary to use these tactics, it is important to bear in mind that:

- Every elephant is different, which means that one tactic, or combination of tactics, may be effective on one particular elephant, but it is not guaranteed to be effective with all elephants.
- These methods can only be used temporarily. With no tangible threat behind these methods, the elephant(s) will habituate to them at some point.
- There is a risk of turning non-aggressive elephants aggressive.
- The vehicle used in these tactics will have a negative association. Hence, it should not be a vehicle that is used in any other interactions with the elephants – or at least this should be considered.

Consistency is of the utmost importance for this type of intervention to be successful. That means that it must happen every time, the elephant(s) approaches a fence – any fence. It also means, that none of the tactics should be used when the elephant(s) is not doing anything wrong. An elephant can forage next to a fence or walk along a fence without doing anything wrong. If these methods/tactics are used, when the elephant is not doing anything wrong, it will get mixed signals and unnecessary stress is put upon it.

If possible, appoint an elephant monitor with experience in elephant behaviour. The purpose of an elephant monitor is to have a fulltime employee to monitor the elephants, investigate the reasons for the breaking of fences, and assist with preventing the elephants from breaking the fences again.

Initial investigation for decision-making process for recovering elephant(s)

As much information and knowledge on the elephant(s) involved and the status of the situation is important, as this will guide the decision-making process to the most appropriate strategy.

Below are some useful questions that should be answered when determining the best strategy for retrieving elephant(s).

- Who has escaped? If at all possible, identify the elephant(s).
- How many elephants have escaped?
 - Is it a single elephant bull?
 - Is it a family group of elephants with infants?
- What is the temperament/behaviour of the elephant(s)?
 - Is the general temperament of the elephant(s) mild or volatile/unpredictable?
 - Is the elephant(s) relaxed, aggressive, agitated due to human aggression?
- Does the elephant(s) have a collar – satellite or radio? If so,
 - Is it possible to change the update intervals to every 15 minutes or as short as possible?
 - Is it possible to use past updates to determine path and to predict potential ongoing path?
 - Is it possible to track the elephant(s) using the satellite updates?
 - If no satellite collar, is it possible to use telemetry to track the elephant(s) on the ground?
- Where is the elephant(s)?
 - Is the elephant(s) close to the safe area or far away?
 - Is it on a private property? If so,
 - What is on the property, e.g. crops, cattle, game?
 - Is there a risk to human lives?
 - What are the past experiences with the owner/manager regarding elephant(s)? Positive / negative?
 - Is it in a human residential area? If so,
 - Is it densely populated?
 - Are their attractants in the community that would draw the elephant(s)?
 - What are the past experiences with the community regarding elephant(s)? Positive / negative?
 - Is the elephant(s) close to or moving closer to a residential area? If so,
 - Is it densely populated?
 - Are there attractants in the area that would draw the elephant(s)?
 - What are the past experiences with the people in the area regarding elephant(s)? Positive / negative?
 - What is the vegetation like in terms of visibility, accessibility, potential damages etc.?
- What is the elephant(s) doing?
 - Is the elephant(s) stationary, walking, feeding etc.?
 - Is the elephant(s) aggressive towards people?



If an elephant has broken into an area, the following people should be contacted and informed:

- If the elephant has come from a national park or game reserve: The reserve management.
- If the elephant is on private property: The owner or manager of the private property.
- If the elephant is in a human residential area: The community representative
- Always: The appropriate authorities, i.e. province authority, the SAPS, the traffic police etc.

Strategies for recovering escaped elephant(s)

There are different strategies depending on the elephant(s) in question and the situation. Answering the above questions should help determine the most appropriate response strategy. Below are listed different response strategies, if the elephant(s) is already out of the safe area.

Herding on the ground

If the elephant(s) is relatively close to the perimeter fence of the area that it belongs to, e.g. the perimeter fence of a game reserve, it can be possible to “walk” or herd the elephant(s) back to safety by blocking its route and preventing it from moving further away. Vehicles and/or people on foot, as well as potentially drones, can be used for this. However, this should only be done by skilled personnel with experience, knowledge on elephant behaviour and the temperament of the particular elephant(s) and knowledge on the surrounding area. This exercise requires manpower, patience, coordination and communication.

Herding from the air

If it is not possible to “walk” or herd the elephant(s) back to safety, e.g. due to dense vegetation with limited access and visibility and/or close to human residential areas where it may risk the lives of residents, it can be helpful to use a drone to determine the exact location of the elephant(s) and the movement direction. In situations such as these, it can be necessary to bring in a helicopter to herd the elephant(s) back to safety. It is important to be aware that a helicopter can stress the elephant(s), depending on the background of the elephant(s). If the elephant(s) has negative associations with helicopters, it can result in a panic run from the elephant(s), resulting in dangerous situations. It is of utmost importance to use an experienced helicopter pilot that is very experienced with elephants and know the surrounding area.

Darting and transporting on the ground

If it is not possible to herd the elephant(s) back, the only option left is to dart the escaped elephant(s) and transport it by a flatbed vehicle.

Decision-making process for determining recovery strategy

