Food and Agriculture Organization of the United Nations

IUCN SSC Human-Wildlife Conflict & Coexistence SPECIALIST GROUP

HUMAN-WILDLIFE CONFLICT & COEXISTENCE
/ CASE STUDIES

UNDERSTANDING ANIMAL BEHAVIOUR PATTERNS FOR LONG-TERM SOLUTIONS TO HUMAN-WILDLIFE CONFLICT

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INTRODUCTION

In Zimbabwe, Chacma baboons *Papio ursinus* cause large-scale damage to commercial pine plantations, creating a severe problem for the timber industry due to losses in the value of timber as a result of the damage they cause. Historically, baboons in Zimbabwe have been treated as vermin and considered a problem species, with bounty hunting encouraged by the District Commissioners.

LETHAL CONTROL WAS OFTEN EMPLOYED TO REMOVE BABOON TROOPS FROM PLANTATIONS BY PROBLEM ANIMAL CONTROL UNITS, UNDER THE DIRECTION OF THE ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY (ZPWMA OR ZIMPARKS).

KEY INSIGHTS & LESSONS LEARNT
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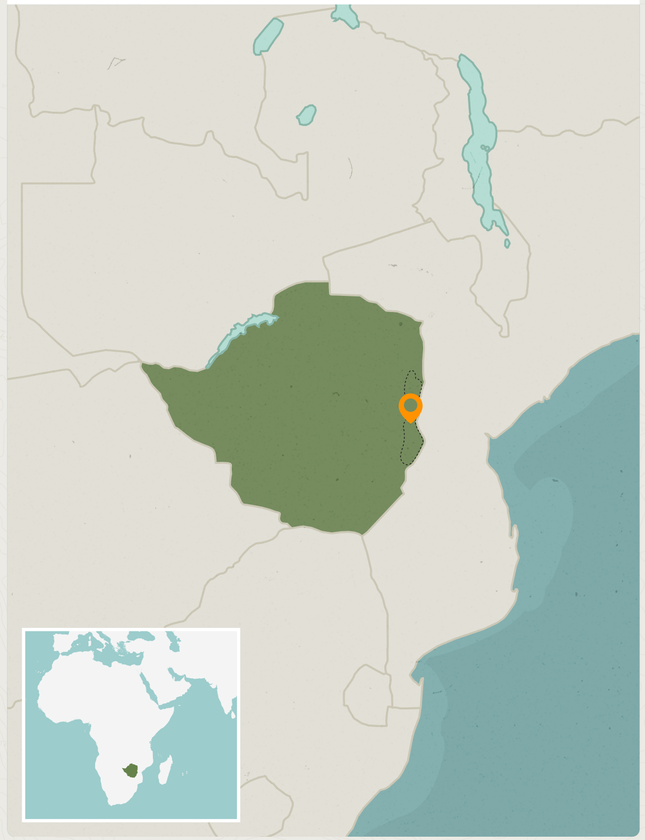
EASTERN HIGHLANDS ZIMBABWE

NYANGA, MUTARE, CHIMANIMANI AND CHIPINGE DISTRICTS, ZIMBABWE



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While successful at reducing damage, within two years, new troops would move back into the area with damage reoccurring. This case study follows the long-standing research and experiences of a wildlife manager, who had initially been tasked with conducting the lethal control, but through observations of the baboon's behaviour, identified what might be driving their behaviour and how the behaviour was transferred between individual troops. Consequently, they could determine how the situation should be managed in the long-term, removing the need for lethal control of baboons on a large scale.

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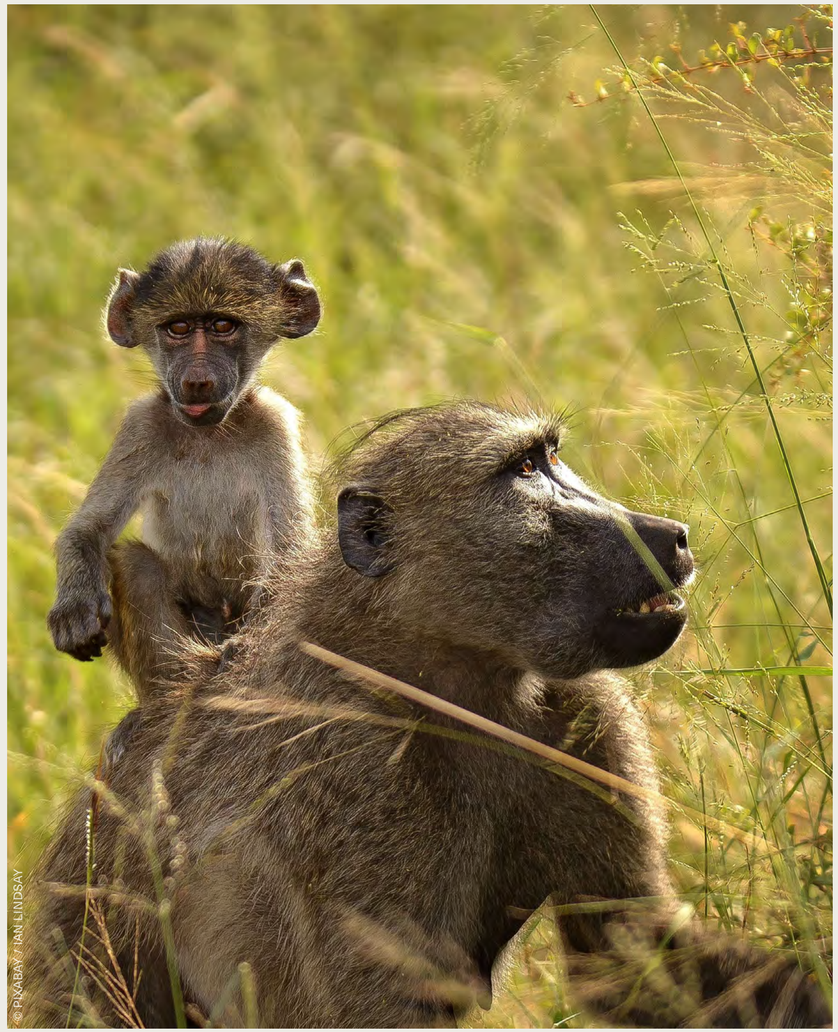
PROBLEM ANALYSIS

Baboon damage to trees started in the 1980s, escalating in afforested plantations along the eastern Highlands of Zimbabwe. Although the baboons were causing damage to pine plantations, evidence showed the damage was not due to a food or mineral deficiency, as there appeared to be no dietary shortfall to trigger the detrimental behaviour.

THE ACTUAL DAMAGE RESULTED FROM THE BABOONS STRIPPING BARK FROM THE TREES RESULTING IN TREE MORTALITY, DEFORMATION AND STUNTED GROWTH.



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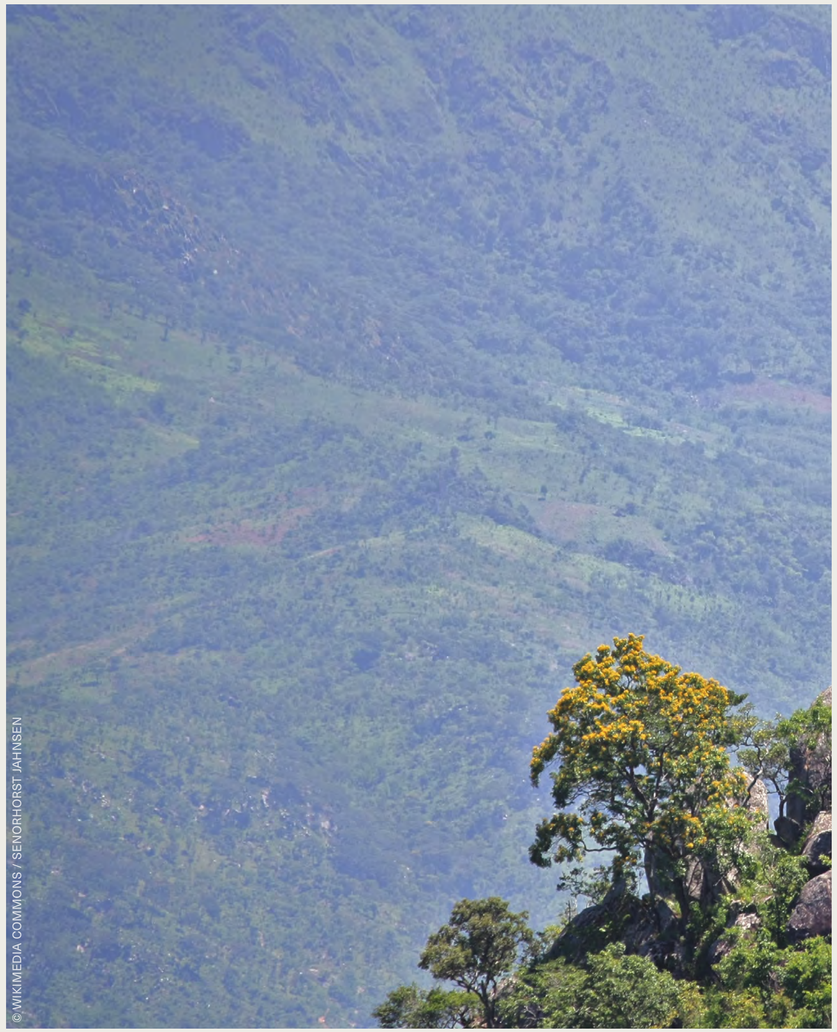

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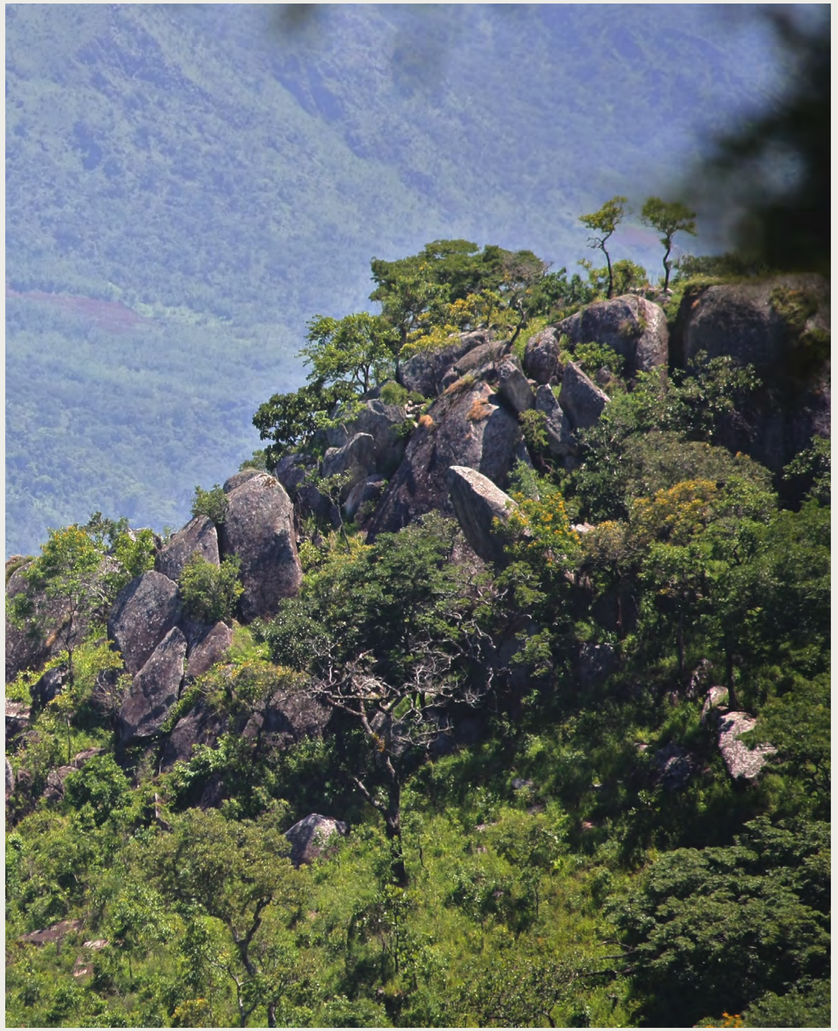


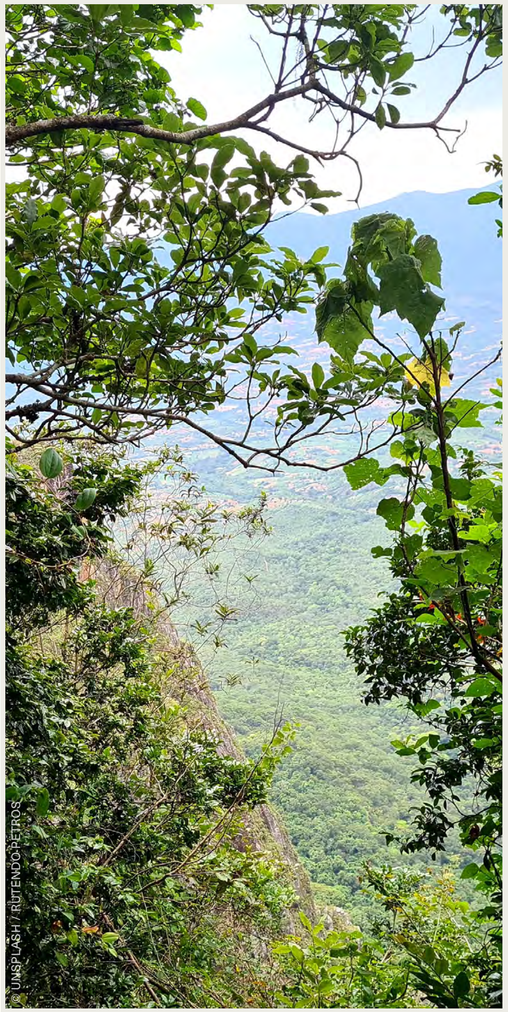
At first, the bark stripping behaviour involved a single species of pine, but eventually spread to all pine species, and in time to gum and wattle trees (also exotic species). At the time, the baboons were recognised as a problem species, and initial management efforts involved the lethal removal of baboon troops. This resulted in a significant reduction in damage in the short term, over 6-8 months. However, over time, of around 18 months to two years, the damage recurred. In turn, a further action of lethal control of troops was needed and a perpetual cycle of damage occurring, baboon troops being removed, damage being reduced then increasing again, in such a manner that a long-term solution could not be identified. Initially, damage caused to the plantations was limited, with occasional sporadic damage events happening that could be contained through the removal of the damage-causing troops. However, in 1991, there was a sudden upsurge in several hotspots in Zimbabwe, along the Eastern Highlands, in the Nyanga, Mutare, Chimanimani and Chipinge Districts. It became critically important to better understand this pattern and to identify a permanent solution to the problem.

ACTIVITIES

Under natural circumstances, baboon troops would typically keep a distance from each other by occupying distinct but dynamic home ranges. With a typical baboon habitat comprising of savannah woodland, open and rolling hills, the baboon troops can observe neighbouring troops and interact on their home ranges' boundaries. However, in the timber plantations, due to intensive silvicultural operations, the density of canopies was significantly increased, and vegetation was constantly changing, hindering the troop's ability to geo-locate, establish home range features and observe other troops. In these plantations, due to the reasons discussed, when they would come upon other troops, as they were likely not aware of where their home range boundaries were, it was hypothesised that this caused an increase in anxiety and stress among the troops, which in turn triggered the bark-stripping behaviour to start.

IT WAS ALSO OBSERVED IN THE MAJOR AFFORESTED ESTATES THAT NOT ALL TROOPS CARRIED OUT THE BARK-STRIPPING BEHAVIOUR. SOME TROOPS WOULD DO THE DAMAGE, BUT OTHERS WOULD NOT.

When the troops causing the damage were identified and removed, the damage would stop even with other troops present. However, the behaviour would restart after a certain period (12-18 months). It was hypothesised that when the behaviours began again, it may have been when dispersal males who had already shown this behaviour joined the troops and re-established the behaviour into the non-damaging troop, resulting in them now also causing damage. In terms of urban and farming operations, it became apparent that there was a need to control the particular baboon individuals who had this acquired behaviour, and not necessarily the whole troop.



Although the bark-stripping behaviour had been observed in the plantations, the behaviour was fortuitously replicated under another scenario. When habituating baboon troops to bait sites, in ranching settings, in which lethal control programs were taking place, more than one troop would often be baited to the site simultaneously. At times, there would then be three or four different troops trying to get to the same bait. Initially, there would be a lot of dispute and infighting amongst them, but eventually, the troops would manage to establish a social hierarchy between the troops and conflicts would subside. Subordinate troops often needed to wait for access to the bait site while the dominant troop fed.

WHILE WAITING, THEY WOULD OCCUPY THE ACACIA TREES NEARBY, CAUSING SIGNIFICANT DAMAGE TO TREES IN THE SAME WAY THAT WAS OCCURRING IN THE PLANTATIONS.

The provision of bait stations resulted in home ranges being ignored and troops coming into closer spatial proximity with each other, which otherwise would not occur naturally. The troops that had to wait would become frustrated and would commence the bark stripping behaviour.

Although it had been possible to pinpoint why the baboons were causing the damage, it was also essential to understand what had caused the behaviours to start in the first place. The increase in non-native plantations had significantly disrupted the natural landscape, resulting in loss of biodiversity, reducing food competition by other macro herbivores and improving food opportunities for baboons that could survive in the plantations. It was hypothesised that the primary triggers were the severe droughts that occurred in 1982-1983 and again in 1994-1995, which greatly limited natural food availability, with plantations becoming attractive to baboon troops, and significantly increasing baboon densities to approximately 11.5 baboons/km^2, a number which would otherwise be approximately 2 baboons/km^2.

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THE PLANTATIONS COULD SUPPORT THESE DENSITIES IN TERMS OF FOOD AVAILABILITY, BUT NOT IN REGARDS TO THE BABOON TROOPS' SPATIAL REQUIREMENTS, WHICH IN TURN ULTIMATELY TRIGGERED MORE CONFLICTING INTERACTIONS BETWEEN BABOON TROOPS AT A CLOSER RANGE. IT WAS HYPOTHESISED THAT THIS INITIATED THE CYCLE OF DAMAGE.

OUTCOMES

HAVING RECOGNIZED THAT THE BARK-STRIPPING BEHAVIOUR EITHER INVOLVED THE WHOLE TROOP OR NONE, AND IT WAS NOT SOLELY RESTRICTED TO PARTICULAR INDIVIDUALS WITHIN A TROOP, CONTROL WAS DIRECTLY TARGETED AT TROOPS CONDUCTING THE BEHAVIOUR WHILE ENCOURAGING TROOPS THAT DIDN'T.

This resulted in stopping the baboon damage entirely on isolated forestry estates where the damage drivers were no longer present. As no individuals that conducted the behaviour were thus present, the knowledge transfer mechanism was effectively halted. Any dispersal males that moved back into the troop, which might have had the damage-causing behaviour, were swiftly removed, to ensure the knowledge was not reintroduced to the troop, thus interrupting the behavioural transfer mechanism.

Over time, the management strategy in Zimbabwe outside macro forestry has shifted from one of lethal control of baboon troops to identifying individuals having problematic behaviour and knowledge and removing these from the troops. However, to achieve full coexistence, these underlying behavioural drivers need to be addressed in such a manner that no baboons need to be lethally removed at all.

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KEY INSIGHTS & LESSONS LEARNT

01 IMMEDIATE SUCCESS

The lethal control of baboons causing damage to plantations meant that in the short term, the damage was prevented, and the impacted stakeholders were pleased with the result. However, this meant that affected stakeholders were often unwilling to implement longer-term management plans to remove the drivers of the baboon's behaviour, which included land use planning and silvicultural intensity reduction.

02 ABUNDANT SPECIES

The Chacma baboon is prevalent in Zimbabwe and, therefore, not of conservation concern at the moment. As a result, lethal control has been acceptable. Offering non-lethal solutions that take longer to implement, but were equally successful, were less favoured. This had to be taken into account.

03 TARGETED MANAGEMENT

Initially, all baboon troops in a particular area were targeted with lethal control. However, throughout the work of the wildlife manager, it became apparent that only certain troops and individuals conducted the behaviour. Therefore, targeted management of certain troops rather than all troops provides for a better outcome.

04 ADDRESSING THE DRIVERS

For any strategy to be successful in the long term, the underlying drivers need to be addressed. Although baboon troops could be removed regularly, this was only a short-term solution, often requiring repetition of efforts. If the drivers of the situation could be reduced, then baboon bark-stripping behaviour would not occur at all, negating the need for any lethal control and promoting coexistence.

05 SUCCESS DEPENDS ON STAKEHOLDERS

Many stakeholders only wanted the baboons removed, which they considered a successful outcome. However, as attitudes change through awareness and education and a new focus on conservation is realized, there will be an increasing understanding for the need of coexistence. Some stakeholders were willing to coexist with the baboons, making less invasive management approaches more effective in the longer term.

06 INCENTIVE OR AGREEMENT FOR REDUCING DRIVERS

When stakeholders affected by baboons requested assistance, there needs to be an agreement or incentive whereby after any management has been conducted, the stakeholders would also address their own behaviours so that the drivers (e.g. access to food) are also removed. Therefore, the baboon’s damage-causing behaviour is not triggered.

07 IMPORTANCE OF EXPECTATIONS

As lethal control immediately removes the problem for the stakeholders, there was no option to reduce the damage by 70 percent or 80 percent, as the expectation is that all damage would be reduced.

08 CHALLENGE OF OBSERVATION

All the work conducted was influenced by observations and experience from the field over a 50 year period. It can be challenging to make the management approaches mainstream when they are not backed up by standard science protocols.

09 LATE ENGAGEMENT

In a typical situation, support from the consultant was requested when damage was deemed to be out of control. Therefore, it was much harder to find a solution as the drivers of the behaviour were deeply embedded already in the baboon troops. Ideally, support should be requested at an early stage, before the damage-causing behaviour starts to occur, so the drivers can be addressed immediately, reducing the chances of the behaviour occurring in the first place and becoming a serious inconvenience.

FURTHER INFORMATION

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ABOUT THE CASE STUDIES

The **Food and Agriculture Organisation of the United Nations** (FAO) and the **IUCN SSC Human-Wildlife Conflict & Coexistence Specialist Group** (HWCCSG) have jointly developed a set of case studies with the aim of covering the process projects have taken to manage various aspects of a human-wildlife conflict & coexistence situation. This case study is one of many that will be used to illustrate key components of the **IUCN SSC Guidelines on Human-Wildlife Conflict & Coexistence**. The published case studies can be found in the **Human-Wildlife Conflict & Coexistence Library**.

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