

**NMMU GEORGE CAMPUS**

**CONSERVATION STRATEGY FOR  
THE NAMIBIAN CHEETAH USING  
AN OPERATIONAL MODEL AS A  
MANAGEMENT TOOL**

Authorized by: Corli Coetsee  
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Student: Luigi Lottino  
Student no: 207038853

## **1. INTRODUCTION**

This report is a summary of a conservation strategy for the Namibian cheetah (*Acinonyx jubatus*) populations (Eaton, 1982). In this essay, I have attempted to adapt an operational model shown in Knight *et al.* (2006), in order to achieve an effective conservation management plan for the cheetah. This essay touches on the protocol of how to use an operational model as a conservation tool with the aim to essentially broaden readers' perspectives and create awareness of the current issues concerning the Namibian cheetah.

The Convention of International Trade in Endangered Species (CITES) currently lists the cheetah as a vulnerable species (Marker, 2000). Human interference is the primary cause of this status, as farmers have resorted to shooting or capturing them as a means of protecting their livestock (Marker *et al.* 2007). Most of the cheetah's rangeland has been converted to agricultural land, and with increasing human population, only further encroachment on their habitat is occurring.

Successful conservation relies on three primary pillars: systematic assessments, planning, and management implementation (Knight *et al.* 2006). Knight *et al.* (2008) further argues that the use of operational models as a tool in the conservation field is a good method to consider for any situation where the conservation lacks the actual implementation phase. This report will attempt to explain these three major pillars in an effort to understand the actual application of an operational model, and to create a foundation for a successful management plan.

## **2. STATUS AND ECOLOGY OF THE NAMIBIAN CHEETAH**

The Namibian cheetah population numbers declined dramatically in the 20th century with only an estimated 15 000 individuals remaining worldwide (Bartels *et al.* 2001, as cited in Marker *et al.* 2007, p. 4). Due to human interference, the cheetah has lost most of its habitat to commercial livestock farms that cause degradation and fragmentation in the cheetah's territory (Marker *et al.* 2007).

Eaton (1982) describes the general appearance of the cheetah as yellow/ tanned in colour with black spots covering its whole body. The yellow/ tan colour often varies from lighter to darker within individuals. This is the fastest land mammal on Earth (Eaton, 1982), with recorded speeds between 90 and 100 kilometres an hour

(Carnaby, 2006). Northern Namibia is home to approximately 20 percent of the world's cheetah population (90 percent of which are outside reserves, on farmlands occupied by livestock) (Marker, 2000). Marker *et al.* (2007) issued a status report that reveals an approximate 3000 cheetah individual's roam these farmlands. Further studies show that the range size of these cheetahs is very large, despite the fragmentation of habitat in the area (Marker *et al.* 2008).

### **3. CONSERVATION STRATEGY USING AN OPERATIONAL MODEL**

Knight *et al.* (2006) defines an operational model as a summary of processes applied to areas that need conservation action. Cowling *et al.* (2008) adds to this definition the concept of mainstreaming, which includes human behaviour, by taking economic sectors and development models, policies and programs into account. Knight *et al.* (2006) describes three broad phases, which are systematic assessments, planning and management. These are discussed in detail below:

#### **3.1 Systematic Conservation Assessments**

The first phase is the systematic assessment and includes social, biophysical and valuation assessments (Cowling *et al.* 2008). These are looked at by asking the following questions: How do farmers feel about cheetahs entering their property? How has agriculture and other anthropogenic activities affected the habitat of the cheetah? How can farmers and landowners use cheetahs as an income source? Marker *et al.* (2003) showed that farmers are actually open to new ideas and information pertaining to cheetah management, and many seek alternative methods to handle the situation. However, due to lack of collaboration between these landowners and researchers, many methods end in disappointment. The second question addresses Namibia's economy. Extensive studies show that Namibia's livestock and game farming are essential to the country's economy; therefore, conservation policies that do not include these two sectors would not work (Marker *et al.*, 2003). The final question addresses the valuation of the cheetah in Namibia. Many agree that if the economic value of wildlife is increased, the wildlife will also increase, as it becomes a viable source of income (Nowell, 1996).

The Namibian cheetah has a very intricate ecology. It is important to assess the status of this animal in context of its natural habitat, breeding season, population dynamics and genetics, hunting behaviour and inter-species interaction (Eaton, 1982). In this phase, stakeholders can start to discuss goals and set conservation targets that can later be promoted by rewarding those who achieve their targets (Knight *et al.* 2008).

Knight *et al.* (2008) emphasises how researchers need to put more effort into acknowledging the importance of social aspects in conservation assessments and in turn, should implement solutions that will suit all beneficiaries. These assessments are essential to effective conservation of the Namibian cheetah, as it brings together all recipients and managers involved and affected by the cheetah populations (Cowling *et al.* 2008). Practising social assessments from the start promotes landowner involvement (Cowling *et al.* 2008).

### **3.2 Strategy Planning**

In this phase, participants are able to network with each other and finalise the goals and vision set in initial stages of the operational model (Cowling *et al.* 2008). This allows for focus on the actual conservation and ecology of the cheetah and promotes involvement of farmers, landowners, researchers and local communities in the surrounding area (Knight *et al.* 2006). Strategy development is essential; this is where plans are formulated using the available social resources (for example conservancies in the area, local communities, schools and research institutes). The scientists are facilitators in this phase, their opinion and assistance provides simple understanding of complicated information and so can avoid confusion of topics in the future (Cowling *et al.* 2008). It is also with their help that the goals set to protect and conserve the ecosystem processes are put into policies and practises during this phase (Cowling *et al.* 2008).

Mainstreaming is the term used to describe these stages of development and is implemented at the 'crossing point' between the planning phase and the management phase (Cowling *et al.* 2008). For a mainstreaming programme to be affective, it is necessary to involve the participants who are in control of the finances. These participants must be presented with a suitable summary of the estimated expenses as well as a valid source of income that cheetah can bring into the system (Cowling *et al.* 2008).

During the planning phase, one should also start to gather new organisations in the form of non-government organisations (NGO's), non-profit organisations (NPO's) and educational institutions. As the cheetah is currently facing a major threat in Namibia, creating awareness and educating the public can greatly benefit the status and conservation of this animal (Cowling *et al.* 2008).

### **3.3 Management Implementation**

The final phase is management. This is where actions are put into effect to achieve the objectives set by the beneficiaries (Cowling *et al.* 2008). This phase involves actual implementation of the planning done in earlier phases. The stakeholders, researchers and other contributing organisations (in this case NGO's and NPO's) put into effect projects such as social fund raisers, habitat rehabilitation projects and the framework for collaboration among farm owners to create corridors for the cheetah's migration (Cowling *et al.* 2008). Implementing educational programs in local communities to create awareness is beneficial too, as many do not know or understand the cheetah's status or ecology (Cowling *et al.* 2008).

When considering all the aspects of management implementation, one needs to include adaptive management in the equation. For the success of this program, the operational model shows that conservation efforts must work towards an ecosystem with resilience (Knight *et al.* 2006). Ongoing assessments and planning are, and will always be, part of the system, even when participants have reached management phases in their operational model (Cowling *et al.* 2008). This will ensure that participants are able to address the first sign of decline, returning to the ongoing operational model system to do so. Continued assessments and planning are therefore essential to adaptive management.

## **4. CONCLUSION**

The very basis of this operational model is formed with three pillars: the first discussed was the assessment phase where social, biophysical and valuation assessments were explained. The planning phase in the operational model then included all possible stakeholders and their function in the conservation of the cheetah. The final phase is the actual implementation of these plans. The cheetahs

of Namibia are in dire need of a management plan incorporating all these elements. This is why an operational model would be an excellent method of conservation. Knight *et al.* (2006) reflects on how humans must be included in all operational models as people are the cause of environmental degradation as well as the solution to it. With proper guidance and effective teamwork and collaboration of specialists in different fields, a single entity with a diverse knowledge can perform promising results with time.

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