

PAINTBALL MARKER STANDARD OPERATING PROCEDURE

Protocol for using paintball markers as baboon deterrents within the City of Cape Town

Paintball markers: Used predominantly for recreation and in military simulations but have been used in mark-recapture studies of free-ranging wildlife populations and in deterring problematic wild species (e.g. coyotes) from urban environments.

To date, paintball guns are currently used to deter baboons in KwaZulu Natal, Sun City and in the Overberg Region (Hermanus) to deter baboons from tourist and residential areas. Essentially the paintball marker fires gas-propelled spherical pellets which for the purpose of this SOP are filled with environmentally friendly paint and typically at a rate of 90m per second. No paintball marker may fire a paintball faster than 300 foot per second. This should be checked against a chronograph every month. For the purposes of deterring baboons, standard pellets will be used and only directed to the flank and rear portion of a baboon.

An application may be directed to CapeNature to utilise rubber or plastic balls under extreme circumstances and ONLY to achieve a specific, short term goal. If this action is triggered and a paintball marker is no longer effective in keeping baboons out of urban areas, the Baboon Technical Team will need to consider an alternative. The only threat of serious injury to a baboon would be a pellet in the immediate vicinity of the eye. Hence no pellets may be directed towards the face of a baboon.

Conditions of Use

1. Any operator tasked with using the paintball marker will undergo instructions on firing procedures from a competent instructor.
2. Any operator will need to **demonstrate sufficient accuracy** (hitting a 30cmx30cm target at a range of 10m with a frequency of 90% or more) before being allowed to use the paintball marker in the field.
3. Caution must be exerted when operating in wind velocities exceeding 40km/h or more (operators will have to use some degree of their own discretion to this end) or in situations (e.g., heavy rainfall) where external factors will compromise accuracy.

4. While markers are being used in the field, a veterinarian is required to be on call to attend to any unforeseen injuries to baboons. The proposed method of firing (see below) will minimise the chance of injury, but the ability of baboons to move quickly (and sometimes unpredictably) will introduce some degree of chance.
5. When not in use, the markers will be concealed within a bag or carried on a shoulder strap and with the barrel sock or plug in place.
6. Two zones will be designated, namely green and red:
 - **Green zone** This is a buffer zone that extends from the agricultural or urban boundary / fence outwards into the natural area. Depending on the terrain it may be 100 - 250m wide. However, this distance is variable because circumstances may arise whereby rangers need to actively block individuals or small groups from moving away from the troop to raid the urban area. In some circumstances it may be necessary to block a whole troop from running towards a second urban area.
 - **Red zone** (no go zone). This zone includes all human areas and all land within the agricultural or urban area. It therefore covers the whole agricultural or urban area adjacent to / up to the green zone.

Green zone (buffer zone) protocol:

- The operator will position himself between the troop and the nearest agricultural or urban zone (and firing will be directed towards natural areas).
- Once the baboons cross into the green zone, the monitors will be instructed to make an effort to deter them by clapping their hands/shouting or shaking the marker in order to deter them from the human area.
- If the baboons still fail to respond, the operator will begin to fire.
- Only adult baboons will be targeted.
- The operator will only target adult baboons that are within a safe distance from juvenile and infant baboons but within 20m of the operator (so as not to compromise accuracy). NO adult females carrying infants will be targeted.
- At the discretion of the Field Manager, large juvenile males that are at least the size of an adult female AND a known raider, can be targeted.
- The operator may aim at the ground 2m in front of the targeted adult to give a warning shot.

- No more than 2 warning shots are to be fired into the ground in front of any adult.
- From this point, troop members will either begin to retreat or will continue their approach. If the baboons approach the agricultural or urban area purposefully the red protocol will be initiated.

Red zone (NO GO zone) protocol:

- The operator will position himself/ herself between the troop and the nearest agricultural or urban area (and firing will be directed towards natural areas).
- Once the baboons are in the Red zone, the operator will only target adult baboons that are within a safe distance from juvenile and infant baboons but within 20m of the operator (so as not to compromise accuracy). NO adult females carrying infants will be targeted.
- At the discretion of the Field Manager, large juvenile males that are at least the size of an adult female AND a known raider, can be targeted.
- The operator will target the central back and rump of an adult (always firing in the general direction of natural areas).
- Caution should be used when firing on baboons moving directly toward the operator in order to avoid the risk of hitting the facial region.
- Should the adult retreat away from the operator, towards natural land, targeting of that adult will cease once it is beyond the green zone.
- If the troop moves back into the green zone, the firing protocol will be adjusted accordingly.
- Within agricultural areas, efforts will be geared primarily towards keeping local residents and crops safe, firing as little as possible and moving the troop out of the area as quickly as possible.
- When monitors are moving the baboons, firing must be used as a support to the monitors by targeting adult males/females that break ranks with the troop. If the troop is moving in a general direction, moved by the monitors, then firing should be guided by the Supervisor so as not to scatter the troop.
- No firing will be allowed where visibility of the pellets' trajectory is obstructed.
- No firing will be allowed in the direction of people, domestic animals, windows or vehicles of any description.

- No firing will be allowed into isolated trees where baboons are sheltering where no escape route is available. The operator will need to retreat in order to allow the baboon/s to come down. The operator may fire again in order to drive the baboon/s in the desired direction once they are safely out of the tree.
 - Any firing must be maximally effective (i.e. a minimal number of clear shots). This is to ensure that the marker retains its aversive risk to baboons.
 - If there are multiple operators, a predetermined direction in which to push the baboons must be decided on prior to any action. If baboons are located on roof tops, trees or dead ends, the operators MUST devise an operational plan prior to firing. Baboon escape routes must be determined, and operators must allow baboons the opportunity to escape in the direction away from the operator. No other operators or monitors should hinder this escape route.
 - There should be a single plan and direction common to all operators on the different farms. It is not allowed to chase baboons onto the neighbouring farm and back again.
 - No firing may take place from a moving vehicle.
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